



DEVELOPING A PACKAGING DESIGN FOR DONGJIANG FISH:" A DISTINCTIVE
HUNAN SPECIALTY"



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DEVELOPING A PACKAGING DESIGN FOR DONGJIANG FISH:" A DISTINCTIVE
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A Master's Project Submitted in Partial Fulfillment of the Requirements
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BY
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This paper aims to explore the cultural history of Dongjiang Lake and analyze the current issues in the packaging design of Dongjiang fish products. Through historical document research, archival research and field investigation, the relevant were collected and analyzed to provide theoretical support for Dongjiang Lake and Dongjiang fish product packaging. Dongjiang Lake has rich natural and cultural landscapes, such as the foggy Xiaodongjiang River, Dongjiang Huayue Night, Dongjiang Hydropower Station Dam and Longjing Canyon. Dongjiang Lake also has wonderful historical stories, such as Shennong, with tasting hundreds of herbs and the legend of the cranes. Through field research, the Researchers believes that the existing Dongjiang fish packaging style is single, Although it meets the basic functions of packaging design, it fails to effectively convey the cultural and historical characteristics of Dongjiang Lake. It is necessary to design according to eight packaging design theories and combine the cultural history and scenic spots of Dongjiang Lake.

Keyword : Dongjiang Lake Culture and history Packaging design

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CHAPTER 1

INTRODUCTION

Research background

China, a country with vast land and diverse cultures, is world-famous for its rich history and regional characteristics. China not only has breathtaking natural wonders, such as the Great Wall, Huangshan Mountain and Danxia Mountain, but also has given birth to many provinces rich in cultural connotations (Wang, H. 2020). Among them, Hunan Province, as one of China's cultural business cards, attracts tourists and culture enthusiasts from all over the world with its long history and diverse food culture. Hunan Province, situated in south-central China, boasts stunning natural scenery, including the unique peaks and rocks of Zhangjiajie and the magnificent lakes and mountains surrounding Yue yang Tower. It is also famous for the unique taste of Hunan cuisine. Hunan cuisine is famous for its spicy, spicy and unique cooking techniques, and is one of the eight major cuisines in China (Jiang, Z. 2003). However, Hunan's food culture is only part of the province's richness and diversity. Hunan also possesses a rich historical heritage and a distinctive regional culture.

Hunan is home to numerous natural wonders. these spectacular natural landscapes have become an important selling point for China's tourism industry, attracting many nature lovers. Then, Hunan's nature reserves and scenic spots provide broad opportunities for ecotourism (OuYang, X. 2020). most importantly, Hunan's natural landscape provides richness for the diversification of China's tourism industry (Yang, Z. & Xie, L. 1996). Tourists can choose from different types of natural scenery tours, including mountain adventures, ecological observation, scenic tours, etc. This diversity attracts tourists with different interests and hobbies, providing more possibilities for the development of China's tourism industry. Among them, Dongjiang Lake, as a pearl in Hunan Province, adds unique charm to Hunan's tourism industry (Hu, W. 2003). This lake not only has beautiful natural landscapes, rich cultural connotations and diverse tourism activities, but also carries Hunan's rich historical and cultural heritage. Dongjiang Lake is one of the important tourism resources in Hunan Province (Huang, Z.

2017). Its charming scenery and rich cultural heritage attract tourists to come and enjoy it, making an important contribution to the tourism industry of Hunan Province. It not only provides people with a good place for leisure and entertainment, but is also a symbol of the intersection of nature and culture in Hunan Province, deeply reflecting the regional characteristics and tourism charm of Hunan Province.

Dongjiang Lake is a shining pearl in Hunan Province, with many unique characteristics and importance, and it also profoundly affects local eating habits (Huang, Z. 2017). First of all, Dongjiang Lake is famous for its spectacular natural beauty. The lake area is surrounded by mountains and rich in water and grass, forming a unique ecosystem in the lake area. The lake is crystal clear, reflecting the blue sky and green mountains, and the scenery is pleasant. Secondly, Dongjiang Lake plays an important role in the economy of Hunan Province (Wang, R. 2003). The lake not only provides abundant water resources, but also provides irrigation water for local agriculture and promotes the growth of crops. In addition, Dongjiang Lake is rich in fishery resources, providing fishermen with a rich source of income (Xie, T. & Zhong, L. & Tang, Z. 2009). The tourism industry in the Lake District has also created a large number of local employment opportunities and promoted economic development. Finally, the food culture of Dongjiang Lake is deeply rooted in the lives of local residents. The eating habits in the lake area are affected by the lake environment, and various fish produced in Dongjiang Lake have become delicacies on the table (Hu, W. 2003). Residents of the lake area are good at cooking various fish dishes, which are famous for their freshness, deliciousness and rich nutrition. The delicacies of Dongjiang Lake not only satisfy the appetites of local residents, but also attract tourists from afar, becoming part of the food culture of Hunan Province. In short, Dongjiang Lake, as a natural scenic spot in Hunan Province, not only attracts tourists with its spectacular scenery, but also plays an important role in the local economy and food culture (Xie, T. & Zhong, L. & Tang, Z. 2009). Its characteristics, importance and rich food culture make it an indispensable part of Hunan Province, and it has also contributed significantly to the development and cultural inheritance of Hunan Province. can be seen in Figure 1.



Figure 1 Dongjiang Lake Photos

Source: Chinanews. Cn, Accessed on September 8, 2023, Accessible

Dongjiang fish, as one of the representatives of Hunan specialties, carries profound regional culture and unique gastronomic value (Xiao, Y. 2012). Its unique flavor and production process sublimate Dongjiang fish from an ingredient to a delicious cultural symbol. Dongjiang fish belongs to the carp family, with a slender body, delicate scales, fresh and tender flesh, and a mellow taste. It is known as "the best among fresh fish" (Xue, X. 2015). It occupies an important position in Hunan's food culture and has become a must-have dish for folk festivals, family gatherings and other occasions. The production process of Dongjiang fish is the key to ensuring its unique deliciousness, covering multiple links, from fishing to cooking, each link has an impact on the final flavor. In the fishing process, there are various fishing methods for Dongjiang fish, but traditional boating fishing still occupies an important position (Xue, X. 2015). The fishing masters go out in the early morning or dusk, place fishing nets on the lake, and rely on their rich fishing experience to wait for the moment of harvest. They retain the ancient craftsmanship and imbue Dongjiang fish with strong regional cultural sentiments. After being caught, Dongjiang fish needs to be carefully processed to keep it fresh and delicious. This includes removal of scales, internal organs, and other unnecessary parts

(Chen, R. & He, Z. 2015). Care is taken during processing to maintain the integrity of the fish body to ensure the flavor and texture of Dongjiang fish. Dongjiang fish usually needs to be moderately marinated and seasoned before cooking to enhance its flavor (Xue, X. 2015). Commonly used pickling methods include salt pickling and sauce pickling. By adding various spices and seasonings during the production process, Dongjiang fish can present a richer taste and flavor after cooking (Xiao, Y. 2012). can be seen in Figure 2.



Figure 2 Dongjiang Fish Pictures

Source: Facebook. Cn, Accessed on September 8, 2023, Accessible from.

In Dongjiang Lake Scenic Tourist Area, on May 1, 2024, the number of tourists to Dongjiang Lake reached a peak. In terms of the number of tourists received per day, the Dongjiang Lake Scenic Tourist Area (around the lake) reached a maximum of 93,600, and the Dongjiang Bay Scenic Area reached a maximum of 72,900. The comprehensive tourism income reached 26.097 million yuan, the number of tourists ranked fourth in Hunan Province, and the operating income and ticket revenue ranked third in Hunan Province. The total number of tourists received by Dongjiang Lake was

383,253, a year-on-year increase of 736.82%; in the end, among the more than 600 monitored scenic spots in Hunan Province, the ticket revenue of Dongjiang Lake Tourist Area ranked first in Hunan Province with 35.117361 million yuan. (Data source: Chenzhou Daily)

Dongjiang fish industry is not only a delicacy in Hunan Province, but also a representative of the profound regional culture of this land (Xiao, Y. 2012). Its unique flavor and production process have sublimated Dongjiang fish from an ingredient to a cultural symbol of Hunan Province, carrying people's yearning and emotions for food (Xiao, Y. 2012). However, like many industries, Dongjiang Fish faces a series of challenges and problems (Fan, X. 2015). First, the existing packaging design fails to fully convey the unique features of the product, thus limiting consumers' comprehensive understanding of Dongjiang fish. This makes it difficult for consumers to deeply understand the value and features of the product, which affects their purchasing decisions. Secondly, the existing packaging lacks the historical and cultural story of Dongjiang fish and fails to connect the product with Dongjiang lake cultural which affects consumers' cultural understanding of the product. At the same time, there is also room for improvement in the selection of packaging materials and design style. Current packaging materials do not fully meet the requirements of environmental protection and sustainable development. Through the investigation of packaging design, the researchers found that there are currently 9 different shapes of packaging materials for Dongjiang fish, which are divided into three categories: canned, vacuum packed and plastic. After analyzing the packaging design, the researchers believe that the existing Dongjiang fish packaging style is single, lacking the principles of safety, sales benefits, green packaging design and creativity. Although it meets the basic functions of packaging design, it fails to effectively convey the cultural and historical characteristics of Dongjiang Lake. Improving material selection will help improve the overall image of the product. In addition, the creativity and aesthetics of packaging design are also aspects that need breakthroughs (Wang, J. 2023). Through Change design concepts and artistic expression, Dongjiang Fish can stand out in the market and attract more consumers'

attention. In general, the packaging design of Dongjiang Fish needs to be comprehensively optimized in terms of highlighting product features, reflecting cultural connotation, and being environmentally friendly and sustainable to meet the needs of current market competition. can be seen in Figure 3.



Figure 3 common Dongjiang fish packaging

Source: TaoBao. Cn, Accessed on September 20, 2023, Accessible from.

In summary, this study aims to solve the problems faced by Dongjiang fish product packaging, including challenges in conveying product features, integrating historical and cultural stories, improving environmental sustainability, and Change design concepts. The research objectives include in-depth exploration and study of the culture and history of Dongjiang Lake, while designing and developing culturally

appropriate Dongjiang fish product packaging for tourists to meet market demand and enhance the product's appeal in the competitive market.

1.2 Research objectives:

1. To study the culture and history of Dongjiang Lake.
2. To analyze the current problems existing in Dongjiang fish packaging.
3. To design and develop Dongjiang fish packaging for tourists.

1.3 Scope of the study:

1.3.1 Population and Sample Size

Population and sample: Dongjiang Lake tourists. Population and Sample Size of Packaging Design and Development for Dongjiang Fish:" A Distinctive Hunan Specialty". - External (Infinite Population) Roscoe, J.T. (1969).

$$N = (Z_c * \sigma / e_m)^2$$

Where,

N = Sample size of population

Z_c = Given Z_c value | $Z = 1.96$ at 95% confidence interval

C = Confidence level | C = 95% confidence interval

e_m = The maximum likely error is 1/10 of σ

σ = The Standard deviation of population | $\sigma = 10$

$$\begin{aligned} \text{Sample size of population} &= (Z_c * \sigma / e_m)^2 \\ &= (1.96 * 10)^2 \\ &= 1.962 \\ &= 384.16 \\ &\sim 384 \end{aligned}$$

1.3.2 Contents

1. Research the cultural history of Dongjiang Lake.
2. Select Dongjiang fish packaging for sample analysis.

3. Design product packaging with Dongjiang fish elements.

1.4 Benefit(s) of the study

1. Product market value enhancement: By redesigning the packaging of Dongjiang fish to convey the unique characteristics and cultural history of the product, Dongjiang fish can be given a stronger recognition and competitiveness in the market. This helps to attract more consumer interest, increase sales and achieve more favorable pricing in the market. With improved packaging design, the appearance of the product is more appealing to the eye, which triggers the desire to buy, thus enhancing the overall market value of the product.

2. Strengthening cultural heritage: By integrating the historical and cultural stories of Dongjiang fish into the package design, the rich cultural heritage of Hunan can be better inherited. Such a design not only makes consumers better understand the historical origin of the product, but also inspires them to pay attention to and respect the cultural value. The product packaging is not only the appearance but also a medium to convey culture, which helps to promote the unique culture of Dongjiang fish as a Hunan specialty.

3. Cultural tourism promotion: After successfully integrating the cultural elements of Dongjiang fish into the packaging design, the product has a stronger cultural attraction, which helps promote the development of the related cultural tourism industry. Tourists can not only taste the food, but also understand the history, tradition, and culture of Dongjiang fish through the product packaging. This will promote the development of cultural tourism in Hunan, attract more tourists to explore and experience, and inject new vitality into the local economy.

1.5 Terminology:

Dongjiang fish: Dongjiang fish refers to a special fish from Dongjiang Lake in Hunan Province, China.

