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Original Paper

SC-TVP Green Practice Initiative in China's Logistics Market Based on Case Analysis

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Abstract

In the era of circular economy, the concept of sustainable development has attracted more and more attention. With the development of cross-border e-commerce, the demand for logistics services has continued to surge, and the pressure on them to provide sustainable services has risen sharply. In 2020, China officially put forward the "double carbon" strategic goal, and green logistics has become the new direction of industry development, in line with the concept of sustainable development. However, the actual impact of green logistics practice on China's sustainable logistics services is unknown. This paper aims to study the current situation and results of green logistics practice through data analysis and case analysis, including green design, green transportation, green management and other indicators. Based on the case analysis in this paper, the SC-TVP model is constructed to provide an effective green logistics practice framework, with a view to improving the management level of green logistics, promoting the development of enterprises, and providing some reference for the logistics development in the post-epidemic era.

Keywords

green logistics practice, China's sustainable logistics service, overseas warehouse

1. Introduction

In 2020, human society faced one of the most serious public health emergencies, COVID-19. As the first country to discover the outbreak, China was hit in all aspects, including social, economic, and technological development, policies, and regulations. The outbreak first affected the logistics market's demand and supply chain and increased logistics companies' operational burden in the general environment. It is also indirectly transmitted to the logistics sector through its impact on the real economy. Although the risk of the outbreak to the logistics industry is generally manageable, some regions and

business areas still face greater challenges. Going into 2022, the logistics sector accounts for approximately 12% of China's GDP. Now that China has liberalized its new crown epidemic control measures, the logistics industry is generally in a favorable position.

Regarding logistics structure, industrial goods logistics account for a larger proportion of China's total logistics. In the future, China will focus on the manufacturing sector and emphasize supply chain logistics, with the production and distribution chain playing a top-down role. However, the overall logistics industry operating costs will continue to rise under the impact of the new crown pneumonia epidemic. The external environment is complex, severe, and uncertain. At the same time, with rising international energy prices and the risk of supply chain disruptions, energy issues are emerging as a major factor limiting the growth of the logistics industry. With energy shortages, labor shortages, supply shocks, and inflationary pressures, it has become imperative to plan the energy consumption of the logistics system rationally to achieve sustainable logistics services. Therefore, the logistics industry is actively pursuing green practices, which will effectively achieve the overall greening of logistics companies and provide sustainable services.

2. Literature Review

2.1 Current Situation of Energy Consumption in China's Logistics Market

As an emerging hot industry with rapid development in recent years, China Statistical Yearbook does not contain statistical data on the logistics industry. Transportation, warehousing, and postal services are important components of the logistics industry, accounting for more than 83% of the total share of the logistics industry. Therefore, the statistics of transportation, warehousing, and postal services can reflect the development of the entire logistics industry to a certain extent. Therefore, this paper uses the statistical data of the transportation, warehousing, and postal industry to explain the relevant situation of the development of the logistics industry and studies these data. According to the energy consumption statistics in the China Statistical Yearbook, the energy consumption data of transportation, storage, and postal industries are given respectively based on the energy consumption data of coal, coke, crude oil, kerosene, diesel, fuel oil, natural gas, and electricity. According to the China Statistical Yearbook data, the energy consumption of transportation, storage, and postal services will be counted every three years. This can be seen from the trend chart of energy data in the past decade's transport, storage, and postal sectors. As of 2019, the overall energy consumption showed an upward trend, but the trend in the last three years showed a downward trend, indicating that the Chinese market is currently concerned about energy consumption in the transportation, storage, and postal industries. In the energy classification and share, the energy consumption of diesel fuel accounts for the highest share of the total energy consumption. This is because diesel is the most important transportation energy in the logistics industry, but the data in 2022 also shows that diesel consumption has declined. At the same time, in the data for 2022, the energy consumption of 9 countries is lower or almost the same as that of 2019. This phenomenon shows the importance of China's logistics market in energy consumption.

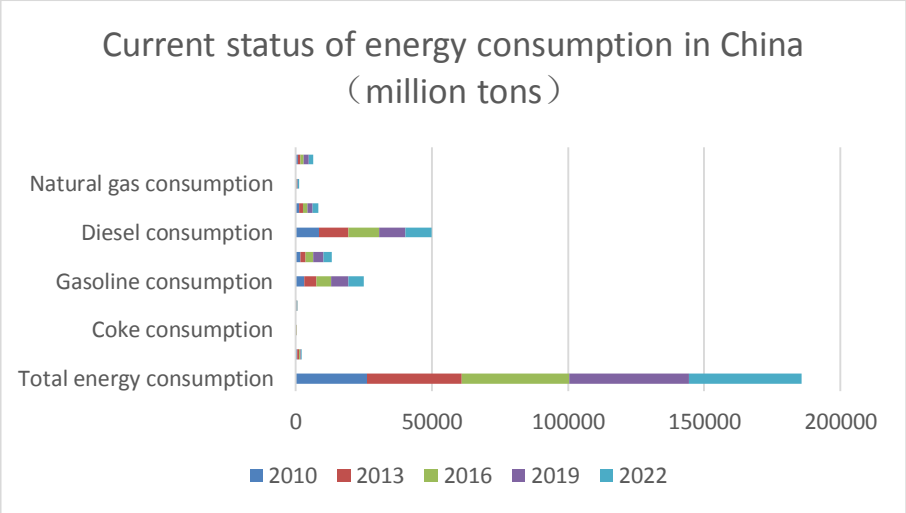

Figure 1. Current Status of Energy Consumption in China (Million Tons)

