

The Application of Environmental Protection Cultural Concepts in Packaging Design and its Role in Promoting Brand Image

Guobao Zhou*

Department of Art and Media, Tongling Vocational and Technical College, Tongling
244061, China
Zgbao00@163.com

Gui Wei Bai

Department of Art and Media, Tongling Vocational and Technical College, Tongling
244061, China

Abstract: This study explores the application of environmentally friendly cultural concepts in packaging design and its role in promoting brand image. Through literature analysis, case studies, and empirical investigations, the importance of environmentally friendly packaging design in the modern market is clarified. Research has found that environmentally friendly packaging can not only reduce environmental pollution but also enhance a brand's social responsibility and market competitiveness. Brands that use environmentally friendly materials and designs experience significant increases in consumer satisfaction and loyalty. This article proposes a systematic, environmentally friendly packaging design strategy, including material selection, design innovation, and consumer education, providing practical guidance for designers and companies. Although the study has sample selection and methodological limitations, it provides directions for future research, and it is recommended to expand the scope of the study and incorporate diverse methods. Environmentally friendly packaging design has broad prospects for development. With the advancement of new materials and intelligent technology, it will become the mainstream packaging design trend in the future. The research has important implications for the packaging design industry, emphasizing the importance of interdisciplinary collaboration and consumer engagement to achieve sustainability goals.

Keywords: Environmental Protection Cultural Concept; Packaging Design; Brand Image; Sustainable Development

1. INTRODUCTION

In the context of increasingly severe global environmental problems, the concept of environmental protection culture has gradually become the focus of attention from all walks of life (Buttel, 2000; Hironaka, 2002). As a bridge between products and consumers, packaging design not only undertakes the functions of protecting products and transmitting information, but is also an important part of brand image. As consumers'

awareness of environmental protection increases, green packaging design has gradually become an important factor in brand competition. According to a report by market research company Nielsen, 66% of consumers worldwide are willing to pay higher prices for environmentally friendly products, which is especially obvious among young consumers. Environmentally friendly packaging design is not only a strategy to respond to consumer needs, but also an important manifestation of corporate social responsibility. In recent years, many countries and regions have introduced relevant policies and regulations to encourage companies to adopt environmentally friendly materials and designs. For example, the EU's Plastics Strategy released in 2018 clearly states that by 2030, all plastic packaging must be recyclable. China also issued the "Opinions on Further Strengthening Plastic Pollution Control" in 2020, requiring a gradual ban and restriction on the production, sale and use of some plastic products. The introduction of these policies provides policy support and development opportunities for the environmental protection transformation of the packaging design industry (Ketelsen et al., 2020). Internationally, research on environmentally friendly packaging design started earlier, and related theories and practices have become relatively mature. Research in European and American countries mainly focuses on developing and applying environmentally friendly materials, formulating green design standards, and impacting consumer behavior (Wei, 2013). American research institutions such as the Sustainable Packaging Coalition are committed to promoting the development of sustainable packaging design and have issued a number of industry standards and guidelines. European research pays more attention to the impact of policies and regulations, such as the role of the EU's circular economy policy in promoting packaging design (Nguyen et al., 2020). Domestic research started relatively late, but has developed rapidly in recent years. Domestic scholars mainly focus on the theoretical construction, design strategies and market impact of environmentally friendly packaging design. With the promotion of national policies and the increase in market demand, more and more companies are beginning to pay attention to applying environmentally friendly packaging design. However, domestic research still has problems such as insufficient theoretical systems and insufficient practical cases, which need to be further deepened and expanded. This study aims to explore the specific application of environmentally friendly cultural concepts in packaging design and its role in promoting brand image. Analyzing the theoretical basis, practical cases, and the impact of environmentally friendly packaging design on brand image reveals how

environmentally friendly design can enhance the brand's market competitiveness and consumer loyalty.

2. OVERVIEW OF ENVIRONMENTAL PROTECTION CULTURE CONCEPT

The cultural concept of environmental protection is an indispensable part of the development of modern society. It is not only related to the protection of the ecological environment, but also involves the sustainable development of human society (Schofer & Hironaka, 2005). As global environmental problems become increasingly serious, the concept of environmental protection culture has gradually become the focus of attention of governments, enterprises and the public around the world. This article will elaborate on the connotation, characteristics, development process, relationship with modern society and future trends of the concept of environmental protection culture.