Hunan Specialty: Hunan specialties or Hunan specialty products refer to goods or items that are uniquely produced or manufactured in Hunan Province. These

specialties may include food, handicrafts, souvenirs, artworks or other types of goods, representing the unique culture, tradition, or unique natural resources of Hunan. For example, Hunan's Dongjiang fish, Hunan cuisine seasonings, handicrafts, etc. can all be called Hunan's specialties or specialty products, because they are unique and representative commodities or items in Hunan. These specialties often attract tourists and consumers, showcasing Hunan's rich and diverse culture and characteristics.

1.6 Research Framework

This illustrates show that the conceptual framework of Developing A Packaging Design For Dongjiang Fish:" A Distinctive Hunan Specialty".

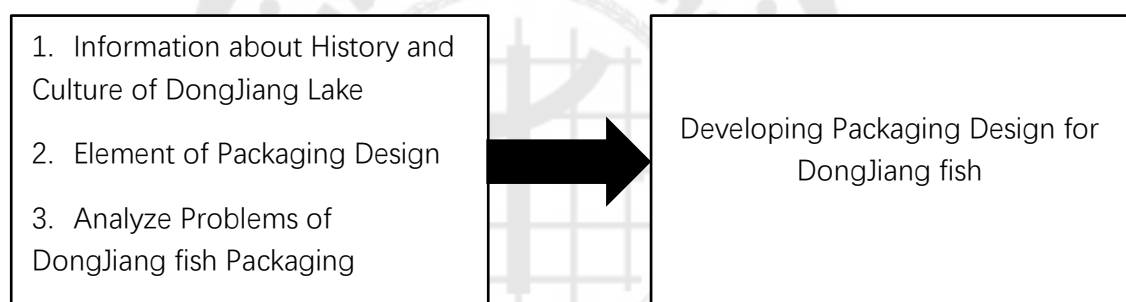


Figure 4 Research Framework

Source: Designed by researcher

CHAPTER 2

LITERATURE REVIEW

This chapter includes the theory, the concept, and the research papers that relate to Packaging Design and Development for Dongjiang Fish:" A Distinctive Hunan Specialty" as follow:

2.1 Information about History and Culture of DongJiang Lake

2.2 Packaging Design Theory

2.1.1 Packaging design meaning

2.1.2 Packaging design type

2.1.3 Packaging design elements

2.3 Related Research

2.1 Information about History and Culture of DongJiang Lake

Hunan is one of the key cradles of Chinese civilization. Ancient human activities were already present in Hunan as early as the Paleolithic Age. Humans began cultivating rice in Hunan over 12,000 years ago, and its ancestors started settling here 5,000 years ago (Hunan Provincial People's Government, 2024). The province is situated in central China, along the middle reaches of the Yangtze River (2024).Physical Geography. Hunan Provincial People's Government.www.hunan.gov.cn. It is named "Hunan" because most of its area is south of Dongting Lake. It is abbreviated as "Xiang" because the largest river in the province, Xiangjiang River, flows through the entire province. The provincial capital is Changsha. Hunan has been a place where wood hibiscus has been planted since ancient times. During the Five Dynasties, there was a saying that "autumn wind blows thousands of miles into the hibiscus country", so it is also known as the "Hibiscus Country". Hunan is located between 108°47' and 114°15' east longitude and 24°38' and 30°08' north latitude. The province spans 667 kilometers in a straight line from east to west and 774 kilometers from north to south, covering a total area of 211,800 square kilometers. This accounts for 2.2% of China's land area,

making Hunan the 10th largest among all provinces, autonomous regions, and municipalities, and the largest in the central region (Hunan Provincial People's Government, 2024). www.hunan.gov.cn.



Source: Hunan Provincial People's Government Portal www.hunan.gov.cn

Hunan has a diverse ecological environment and is an important national grain production base. Hunan is located between 25° - 30° north latitude and has a Hunan has a subtropical monsoon humid climate, with an average annual temperature of $16-18^{\circ}\text{C}$ and average annual precipitation ranging from 1200 to 1800 mm (2024). Hunan Provincial People's Government. Provincial Profile. www.hunan.gov.cn. It has the characteristics of "humid climate, distinct four seasons, Hunan experiences sufficient heat, concentrated rainfall, variable spring temperatures, summer and autumn droughts, a short severe cold period, and a long hot summer period. Hunan has beautiful mountains and clear waters, dense river networks, and a developed water system. There are 5,341 rivers over 5 kilometers long, and the freshwater area reaches 13,500 square kilometers (2024). Hunan Provincial People's Government. Provincial Profile. www.hunan.gov.cn. Dongting Lake is the second largest freshwater lake in China. The province is traversed by four major river systems: the Xiangjiang River, Zi shui River, Yuan shui River, and Li shui River. Of these, the Xiangjiang River is one of the seven

major tributaries of the Yangtze River. Hunan boasts the highest total natural water resources among the nine southern provinces. Hunan belongs to the subtropical evergreen broad-leaved forest belt, with lush vegetation and evergreen all year round. There are 53 nature reserves above the provincial level, covering an area of 906,000 hectares. Among them, 23 are national and 30 are provincial. There are 2 world geological parks and 14 national geological parks. The annual afforestation area is 441,000 hectares. It is known as "Hunan and Guangdong are familiar with each other, the world is rich", "the land of fish and rice"



Source: Hunan Provincial People's Government Portal www.hunan.gov.cn

Hunan's multicultural background and long history have nurtured a splendid culture. Hunan has been known as the "Sacred Land of Ancient Roads" (Huxiang is the main place where Emperor Yan and Emperor Shun spread the ancient Chinese moral teachings and cultivated Chinese ethical civilization.), "Hometown of Qu Yuan and Jia Yi". Huxiang is where Qu Yuan and Jia Yi cared about the people of the world and sought the future of the motherland. It is also the place where their spirits were settled and their personalities were perfected. And "Xiaoxiang Zhushi". Huxiang is a place to carry forward the essence of Confucian ethics and inherit the Confucianism of Confucius and Mencius. Among them, "Zhushi" is two rivers in Shandong. Zhushui is in the north of Qufu and Sishui is in the south of Qufu. Between the two rivers, it is the place where

Confucius gathered his disciples to teach. Therefore, later generations used Zhuzi to refer to the Confucian culture of Confucius and Mencius. The reputation of Hunan culture, with the spiritual characteristics of "worrying about the world, daring to be the first, being practical, and eclectic", has been passed down from generation to generation, cultivating the Hunan spirit of "loyalty, responsibility, truth-seeking, and striving for strength". At present, there are 4 national historical and cultural cities in the province, namely Changsha, Yueyang, Fenghuang and Yongzhou, and 228 national key cultural relics protection sites, including the Wenjiashi meeting site of the Autumn Harvest Uprising and the Hongjiang ancient building complex. Among them, the Tanheli site is the earliest known Western Zhou city site in the southern region. Hunan has always respected literature and education, with a maximum of 280 academies. Since the Song Dynasty, Changsha Yuelu Academy and Hengyang Shigu Academy have been particularly famous. The Shiwu Academy, founded in Changsha at the end of the 19th century, pioneered the reform of the modern academy system and the establishment of new-style schools. Hunan has diverse folk customs. 118 folk arts such as Hunan embroidery, Tantou woodblock New Year paintings, shadow play, and Jiangyong women's script have been listed as national intangible cultural heritage projects. Folk songs and dances such as Huagu Opera, Kunqu Opera, Hunan Opera, Qi Opera and Changde Silk String are famous both at home and abroad. The Wu Nuo culture of the Miao ethnic group in western Hunan, the customs of the De hang Miao village, and the Tujia sentiment characterized by Mao gus and waving hand dance are unique. Hunan cuisine, with a history dating back to the Han Dynasty, is one of the eight major culinary traditions of Han food culture.

Dongjiang Lake covers an area of 200 square kilometers, with an average water depth of 51 meters and a maximum depth of 157 meters. It has a water storage capacity of 8.12 billion cubic meters. Dongjiang Scenic Area is located in Zixing City. Chenzhou District, southeastern Hunan Province, close to the Beijing-Guangzhou Railway and National Highway 107, 38 kilometers away from the city center, and has extremely convenient transportation. It is the only tourist attraction in Hunan Province that

integrates national scenic spots, national 5A-level tourist attractions, national forest parks, national wetland parks, national water conservancy scenic spots, and national ecological tourism demonstration areas. Dongjiang River is the upper reaches of Leishui, a first-level tributary of Xiangshui River. Legend has it that Shennong Yandi "made Leishui in Leishan, Chenzhou", and Leishui flowed out from Leishan, Rucheng. In modern times, Leishui was cut off for power generation, and the huge Dongjiang Lake was formed. Dongjiang Lake is surrounded by mountains on all sides, the lake is vast and misty, the lake water is crystal clear, the harbors are crisscrossed, and the islands are dotted. Dongjiang Lake Scenic Area is a lake-island tourist area with Dongjiang Lake as the main body, featuring Dongjiang rapids, Dousui Lingyan Divine Realm, Longjing Canyon Wonders, and island community landscapes. It is a lake-island tourist area for sightseeing, leisure, vacation, and health care. It integrates the elegance of mountains and the charm of water, and combines the beauty of the South with historical civilization. It is known as "a lake in heaven on earth, with thousands of scenes in it". From April to November every year, the 12-kilometer-long Xiaodongjiang River is full of clouds and mist, like a jade belt floating in the canyon, and is known as "a wonder of China and a wonder of the universe". The boutique project Dongjiang rafting is 28 kilometers long, with a drop of 75 meters and 108 rapids. It is famous for the original secondary forests on both sides of the river, which are lush and green, with ancient vines entwined, birds singing and flowers fragrant, and the large drop, long rafting, and natural rafting. It is known as "China's No. 1 Ecological Tourism Rafting". Longjing Canyon is dotted with flowing springs and waterfalls, and old trees and vines cling to the walls. It is the place with the highest concentration of negative ions in the country and is known as a "natural oxygen bar". Doushi Lingyan is built on the edge of the island. There is a temple on the island, a cave in the temple, and a temple in the cave. The caves are connected. It was known as the "Famous Mountain in the World" in the Southern Song Dynasty.



Source: Hunan Provincial Tourism Development Committee website

<https://hnstb.gov.cn/>

Dongjiang Lake has a profound cultural heritage and rich tourism resources. It not only integrates the elegance of mountains and the charm of water, but also has the beauty of the south and historical civilization. Natural landscapes such as the foggy Xiaodongjiang River, Dongjiang River rafting, Dongjiang Hydropower Station Dam, and Longjing Canyon are scattered throughout the lake area. Cultural landscapes such as the Stone Museum, Photography Art Museum, Wuling Agricultural Civilization Museum, Shoufo Temple, and the Lakeside Tourism Highway complement each other. The Taoist scenic spots Doushuai Rock and Longjing Canyon are spread with legends and relics of Shennong Yandi. Yandi Shennong picked up Jiagu to create rice, made plows and taught farming, and tasted hundreds of herbs to create medicine. Boiling oranges with Sudan Well water to cure plague, "Orange Well Spring Fragrance" has become a symbol of traditional Chinese medicine; the legend of ascending to heaven on a crane has made it known as the "18th Blessed Place in the World". Zhou Dunyi, Du Fu, Han Yu, Liu

Yuxi, Qin Shaoyou and other literati of all dynasties have left popular poems and essays here. Mao Zedong, Zhou Enlai, Zhu De, Deng Xiaoping, Chen Yi and other older generation proletarian revolutionaries left their battle footprints here, and revolutionary pioneers such as Deng Zhongxia and Huang Kecheng walked out from here and devoted themselves to the great cause of the liberation of the Chinese nation (2017) Chenzhou Civilization Network. Introduction to the essence of Chenzhou culture: Dongjiang Lake, one of the ten cultural symbols of Chenzhou. <http://hncz.wenming.cn/>. The Chinese women's volleyball team rose from here and created the legend of "five consecutive championships"



Source: Chenzhou Civilization Network <http://hncz.wenming.cn/>

Dongjiang Lake has now become a nationally renowned photography creation base and a well-known domestic and international tourist destination for sightseeing, leisure and vacation, and health and well-being. Dongjiang fish not only has a unique taste, but also carries important elements of Hunan regional culture (Chen R., 2017). water surface of the reservoir in the whole territory, and artificial stocking is mainly implemented, with equal emphasis on breeding and proliferation. In 2013, Dongjiang fish was officially designated as the mascot of the "Dongjiang Lake Cup" 2014 World Volleyball Championship Asian Qualifying Tournament. In 2014, the CCTV program "A

"Bite of China" made a special trip to Zixing to report on Dongjiang fish (2017) Chenzhou Civilization Network. Introduction to the essence of Chenzhou culture: Dongjiang Lake, one of the ten cultural symbols of Chenzhou. <http://hncz.wenming.cn/>. On December 1, 2014, The former General Administration of Quality Supervision, Inspection and Quarantine approved the implementation of geographical indication product protection for "Yancheng Sea Salt". Famous historical stories include Shennong myths, legends of fairy cranes. The fishery and related industries in the Dongjiang Lake area have provided local employment opportunities and promoted the prosperity of the local economy. In 2002, Liu Jun, an academican of the Chinese Academy of Engineering and a famous fish reproductive physiologist, wrote an inscription for Dongjiang fish. With the rapid development of Zixing's tourism industry, "visiting Dongjiang Lake, drinking Dongjiang water, and eating Dongjiang fish" has become a physical and mental enjoyment for domestic and foreign tourists (Li Zheng, 2008).