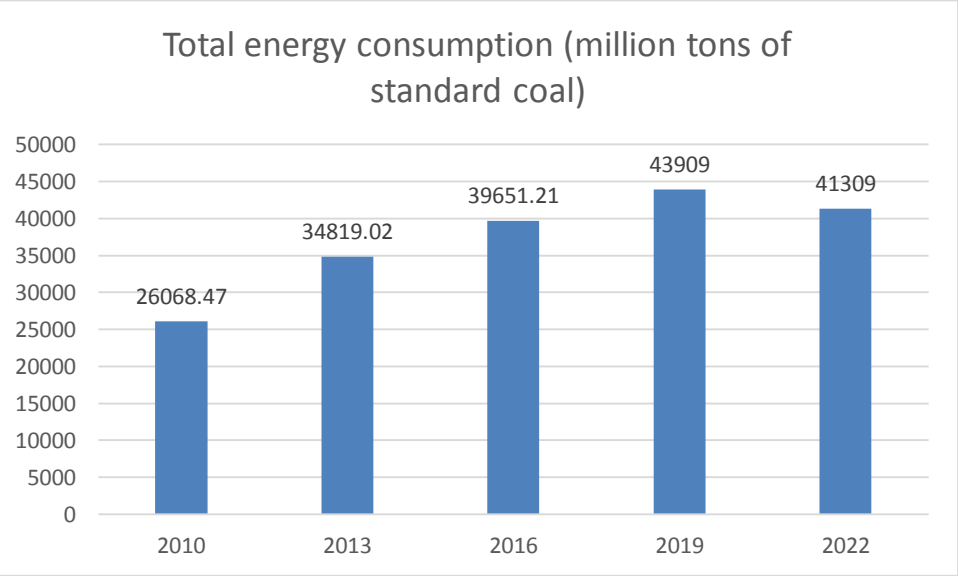

Figure 2. Total Energy Consumption (million tons of standard coal)

2.2 Factors Affecting the Environmental Sustainability of the Logistics Industry

Environmentally sustainable development is no longer a strange topic for all humanity. As an emerging economic industry, modern logistics has been showing a rapid growth trend since its birth. With economic globalization, the modern logistics network has gradually expanded from economically developed to remote areas, forming a comprehensive network with global connectivity. However, with the increase in logistics activities, excessive energy consumption and the serious waste of resources have led to the intensification of social problems such as air pollution and traffic congestion, which to some extent restricts the sustainable development of the social economy.

The factors affecting the logistics environment's sustainability depend on the logistics system's functions. The major impacts on the environment and energy include the following three parts.

Transportation and distribution are the logistics industry's basic production links and main functions. However, regardless of the mode of transportation, its energy consumption and emissions are the main factors that directly cause environmental pollution.

Logistics circulation is mainly to complete the simple processing of fresh agricultural products in the distribution process to improve transportation efficiency and realize the value-added of goods. If the planning and design stage is not scientific, such as the location of the logistics distribution center is not optimized, the transportation volume will increase, thus increasing energy consumption and generating new environmental pollution. At the same time, the utilization rate of material objects decreases, and the waste increases, which will cause the waste of resources.

Packaging is the prerequisite for realizing logistics value. However, excessive use of packaging materials will also cause a waste of resources and increase secondary pollution of the environment.

In addition to the main activities mentioned above, modern logistics production has other functions, such as warehousing, loading and unloading, and information. Compared with traditional industries, it brings more and more energy consumption and pollution problems.

Countries worldwide have introduced legislation to regulate and control the logistics industry from the energy and sustainable environmental development perspective. The following table briefly introduces the relevant legal provisions.

Table 1. Relevant Provisions of Law

Time	Nation or organization	Laws and regulations
1970s	United States	Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act
1980	United Nations	Convention on the International Multimodal Transport of Goods
1990s	Europe	Taxes, legislation, and other means to optimize transport structure, enhance transport safety
1992	Japan	"Environmental Protection Diet", revised a number of laws and regulations related to reverse logistics
1997	Asia	Pacific "97 Asia Pacific International Logistics Conference"
2001	Japan	"New Comprehensive Logistics Implementation Outline"
2016	China	The 13th Five-Year Plan: Focus on Energy Consumption in Logistics
2020	China	APEC meeting Promise：increase the proportion of non-fossil energy use to 20% by 2030

2.3 Green Logistics Practice (GLP)

Green logistics refers to the logistics process to suppress the harm caused to the environment and maximize the protection of the ecological environment. Green logistics involves various participants in the supply chain, logistics authorities, and ordinary consumers.