2.1 The Connotation of Environmental Protection Cultural Concept

The cultural concept of environmental protection refers to the sum of the cognition, attitude and code of conduct towards environmental protection at the cultural level. It emphasizes the harmonious coexistence of man and nature, and advocates paying attention to the protection of the ecological environment and the sustainable use of resources in the process of economic development (Sagoff, 2013). The connotation of the environmental protection cultural concept can be understood from the following aspects: First, the environmental protection cultural concept is a value concept. It emphasizes the value of the natural environment and advocates respecting nature and protecting ecological balance. The concept of environmental protection culture believes that the natural environment is not only the basis of human survival, but also an important part of human culture. Therefore, protecting the environment is not only an economic and technical issue, but also a cultural and moral issue. Secondly, the cultural concept of environmental protection is a behavioral norm. It requires individuals, businesses and governments to take environmental protection measures in production and life to reduce pollution and damage to the environment. The concept of environmental protection culture advocates green consumption, green production and green lifestyle, and encourages the public to participate in environmental protection activities. Finally, the cultural concept of environmental protection is a social

responsibility. It requires all sectors of society to work together to promote the development of environmental protection. The concept of environmental protection culture emphasizes cooperation and coordination among all sectors of society. It advocates improving the public's awareness and sense of responsibility for environmental protection through legal, policy, education and other means.

2.2 Characteristics of Environmental Protection Cultural Concept

The cultural concept of environmental protection has the following salient characteristics: The cultural concept of environmental protection has global characteristics. Environmental issues are global issues, and no country or region can be immune to them. The cultural concept of environmental protection emphasizes international cooperation and advocates that all countries jointly respond to environmental challenges. In recent years, the number of environmental protection organizations and international environmental protection conferences around the world has continued to increase, demonstrating the global influence of environmental protection cultural concepts. The concept of environmental protection culture has comprehensive characteristics. It involves many fields such as economy, society, culture, science and technology, and requires multi-faceted coordination and cooperation. The concept of environmental protection culture not only focuses on environmental protection itself, but also on issues such as economic development, social progress, and cultural inheritance, emphasizing comprehensive management in multiple fields (Feng & Hu, 2013; Kuznetsova et al., 2018). Environmentally friendly cultural concepts emphasize sustainability. It advocates meeting the needs of the present without compromising the ability of future generations to meet their own needs. The concept of environmental protection culture advocates a sustainable development strategy and emphasizes the rational use of resources and the long-term protection of the environment. The cultural concept of environmental protection has innovative characteristics. With the advancement of science and technology and the development of society, environmental protection cultural concepts continue to innovate and develop. The application of new technologies, new materials, and new processes provides new possibilities for the practice of environmental protection and cultural concepts.

2.3 Environmental Protection Cultural Concept and Modern Society

In modern society, the influence of cultural concepts related to

environmental protection is increasingly profound. It not only affects people's lifestyles and consumption habits, but also has an important impact on economic development and social progress (Feng & Reisner, 2011). The cultural concept of environmental protection has profoundly impacted economic development. With the popularization of environmental protection cultural concepts, new economic models such as green economy, circular economy and low-carbon economy are gradually emerging. Enterprises pay more attention to the application of environmental protection technology in the production process, promoting the development of environmental protection industry. According to the International Energy Agency, global investment in renewable energy reached a record high of US\$ 281 billion in 2020, demonstrating the role of environmentally friendly cultural concepts in promoting economic development. The cultural concept of environmental protection has also had a positive impact on social progress. The popularization of environmental protection cultural concepts has improved the public's awareness of environmental protection and promoted the sustainable development of society. Governments of various countries have promoted the implementation of environmental protection cultural concepts through legislation, policies, education and other means, and improved the overall environmental protection level of society. The cultural concept of environmental protection has had a profound impact on people's lifestyles. With the popularization of cultural concepts of environmental protection, green consumption, green travel, and green lifestyles have gradually become mainstream in society. People pay more attention to energy conservation and emission reduction in their daily lives and reduce their impact on the environment.