In 1991, the People's Government of Hunan Province approved Dongjiang Lake Scenic Tourist Area as a provincial scenic spot. By 1996, it was recognized by the public as the best tourist destination in Hunan Province, and Dongjiang River rafting was named the best special tourism activity in the province. Dongjiang Lake Scenic Tourist Area was successively rated as the "Best Tourist Scenic Spot" by the Hunan Provincial Tourism Bureau in 1997, 1998, and 2001, and in 1998, it was listed as a "98 China Urban and Rural Tour Green Mountains and Waters Classic Scenic Spot" by the National Tourism Administration. It has since become a key base for ecological tourism and vacation in Hunan Province. In 2001, the area attracted 554,300 domestic and international visitors, establishing itself as a highlight along the Beijing-Guangzhou Railway Golden Tourism Line and the Hunan Province Religious Famous Mountain Tourism Line. On October 25, 2002, Dongjiang Lake Scenic Tourist Area was awarded the "AAAA-level Scenic Tourist Area" designation by the Tourism Bureau.

Dongjiang fish, also known as "catfish", belongs to the carp family and is a freshwater fish that lives in Dongjiang Lake (cnipa.gov.cn. 2018). According to the National Intellectual Property Administration's explanation of Dongjiang fish, Dongjiang

fish is made from fresh red bream or silver carp in Dongjiang Lake and the Dongjiang River Basin, using traditional food processing methods in southern Hunan and modern food processing technology. Due to the influence of the Nanling Mountains, soil quality, vegetation and other comprehensive conditions, coupled with the climate effect of Dongjiang Lake, it has obvious three-dimensional climate characteristics. The annual average temperature is 17.1°C , and the annual sunshine hours are 1503.5 hours. The lowest temperature is in January, with an average of 5°C , and the highest is in July, with an average of 30°C . The water temperature, light and heat are moderate, which is very suitable for the growth and development of fish (cnr.cn. 2015). Due to the large heat capacity of the large water body, the annual growth period of Dongjiang fish is more than one month longer than that of general waters. The vegetation in Dongjiang Lake is well preserved, with a coverage rate of more than 80%. Dongjiang Lake has a storage capacity of 8.12 billion cubic meters and is known as the "Dongting Lake in Southern Hunan". There are no large-scale industrial and mining enterprises in the reservoir area. Monitoring results show that all 89 indicators of Dongjiang River water meet the national surface water quality standards of Class I, that is, Dongjiang River water can be directly drunk without purification. The ecology is pristine, and the water quality has reached the national first-class drinking water standard after testing. The 300,000 mu of water surface in the Dongjiang Lake basin passed the pollution-free aquatic product certification in 2004. The clear, cold, pollution-free deep lake water and abundant natural bait make it a paradise for fish (e.cn. 2015). It has successfully pioneered the use of freshwater fish to make leisure fish products in China.

Dongjiang fish is named after the Dongjiang Lake where it is produced (Yuan, H. 2018). "A dam locks the Dongjiang River, and a high gorge produces a flat lake." The Dongjiang Dam stands 157 meters high, 35 meters wide at the base, 7 meters wide at the top, and 438 meters long at the crest. It has an installed capacity of 500,000 kilowatts. Dongjiang Lake, covering 160 square kilometers, has a water storage capacity of 8.1 billion cubic meters, which is equivalent to half the capacity of Dongting Lake. Dongjiang Lake is surrounded by forests and has clear water. The water body has

moderate temperature, light, and heat, which is very suitable for the growth and development of fish. Due to the large heat capacity of the large water body, the annual growth period of Dongjiang fish is more than one month longer than that of ordinary waters. The fish produced in the lake are rich in various amino acids and proteins, with delicate meat, bright color and delicious taste. They can be called a model of organic fish and green food.

The vegetation in the Dongjiang Lake area is well preserved, with a coverage rate of more than 80%. The metabolism, respiration, excretion and interaction of Dongjiang Lake fish with animals, aquatic plants and microorganisms can maintain the normal pH value of the water body; the fish in Dongjiang Lake can eat the excess aquatic plants and algae in the water body, while the small fish can provide food for the big fish or other water birds, thus maintaining the stability of the food web structure of the water body (Ye, F. & Yang, P. 1991). Its body is oval, with fine scales and tender meat. The clear water and abundant aquatic plants in the area provide an ideal growth environment for Dongjiang fish, making it a local delicacy. Dongjiang fish is famous for its unique flavor. Its fish meat is delicious and plump, and it is known as the "freshest" (Li, Y. 2014).

The technical requirements for the quality of Dongjiang fish are very strict. The source is fresh red carp and silver carp from Dongjiang Lake. The auxiliary materials come from camellia oil produced in Dongjiang Lake. The first step is slaughtering: transport fresh raw materials, the water temperature of the fish does not exceed 200 °C, and it takes no more than 8 hours from fishing to processing. The second step is pickling: add 1kg to 2kg of salt and 1kg to 6kg of sugar for every 100kg of fish. Put it in a ceramic jar and pickle it in layers. Pickling time: 12 hours to 24 hours in summer, 2 days to 3 days in winter, and 1 day to 2 days in spring and autumn. The third step is frying: fry the raw fish in camellia oil at no more than 2000 °C, the fish skin turns golden yellow, and a strong aroma is fried, then remove from the pan and filter the oil. Finally, mix the ingredients: control the temperature of the fried fish at about 800 °C and mix it in the secret sauce. Physical and chemical indicators: crude protein $\geq 18\%$; unsaturated fatty

acids $\geq 5.9\%$. The Dongjiang fish produced in this way has fresh and fragrant meat, dense and easy-to-tear texture, moderate hardness and softness, no muddy smell, and is chewy, spicy, salty and delicious.

Dongjiang fish not only has a unique taste, but also carries important elements of Hunan regional culture (Chen R., 2017). As one of the representatives of Hunan cuisine, Dongjiang fish reflects the Hunan people's love for food and cherishment of traditional cooking. From ancient times to the present, Zixing people have always liked to eat fish, and the folk slang "I would rather go without meat for a month than go without fish for a day" has been passed down to this day; in the late Qing Dynasty, "Xingning County Chronicles" recorded that many (mountain) ponds throughout the territory raised the four major carps; in the early days of the founding of the People's Republic of China, fishery production was popular throughout the territory; in 1964, Zixing Agricultural Science Institute pioneered artificial hatching and seedling breeding; in the 1980s, the Dongjiang Reservoir (large) closed the gate to store water, and the fish-raising water surface was 180,000 acres. It accounts for 97.3% of the fish-raising

water surface of the reservoir in the whole territory, and artificial stocking is mainly implemented, with equal emphasis on breeding and proliferation. In 2013, Dongjiang fish was officially designated as the mascot of the "Dongjiang Lake Cup" 2014 World Volleyball Championship Asian Qualifying Tournament. In 2014, the CCTV program "A Bite of China" made a special trip to Zixing to report on Dongjiang fish. On December 1, 2014, the former General Administration of Quality Supervision, Inspection and Quarantine approved the implementation of geographical indication product protection for "Yancheng Sea Salt". The fishery and related industries in the Dongjiang Lake area have provided local employment opportunities and promoted the prosperity of the local economy. In 2002, Liu Jun, an academicians of the Chinese Academy of Engineering and a famous fish reproductive physiologist, wrote an inscription for Dongjiang fish. With the rapid development of Zixing's tourism industry, "visiting Dongjiang Lake, drinking Dongjiang water, and eating Dongjiang fish" has become a physical and mental enjoyment for domestic and foreign tourists (Li Zheng, 2008).

2.2 Packaging Design Theory

2.1.1 Packaging design meaning

Bao can be interpreted as wrapping, storage, etc.; zhuang can be interpreted as stylish dressing and decoration (Liu G, 2020). Packaging design is a discipline that combines natural science and aesthetics, with the purpose of better protecting goods and promoting product sales during the circulation process. Packaging is a general term for containers, materials and auxiliary equipment that are stored according to a certain method of use. It is a design activity that uses design means to shape product packaging and appearance into a distinctive and attractive form to make it stand out in the market, thereby increasing sales and brand image (Li, W. 2021). There are many factors that need to be considered in packaging design, such as packaging materials, packaging forms, packaging colors, etc., among which visual effects are the most important factor (Xu, C. 2015). Good packaging design can attract consumers' attention and make the product stand out among many competitors, thereby increasing sales and brand influence (Ma, X. 2019).

From Kan Guangbin (2013) Researched the functions and design principles of packaging design. The researcher believes that packaging design is the process of creating packaging entities through certain techniques. The purpose is to protect the circulation safety of goods, facilitate consumers' use, and promote the sales of goods. It is an activity that combines art and technology. It uses reasonable materials, shapes, structures, text, graphics and colors to design based on the physical form, attributes and circulation intention of the packaging object.

From Fu Gang (2009) researched the functionality and design principles of packaging. The researcher argues that packaging fundamentally serves three primary functions: it must first protect the product during production, then facilitate its movement during distribution, and finally enhance its appeal in the sales arena. Packaging addresses issues related to distribution and display, as well as the convenience and practicality of use. Sturdy outer packaging ensures safe transportation, while well-designed small packaging can offer functional advantages. Additionally, packaging

must effectively communicate the product's information and value to consumers. Successful packaging not only conveys accurate product details but also captures consumer attention, as products that attract interest are more likely to be purchased.

To sum up, packaging design is a creative and strategic design work aimed at developing and designing the appearance and form of product packaging (Liu Hongyan, 2015). It covers formulating the appearance, material, structure, pattern, color and information of the packaging to meet the needs of the product, attract the target audience, convey the brand message, and provide effective protection and convenience (Hu Shijiao, 2017). Packaging design is an indispensable part of product sales and can directly affect consumers' purchase intention and brand recognition (Li Yan, 2017). Therefore, it is of great significance to study and optimize the visual information communication effect of packaging design based on graphic design, which places higher requirements on packaging designers. When designing packaging, packaging designers not only need to consider the characteristics and positioning of the product, but also need to consider the cultural background and aesthetic concepts of the target consumer group, and use their professional knowledge to design excellent packaging works to achieve the best visual impact and Information transmission effect (Liu Hongyan, 2015).

2.1.2 Packaging design type

Meng Xiangbin (2012) researched the basic principles of packaging design. The researcher believes that product packaging design is a focused and specialized task that encompasses both creative thinking and technical skills. Several key principles for effective packaging design are as follows:

1. Scientific principles: The first thing to pay attention to is the scientific attitude in product packaging design and the way of scientific research on problems. Product packaging and products go hand in hand. Distributing products is distribution packaging, so it is impossible not to pay attention to scientific attitudes and thinking. In addition, the packaging implementation process requires certain technologies and processes, which also require scientific knowledge and scientific means. Modern

packaging is also the result of large-scale production. Engineering problems in these large-scale production processes require numbers to provide a basis. Without understanding these scientific data, production cannot be achieved. Therefore, scientific principles are the primary issue in product packaging design.

2. Safety principle: The safety principle mandates that packaging design must adhere to objective guidelines for protecting goods and preventing leakage or spillage. This involves carefully designing the position and proportions of each container component. For example, the "foot" of the container should be thick and sturdy to ensure stability, while the "flow" position should be positioned at the top to prevent leaks. The packaging method should be both scientific and reliable to maintain product quality. Additionally, anti-counterfeiting measures are crucial for ensuring safety. Since imitation and counterfeiting pose significant risks in marketing, product packaging must incorporate various anti-counterfeiting features. One common method is the use of tamper-evident or destructible packaging to prevent unauthorized access and ensure the authenticity of the product.

3. Convenience Principle: Packaging serves as a "silent helper" for consumers during product use, making convenience a crucial aspect of container design. The proportions and dimensions of each part of the container should be scientifically designed to accommodate human hand physiology and ease of handling. Poor design can lead to difficulties in use. Emphasizing human factors and incorporating ergonomic considerations for "grasping and holding" should be strongly advocated. Additionally, packaging should be easily identifiable to enhance consumer convenience and boost sales. This involves using text, graphics, color, and other design elements to clearly and effectively communicate the product's characteristics and marketing concepts. The design should aim to be straightforward and easily recognizable.

4. Principle of profit-making sales: The significance of product packaging design is fundamentally tied to "profit-making sales." The primary functions of packaging—protecting the product, facilitating its transport, and clearly marking its

variety and brand—underscore that the ultimate goal is to enhance product sales, or "profitable sales." The "sales-promoting" design principle should encompass all aspects of visual design and methods. For instance, eye-catching product names can capture consumer attention, while vibrant, high-chroma colors can attract both visual and psychological interest. These design strategies effectively embody the principle of "profit and sales."