In countries and regions with developed logistics internationally, governments and enterprises have started to pay attention to the energy and environmental issues of logistics at an early stage, and some scholars have studied the specific utility of green logistics practices. Wu and Dunn (1995) put forward the concept of green logistics in the 1990s. He believes that green logistics is a system responsible for the environment. In this system, forward and reverse logistics are the complete process of logistics activities. Forward logistics include production, packaging, transportation, distribution, warehousing, etc. Reverse logistics means the recovery and disposal of wastes or consumables in the logistics process. Murphy and Poist (2003) point out that green logistics is the thinking of western industrialized countries on environmental issues and logistics decision-making from the supply chain perspective. Syed Abdul Rehman Khan et al. (2018) study the data from 43 countries in the world were investigated to research the relationship between green logistics operations and energy demand, environmental sustainability, and economic growth. The results showed that logistics operations consume large amounts of non-green energy and fossil fuels, which undermine environmental sustainability and negatively affect economic growth. At the same time, low-quality transportation infrastructure and logistics services are also important factors that affect the environment. In the past decade, scholars' literature has focused on the links between GLP, reverse logistics, sustainability, and distribution (Zhen et al., 2020). Lee Y and Lee J (2014) study the factors that influence the degree of green logistics at the company level and put forward the methods and suggestions for green logistics management. Shahbari and Othman (2015) add human factors to the study of the green logistics system. Sbihi (2009) believes that as environmental factors become more and more important, it is necessary to effectively use combinatorial optimization theory and technology to address the challenges of new green logistics problems, especially considering the themes of "reverse logistics", "waste management", "vehicle optimization" and "scheduling". Reverse logistics also allows for better recycling of expired or obsolete products. With the support of sustainable transportation, related companies have accomplished cleaner production, reduced pollution, and reduced emissions by using alternative fuels (Govindan & Gholizadeh, 2021; Mishra et al., 2022).

When GLP is gradually implemented and promoted by enterprises, its performance on enterprise performance is reflected. Golicic and Smith (2013) discuss the relationship between green logistics practices and enterprise operation performance is studied. Their research results show that enterprises can better coexist with the natural environment and strengthen their competitive advantages through green logistics practices.

Other scholars have formed the Green Logistics Management Practice (GLMP) to investigate the effectiveness of environmental practices on environmental protection. Moreover, ensure the company's sustainable development by improving profitability and increasing shareholder wealth (Baah et al., 2019).

Li et al. (2021) show that GLP positively impacts environmental performance. Another green practice is the sustainable allocation of resources, which can improve efficiency and reduce environmental impact. Green monitoring and green evaluation are a practice under green logistics as for supply chain inspection, monitoring and evaluation can reduce the environmental impact while increasing efficiency. (Mardani et al., 2020; Khan et al., 2021). Companies are becoming more aware of the environment.

At the technical level of green logistics practice as a whole, people initially believe that the adoption of various green measures and green practices in the manufacturing process posed challenges in terms of science and technology, such as high cost, skill gap, lack of practical information, quality concession and supply chain complexity (Jaeger & Upadhyay, 2020). However, in the era of Industry 4.0, Bag and Pretorius (2020) confirm that relevant technologies such as AI, CPS, the Internet of Things, BDA, blockchain, and automation could play a key role in promoting green practices in production systems. Subsequently, in the literature of other scholars in China it is also shown that digital technology could reduce resource consumption and cost (Yao et al., 2019).

In the Chinese market, green logistics practices are mainly focused on the proposal and theory level, but in recent years, relevant green logistics cases have also been put into practice. For example, Suning invested heavily and finally explored the "Qingcheng Plan", and in 2018, SF's "Feng Box" terminal recycling packaging covered 24 shopping districts, achieving full recyclability and saving 355 million tons of paper, etc. However, it has yet to be fully popularized and promoted in the Chinese market. Some related scholars have proposed a basic framework of the impact elements of green logistics practices, but their utility still needs to be analyzed and judged. Changqiong Wang (2004) believes that the development of green logistics is not to give up economic development but to protect the environment from achieving sustainable economic development. Green logistics will bring huge benefits to enterprises. Xue Gong et al. (2017) propose that green logistics is the inevitable trend of future logistics development, and the development of green logistics can promote the optimization of the logistics industrial structure. Qingli Zhao (2019) proposes that for the indicators affecting green logistics practices, internal and external factors should be considered, including various factors such as the economic status of enterprises, enterprise scale, government subsidies, service industries, etc. Haoxiong Yang and Yi Li (2009) analyze the development motivation of enterprises to implement green logistics through the game behavior between enterprises and the government and point out that the motivation of enterprises to develop green logistics is based on external incentives and supervision. In terms of the performance of enterprises, Chengxue Yu (2004) points out that implementing green logistics can improve the core competitiveness of enterprises from the perspective of non-green logistics factors. Chongfeng Li (2021) proposes the direct or indirect relationship between green practices on the performance of enterprises' practical experience, taking into account relevant indicators such as green collaboration and green supervision to strengthen the perceived power of logistics enterprises, customers and consumers on environmental protection, thus positively influencing the environmental benefits.

The above literature shows that foreign scholars have increasingly focused on reducing energy consumption in the logistics industry by improving logistics infrastructure and services in recent years. These specific implementation plans provide relevant suggestions for the Chinese market, and the whole logistics industry will improve towards an intensive and environmentally friendly logistics model to achieve green development.