2.4 Future Trends of Environmental Protection Cultural Concepts

The future development trend of environmental protection cultural concepts is mainly reflected in the following aspects: With the advancement of science and technology, environmental protection cultural concepts will be further developed. The application of new technologies, new materials, and new processes will provide new possibilities for the practice of environmental protection and cultural concepts (Bérard & Delerue, 2010). In the future, innovation in environmental protection technology will become an important driving force for the development of cultural concepts related to environmental protection. Governments of various countries will further strengthen policy support for environmental

protection cultural concepts. Promote the implementation of cultural concepts related to environmental protection through legislation, policies, and financial support. In the future, the government will play a more active role in promoting and implementing cultural concepts related to environmental protection. Public participation will become an important force in developing environmental protection cultural concepts. With the improvement of environmental awareness, the public will play a more active role in promoting and implementing cultural concepts of environmental protection. In the future, the forms of public participation in environmental protection activities will be more diverse, and the influence of environmental protection cultural concepts will be further expanded. The development of cultural concepts related to environmental protection is inseparable from international cooperation. In the future, countries will strengthen cooperation in promoting and implementing cultural concepts related to environmental protection and will jointly respond to global environmental challenges. International environmental protection organizations and conferences will play an important role in promoting the development of cultural concepts related to environmental protection.

3. BASIC THEORY AND DEVELOPMENT OF PACKAGING DESIGN

3.1 Concept and Function of Packaging Design

Packaging design refers to design activities that achieve multiple purposes such as protecting goods, conveying information, and promoting sales through visual, structural, material and other design means during the packaging process of goods. Its core is to create a packaging form that can not only attract consumers' attention but also effectively protect goods through the combination of visual language and material carriers (Azzi et al., 2012). Packaging design's functions mainly include protection, convenience, promotion, and information transmission functions. Protection function is the basic function of packaging design, aiming to prevent goods from physical damage, chemical corrosion or biological attack during transportation, storage and use. The convenience function is reflected in the ease of opening, portability and storage of the packaging, providing consumers with convenience in use. The promotional function enhances the market competitiveness of products through the visual appeal and brand recognition of packaging. The information communication

function uses text, graphics, symbols and other elements on the packaging to convey product information, usage methods, precautions, etc. to consumers (García - Arca & Carlos Prado Prado, 2008).

3.2 Development History of Packaging Design

The development of packaging design can be traced back to the early stages of human civilization. The original form of packaging was simple natural materials, such as leaves, animal skins, bamboo tubes, etc., used to contain and protect food. With the development of society and the increase of commercial activities, the forms and materials of packaging have gradually become richer, and their functions have become increasingly diversified (Gray, 1939). In ancient times, pottery, wooden boxes, metal containers, etc. began to be used to package valuables and food. In the Middle Ages, with the rise of trade, paper packaging gradually became popular, especially in China, where the invention and application of paper promoted the progress of packaging design. During the Industrial Revolution, packaging design ushered in an important turning point. The emergence of mechanized production and new materials has greatly improved the production efficiency and quality of packaging. Modern packaging forms such as glass bottles, metal cans, and cartons have appeared one after another, and packaging design has gradually become an independent discipline. Since the 20th century, with the development of market economy and the rise of consumer culture, the role of packaging design has become increasingly important. Especially in the mid-to-late 20th century, the widespread application of plastic materials and the advancement of printing technology gave packaging design greater room for development in terms of color, graphics, structure, etc. Entering the 21st century, the enhancement of environmental awareness and the popularization of digital technology have promoted the development of packaging design in a green and intelligent direction.

3.3 Characteristics and Trends of Modern Packaging Design

Modern packaging design presents the characteristics of diversification, personalization, environmental protection and intelligence. Diversification is reflected in the variety of packaging forms, materials, and processes, which can meet the needs of different commodities and markets. Personalization emphasizes the uniqueness and brand recognition of packaging design, and enhances brand competitiveness through

differentiated design. Environmental protection is one of the important trends in modern packaging design (Cao, 2021). As global environmental awareness increases, consumer demand for green packaging continues to increase. Biodegradable materials, recyclable design, and reducing excessive packaging have become important considerations in packaging design. Intelligent packaging is an emerging trend in recent years. By embedding RFID tags, QR codes, sensors and other technologies, intelligent identification, information tracking and interactive experience of packaging can be achieved. According to market research company Statista, the global green packaging market size reached US\$ 237 billion in 2020 and is expected to grow to US\$ 412 billion by 2027, with an average annual growth rate of 8.1%. This data reflects the huge market potential and development space of environmentally friendly packaging design (Verma et al., 2021).

3.4 Elements of Packaging Design

The elements of packaging design mainly include materials, structures, colors, graphics and text. Materials are the basis of packaging design and directly affect the function, cost and environmental performance of packaging. Commonly used packaging materials include paper, plastic, glass, metal, etc. Different materials have different physical properties and processing techniques (Al-Samarraie et al., 2019). Structural design involves the shape, size, opening and closing methods of the packaging, etc., which is directly related to the protection and convenience of the packaging. Color is the most visually impactful element in packaging design. Through the matching and contrast of colors, the product's characteristics and the brand's emotional appeal can be conveyed. Graphic design includes logos, illustrations, patterns, etc., which enhance the recognition and aesthetics of packaging through the use of visual symbols. Text design is the main carrier of information communication, including brand name, product description, usage guide, etc. In packaging design, these elements interact to form a complete visual and functional system. Designers need to comprehensively consider market positioning, consumer psychology, production technology and other factors to conduct systematic design planning.

