

Research on the Recycling of Express Packaging based on the Theory of Sustainable Development

Renhui Zhang

Shanghai Polytechnic University, 201209, Shanghai, China

Abstract

With the rapid development of e-commerce, the volume of express delivery business has increased dramatically, and the express delivery packaging waste has also been produced in large quantities, which has caused a serious burden on the environment. This paper is based on the theory of sustainable development, in-depth analysis of the existing courier packaging recycling mode and recycling problems, and puts forward the corresponding solution strategy, aims to promote the sustainable development of courier packaging recycling, to achieve the efficient use of resources and friendly protection of the environment.

Keywords

Sustainable Development; Express Packaging; Recycling.

1. Introduction

Against the backdrop of booming e-commerce, the express delivery industry has seen unprecedented growth. However, this growth has also brought about serious environmental problems, especially the proliferation of express packaging waste. According to statistics, more than 9 million tons of waste generated by express packaging each year, and the recycling rate is low. This not only causes a waste of resources, but also puts great pressure on the environment. Therefore, based on the theory of sustainable development, it is of great significance to carry out the research on express packaging recycling and explore effective recycling strategies to realize the efficient use of resources and friendly protection of the environment.

2. Existing Modes of Express Packaging Recycling

2.1. The Traditional Express Packaging Recycling Mode

The traditional way of express packaging recycling mainly relies on consumers to discard the packaging to the garbage collection station, and then by the garbage disposal organization unified treatment. However, this way of disposal has the problems of low recycling efficiency and significant waste of resources. Moreover, there are many types of express packaging, and some packaging materials are difficult to degrade naturally, so the traditional recycling path is particularly difficult to deal with these wastes, and it is difficult to deal with them effectively.

2.2. The Courier Company Recycling Mode Recycling-based

Courier companies under this model set up special courier packaging recycling points in their courier outlets, community service centers, supermarkets and other places to facilitate consumers to classify courier packages for drop-off. At the same time, the use of intelligent technology, such as intelligent recycling boxes, two-dimensional code recognition, etc., the recovery of express packaging tracking and management, improve the efficiency of recycling. But in this case, due to the need to increase construction costs, express delivery companies are reluctant to invest more energy in recycling.

2.3. Third-party Recycling Model

The third-party recycling model refers to the process of collecting, classifying, treating and reusing express packaging waste by independent recycling organizations. This mode realizes the effective management of express packaging waste and the recycling of resources through specialized services and efficient operation. However, there are still some problems with the application of the third-party recycling mode in the field of express packaging, such as imperfect recycling network, low recycling efficiency and high recycling costs.

3. Problems with Express Packaging Recycling

3.1. Weak Recycling Awareness

Currently, both consumers and express delivery enterprises, for express packaging recycling awareness is relatively weak. Consumers tend to express packaging as disposable items, the lack of recycling awareness; and express delivery enterprises are more focused on improving service quality and customer satisfaction, the environmental protection of packaging materials and recycling is not enough to consider, based on cost considerations, the enterprise is not willing to invest more money for packaging recycling.

3.2. Inadequate Recycling System

At present, China's express packaging recycling system is not perfect, the lack of unified management and planning. Recycling sites are unevenly distributed, and the recycling process is cumbersome, resulting in low recycling efficiency. At the same time, the recycling process also exists in the classification is not clear, processing is not standardized and other problems, affecting the effect of recycling and reuse.

3.3. Complex Packaging Materials

Express packaging materials are complex and diverse, including plastic, paper, metal and composite materials. This diversity not only increases the difficulty of recycling, but also raises the cost of recycling. In addition, some packaging materials are difficult to degrade, causing pollution to the environment and other problems.

3.4. The Prevalence of Excessive Packaging

Many enterprises in order to prevent damage to the goods in the transportation process a large number of fillers, as well as in order to increase the value of the goods, will use too many gorgeous decorations to packaged goods, invariably produce a lot of packaging waste.

4. Recommendations for the Sustainable Development of Express Packaging

4.1. Raising Awareness of Recycling

Strengthen environmental protection publicity and education, and raise the environmental awareness of consumers and express delivery enterprises. Popularize the importance and methods of express packaging recycling by organizing lectures on environmental protection knowledge and producing publicity posters to stimulate the public's enthusiasm for participation. At the same time, encourage express delivery enterprises to carry out green packaging and recycling services to establish an environmentally friendly image.

4.2. Improvement of the Recycling System

Establish a unified express packaging recycling system, including the layout of the recycling site, the design of the recycling process, and the training of recycling personnel. Optimize the recycling process, simplify recycling procedures and improve recycling efficiency. At the same

time, strengthen the classification of the recycling process to ensure that packaging materials of different materials can be effectively recycled and reused.

4.3. Promote Environmentally Friendly Packaging Materials

Encourage express delivery enterprises to adopt environmentally friendly packaging materials, such as biodegradable plastics and paper packaging. Through policy guidance and financial support, promote the green transformation of express delivery packaging materials. At the same time, strengthen the research and development and promotion of environmentally friendly packaging materials, and increase the proportion of their application in the express delivery industry.

4.4. Establishment of Incentives

The government can introduce relevant policies to give incentives and concessions to enterprises and individuals who actively participate in express packaging recycling. For example, tax incentives or subsidies are given to enterprises with large recycling volumes; consumers who actively participate in recycling are given rewards such as points exchange and coupons. Through the incentive mechanism, to stimulate the enthusiasm of all sectors of society to participate in promoting the deepening of the work of express packaging recycling.

5. Conclusion and Outlook

Based on the theory of sustainable development, this paper analyzes the current situation, problems and reasons of express packaging recycling in depth, and puts forward corresponding solution strategies. By improving recycling awareness, perfecting the recycling system, promoting environmentally friendly packaging materials and establishing incentive mechanisms and other measures, the sustainable development of express packaging recycling can be effectively promoted. In the future, with the continuous improvement of environmental awareness and technology, I believe that express packaging recycling will achieve more significant results.

References

- [1] Lili D ,Zhimeng G ,Yuemei X .Dump or recycle? Consumer's environmental awareness and express package disposal based on an evolutionary game model.[J].Environment, development and sustainability,2022,25(7):21-24.
- [2] Jiahui Y ,Ruyin L ,Hong C , et al. A comparative analysis of express packaging waste recycling models based on the differential game theory[J].Resources, Conservation & Recycling,2021,168.
- [3] Liang P H ,Li J .Research on the creative design of express package recycling system basis on internet[J].IOP Conference Series Earth and Environmental Science,2020,463(1):012089.
- [4] Gong J ,Lu X ,He J , et al. Intelligent and safe design of recycling express packing boxes[J].MATEC Web of Conferences,2020,32502003-.
- [5] Wang Q ,Zhang W ,Tseng M P C , et al. Intention in use recyclable express packaging in consumers' behavior: An empirical study[J].Resources, Conservation & Recycling,2021,164105115-.