3. Research Methodology

In this study, the main methods used are as follows:

3.1 Literature Research Method

This paper reviews the relevant literature on warehousing logistics, cross-border logistics, overseas warehouses, green logistics, and sustainable logistics performance and determines the research background, relevant concepts, and theoretical basis.

3.2 Case Analysis Method

Analyze the specific cases of logistics company A and overseas warehouse company B, and study the impact of green logistics practices on energy efficiency in actual operation. It is expected to build a node hub radial network suitable for warehousing logistics based on practical operation and design a logistics transportation path that comprehensively considers the green logistics performance indicators. Explore the mode of green logistics practice applicable to China's cross-border investment, and optimize cross-border logistics management.

4. Case Analysis

4.1 Company A Case

4.1.1 Company Profile

Company A is located in China Express Southwest (Kunming) Intelligent Technology E-commerce Industrial Park. The company aims to provide customers with a comprehensive "one-stop logistics" service platform. As a centralized management organization for all of Company A's business centers in Southeast Asia, the management area has more than 120 professional managers covering areas such as human resource management, logistics business optimization, market relationship coordination, brand communication and supply chain, and financial management of cold chain business, which provide important guarantees for the smooth operation of the business in Southeast Asian countries.

4.1.2 Case Study Point 1: The Design and Promotion of Intelligent Technology Help Green Logistics Practice.

The success of green logistics practices and the operation of overseas warehouses depends not only on its position and role in the whole supply chain and industry chain but also on the efficiency comparison of cost and benefit of operation and management. The higher the matching course of warehousing commodity types and supply chain types, and the greater the support of intelligent technology for intelligent decision-making in warehousing, the better the overall green warehousing and logistics

practice. Because in today's era, information asymmetry, difficulty in data sharing, and inaccuracy in forecasting have become one of the reasons why many overseas warehousing companies are limited in developing their green logistics.

In search of a solution, the company researched big data and cloud service systems and found that both could enable the A-side to more accurately predict what, when and how much consumers needed, thus satisfying the optimal allocation of resources between storage and transportation functions with low cost and high response.

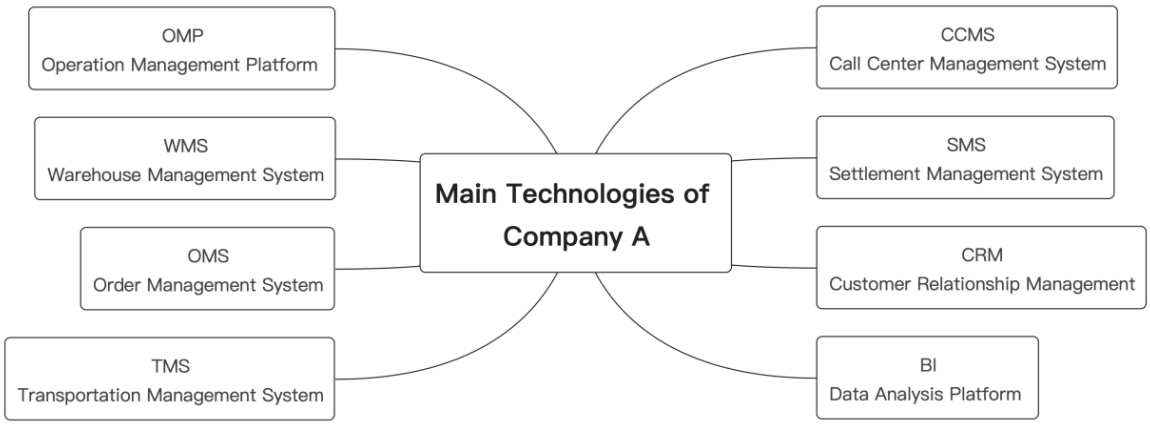

Figure 3. Company A's Main Technologies

4.1.3 Case Study Point 2: Green Warehousing Improves Enterprise Performance in All Aspects

Company A has obvious green storage characteristics, and the development of technology and equipment in the field of storage configuration presents three characteristics. No humanization. Manual operation is replaced by mechanized, automated, intelligent equipment. Specific performance: automatic sorting, rapid storage robot field development, scene. In the existing storage facilities, according to the demand and operational process characteristics, the development of customized solutions based on "service scenarios + technical support + service system"; space saving and efficiency. The land has become a critical resource for warehousing and distribution enterprises, improving storage space utilization and reducing rental costs; manual operation efficiency is enhanced to the extreme.

4.2 Company B Case

4.2.1 Company Profile

Company B is a comprehensive express logistics service provider headquartered in Shenzhen. After years of development, it has initially established the ability to provide integrated and comprehensive logistics solutions for customers. It is an intelligent logistics operator with the advantage of network scale. As a socially responsible company, Company B is fully aware of the impact of its business on the environment and has been committed to creating sustainable supply chain services.

4.2.2 Case Study Point 1: Green Measures Help Reduce Environmental Pollution

In 2021, Company B will reduce greenhouse gas emissions by 279000 tons through green packaging measures. Green packaging is a common green practice mode at present. Company B actively cooperates with the upstream and downstream industrial chains by creating the express packaging cycle ecosystem. Jointly with all parties to promote the recycling of green packaging in the whole society and practice the green R&D and operation of the whole life cycle of recycling packaging. Company B's renewable energy power generation measures reduced greenhouse gas emissions by 0.24 tons, and green transportation reduced greenhouse gas emissions by 920000 tons. Company B has a good sense of itself and is committed to promoting green and low-carbon transformation through scientific and technological forces. Put forward a good vision: to achieve its carbon efficiency by 55% in 2030 compared with 2021.