5. Holistic principle: Commodity packaging is a cohesive object where each part serves specific functions but must integrate seamlessly into the whole package. This means that packaging design should focus on the overall unity and the relationship between the whole and its individual components. Given that packaging has three-dimensional characteristics, it is observed from multiple angles and perspectives. Therefore, packaging design must not only address the main display surface but also consider its interaction with other surfaces and contribute to the overall style and characteristics of the package. Integrity is a crucial principle in packaging design. This involves ensuring a consistent style across text, graphics, colors, and organizational structure. Each aspect of packaging, whether it's the inner or outer packaging, or a series of related packages, must be viewed as a unified whole. Designers need to maintain a clear understanding of the relationship between the whole and its parts, prioritizing the overall design problem while addressing the details and coordination between components. This approach helps in creating a cohesive style and effectively reflecting the product's theme.

6. Creativity Principle: Building on the principles of structural science and packaging, it is essential to embrace innovation by challenging conventions and outdated concepts. Seek fresh ideas and methods through diverse channels, broader perspectives, and new levels of thinking. Discovering connections between different elements can lead to creative solutions. Borrowing and adapting successful ideas from various sources is a valuable creative approach. Additionally, learning from and building upon the achievements of predecessors, while infusing them with a modern and vibrant style, is also a powerful means of fostering creativity.

7. Principles of series packaging: 1. Unified style. The main feature of serialized design is the integrated design of a series of products in groups and sets. It is an interrelated overall plan. Therefore, the first thing to pay attention to in series packaging design is its overall characteristics. In other words, there must be a certain visual style and image difference. 2. Pay attention to changes. Unity is never pure and absolute identity. Because there are different specifications, different contents, different ingredients, different attributes and other different characteristics in a series of products, we should pay attention to the individual expression of specific product characteristics while paying attention to uniformity and stylization. Seek change in unity, and seek unity in change; it neither loses the unity (commonality) of the series of designs, but also lacks the flexibility (individuality) to express a single design; it is neither monotonous or plain, nor complicated and confusing. This is the reasonable way to truly achieve the "unity" of serialized design. Therefore, it should be emphasized that serial design must have an in-depth understanding of the commonality and individuality of serialized products, and must grasp the relationship between the whole and the specific. This is an important link in series packaging design. 3. Can be relatively stable. The stability of the brand image means that it should maintain its unique style and unique style for a certain period of time and to a certain extent. This is also a necessary process and way for the market and consumers to recognize and understand the brand and generate trust on this basis. Without stability, it means losing the possibility of gaining trust. 4. Sustainable development. Stability does not mean solidification. Relative stability means that stability is conditional. This stability will develop due to changes in time, location (market and objective environment), people (consumers) and other factors.

From Zhang Xian (2023) a brief analysis of the basic principles of modern product packaging design was conducted. The researcher believes that as modern living standards and aesthetic needs continue to evolve, the expectations for product packaging are rising. Packaging design should align with the principles of convenience, safety, sustainability, practicality, and humanization, all while adhering to the specific characteristics of the product.

Green packaging design principles: 1. Environmentally friendly design: Most modern daily necessities packaging designs use non-degradable plastics. This material is difficult to effectively decompose after daily use, leading to serious environmental pollution and even damage to the ecosystem. In order to solve this problem, we should adopt green packaging design principles and form a multi-level beautification system by adjusting packaging materials, which not only makes daily necessities packaging design more beautiful, but also effectively reduces environmental pollution. Therefore, in today's daily necessities packaging design, the most important thing is to follow the principles of environmental friendliness. 2. Energy-saving and environmentally friendly design: The importance of energy-saving and environmentally friendly product design principles is that it can help us make better use of the design resources of modern daily necessities, reduce production costs and reduce environmental pollution through reasonable design. 3. Beautiful and elegant design: The outer packaging design of daily necessities can give people an intuitive experience. Therefore, when designing product packaging, consumers should be as happy as possible. However, attention should also be paid to giving consumers a strong visual impact so as not to cause physical or psychological discomfort to consumers. Therefore, aspects such as color and brightness should be treated with caution and its adaptability should be fully considered. After selecting the keynote of product packaging, color perfection is essential, because color composition has an important impact on the appearance design of the product. Therefore, when designing product outer packaging, objective aesthetic rules must be followed to ensure that the product Design aesthetics and practicality.

Principles of convenience packaging design: 1. Visual recognition convenience: The packaging design should allow customers to clearly know its type, taste and main ingredients when they first see it, so that customers can quickly judge whether it is what they want. Products to purchase. 2. Convenience of purchasing and carrying: A packaging structure that is easy to carry can bring a pleasant psychological experience to consumers, but if consumers cannot easily carry the goods home or are

damaged during the journey, this will reduce their consumption experience. 3. Opening convenience: From a consumer's perspective, convenient opening of packaging can greatly improve the purchasing experience and save time and cost. From the perspective of the product owner, opening the packaging can not only add new functions, but also bring more potential value and benefits to the product. 4. Convenience of taking and eating: Modern packaging design should take into account the customer's experience in order to better meet their needs. 5. Storage convenience: After consumers purchase goods, in order to be able to store them as soon as possible, they must consider the convenience of storage, because many consumers will not use all of them immediately after purchase, but require them to be stored, to ensure safety and reliability.

Practical packaging design principles: 1. Aesthetics: On the basis of practical design, we should integrate aesthetics to meet the needs of consumers. By deeply understanding the needs of consumers, we design creativity products to achieve the perfect combination of practicality and aesthetics. 2. Sustainability: Under the guidance of the ecological design concept, we should fully use recycled materials to reduce the waste of materials and space. Only in this way can the product packaging design be sustainable and more practical.

Humanized packaging design principles: Humanized product packaging design principles emphasize people-oriented and aim to meet the various needs of customers, including material needs, cultural and spiritual needs, and services. The packaging design of modern products should be people-oriented, focus on practicality, and design a more humane product packaging structure to meet the diverse needs of customers.

To sum up: 8 major principles should be followed when designing packaging design, namely: 1. Safety principle: Check the performance of existing packaging in protecting Dongjiang fish products from damage to ensure the safety and integrity of the product. 2. Profitable sales principle: Evaluate whether the packaging design is eye-catching and attracts the interest of potential consumers. 3. Principle of

visual recognition convenience: Check whether the information on the packaging is clear and easy to understand and whether it contains sufficient product information. 4. Principle of series packaging: Evaluate whether the packaging design is consistent with the overall brand image and whether it can be quickly recognized by consumers. 5. Green packaging design principles: Check whether the packaging uses recyclable materials, whether it reduces environmental burden, and whether there are measures to reduce packaging waste. 6. Opening convenience principle: Evaluate whether the packaging design takes into account the ease of use of the product, including ease of opening, closing and storage. 7. Creativity principle: Examine whether the packaging design is creativity and adopts novel designs, shapes or structures. 8. Safety supervision principles: Check whether the packaging design complies with relevant regulations and standards such as food safety and drug labeling.

2.1.3 Packaging design elements

The seven most common elements in design are line, shape, texture, form, space, color, and value, with additional considerations for mark making and materiality. Analyzing these intentionally utilized elements guides the viewer toward a deeper understanding of the work.

Lines are marks that move through space between two points, allowing viewers to perceive the stroke's movement, direction, and intent based on its orientation. Lines define outlines and can create texture depending on their length and curvature (Roxo, J. 2018; Wiltshire, M. E. 2021). Artists use various types of lines, including actual, implied, vertical, horizontal, diagonal, and contour lines, each serving distinct functions. Lines are also situational elements, requiring viewers to have an understanding of the physical world to interpret their flexibility, rigidity, synthetic nature, or vitality (Roxo, J. 2018).

A shape is a two-dimensional design enclosed by lines that defines its height and width, and can use various colors to give it a three-dimensional appearance. In animation, shapes are crucial for imbuing characters with distinct personalities and features, with animators manipulating these shapes to bring characters to life (Roxo, J.

2018; Esaak, S. 2020). Shapes can be categorized into geometrical shapes, defined mathematically, and organic shapes, created by artists (Roxo, J. 2018). Geometrical shapes such as circles, triangles, and squares are simplistic and convey a symbolic, synthetic feel. In contrast, acute-angled shapes with sharp points are perceived as dangerous, while rectilinear shapes are seen as dependable and structurally sound. Curvilinear shapes, on the other hand, are viewed as chaotic and adaptable (Roxo, J. 2018; Esaak, S. 2020).

Form is a three-dimensional object that encompasses height, width, and depth (Wiltshire, M. E. 2021). Examples of forms include cubes, spheres, and cylinders (Wiltshire, M. E. 2021). Form is particularly relevant when discussing physical artworks, such as sculptures, as it is most closely associated with three-dimensional creations (Marder, L. 2021).

Color is an element defined by hues, with three key properties: hue, chroma (or intensity), and value. Color appears when light strikes an object and is reflected back into the eye, causing a reaction to a hue in the optic nerve (Esaak, S. 2020).

Hue refers to the distinguishable color, such as red, blue, or yellow (Esaak, S. 2020).

Value denotes the lightness or darkness of a hue.

Chroma or intensity differentiates between strong and weak colors (Esaak, S. 2020).

The color wheel, which displays primary colors, provides a visual representation of chromatic scales. Color is categorized into various classes: primary colors, secondary colors, complementary colors, tertiary colors, analogous colors, and neutral colors.

Primary colors (red, yellow, and blue) are fundamental and cannot be created by mixing other colors.

Secondary colors are produced by mixing two primary colors in equal amounts.

Space refers to the perspective (distance between and around objects) and proportion (size) between shapes and objects, as well as how they relate to the foreground and background (Esaak, S. 2020). Artists can manipulate different types of space to achieve various effects:

Positive space refers to the areas of a work that contain the subject.

Negative space is the area around and between the subjects, which does not contain the subject itself (Esaak, S. 2020).

In three-dimensional art, such as sculptures:

Open space refers to the empty areas within and around the sculpture.

Closed space involves the physical elements that make up the sculpture (Esaak, S. 2020).

Texture describes the surface quality of a work, relating to the types of lines and techniques used by the artist (Roxo, J. 2018). Texture can be either tactile (real) or visual (implied):

Tactile texture is experienced through three-dimensional works, such as sculptures, where viewers can physically feel and see different textures.

Visual texture pertains to how texture is perceived through visual cues alone, based on the way textures are depicted in two-dimensional works (Esaak, S. 2020).

Value refers to the degree of lightness or darkness of tones within an image (Wiltshire, M. E. 2021). This element is akin to the concept of luminosity and can be "measured in various units designating electromagnetic radiation" (Esaak, S. 2020). The variation in values is known as contrast, which highlights the range between the lightest (white) and darkest (black) tones, with an infinite number of gray shades in between (Esaak, S. 2020). Although value is most commonly associated with greyscale, it is also important in colored images.

Mark making refers to the interaction between the artist and their materials, capturing the essence of the artist's process and allowing viewers to experience the act

of creation (Roxo, J. 2018). It provides insight into how the artist made their marks, effectively reliving the creation process.

Materiality involves the selection of materials and their influence on the artwork, affecting both the final piece and the viewer's perception of it (Roxo, J. 2018).

2.3 Related research

Hassan, A. A. E., & Mostafa, H. M. N. (2018) studied The Importance of Packaging Design as a Branding Factor in Consumer Behavior. They found that Good packaging design creates positive feelings about a brand and contributes to the emotional and cultural connection between the product and the consumer. Packaging creativity, especially the use of cartoon characters, has a greater impact on consumer behavior during the buying process than other design elements such as color and font style.

Shen, Q. (2021, January) conducted research on the use of regional cultural visual language in packaging design for local specialties. The study highlights that incorporating regional cultural elements into packaging design can enhance the spread of regional culture and contribute to local economic development. The research emphasizes the importance of exploring cultural elements and visually presenting them through artistic design techniques. By blending modern aesthetics with distinctive regional characteristics and cultural heritage, packaging can create a strong sense of public identity for local specialties. This approach not only preserves and promotes China's rich regional culture but also integrates it with contemporary packaging design.

Spence, C. (2016) explored multisensory packaging design, focusing on the integration of color, shape, texture, sound, and smell. The study examined how these sensory elements interact to enhance the consumer experience and influence perception of the product. By incorporating multiple senses into packaging design, brands can create a more engaging and memorable interaction with their products, potentially impacting consumer preferences and satisfaction. He found that Packaging designers should pay attention to the visual attributes of packaging, especially color, as

it is the most important sensory cue to the success of a product on the supermarket shelf. Creativity shapes of packaging, unique textures or finishes and olfactory packaging can be used to enhance consumer perception and product experience. Weight should be considered in terms of tactile and haptic aspects, but a balance needs to be struck between the benefits of an enhanced multi-sensory product experience and increased transportation costs.