3.5 Process and Methods of Packaging Design

The packaging design process usually includes market research, concept

design, scheme design, sample production, testing and evaluation, production implementation and other stages. Market research is the basis of design. By analyzing market trends, competitive products, consumer needs, etc., the design goals and directions are clarified (Azzi et al., 2012). In the conceptual design stage, designers propose preliminary design ideas and creative plans based on the research results. Schematic design is the process of materializing conceptual design, involving material selection, structural design, visual design and other aspects. Sample production is the verification of the design plan. By making physical samples, the feasibility and effect of the design are tested. In the testing and evaluation phase, the design plan is further optimized through a series of performance tests and market feedback. Production implementation is the final stage of design, ensuring that the design plan can be efficiently and stably transformed into actual products.

In terms of packaging design methods, commonly used ones include user experience design method, ecological design method, brand design method, etc. The user experience design method emphasizes taking the consumer as the center and optimizing the packaging experience by studying user behavior and psychology. Ecological design principles focus on the environmental impact of packaging, and reduce the ecological footprint of packaging through life cycle analysis and the application of green materials. The brand design method focuses on the consistency of packaging and brand image, and enhances the market competitiveness of the brand through the construction of a visual identity system. Through an in-depth discussion of the basic theory and development of packaging design, we can better understand its importance and influence in modern business, and lay the foundation for subsequent research on the application of environmentally friendly cultural concepts in packaging design.

4. APPLICATION OF ENVIRONMENTAL PROTECTION CULTURAL CONCEPTS IN PACKAGING DESIGN

In modern society, the concept of environmental protection culture has become an important part of the design field, especially in packaging design. As consumers' awareness of environmental protection increases, companies integrating environmental protection cultural concepts into packaging design can not only meet market demand, but also enhance brand image. This article will discuss in detail the specific application of environmental protection cultural concepts in packaging design, as shown in Figure 1, and analyze it based on actual cases.