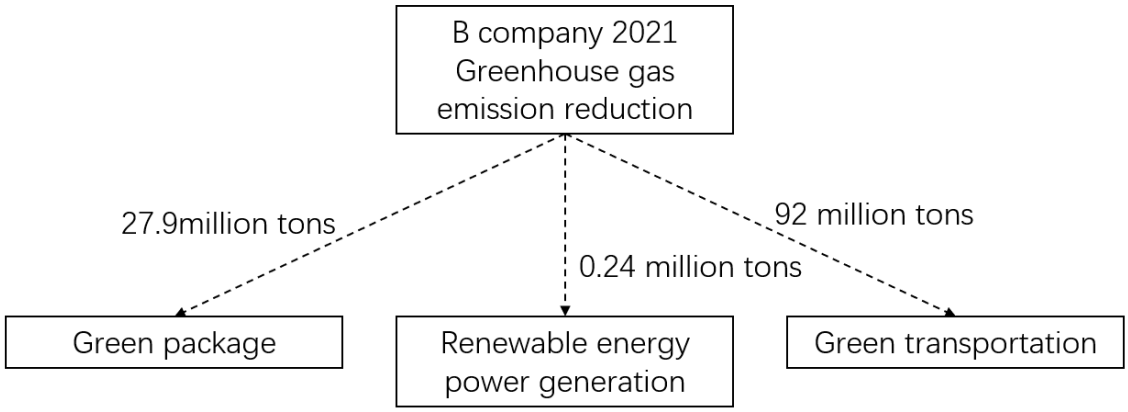

Figure 4. B Company 2021 Greenhouse Gas Emission Reduction

4.2.3 Case Study Point 2: Green Logistics and Transportation Mode Contributes to Energy Conservation and Emission Reduction

As mentioned above, the proportion of energy consumption in China's logistics industry is mainly concentrated in the consumption of diesel, gasoline, and other transportation modes. The following table shows B company's land and air transportation resource consumption data. In terms of land transportation, Company B has increased the investment and use of new energy vehicles through various ways, created an efficient operation mechanism for new energy logistics vehicles, and comprehensively improved the efficiency of transportation energy use. In terms of air transportation, Company B carries out refined management through the fuel management system and implements various energy-saving and emission-reduction measures.

Table 2. Company B Land and Air Transportation Resource Consumption Data

	Unit	2020	2021
Land transport power usage	kW-h	117,336,376.50	104,746,128.00
Ground transportation gasoline consumption	L	69,067,775.70	109,833,639.60
Diesel consumption for ground transportation	L	913,116,365.40	1,108,470,842.40
Total GHG emissions from land transport	tCO2e	2,705,510.60	3,263,703.20
Aviation kerosene usage	t	500,657.70	424,717.80
Aviation ground water usage	t	39,116	44,504
Aviation ground power usage	kW-h	7,731,677.50	12,032,767.10
Aviation ground gasoline usage	L	81,891.60	101,554.00
Aviation ground diesel usage	L	1,149,079.00	1,069,811.70
Total greenhouse gas emissions from air transport	tCO2e	1,585,863.20	1,297,990.40

4.2.4 Case Study Point 3: Green Practice Consciousness Contributes to the Sustainable Development of the Supply Chain

Company B, in addition to its awareness of green logistics practices, is committed to building green practices in the whole chain of green supply chains, from the establishment of carbon emission calculation models in the whole chain of the end-to-end supply chain to the provision of All Green service solutions for enterprise customers to the final co-construction of a zero-carbon commercial society. Company B has formulated green practice ideas and plans for the whole chain to create value for the sustainable development of logistics.

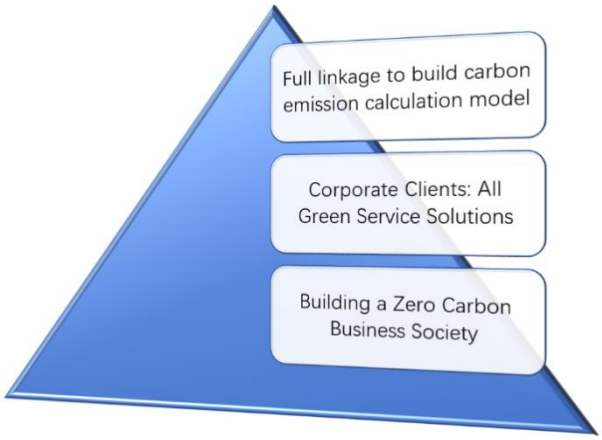

Figure 5. Company A's Main Technologies

4.3 Company C Case

In 2021, China's cross-border e-commerce import and export scale reached 1.98 trillion yuan, up 15% yearly, including 1.44 trillion yuan of cross-border e-commerce exports, up 24.5% yearly. In recent years, the development of cross-border e-commerce in the late-developing period is still prominent and has become a new economic growth point in China.