Salimian Rizi, M., Paknejad, F., Salimian Rizi, R., & Koleini Mamaghani, N. (2022) studied A Story-based Design: A Research on Narrative Packaging Design. They found that Storytelling in packaging design, such as the Zanjan knife packaging, can increase user satisfaction. The use of storytelling in packaging design can also promote cultural sustainability, as the potential to reuse packaging over time may repeat the story with each use.

Beckman, S., & Barry, M. (2009) studied Design and creativity through storytelling. They found that stories play a vital role in the design process, allowing designers to understand clients and users, as well as the conflicts, norms and failures in their lives. Stories can inspire designers to help users overcome challenges, make connections and foster creativity. Considering the creation and exchange of stories within an organization can have significant benefits, including driving creativity and fostering organizational change.

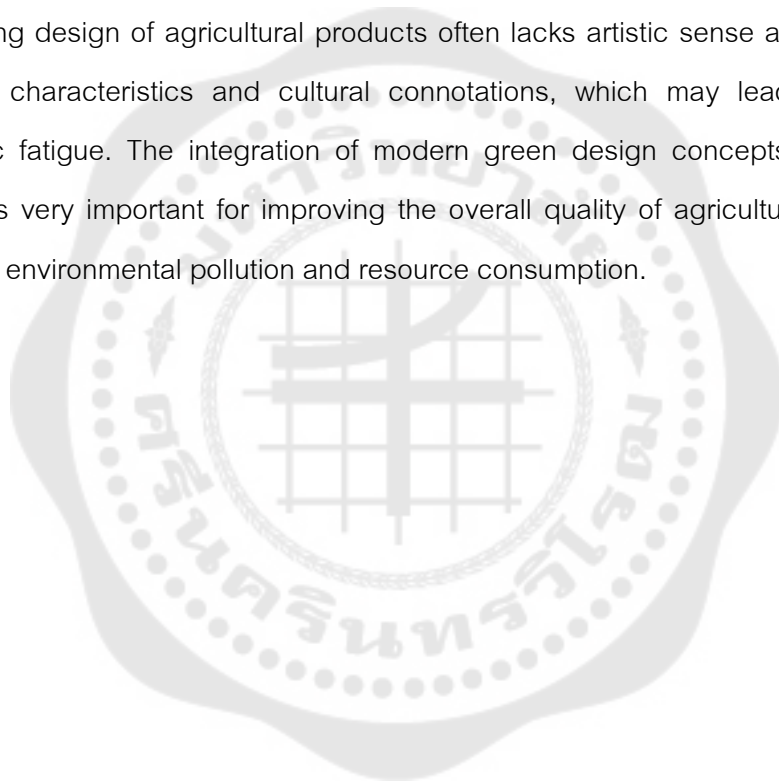
Joutsela, M. (2010) studied Multisensory persuasion and storytelling through packaging Design. He found that Packaging design can be used to influence all of the consumer's senses, including visual cues, touch, sound, smell and taste, to create meaning and convey ideas and impressions. Packaging has the potential to convey information about brand values, product characteristics, uses, sources and quality in a variety of ways, not just visual appearance. The multisensory design process is a more holistic approach to package design, taking into account the sensory cues associated with the package and product in question. Design elements in packaging, such as touch, smell, sound, shape and material, can convey different meanings and help create a stronger connection between the sender and receiver of a message.

Wang, H., Ab Gani, M. A. A., & Liu, C. (2023) investigated the impact of snack food packaging design characteristics on consumer purchase decisions using the Decision Making Experimentation and Evaluation Laboratory (DEMATEL) methodology. Their findings revealed that color, shape, image, line, and typography are the five most critical design features influencing consumer buying behavior. Among these, images were identified as the most significant factor affecting purchasing decisions. The study also found that materials and technology had minimal impact on consumer choices. It highlighted causal relationships between design features, with color and image being pivotal in influencing other aspects, while shape was not related to typography. The research suggests that improving these key design features can enhance consumer interaction with snack food packaging and boost sales, offering valuable insights for designers and marketers aiming to align packaging with consumer needs and preferences.

Wever, R., Schermer, R., Smit, L., & Vos, L. (2015, June) studied Wrapping up your message; sustainable storytelling through packaging. They found that telling a sustainable story through packaging can enhance a product's perceived value and contribute to its overall sustainability. Packaging design based on green aesthetics or eco-labeling may initially have a greater impact on consumers than packaging design that focuses on storytelling. -However, sustainable storytelling packaging aims to create a lasting dialog with consumers after the product and brand have entered their lives. Evaluating the effectiveness of sustainable storytelling packaging requires different research techniques, such as focus groups, as traditional packaging design tests often focus on first impressions. Companies can tell stories in other media or use the packaging itself to tell the story of their sustainability efforts, both of which provide opportunities for sustainable marketing.

Zhou, C. (2023) examined the intersection of regional traditional culture and agricultural product brand packaging design. The study found that creatively integrating regional traditional culture and aesthetics into agricultural product packaging can result in distinctive products that enhance consumer recognition and increase purchase

desire. This approach not only highlights regional heritage but also differentiates products in the marketplace, potentially boosting consumer interest and sales. The use of traditional folk art expression techniques and regional cultural elements in packaging design can enhance the regional and cultural characteristics of agricultural products and promote the inheritance of traditional culture. The packaging design of characteristic agricultural products lacks clear brand positioning and brand awareness, which hinders the establishment of brand image and affects brand promotion. The packaging design of agricultural products often lacks artistic sense and cannot reflect regional characteristics and cultural connotations, which may lead to consumers' aesthetic fatigue. The integration of modern green design concepts into packaging design is very important for improving the overall quality of agricultural products and avoiding environmental pollution and resource consumption.



CHAPTER3

RESEARCH METHODOLOGY

When studying "Developing A Packaging Design for Dongjiang Fish: A Distinctive Hunan Specialty", The researcher adopted a mixed research method and carried out in-depth research and design according to specific steps. First, the researcher deeply explored and studied the culture and history of Dongjiang Lake, which provided the researcher with a rich background for packaging design. Subsequently, the researcher conducted a detailed analysis of the problems existing in the nine existing Dongjiang fish packaging and found the key points that can be improved. Through interviews with 384 Dongjiang Lake tourists and 5 Dongjiang fish stores, the researcher collected valuable opinions and obtained questions and suggestions on Dongjiang Lake packaging design. In addition, the researcher is conducting in-depth interviews, focus group discussions and questionnaires to obtain detailed data. Based on these data, the researcher designed three to five creative works of Dongjiang Lake product packaging, aiming to improve and show its uniqueness. The second, the researcher interviewed two professional designers and a Dongjiang fish expert, integrated expert opinions, and finally determined the best Dongjiang fish product packaging works. Finally, the researcher summarized the chapters, summarized the research results, and drew conclusions. This comprehensive approach helped the researcher better achieve the research objectives. As shown in the figure5.

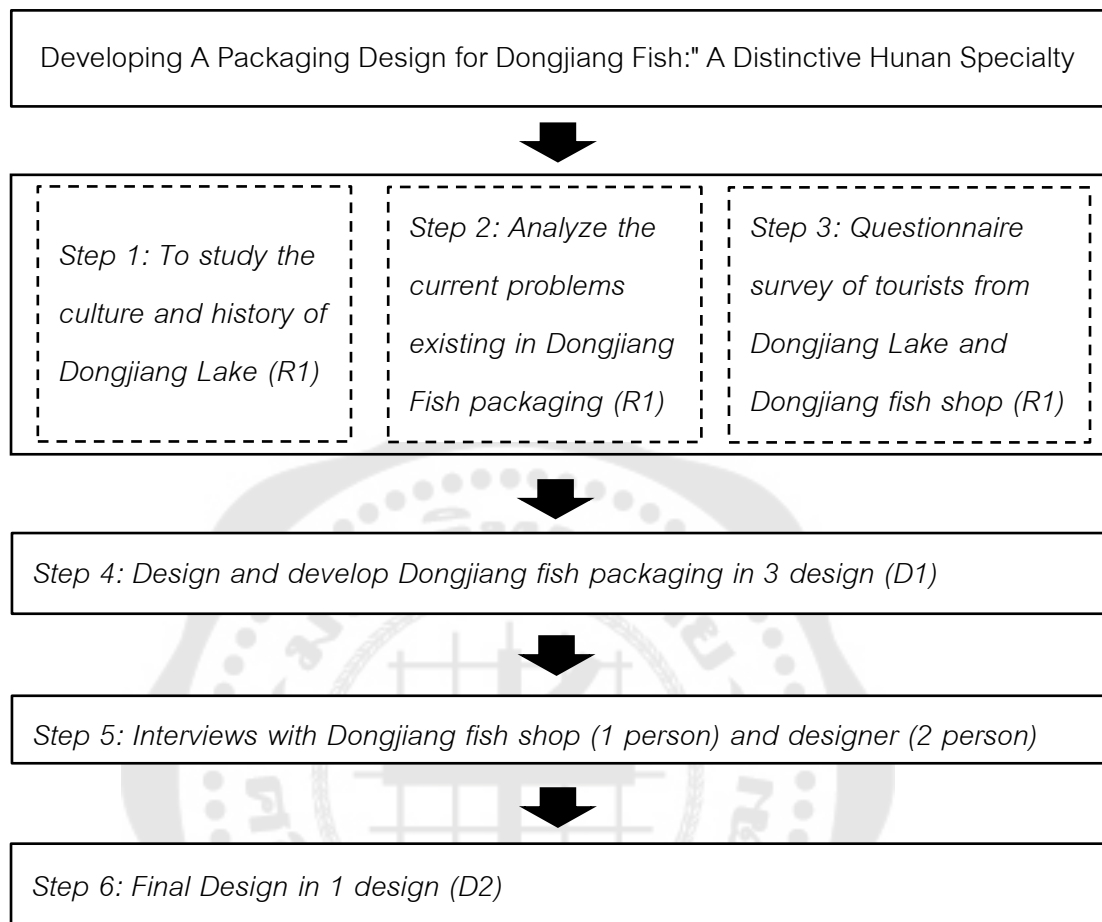


Figure 5 Step-by-step diagram of the study

Source: Designed by researcher

Step 1: To study the culture and history of Dongjiang Lake

1.1 literature review

Through domestic and international online academic resource databases, historical museums and newspapers and periodicals related to Dongjiang Lake, we collect documentary materials, official archives and related records related to the cultural history of Dongjiang Lake, summarize key historical events, cultural characteristics.

1.2 field trip

Go to the surrounding areas of Dongjiang Lake to conduct inspections and record the natural landscape, landform features, cultural relics, local folk customs, architectural styles and other main features to understand and record the cultural and historical characteristics of Dongjiang Lake on the spot.

Step 2: Analyze the current problems existing in Dongjiang fish packaging

In the analysis of existing packaging, Dongjiang fish products currently sold in the market were collected and divided into different types according to packaging styles. The current Dongjiang fish packaging was evaluated according to the eight basic principles of packaging design. The results of these evaluations will help us identify the strengths and weaknesses of existing packaging and provide guidance for subsequent design improvements. (Meng Xiangbin and Zhang Xian, 2023) as follow.

1. Safety principle: Examine the performance of existing packaging in protecting Dongjiang fish products from damage to ensure product safety and integrity.

2. Profitable sales principle: Evaluate whether the packaging design is eye-catching and attracts the interest of potential consumers.

3. Principle of visual recognition convenience: Check whether the information on the packaging is clear and easy to understand and whether it contains sufficient product information.

4. Principle of series packaging: Evaluate whether the packaging design is consistent with the overall image of the brand and whether it can be quickly recognized by consumers.

5. Green packaging design principles: Check whether the packaging uses recyclable materials, whether it reduces the environmental burden, and whether there are measures to reduce packaging waste.

6. Opening convenience principle: Evaluate whether the packaging design takes into account the ease of use of the product, including ease of opening, closing and storage.

7. Creativity principle: Examine whether the packaging design is creativity and uses novel materials, shapes or structures.

8. Safety supervision principles: Check whether the packaging design complies with relevant regulations and standards such as food safety and drug labeling.

2.1 Population and sample

Population: The researchers collected a total of 23 pieces of 3 different types of packaging from the Dongjiang Lake Museum, community, and supermarket (museum: 8 pieces in cans, community: 8 pieces in plastic packaging. Supermarket: 7 pieces in vacuum packaging.)

sample : Through targeted selection, 3 items were selected for the museum, 3 items for the community, and 3 items for the supermarket. 9 pieces in total.

Step 3: Questionnaire survey of tourists from Dongjiang Lake, Dongjiang fish shop

The main area studied is Hunan Province, especially the communities and businesses near Dongjiang Lake. The research subjects include 384 Dongjiang lake tourists, 5 shops involved in the packaging design process.