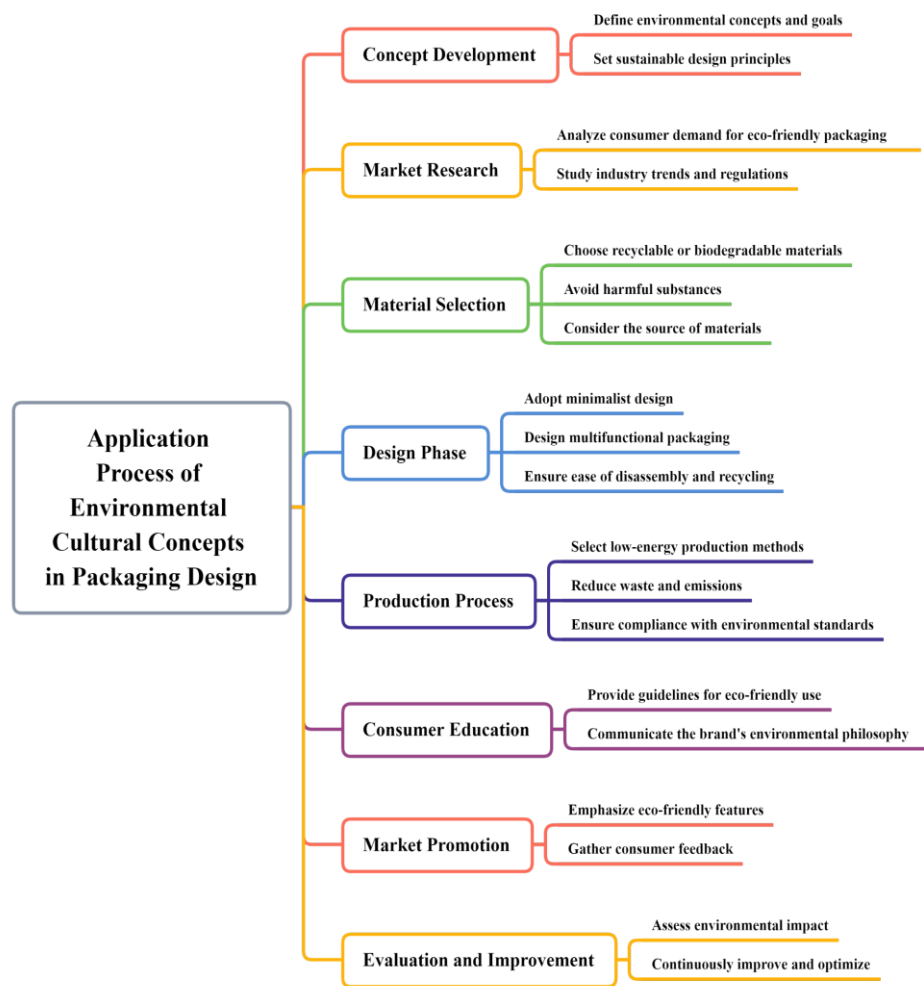


Figure 1: The Application of Environmental Protection Culture Concept in Packaging Design

4.1 Selection and Application of Environmentally Friendly Materials

The selection of environmentally friendly materials is one of the most direct ways to reflect the cultural concept of environmental protection in packaging design. Environmentally friendly materials are usually degradable, renewable or recyclable, and the use of these materials can effectively reduce environmental pollution. Biodegradable materials are increasingly used in packaging design. Biodegradable plastics are a common choice that break down into harmless substances in the natural environment through the action of microorganisms. Coca-Cola, for example, has launched a bottle made from plant-based plastic, a material that not only reduces reliance on petroleum-based plastics but also completely degrades under certain conditions. Renewable materials such as bamboo, bagasse and recycled paper are also widely used in packaging design. Bamboo grows quickly and is a sustainable resource. Starbucks uses cups made of bamboo fiber in some of its stores. This material is not only

environmentally friendly, but also has good texture and durability. The use of recyclable materials can effectively reduce resource waste. Aluminum cans are a classic example. Not only can they be recycled unlimited times, but the energy consumption in the recycling process is only 5% of the production of new aluminum cans. PepsiCo is reducing its carbon footprint by using 100% recyclable aluminum cans.

4.2 Reflection of Simple Design Style

Simple design style can not only reduce the use of materials in packaging design, but also convey environmental protection concepts through visual clarity and directness. Through simple design, the amount of material used can be reduced while ensuring the packaging function. Apple adopts a minimalist design in its product packaging, reducing unnecessary decoration and material waste. The design of its iPhone packaging box is not only compact, but also uses recyclable paper materials. Simple design style can directly convey environmental protection concepts through visual elements. Take IKEA as an example. Its product packaging design usually uses simple lines and color blocks, coupled with environmental protection logos, to directly convey its environmental commitment to consumers.

4.3 Design of Reusable Packaging

Reusable packaging design is one of the important ways to realize the cultural concept of environmental protection. Through design innovation, packaging is not just a one-time use product, but a resource that can be used multiple times. Multifunctional packaging design can extend the life of the packaging. Lego has launched a building block box packaging that consumers can continue to use as a storage box after using the building blocks. This design not only increases the added value of the product, but also reduces packaging waste. Replaceable packaging design allows consumers to replace only the inner product after using the product without having to discard the entire package. L'Oréal has launched a replaceable cosmetics packaging, consumers can continue to use the original packaging box only by purchasing refills.

4.4 Recycling and Reuse of Packaging

The recycling and reuse of packaging is a key link in realizing the cultural concept of environmental protection. Through effective recycling systems and reuse designs, companies can significantly reduce the environmental impact of packaging waste. Establishing a complete recycling system is the basis for packaging reuse. Nestlé has cooperated with governments and

environmental organizations in many countries to establish an extensive packaging recycling network to ensure that its product packaging can be effectively recycled. Reuse design can give packaging new life. Nike has launched a sneaker made from recycled plastic bottles and its packaging is made from recycled paper. This design not only reduces resource consumption, but also gives packaging new uses.