The overseas warehouse is an important node of cross-border e-commerce and a platform to drive foreign trade growth and achieve high-quality development.

The traditional cross-border e-commerce logistics model has problems such as long transportation time, large consumption of transportation modes, high cost, and low efficiency. With the development of the times, the overseas warehouse model came into being. It can provide warehousing and distribution services and value-added services such as secondary packaging, display and distribution, payment on delivery, after-sales maintenance, etc. Enterprises developing overseas warehouses can not only reduce costs and improve efficiency but also build brands, expand overseas markets, and give full play to the advantages of overseas warehouses.

In the practice of green logistics, it can be focused on the location, structure, and mode of overseas warehouses. This paper analyzes and investigates the green logistics practice of overseas warehouses in the Chinese market.

4.3.1 Company Profile

Company C Overseas Distribution Center Group Co., Ltd. has major operating companies in Jiangsu, Zhejiang, Tianjin, and Fujian, and its global operation center is located in Shanghai. It has established 103 overseas warehouses, 5 exhibitions and trade centers, and 4 free trade ports in 76 countries worldwide. It has established major management companies in the United States, Europe, and Central Asia.

4.3.2 Case Study Point 1: Green Logistics Practice Helps to Reduce the Cost of Overseas Warehouses

The construction of company C's overseas warehouse considers the logistics cost and pays attention to environmental protection and resource conservation. The company pays attention to strengthening the

awareness of green logistics in the operation of overseas warehouses and fully considers the factors of green sustainable development in the location. While developing storage and information management technology, pay attention to developing and utilizing green logistics technology and consciously cultivating green logistics talents. Environmental protection and resource utilization are always considered during the construction and operation of overseas warehouses.

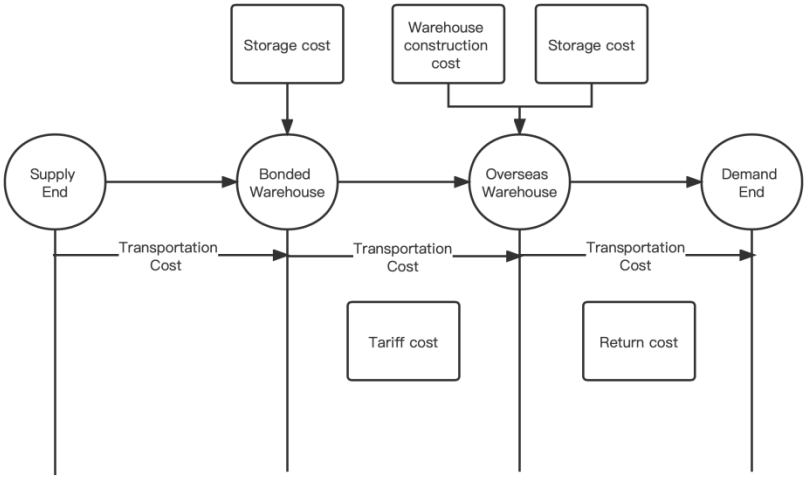

Figure 6. Cost Composition of Overseas Warehouse Logistics System of Company C

4.3.3 Case Study Point 2: Green Logistics Practice Helps to Reduce the Cost of Overseas Warehouses

The practice of green logistics helps to reduce the cost of overseas warehouses. Regarding site selection, Company C sets most of its warehouses in the suburbs, which is conducive to reducing the occupation of land resources and saving land resources. In the construction of overseas warehouses, renewable green energy and materials are used to reduce the construction cost further. With the support of relevant policies, Company C uses reusable packaging boxes and environmental protection materials on a large scale and uses new energy vehicles to replace fossil fuel vehicles for transportation. Through various green logistics practices and optimizing the operating costs of overseas warehouses, Company C is striving to achieve the development goal of green warehousing.

4.4 Case Summary and Comments

This paper summarizes the green practices of three logistics companies with different characteristics through case analysis. The focus of the case study can be summarized as follows:

1) Intelligent information technology helps promote green logistics practice

2) Green packaging, transportation, and storage are the specific measures of green logistics practice.

3) Green logistics practice helps to reduce greenhouse gas emissions and save energy at the environmental level; In terms of financial performance, it helps to reduce the cost of enterprises, including overseas warehouses; Green practice awareness is conducive to the sustainable development of the supply chain.