3.1 tourists from Dongjiang Lake 384 people

Population and sample: Dongjiang Lake tourists. Population and Sample Size of Packaging Design and Development for Dongjiang Fish:" A Distinctive Hunan Specialty". - External (Infinite Population) Roscoe, J.T. (1969).

$$N = (Z_c * \sigma / e_m)^2$$

Where,

N = Sample size of population

Z_c = Given Z_c value | Z = 1.96 at 95% confidence interval

C = Confidence level | C = 95% confidence interval

E_m = The maximum likely error is 1/10 of σ

σ = The Standard deviation of population | σ = 10

Sample size of population = $(Z_c * \sigma / e_m)^2$

= $(1.96 * 10)^2$

$$\begin{aligned}
 &= 1.962 \\
 &= 384.16 \\
 &\sim 384
 \end{aligned}$$

3.2 Dongjiang fish shops 5 people

1. Dongjiang Fish Dried Goods Store.150 meters northwest of the intersection of Wenhua Road and Shuidian Road, Zixing City, Chenzhou City (Postal Code: 423400)

2. Dongjiang Fish Group Flagship Store.Northwest corner of Aolin Villa at the intersection of Wenfeng Road and Hanning Road, Tangdong Street, Zixing City, Chenzhou City (Postal Code: 423400)

3. Dongjiang Fish Trading Company.S219, Dongjiang Street, Zixing City, Chenzhou City, Hunan Province (Yanjiang East Road)

4. Yuan Jidong Jianghu Ecological Fish Store, Beihu District, Chenzhou City.Facade of Fish No. 2, Tongxin Wet Market, Beihu District, Chenzhou City, Hunan Province

5. Vegetable Dongjiang Fish Direct Sales Store in Suxian District, Chenzhou City.Facade No. 16, Shizhuyuan Market, Bailutang Town, Suxian District, Chenzhou City, Hunan Province

Step 4: Design and Develop Dongjiang Fish Packaging 3 Design Works

4.1 Packaging Design Briefs

Through literature review, archive inspection and field investigation, we developed a comprehensive design brief for Dongjiang Fish packaging, which included key elements such as Line, Shape, Form, Color, Texture, Value, Mark making and materiality.

4.2 Creative Conceptualization

Based on the identified strengths and weaknesses of the existing packaging and guided by the design principles outlined earlier (1.Safety principle 2.Profitable sales principle 3.Principle of visual recognition convenience 4.Principle of

series packaging 5.Green packaging design principles 6.Opening convenience principle 7.Creativity principle 8.Safety supervision principles), 3-5 Change design concepts were developed.

4.3 Documentation and Presentation

A detailed documentation of the design process, including initial concepts, iterations, testing results, and final designs, was compiled. This documentation served as a comprehensive presentation highlighting the evolution of the packaging designs.

Step 5: Interviews with Dongjiang fish shop (1 person) and designer (2 person)

Before conducting interviews, prepare a structured interview guide that covers key areas of inquiry, such as perceptions of Dongjiang Fish, insights on packaging, suggestions for improvement, and the significance of cultural representation in packaging.

5.1 Dongjiang fish shop

Engage with experts in the fields of packaging design, cultural heritage, and local specialties. These interviews aim to gather insights into the historical and cultural significance of Dongjiang Fish and how it should be represented in packaging. Seek opinions on the existing packaging's cultural alignment and suggestions for enhancements.

Li Zhiping serves as the president of Zixing Dongjiang Fish Breeding Association and is the first fish farmer in Chenzhou City to have environmentally friendly technology facilities in his fishing pond.

5.2 Designer

Interact with professional designers and explore their perspectives on the cultural elements, aesthetics, and functionality required for effective packaging design.

1. Lu Qiang, senior designer, executive creative director of Shangshan Visual Design Consultants, art director of Kuai Ke New Youth University Marketing Department Hunan Branch, ONE SHOW youth self-media partner Shangshan Visual Project Leader, member of China-Europe International Design Culture Association,

Member of Hunan Provincial Designers Association, Shanghai Haichang Ocean Park campus ambassador, Lunan Pharmaceutical campus star recommendation officer, Zhuanzhuan campus star recommendation officer, the 10th Future Master Class, creative business illustrator.

2. Gao Shenghui, senior designer, Shangshan visual design consultant graphic designer, Red Dot Design Museum • Xiamen graphic designer, ARKR hydrogen krypton art director. Selected for the 5th Shanghai • Asia Graphic Design Biennale, selected for the 2018 Ukrainian '4TH BLOCK' Ecological International Poster Triennial, selected for the 2021 Ukrainian '4TH BLOCK' Ecological International Poster Triennale, selected for the 4th "Word Cool" Text Art Selected in the design exhibition, "Forest • City" International Public Welfare Poster Design Invitational Exhibition, selected in the 5th Wuhan Design Biennale, selected in the 2019 Cross-Strait Chinese Character Cultural Creativity Competition, selected in the 2019 Taiwan International Student Creative Design Competition, selected in the 14th Shenzhen Shortlisted for the Design City Public Service Advertising Competition, the Super IP Ecological Conference Laimeng Award won the Bronze Award for Super IP Commercial Application Award, the CPDB China Printing Art Design Biennale Excellence Award, and the 25th China International Advertising Festival Yellow River Award Excellence Award.

Step 6: Final design

Through the previous 5 steps, the final design Have 1 work completely.

CHAPTER 4

DATA ANALYSIS AND RESEARCH RESULTS

Step 1: The result of study the culture and history of Dongjiang Lake

1.1 Literature Summary

Through the official documents of the Hunan Provincial Tourism Development Committee and the official archives of the Hunan Provincial People's Government Documents, the researcher concluded that Dongjiang Lake, located in Hunan Province, is a unique tourist destination, famous for its colorful natural landscape and profound cultural heritage. As a national scenic spot and a 5A-level tourist attraction, Dongjiang Lake is surrounded by mountains, the lake water is crystal clear, and it also has rich historical and cultural connotations. Famous historical stories include Shennong myths, legends of fairy cranes. the Dongjiang Lake Scenic Area is marked by the four major scenic spots: Dongjiang Dam, Mi Man Xiaodongjiang, Tushita Lingyan, and Dongjiang Huayue Night It has become a photography creation base and a popular destination for sightseeing, leisure and vacation. Its superior geographical location and water quality ensure rich water resources and breed delicious delicacies represented by Dongjiang fish. Dongjiang Lake has a beautiful ecological environment, with a vegetation coverage rate of more than 80%, which ensures the normal pH value of the water body and maintains the ecological balance of the water body. Dongjiang fish, with its unique production process and high-quality taste, carries important elements of Hunan regional culture and has become one of the local food representatives. At the same time, the fishery and related industries in the Dongjiang Lake area have provided support for local economic development and have become an important tourist resource to attract tourists, forming a unique "swimming in the lake, drinking water, and eating fish" tourism experience.

1.2 Field trip investigation

Through field visits to the Dongjiang Lake Wetland Science Museum, Chenzhou Water Resources Museum, and Dongjiang Lake National Wetland Park, the researcher concluded that: Dongjiang Lake, as a pure and vast body of water, has a vast lake surface, and its water quality meets the national first-class drinking water standard. Its unique geographical location and rich biodiversity make it a model of natural ecology. The improvement of Dongjiang Lake's ecological environment is the best evidence of its rich biological resources and diversity, including many rare species such as the Chinese merganser, known as the "giant panda among birds." The water body of Dongjiang Lake also has a significant impact on the surrounding climate. Its huge water body plays an important role in regulating the temperature, especially in cooling in summer and warming in winter, and has a positive impact on plant growth and fruit quality.

Through on-site inspections of the Dongjiang Lake Wetland Science Museum, Dongjiang Lake stores and supermarkets around Dongjiang Lake, the researchers concluded: At museum, community and supermarket there are some practical problems in Dongjiang fish packaging. increasing resource consumption and environmental burden. Another problem is that the packaging design is single and lacks creativity and personalization, resulting in a lack of differentiated competitive advantages between products. In addition, some packaging materials may not meet food safety standards and pose potential health risks. There are also some packaging designs that may be inconvenient for consumers to use or handle, affecting the actual use experience of the product. Therefore, it is necessary to improve these practical problems and design a more environmentally friendly, creativity, safe and convenient Dongjiang fish packaging solution to enhance product competitiveness and consumer satisfaction. can be seen in Figure 6.



Figure 6 Supermarkets around Dongjiang Lake

Source: Photographed by researcher

Step 2: Analyze the current problems existing in Dongjiang fish packaging

The researcher collected 23 Dongjiang fish products on the market and divided them into three types according to packaging styles: 1. Canned 2. Plastic bag 3. vacuum. The current Dongjiang fish packaging was evaluated based on the eight basic principles of packaging design. can be seen in Table 1.

Table 1 Packaging style analysis.


Packaging Type: Canned			
	1	2	3
1. Safety principle	3 packaging options with safety and integrity		
2. Profitable sales principle	Package 1 and Package 2 have no attention-grabbing graphics, while Package 3 has a small amount of graphics.		
3. Principle of visual recognition convenience	None of the three packaging types have product visual information		
4. Principle of series packaging	None of the three packagings have the product visual brand image		
5. Green packaging design principles	All three packaging are plastic packaging and can be recycled		
6. Opening convenience principle	All 3 packages have spiral switches		
7. Creativity principle	All three packaging styles are canned, not novel, not creative		
8. Safety supervision principles	Package 1 and 2 do not have any food safety information Package 3 has limited information		

Table 1 (Continue)







Packaging Type: plastic			
	1	2	3
1.Safety principle	All three packages are plastic packed and are easily damaged.		
2.Profitable sales principle	The product packaging does not contain any information or images		
3.Principle of visual recognition convenience	The product packaging does not have any visual information or visual patterns		
4.Principle of series packaging	The product packaging does not have any information or graphics and does not have a brand image		
5.Green packaging design principles	All three products are plastic compression bags and are not environmentally friendly and recyclable.		
6. Opening convenience principle	All three packages are plastic compression bags, which are difficult to open		
7. Creativity principle	All three packaging types are plastic compression bags, which are not innovative.		
8.Safety supervision principles	None of the three packagings have any legal regulations or product information		

Table 1 (Continue)

Packaging Type: vacuum			
	1	2	3
1.Safety principle	They are all vacuum packed, which has a small amount of safety, but the hidden dangers are great		
2.Profitable sales principle	With a few decorative elements		
3.Principle of visual recognition convenience	Has little product information and visuals		
4.Principle of series packaging	Has a small amount of brand visuals, but no recognizable impression		
5.Green packaging design principles	The packaging of the three products is vacuum bag, which is not worth recycling.		
6. Opening convenience principle	The packaging of the three products is vacuum bag, which is inconvenient to tear open manually.		
7. Creativity principle	The packaging of the three products is vacuum bag, which is not innovative.		
8.Safety supervision principles	All three product packages have a small amount of food safety information		

2.1 Safety principle

Canned packaging: safe and complete. Plastic packaging: easily damaged. Vacuum packaging: safe to a certain extent, but with potential risks.

2.2 Profitable sales principle

Canned packaging: The first two types of packaging are unattractive, and the third type has a few patterns. Plastic packaging: No information or images, no sales appeal. Vacuum packaging: There are a few decorative elements, slightly attractive.

2.3 Principle of visual recognition convenience

Canned packaging: no visual product information. Plastic packaging: no visual information or graphics. Vacuum packaging: little product information and visual elements.

2.4 Principle of series packaging

Canned packaging: no visual brand image. Plastic packaging: no brand information or images. Vacuum packaging: a small amount of brand visuals, but not obvious.

2.5 Green packaging design principles

Canned Packaging: Recyclable plastic materials are in line with the principles of green design, as they support sustainability and reduce environmental impact through recyclability. Plastic Packaging : Generally not in line with green design principles due to its environmental impact, non-recyclability, and contribution to waste. Vacuum Packaging : Often not in line with green design principles, as it is typically not recyclable and can contribute to environmental issues.

2.6 Opening convenience principle

Canned packaging: all with screw switches, easy to open. Plastic packaging: difficult to open, inconvenient to use. Vacuum packaging: difficult to tear open manually, inconvenient to use.

2.7 Creativity principle

Canned packaging: Canned packaging, no novelty. Plastic packaging: No innovation, no creativity. Vacuum packaging: No innovation, no creativity.

2.8 Safety supervision principles

Canned packaging: No food safety information for the first two types, limited information for the third type. Plastic packaging: No legal regulations or product information. Vacuum packaging: There is a small amount of food safety information, but it is not sufficient.

2.9 Summary of current Dongjiang fish product packaging issues

Through the investigation of the eight basic principles of packaging design, the researcher found that there are currently 9 different shapes of Dongjiang fish packaging materials, which are divided into three categories: canned, vacuum packed and plastic. After analyzing the eight principles of packaging design theory, the researcher concluded that the existing Dongjiang fish packaging styles are single and lack Safety principle, Profitable sales principle, green packaging design principles, Creativity principle. Although they meet the basic functions of packaging design, they fail to effectively convey the cultural and historical characteristics of Dongjiang Lake.