4.5 Innovative Application of Environmental Protection Cultural Concepts in Packaging Design

In packaging design, the innovative application of environmentally friendly cultural concepts can bring unique competitive advantages to brands. Through technological innovation and design thinking, companies can create packaging products with environmental protection value. Smart packaging technology can improve the environmental performance of packaging. By embedding sensors and RFID tags, packaging can monitor the status of products in real time and reduce waste caused by expired or damaged products. Walmart Inc. is applying smart technology to its fresh product packaging, significantly reducing food waste. The application of innovative materials brings new possibilities to packaging design. Take Mushroom Packaging as an example. This material made from mushroom mycelium is not only completely biodegradable, but also decomposes naturally within a short period of time. Dell uses this material in some of its product packaging, reducing its reliance on traditional plastics. Interactive design can enhance consumers' recognition of environmental protection concepts. By designing interactive elements on packaging, such as QR codes or augmented reality technology, consumers can get more information about the environmental properties of products. Haier has applied AR technology in the packaging of its home appliances. Consumers can see the environmentally friendly production process of the product by scanning the packaging. Through the above analysis, it can be seen that the application of environmentally friendly cultural concepts in packaging design can not only reduce environmental burdens, but also bring new market opportunities to brands. Enterprises should fully consider environmental protection factors in the design process to achieve the goal of sustainable development.

5. THE ROLE OF ENVIRONMENTALLY FRIENDLY PACKAGING DESIGN IN PROMOTING BRAND IMAGE

In today's highly competitive market environment, brand image building

has become one of the key factors for corporate success. As an innovative design concept, environmentally friendly packaging design not only meets consumers' needs for sustainable development, but also plays an important role in enhancing brand image. The following will discuss in detail the components of brand image, the impact of environmentally friendly packaging design on brand awareness, reputation, and loyalty, as well as its role in brand differentiation.

5.1 Components of Brand Image

Brand image is consumers' overall perception and evaluation of a brand, which is usually composed of multiple elements. The first is brand identity, including visual elements such as brand name, logo and packaging, which help consumers identify and remember the brand. The second is brand association, which is consumers' emotional and cognitive response to the brand, which is usually related to the brand's advertising, product quality and social responsibility. Finally, brand reputation refers to the brand's position in the market and the degree of trust among consumers. The components of brand image are interrelated and jointly affect consumers' purchasing decisions and brand loyalty. Environmentally friendly packaging design can effectively enhance all aspects of a brand's image by connecting with consumers on a visual and emotional level.

5.2 The Impact of Environmentally Friendly Packaging Design on Brand Awareness

Environmentally friendly packaging design can significantly increase brand recognition through unique visual expression and innovative material selection. Research shows that consumers' attention to environmentally friendly packaging is increasing year by year, especially among young consumers. This trend is particularly obvious. According to a 2022 Nielsen survey, more than 70% of consumers said they are more willing to buy products with environmentally friendly packaging. Environmentally friendly packaging designs often use renewable materials, such as degradable plastics, recycled paper, and bio-based materials, which are not only visually unique but also convey the brand's environmental philosophy. By clearly displaying environmentally friendly logos and information on packaging, brands can build a distinct image in consumers' minds, thereby increasing brand awareness. In addition, environmentally friendly packaging design can also attract consumers' attention through innovative design language and visual elements. For example, packaging using natural tones and minimalist design styles can convey a brand's

environmental commitment and sustainable development philosophy. This visual consistency and innovation helps brands stand out in a highly competitive market.

5.3 Environmentally Friendly Packaging Design Improves Brand Reputation

Brand reputation refers to consumers' positive evaluation and emotional identification with the brand. Environmentally friendly packaging design can effectively enhance a brand's reputation by demonstrating its social responsibility and commitment to sustainable development. Consumers are increasingly paying attention to corporate social responsibilities, especially in terms of environmental protection. According to a market survey, more than 60% of consumers said they are willing to pay higher prices for products using environmentally friendly packaging. Environmentally friendly packaging design conveys the brand's environmental commitment to consumers by reducing negative impacts on the environment. This positive brand image can not only attract consumers with strong environmental awareness, but also enhance the brand's social responsibility and ethical image. For example, Starbucks has successfully enhanced its brand reputation by using reusable cups and biodegradable packaging materials. In addition, environmentally friendly packaging design can also enhance brand reputation through interaction with consumers. Many brands encourage consumers to participate in environmental protection actions by printing environmental tips or environmental knowledge on their packaging. This interaction not only enhances consumers' favorable impression of the brand, but also establishes an emotional connection between the brand and consumers.

5.4 Environmentally Friendly Packaging Design Fosters Brand Loyalty

Brand loyalty refers to consumers' continued preference and repeat purchase behavior for a brand. Environmentally friendly packaging design can effectively cultivate brand loyalty by enhancing consumers' brand identity and satisfaction. Research shows that consumer loyalty to a brand is closely related to the brand's social responsibility. Environmentally friendly packaging design can enhance consumers' trust and loyalty to the brand by demonstrating the brand's environmental commitment and sustainable development concepts. When consumers choose products, they not only pay attention to the quality and price of the product, but also pay attention to the social responsibility and environmental impact of the

brand. By using environmentally friendly packaging, brands are able to convey their commitment to environmental protection to consumers, thereby enhancing consumer brand loyalty. In addition, environmentally friendly packaging design can also enhance consumer satisfaction by providing convenience and functionality. For example, reusable packaging designs not only reduce environmental impact but also provide convenience to consumers. This functional design can enhance consumers' experience and thereby increase brand loyalty.