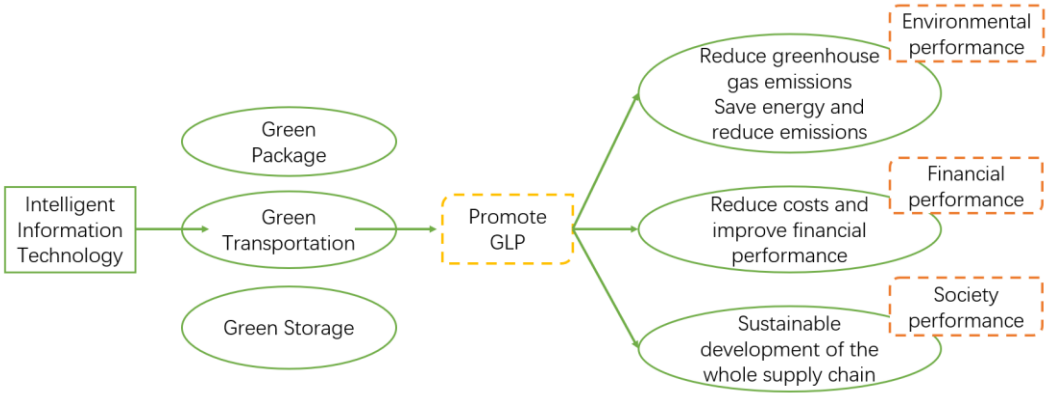

Figure 7. Performance Effect of Green Logistics Practice

5. Evaluation Model of SC-TMP Green Logistics Practice

Based on the basic operation mode of each company for green logistics practice in the case, this paper constructs the SC-TMP assessment model to evaluate the green practice situation of logistics enterprises. SC-TMP model constructs the following indexes

5.1 Technology Index

With the development of the logistics industry, informationization, intelligence, standardization, and intensification have become the general trend of logistics industry development. Before completing effective green practice initiatives, the company needs to build an integrated technology platform. From the overall logistics process link, the level of green logistics practice needs to be promoted and supervised through the level of information technology and equipment guarantee. In the process of using logistics equipment, facilities and equipment that can use clean energy are used to replace those that can only consume diesel and gasoline, which are widely used in the current logistics industry, to reduce carbon emissions in the process of use. In the process of transportation, an intelligent transportation system (ITS), a global positioning system (GPS), a geographic information system (GIS), electronic data interchange (EDI), and other technologies can be used to track and manage the positioning of vehicles, optimize the transportation route, shorten the time and improve the utilization rate of vehicles. At the same time, the overall situation of energy consumption and carbon emissions in the logistics transportation process can be monitored. The technical model is optimized according to the adjustment of intelligent routes. This indicator will be particularly important in the practice of overseas warehouses. How to plan the location of the overseas warehouse the storage location greatly influences the future industrial layout of the overall cross-border e-commerce. In the distribution process, electronic scanning and radio frequency identification (RFID) technology can sort goods efficiently, three-dimensional warehouse and automated packaging can quickly and accurately pack, load and unload and carry goods, and efficient operation in the logistics industry can reduce energy consumption and carbon emissions.

5.2 Measure Index

Green logistics practices, supported by technology, are bound to be implemented into concrete initiatives. From the green packaging, transportation, and storage mentioned above, logistics companies will have more specific green practices in the future. With the supervision and help of technology, green practice initiatives should set certain quantitative targets and establish uniform minimum standards across the industry as a consideration for green practices. This is about business development and the industry's overall development direction. In the case of green packaging, for example, the degree of reduction of the outer packaging, bulk packaging materials, and the number of recycled boxes used will all be measured.

5.3 Performance Index

All green logistics practices are designed to help companies reduce costs, improve logistics sustainability, and build environmentally friendly enterprises. As we can see from the company examples above, the performance of current green logistics practices can be reflected in three main aspects: financial, environmental, and social. The measurement of financial indicators should consider various aspects such as logistics unit volume, total savings of green logistics practices, annual ROA, and net profit. To examine environmental performance, the environmental and energy compliance rate can be explored according to the indicators set up by MEASURE INDEX. The company's awareness of social friendliness should be considered comprehensively regarding social performance indicators. The sustainable development system should be built from the perspective of consumers, enterprises, and the supply chain at the front and back of the logistics supply chain.

5.4 Service and Consciousness

In addition to the specific technologies, initiatives, and performance of green practices within the company, the SC-TCP model also proposes the role of service and consciousness-based orientation. First of all, within the enterprise, not only should the management build awareness of green practices, but also the enterprise should implement a personnel training mechanism for the people. The logistics industry requires human labor to assist. Improving corporate awareness of green logistics practices and implementing green logistics practice initiatives from the top down requires certain examination criteria. A relevant green practice management platform can be established to encourage and urge end employees to implement and cooperate with green practices actively. The relevant green practices can be given corresponding incentives to promote green practices.

However, the awareness of green practices is the attention to environmental sustainability and the cooperation of consumers and customers with the company. Consumers and customers should be aware of the need for green logistics from the source and consider the results of green logistics practices when choosing logistics services—the company's behavior to achieve supervision and synergy to improve end-to-end green logistics performance.