Step 3: Dongjiang Lake tourists, Dongjiang fish shops

3.1 Through the questionnaire survey of 384 tourists from Dongjiang Lake.

3.1.1. Gender.

	Male	Female
1. What is your gender?	193(50.16%)	191(49.87%)

Analysis conclusion: According to the data table, men participated in the survey of 50.16% and women accounted for 49.87%. The proportion of the two was similar, showing the characteristics of relatively balanced gender distribution.

3.1.2. Age group.

2. Your age group?	18 years and below	18-35 years	35-60 years	60 years and above
	43 (11.17%)	158 (41.3%)	123 (31.95%)	60 (15.58%)

Analysis conclusion: According to the data table, among the people participating in the survey, the proportion of people aged 18-35 is the highest, accounting for 41.3% of the total number, followed by people aged 35-60, accounting for 31.95%, those aged 60 and above, accounting for 15.58%, and those under 18, accounting for 11.17%. It can be seen that people aged 18-35 are the main group participating in the survey.

3.1.3. Dongjiang fish products in market are easy to carry.

3.Do you think Dongjiang fish products in market are easy to carry?	Good	Average	Poor
	79 (20.52%)	124 (32.47%)	181 (47.01%)



Analysis conclusion: According to the data table, 47.01% of the participants thought that Dongjiang fish products on the market were not convenient to carry, while only 20.52% of the participants thought that they were convenient to carry. Another 32.47% of the participants thought that they were just average. Overall, most people thought that Dongjiang fish products on the market were not very convenient to carry.

3.1.4. When buying Dongjiang fish products, pay attention to the packaging style.

4.When buying Dongjiang fish products, has the packaging style ever attracted your attention?	Yes	No	General
	201	98	85
	(52.21%)	(25.71%)	(22.08%)

Analysis conclusion: According to the data table, when buying Dongjiang fish products, 52.21% of people said that the packaging style would attract their attention, 25.71% said it would not, and 22.08% said it was just so-so. It can be seen that more than half of the people will pay attention to the packaging style when buying Dongjiang fish products, which shows that packaging design has a certain influence on consumers' purchasing decisions.

3.1.5. Dongjiang fish product packaging preference.

5. Which of the following Dongjiang fish product packaging do you like best?			
	1. Canned	2.plastic	3.vacuum
	193(50.39%)	106(27.53%)	85(22.08%)

Analysis conclusion: According to the data table, among the people who participated in the survey, the most popular packaging for Dongjiang fish products is canned, accounting for 50.39%, followed by plastic packaging, accounting for 27.53%, and the least popular is vacuum packaging, accounting for 22.08%.

3.1.6. Spend more money on products with more beautiful packaging designs.

6. Would you be willing to pay more for a product with a more beautiful packaging design?	1. Yes	2.No
	216(56.36%)	168(43.64%)

Analysis conclusion: According to the data table, 56.36% of the respondents said they were willing to pay more for products with more beautiful packaging designs, while 43.64% of the respondents said they were unwilling to do so. Therefore, most of the respondents attach a certain degree of importance to the aesthetics of product packaging design and are willing to pay extra for it.

3.1.7. Packaging design conveys a message.

7. What messages do you think product packaging design should convey?	1. Product functions and features	2. Brand image and values	3.Origin information	4. Product ingredients and manufacturing process
	380 (98.96%)	384 (100%)	379 (98.7%)	381 (99.22%)

Analysis conclusion: According to the data table, participants believe that the information that product packaging design should convey mainly includes brand image and values (100%), product ingredients and manufacturing process (99.22%), product functions and characteristics (98.96%), and origin information (98.7%). It can be

seen that brand image and values play a vital role in product packaging design, followed by product ingredients and manufacturing process, product functions and characteristics, and origin information. Therefore, when designing product packaging, the brand image and values should be highlighted, and the ingredients, manufacturing process, and functional characteristics of the product should be clearly displayed on the packaging, while providing clear origin information.

3.1.8. Packaging design attracts.

8.What aspect of the packaging design first attracted you?	1. Color	2. Text design	3.Sample picture display	4. Clear text description	5.Packaging materials
	365 (95.06%)	379 (98.7%)	376 (97.92%)	383 (99.48%)	364 (94.55%)

Analysis conclusion: According to the data table, the main aspect that attracts participants when choosing packaging design is clear text description, accounting for 99.48%. The second is text design, accounting for 98.7%, sample picture display accounting for 97.92%, color accounting for 95.06%, and packaging material accounting for 94.55%. It can be seen that clear text description plays a vital role in attracting consumers' attention.

3.1.9. Good packaging design should have.

9.What do you think a good packaging	1. Unique shape and structure	2. Practicality	3. unique	4. colors

design should have?	122 (31.69%)	91 (23.9%)	86 (22.34%)	85 (22.08%)
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Analysis conclusion: According to the data table, the respondents believe that the characteristics of good packaging design mainly include unique shape and structure (31.69%), practicality (23.9%), uniqueness (22.34%) and color (22.08%). Among them, unique shape and structure are the packaging design elements that respondents value most, accounting for the highest proportion. Practicality and uniqueness also received a considerable proportion of attention, while color was slightly less important in the minds of respondents. Therefore, a good packaging design should focus on unique shape and structure, while taking into account practicality and uniqueness.

3.1.10. Opinions on the packaging of Dongjiang fish currently sold on the market.

10.What do you think of the Dongjiang fish packaging on the market now?	1. Good	2. Average	3. Poor
	93 (24.16)	109 (28.57%)	182 (47.27%)

Analysis conclusion: According to the data table, the evaluation of Dongjiang fish packaging on the market is relatively scattered. 24.16% of people think the packaging is good, 28.57% think it is average, and 47.27% think it is not good. Overall, more than half of the people evaluate Dongjiang fish packaging as average or not good, and there may be some room for improvement.

3.1.11. Suitable packaging for preserving fish

11.Which packaging is better for preserving fish?	1. Canned	3.plastic	3. vacuum
	193(50.39%)	26(6.75%)	165(42.86%)

Analysis conclusion: According to the data table, the respondents believe that canned (50.39%) and vacuum packaging (42.86%) are more suitable for preserving fish, while plastic packaging (6.75%) is less recognized. Therefore, canned and vacuum packaging are considered better ways to preserve fish.

According to a questionnaire survey of 384 Dongjiang Lake tourists, male participants accounted for 50.16% and female participants accounted for 49.87%, with a relatively balanced gender distribution. In terms of age distribution, the 18-35 age group is the largest, accounting for 41.3%, followed by the 35-60 age group, accounting for 31.95%, 60 years old and above accounted for 15.58%, and under 18 years old accounted for 11.17%, indicating that 18-35 years old is the main participating group.

Regarding Dongjiang fish products on the market, 47.01% of people think it is not portable, 20.52% think it is portable, and 32.47% think it is average. 52.21% of respondents will pay attention to the packaging style when purchasing, 25.71% will not, and 22.08% said it is average. 50.39% of people like canned packaging the most, followed by plastic packaging (27.53%), and vacuum packaging the least (22.08%). 56.36% of respondents are willing to pay more for more beautiful packaging, and 43.64% are unwilling. Respondents believe that the main information that packaging should convey includes brand image and value (100%), product ingredients and manufacturing process (99.22%), product functions and characteristics (98.96%) and origin information (98.7%).

In terms of packaging design that attracts consumers, 99.48% of people think that clear text description is the most important, followed by text design (98.7%), sample picture display (97.92%), color (95.06%) and packaging materials (94.55%). For

good packaging design, 31.69% of people think it should have a unique shape and structure, 23.9% think it should be practical, 22.34% emphasize uniqueness, and 22.08% emphasize color. For the current Dongjiang fish packaging on the market, 24.16% of people think it is good, 28.57% think it is average, and 47.27% think it is not good. In terms of packaging suitable for preserving fish, 50.39% of people think canned is the best, 42.86% think vacuum packaging is good, and only 6.75% choose plastic packaging.

According to the results of the survey, it is recommended to pay attention to the following points in the design of Dongjiang fish product packaging: improving the portability of packaging to meet the needs of consumers. Strengthen brand image and product information transmission in packaging design. Enhance the attractiveness of packaging design, including the clarity of text description and the display of example pictures. The design of unique and practical packaging, while considering consumers' awareness of the value of packaging.

3.2 Through the questionnaire 5 Dongjiang fish shops and found that

3.2.1. Sales of Dongjiang fish products.

1.How are the sales of Dongjiang fish products in your store?	Good	Average	Poor
	5(100%)	0	0

Analysis conclusion: According to the data table, the sales evaluation of Dongjiang fish products in your store to "Good" is 100%, and a total of 5 people have been effectively filled in. Therefore, it can be concluded that Dongjiang Fish products are well sold in your store and are favored by customers.

3.2.2. The most popular Dongjiang fish in current packaging.

2. Which of these three packaging is the most popular at present?	Canned	plastic	vacuum
	3(60%)	1(20%)	1(20%)

Analysis conclusion: According to the data table, the sales of canned Dongjiang fish are the best, accounting for 60%, followed by plastic and vacuum installations, and the sales volume accounts for 20%.

3.2.3. Dongjiang fish products are not convenient to carry..

3. Do you think Dongjiang fish products are easy to carry?	Good	Average	No good
	1(20%)	1(20%)	3(60%)

Analysis conclusion: According to the data table, 60% of people chose (POOR), 20% of people chose to be good, 20% of people chose to be generally chosen. (AVERAGE). Therefore, most people think that Dongjiang fish products are not easy to carry.

3.2.4. Today's Dongjiang fish products reflect the characteristics of Dongjiang Lake.

4. Do you think the current Dongjiang fish products can reflect the characteristics of Dongjiang Lake?	Good	Average	Poor
	0	1(20%)	4(80%)

Analysis conclusion: According to the survey data, 80%of people think that the current Dongjiang fish products are not good, and 20%of people think it is average. It can be inferred that the current Dongjiang fish products fail to reflect the characteristics of Dongjiang Lake well, and there is a lot of room for improvement.

3.2.5. Currently, the raw materials of Dongjiang fish products are not environmentally friendly and inconvenient to use.

5. Do you think the current Dongjiang fish product materials are environmentally friendly and easy to use?	Good	Average	not good
	1(20%)	1(20%)	3(60%)

Analysis conclusion: According to the data table, 60%of people think that the current Dongjiang fish product materials are not environmentally friendly and are not easy to use. 20% of people think that it is average, and 20% of people think it is good. Therefore, most people have a negative evaluation of the environmental protection and ease of use of the current Dongjiang fish product materials. Producers are advised to improve product materials to improve environmental protection and ease of use.

3.2.6. The appearance of Dongjiang fish products is beautiful now.

6. Do you think the current Dongjiang fish products look beautiful?	Good	Average	Poor
	0	1(20%)	4(80%)

According to the data table, 80%of the people chose "Not Poor" for the current evaluation of the appearance of Dongjiang fish and fish products, and 20%chose "General Average", and no one chose "Good Good". On the whole, most

people are not satisfied with the appearance of the current Dongjiang fish and fish products.

3.2.7. Main selling points of packaging products required by Dongjiang fish.

7. What do you think are the main selling points of the packaging products that Dongjiang fish need?	1. We can start from Dongjiang Lake, the birthplace of Dongjiang fish, and publicize the advantages, geographical location and ecological environment of Dongjiang Lake.
	2. There are many fake and inferior Dongjiang fish on the market, and customers need to be able to identify genuine products and anti-counterfeiting products. Therefore, the packaging material must be environmentally friendly and have an anti-counterfeiting label on it.
	3. Many tourists like to buy Dongjiang fish as a gift, so you can add the stories related to the East Jianghu packaging on the packaging of Dongjiang fish.
	4. We must incorporate the living habits and lifestyle of the Dongjiang Lake people into the product packaging so that consumers can feel the cultural spirit of our Dongjiang Lake and make tourists linger.
	5. Dongjiang Lake itself can drink very clean drinking water. Therefore, it is necessary to highlight the water without pollution, and it is best to let consumers know this.