5.5 Environmentally Friendly Packaging Design and Brand Differentiation

Brand differentiation means that a brand differentiates itself from competitors through unique product features and market positioning. As an innovative design concept, environmentally friendly packaging design can help brands achieve differentiation. With the increase of homogeneous products on the market, brands need to attract consumers' attention through unique designs and concepts. Environmentally friendly packaging design can create a unique market positioning for the brand through innovative material selection and design language. For example, packaging that uses renewable materials and minimalist design styles can convey a brand's environmental commitment and sustainable development philosophy. This unique design can not only attract environmentally conscious consumers, but also enhance the brand's market competitiveness. In addition, environmentally friendly packaging design can further enhance brand differentiation by integrating with brand stories and values. For example, a brand can convey its unique brand value to consumers by displaying its environmental philosophy and social responsibility on its packaging. This differentiated design can enhance the brand's market competitiveness and establish a unique brand image in the minds of consumers. From the above analysis, we can see that environmentally friendly packaging design plays an important role in enhancing brand image. Environmentally friendly packaging design can help brands stand out in a highly competitive market by increasing brand awareness, reputation and loyalty, as well as achieving brand differentiation.

6. PRACTICAL CASE ANALYSIS OF ENVIRONMENTALLY FRIENDLY PACKAGING DESIGN

6.1 Case Selection and Introduction

When discussing the application effect of environmentally friendly cultural concepts in packaging design and its role in promoting brand

image, it is crucial to choose the appropriate case. This study selected the environmentally friendly packaging design of the well-known brand "Lock & Lock" as the object of analysis. LOCK&LOCK is an international brand known for the production of high-quality sealed containers, and its products enjoy a high reputation in the global market (Putra & Erlin, 2024). In recent years, LOCK&LOCK has actively responded to global environmental protection trends and launched a series of environmentally friendly packaging designs to reduce its environmental impact and enhance its brand image. LOCK&LOCK's environmentally friendly packaging design is mainly reflected in its "Eco Life" series of products. The packaging of this series of products uses renewable materials and incorporates environmentally friendly cultural concepts into the design, aiming to reduce resource consumption and environmental pollution through innovative design. LOCK&LOCK's environmentally friendly packaging design optimizes material selection and innovates the production process and packaging structure to achieve the goal of sustainable development (Chu et al., 2024; Widyasari & Handayani, 2021).

6.2 Reflection of Environmental Protection Cultural Concepts in Cases

LOCK&LOCK's environmentally friendly packaging design embodies the cultural concept of environmental protection in many aspects. First of all, the choice of its packaging materials is a direct reflection of the environmental protection concept. LOCK&LOCK uses degradable PLA (polylactic acid) material, which is derived from renewable resources, such as corn starch, and can be degraded in the natural environment, reducing environmental pollution, as shown in Figure 2. In addition, LOCK&LOCK also uses recycled paper and soy ink to reduce the consumption of forest resources and chemical pollution. Secondly, LOCK&LOCK focuses on reducing the use of materials in packaging design. By optimizing the packaging structure, LOCK&LOCK has successfully reduced the use of packaging materials. For example, its product packaging adopts a simple design, reducing unnecessary decoration and excessive packaging, thereby reducing resource consumption. Thirdly, LOCK&LOCK's environmentally friendly packaging design is also reflected in the improvement of its production process. By adopting advanced production technology, LOCK&LOCK reduces energy consumption and waste generation during the production process. This improvement in the production process not only reduces production costs, but also improves the environmental performance of the product.