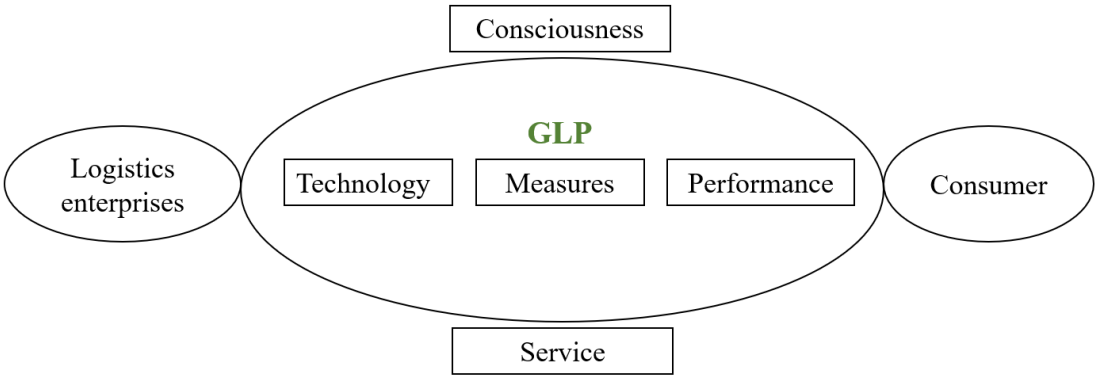

Figure 8. SC-TVP Model

6. Discussion and Implications

For logistics enterprises, carrying out green logistics practices is a necessary measure. Both from international experience and China's national policy, the future sustainable development of the logistics industry must be connected to the higher link requirements through a series of green logistics practices. Through green management, green packaging, and other measures, logistics enterprises can achieve the purpose of environmental protection. At the same time can also further reduce costs and improve logistics efficiency to achieve a higher level of development. When the overall industry green logistics practice system is mature, it will form a business society based on green practices and create a green ecological cycle development for supply chain enterprises.

The above case studies and related data show that logistics enterprises have become more concerned about environmental issues and energy consumption. Enterprises are trying to create a green logistics system with sustainable development potential. However, from the case studies data, the green logistics practices in the Chinese market need more support of effective data compared to the international market. More green logistics practices are in the initial stage and need to reach the amount of data and standards for effective analysis. In addition, the cases investigated in this paper are more mature enterprises in the logistics industry, with green practice awareness and macro development vision goals. The popularity of green practices in the whole industry has yet to be implemented, and it is necessary to radiate better and pay attention to the implementation of green practices in small and medium-sized enterprises in the logistics industry in the follow-up.

Based on the stakeholders from four perspectives of consumers, customers, enterprises, supply chain, and government, this position puts forward relevant suggestions and outlooks that can help promote green practices.

6.1 Consumers

As the service recipients of the logistics industry, when enterprises are aware of green practices, consumers should further improve environmental awareness and concepts as the recipients of end services. Cooperate with logistics enterprises to actively participate in reverse logistics and green

packaging recycling. In addition, consumers should actively respond to the national call to establish green consumption awareness and work with customers and enterprises to carry out green supervision and collaboration.

6.2 Logistics Enterprises

Logistics enterprises should take the initiative to carry out green practices and raise awareness of green logistics practices. Combine the SC-TVP model to quantify and evaluate the measurement standards of each link and provide an institutionalized model for green logistics practice.

6.3 Government

Nowadays, the logistics industry is developing rapidly, and various classification systems in the industry have emerged. Cold chain logistics, cloud warehouse logistics, etc., have more specific classifications, and their management methods will naturally differ. However, there need to be more standards for accurate classification in the logistics industry. Environmental laws and regulations still exist for different logistics types of environmental standards with many imperfections. For the government, in addition to the awareness level to promote green logistics practices to enterprises, there is a need to strengthen the efforts of regulation and financial support. Enterprises are vigorously guided to promote green logistics through incentives and detailed evaluation criteria vigorously.

First, improve the relevant laws and regulations so that the green practices of logistics enterprises can be based on laws and regulations, regulate their operations, and form constraints on enterprises.

Second, strengthen the supervision of local governments. Strict laws cannot be separated from government supervision. Through supervision, enterprises should accept government inspection and supervision under the green practice objectives constructed by the SC-TVP model, rectify the places that fail to meet the standards, and accept punishment when necessary.

Third, strengthen education, promote green knowledge, and cultivate innovative talents in various aspects of technology, practice, and management applicable to SC-TVP to improve the overall efficiency of green practices. Encourage high-quality talents to research and develop innovative green technologies, adjust the industrial structure, build a green logistics platform, and form an industry development model.

7. Conclusions

This paper provides a framework of initiatives for understanding the utility of GLP through a literature review of green logistics practices and specific case studies examples. After analyzing the energy consumption in the Chinese logistics market, it can be concluded that diesel fuel and gasoline have the largest percentage of consumption. In response, transportation methods in the logistics industry will be the main direction of initiatives for green logistics practices. The current process and key focus directions of green practices in the industry are revealed by investigating the three companies' green logistics initiatives. The SC-TMP Green Logistics Practices Assessment Model will be used to monitor and evaluate the green practices of logistics companies and provide a standard for measuring green practices in the industry. Such a model will also serve as a way for consumers and customers to understand other

companies' efforts and contributions to environmental protection and sustainability. Nowadays, all industries will work together to create an environmentally friendly business society model. The logistics industry, as a fast-growing and popular industry, will also contribute to sustainable development. The SC-TMP Green Logistics Practice Assessment Model is an examination of corporate standards and a bridge to provide energy efficiency-oriented services to customers.

By examining advanced in-house information technology capabilities and effective green practice indicators, SC-TMP can provide a better total supply chain service, which will generate positive economic output and is expected to stimulate the demand of logistics customers. With the structure of the maturity model, managers can also monitor and evaluate the different stages of SC-TMP's sustainability in the future. Moreover, according to the overall development changes of the industry, it will be coordinated with relevant government policies to form an institutionalized maturity model and provide better suggestions for the overall future development of the industry.

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