Figure 2: LOCK&LOCK 's Eco -Friendly Cup Packaging Design

6.3 The Impact of Packaging Design on Brand Image in the Case

LOCK&LOCK 's environmentally friendly packaging design has had a positive impact on its brand image. First of all, the environmentally friendly packaging design enhances LOCK&LOCK 's brand identity. Consumers are paying more and more attention to the environmental performance of products. Lock & Lock meets consumer needs through environmentally friendly packaging design and enhances the brand's market competitiveness. Secondly, the environmentally friendly packaging design enhances the brand reputation of LOCK&LOCK. LOCK&LOCK conveys its commitment to environmental protection through environmentally friendly packaging design, winning the trust and support of consumers. According to market survey data, LOCK&LOCK 's brand reputation has increased by about 15% since the introduction of environmentally friendly packaging design, indicating that consumers have given positive evaluations of its environmental protection efforts. In addition, LOCK&LOCK 's environmentally friendly packaging design also enhances the brand's sense of social responsibility. Through environmentally friendly packaging design, LOCK&LOCK demonstrates its efforts in sustainable development and establishes a responsible corporate image. This kind of image creation not only helps to enhance the brand's market position, but also lays the foundation for the company's long-term development. LOCK&LOCK has achieved remarkable success in environmentally friendly packaging design, and its experience is worth learning from. First of all, LOCK&LOCK adheres to the principle of environmental protection in material selection and uses renewable and

degradable materials, setting an example for other companies. Secondly, LOCK&LOCK achieves effective utilization of resources and minimizes environmental impact by optimizing the packaging structure and improving the production process. However, there are also some shortcomings in the environmentally friendly packaging design of LOCK&LOCK. First of all, the cost of environmentally friendly materials is higher, which may lead to an increase in product prices and affect market competitiveness. Although consumer acceptance of environmentally friendly products is increasing, price is still an important factor in purchasing decisions. Secondly, the promotion of LOCK&LOCK's environmentally friendly packaging design in the global market still needs to be strengthened. Consumers in different regions have different perceptions and acceptance of environmentally friendly products. LOCK&LOCK needs to adjust its promotion strategy according to market demand. LOCK&LOCK's environmentally friendly packaging design provides important inspiration for future environmentally friendly packaging design. First of all, when companies design packaging, they should give priority to the use of environmentally friendly materials and integrate environmentally friendly cultural concepts into the design. By choosing renewable, biodegradable materials, companies can reduce their impact on the environment while enhancing their brand image. Secondly, companies should pay attention to the simplicity and functionality of packaging design. By reducing unnecessary decoration and excessive packaging, companies can reduce resource consumption and achieve sustainable development. In addition, companies should actively adopt advanced production technologies and optimize production processes to improve the environmental performance of products. Finally, when companies promote environmentally friendly packaging design, they should formulate corresponding strategies based on the needs of different markets. By strengthening market research and understanding consumers' awareness and acceptance of environmentally friendly products, companies can more effectively promote their environmentally friendly packaging designs and enhance the brand's market competitiveness.

7. CONCLUSION

This research focuses on the application of environmentally friendly cultural concepts in packaging design and its role in promoting brand image, and has achieved a series of important results. First of all, through

sorting out and analyzing a large amount of literature, the importance of environmentally friendly cultural concepts in modern packaging design is clarified. Research shows that consumers have a growing demand for environmentally friendly packaging. Environmentally friendly packaging can not only reduce environmental pollution, but also enhance a brand's social responsibility and market competitiveness. Secondly, through case analysis and empirical research, the study reveals how environmentally friendly packaging design can effectively promote the improvement of brand image. Data shows that brands that use environmentally friendly materials and designs experience significantly higher consumer satisfaction and loyalty. For example, after a well-known brand adopted biodegradable materials, its market share increased by 15% within one year. In addition, the study also found that environmentally friendly packaging design can enhance the brand's sustainable development image and make the brand more attractive in the minds of consumers. Finally, the study proposes a systematic environmentally friendly packaging design strategy, including material selection, design innovation and consumer education. These strategies not only provide practical guidance for designers, but also provide theoretical support for companies' investment decisions in the field of environmentally friendly packaging. With the increase in global environmental awareness and the promotion of policies and regulations, environmentally friendly packaging will become the mainstream trend of packaging design in the future. In the future, environmentally friendly packaging design will pay more attention to the sustainability of materials and innovation in design. The development of new materials, such as biodegradable plastics and renewable fibers, will provide more options for environmentally friendly packaging. At the same time, the development of intelligent packaging technology will also bring new opportunities for environmentally friendly packaging design. By embedding smart labels and sensors, packaging can not only achieve information tracking and product protection, but also improve resource utilization efficiency and reduce waste. In addition, consumer education and engagement will become an important part of environmentally friendly packaging design. By strengthening consumers' awareness and understanding of environmentally friendly packaging, it can promote its acceptance and popularity in the market. Brands can enhance consumers' environmental awareness and participation through interactive design and information transparency.

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