A total of 5 valid questionnaires were collected in this survey, and all the respondents answered the questions in the questionnaire. The survey results show that Dongjiang fish products have performed well in the respondents' stores, but there are insufficient to varying degrees of product in terms of convenience, characteristics, material environmental protection, and appearance. All interviewees said that the sales of the Middle East Jiangyu products in the store were good, accounting for 100%. This shows that Dongjiang Fish products have a certain sales foundation and popularity in the market. In terms of product types, the market performance of canned Dongjiang fish

products is the best, accounting for 60%, followed by plastic and vacuum, each accounting for 20%. This shows that canned products are more popular in the market, which may be due to its facilitation and preservation characteristics. In terms of carrying convenience, only 20% of the respondents believe that Dongjiang fish products are easy to carry, and 60% of the respondents believe that it is inconvenient to carry. This shows that in terms of product design and packaging, it also needs to further enhance its portability to meet the needs of consumers. For whether the product can reflect the characteristics of the East Jianghu, 80% of the respondents expressed their dissatisfaction, and only 20% of the respondents thought it was average. This shows that the current Dongjiang fish products have a large deficiency in reflecting the characteristics of regional characteristics. It is necessary to strengthen the innovation of product design and packaging to better reflect the characteristics of Dongjiang and Lake. In terms of material environmental protection and ease of use, 60% of the respondents also expressed dissatisfaction, and only 20% of the respondents thought it or generally. This shows that there are certain problems in the selection and use of Dongjiang fish products in Dongjiang. It is necessary to pay attention to environmental protection and ease of use, and improve product quality and user experience. For the evaluation of the appearance, 80% of the respondents expressed dissatisfaction, and only 20% of the respondents thought it was average. This shows that there is a lot of room for improvement in the design of Dongjiang fish products in terms of design. It needs to pay attention to the visual effects and aesthetics of the product to attract more consumers.

According to the results of this survey, in response to the problems and deficiencies of Dongjiang fish products, the following suggestions are put forward: strengthen the innovation of product design and packaging, enhance the portability and aesthetics of the product, to attract more consumers. Incorporate more characteristic elements of Dongjiang Lake in product design and packaging to better reflect regional characteristics and enhance the cultural value of the product. Pay attention to

environmental protection and ease of use, choose environmental protection materials, optimize product use experience, and improve product quality and user satisfaction.

Step 4: Design and develop Dongjiang fish packaging 3 design works

4.1 Packaging Design Briefs

4.1.1. The historical characteristics of Dongjiang Lake:

At the end of primitive society, many clans and tribes formed a large tribal alliance for land wealth and to deal with wars caused by the struggle for interests. Shennong, also known as Lieshan, was both the patriarch of the clan and the leader supported by the southern tribal alliance. In the Qitianling Mountain area of the Wuling Mountains, the watershed between the Yangtze River Basin and the Pearl River Basin, he invented the world's earliest agricultural tool [lei] using hardwood forks and pioneered primitive agriculture of slash-and-burn farming and burning (lie) mountains to open fields. In the Qin and Han Dynasties, people associated him with the Yan Emperor and called him "Yandi Shennongshi" at the same time. The annotation said that "he was called Yandi because he was the king of fire virtue, and he was called Shennong because he made lei and hoes", "he taught people to farm, so he was called Shennongshi in the world." Shennong Yan Emperor, together with Huangdi, is called "Yanhuang" and is the ancestor of Chinese civilization. According to legend, Shennong and his mother tasted hundreds of herbs in the hinterland of Wuling Mountains and saw a kind of grass they had never seen before. In order to solve the survival problems of the people, Shennong once "encountered 70 poisons in one day", which means that he tried up to 70 kinds of plants in one day, which was very harmful to his body because all wild plants are more or less poisonous. This time Shennong had just picked it; his mother was worried that her son would be poisoned again, so her maternal love made her rush to grab it and taste it herself first. Unexpectedly, the grass was very poisonous, and his mother died. Legend of Anren, Yanling, Zixing(Dongjiang lake): Shennong tasted hundreds of herbs and unfortunately died of poisoning on the border of Anren and

Yanling. Before his death, he instructed to be buried in "Tangbian" in Zixing(Dongjiang lake), that is, Miaoshan next to Tangshi Hot Spring.

Shennong tasting hundreds of herbs is the earliest known story of the creation of medicine in the world. Chaling County in southeastern Hunan is the place where Shennong is said to have discovered the edible and medicinal value of "tea", hence the name Chaling. Not only Chaling, but also Beihu District, Suxian District, Zixing City(Dongjiang lake), Anren County, Jiahe County, Rucheng County and other places in Chenzhou have folk legends about Shennong tasting hundreds of herbs. can be seen in Figure 7.



Figure 7 Portrait of Shennong tasting hundreds of herbs

Source: <http://www.360doc.com>

It is said that a long time ago, a famous Feng Shui master passed by Dongjiang Lake He saw: the vast blue water and the green mountains in the distance. The vast blue water, the ripples of water waves; the green mountains in the distance, the rugged mountains hidden. The seagulls were startled, two by two, breaking through the green jade; the wild egrets flew over, both of them broke through the green glass. A few pieces of colorful clouds floated in the distance; a few ancient locust trees, the branches

were uneven and hung in the setting sun. Pangu created a unique Feng Shui place, and the common people were free and happy like gods. The master lingered here for more than half a month. When he left, he praised: "The green dragon on the left and the white tiger on the right, it is really a treasure land!" Su Dan, who was well versed in medicine and knew all kinds of medicines, boiled orange leaves with well water to treat the plague, and then rode a crane to heaven, leaving behind the famous story of "The Fragrant Orange Well". can be seen in Figure 8.



Figure 8 Crane Legend Portrait

Source: <https://www.163.com/>

4.1.2. The cultural characteristics of Dongjiang lake:

Table 2 The cultural characteristics of Dongjiang lake

	Dongjiang Dam	Mi Man Xiao Dongjiang	Tushita Lingyan	Dongjiang Huayue Night
story	Dongjiang Dam is a famous scenic spot in Dongjiang Lake. The dam is magnificent and majestic	Dongjiang Lake is a famous scenic spot with turquoise water, drifting fishing boats and golden fishing nets drawing a beautiful arc in the sky.	There is a karst cave on Doushita Island on Dongjiang Lake that was formed over 320 million years ago.	"Dongjiang Flower Moon Night" is a famous Dongjiang Lake scenic spot and the "Venice of the Oriental Water City".
Line	Straight line (Modern architecture, so the lines are straight)	Arc (Arc, landscape, landscape lines, so it is an arc)	Curve (Cave, so the lines are curved)	Curve (Lanterns, flower boats, so the lines are curves)
Shape	Trapezoidal, rectangular (Because it is a modern building, the shape is similar to a trapezoid, rectangular)	Abstract shape (Because it is a mountain, water, boat, fishing net, so it is an abstract shape)	Stone shape (Because it is a karst cave, there are many stones inside, so it is in the shape of stones.)	Lanterns and flower boats are in the shape of lanterns (because Huayue Night is a performance.)

Table 2 (Continue)

	Dongjiang Dam	Mi Man Xiao Dongjiang	Tushita Lingyan	Dongjiang Huayue Night
Form	Water flow, waterfall, modern trapezoidal building form	There is a boat in the lake and a man casting a net	There are many cave stones and a door plaque	Lanterns and flower boats floating on the water
Color	Blue, because the representative color of Dongjiang Lake is blue	Blue, because the representative color of Dongjiang Lake is blue	Blue, because the representative color of Dongjiang Lake is blue	Blue, because the representative color of Dongjiang Lake is blue
Texture	The texture of straight lines, because it is a modern building	The texture of the painting, because it is a scene of mountains, rivers and boats	Stone and historical texture, because time is long and there are many years of history	The texture of joy, because the scene is very lively and there are blessing and prayer sessions
Mark making and materiality	Digital Printing	Digital Printing	Digital Printing	Digital Printing

Source: Designed by researchers

This table 2 summarizes the cultural characteristics of different areas of Dongjiang Lake. The representative color of Dongjiang Lake is blue. If Dongjiang Lake is an oil painting, then blue is the main color of the painting; if you look down at Dongjiang Lake from the sky, it is a blue world, like a sapphire inlaid on the surface of the earth. (Data source: Dongjiang Lake Tourism Area). can be seen in table 2.

Dongjiang Dam is a famous scenic spot in Dongjiang Lake. Its magnificent modern architecture is mainly in the shape of straight lines, trapezoids and rectangles, reflecting the form of water flow, waterfalls and modern architecture. The representative color is blue, and the texture is the straight texture of modern architecture. Digital printing is used. can be seen in Figure 9.



Figure 9 Dongjiang Dam

Source: <https://www.meipian.cn/owg234a>

Mi Man Xiaodongjiang shows the green water of Dongjiang Lake, drifting fishing boats and golden fishing nets that draw beautiful arcs in the air. Its lines are arcs, and its shape is abstract. The form is a boat and people casting nets in the lake. The

representative color is also blue. The texture is a painting texture of mountains, rivers and boats. Digital printing is also used. can be seen in Figure 10.



Figure 10 Mi Man Xiao Dongjiang

Source: <https://tuchong.com/>

Doushita Lingyan is a karst cave formed 320 million years ago, located on Doushita Island in Dongjiang Lake. Its lines are curves, and its shape is stone. There are many cave stones and door plaques inside. The form shows the historical sense of cave stones. The representative color is still blue, and the texture is stone and historical texture. Digital printing is used. can be seen in Figure 11.



Figure 11 Tushita Lingyan

Source: <https://weibo.com/>

Dongjiang Huayue Night is a famous scenic spot in Dongjiang Lake, known as the "Venice of Oriental Water City". The landscape features curved lanterns and flower boats in the shape of lanterns, in the form of lanterns floating on the water, the representative color is blue, the texture is a cheerful texture, the scene is very lively, with blessing and prayer activities, and digital printing is also used. can be seen in Figure 12.



Figure 12 Dongjiang Huayue Night

Source: CTE Cultural Tourism Exhibition

This table summarizes the main characteristics of Dongjiang fish. Its lines are mainly composed of curves and arcs, showing the shape of silverfish, with a curved body covered with scales. Its main colors are silver and green, and its skin is smooth and fine in texture. In terms of value, its scales are richly decorated, and it also has flowing water and landscape decorations. The table points out that digital printing is used as a production method to present these characteristics. can be seen in Figure 13.

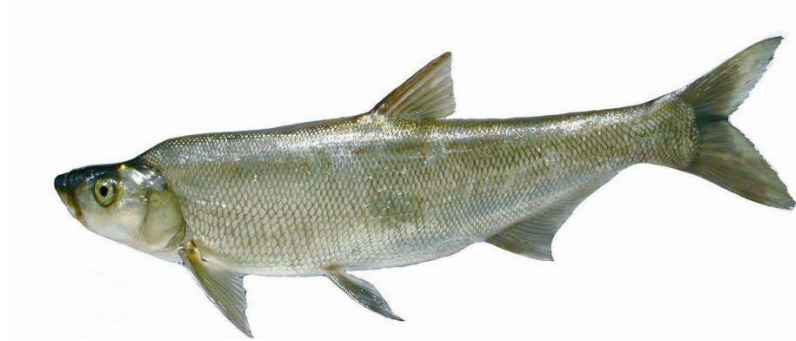


Figure 13 Dongjiang fish

Source: <https://baike.baidu.com/>

4.2 Creative Conceptualization

4.2.1. Extract characteristics according to the theory of packaging design

Table 3 Extract characteristics according to the theory of packaging design

	feature
Safety principle	canned
Profitable sales principle	Dongjiang Lake color: blue, Vegetation green, mountains gray, Packaging font black
Principle of visual recognition convenience	National drinking water grade one standard, 5A-level tourist attractions, Vegetation coverage reaches 80%, catfish, China National Geographic Products, Crude protein $\geq 18\%$; unsaturated fatty acid $\geq 5.9\%$
Principle of series packaging	Consistent design style
Green packaging design principles	PET
Opening convenience principle	spiral open
Creativity principle	Environmentally friendly, clean and innovative design style
Safety supervision principles	Dongjiang fish element table, food safety table, food safety mark, genuine mark

Source: Designed by researchers

According to the packaging design theory, the table summarizes the key features of Dongjiang Lake products. First, the product is canned to achieve the principle of safety, and its packaging is blue as the theme, with vegetation green and mountain gray, and black fonts to meet the principle of profitable sales. Under the principle of convenient visual identification, the product meets the national first-level drinking water standard, belongs to the 5A-level tourist attraction, and the vegetation coverage rate reaches 80%. It adopts the Chinese National Geographic brand and focuses on catfish products. The crude protein content is not less than 18%, and the unsaturated fatty acid content is not less than 5.9%. The product packaging maintains a consistent design style, conforms to the series packaging principle, and the materials are mainly polyethylene (PE) and glass, which conforms to the green packaging design principle. In order to improve the convenience of opening, a spiral opening design is adopted. In terms of creativity, the product packaging is mainly based on environmentally friendly, clean and innovative design styles, and uses the Dongjiang Lake fish element table, food safety table, food safety mark and genuine mark as safety guarantees to meet the safety principle. can be seen in Table 3.

4.3. Questionnaire summary features

Table 4 384 tourists from Dongjiang Lake

	Summary feature
384 tourists from Dongjiang Lake	The questionnaire survey of 384 Dongjiang Lake tourists aimed to understand consumer preferences and needs for packaging design. Results show a balanced gender distribution and age concentration between 18-35 years and 35-60 years. A significant portion (47.14%) find Dongjiang fish products inconvenient to carry, while packaging style influences purchasing decisions for 52.34% of respondents. Canning is favored by the majority (50.26%), and clear text descriptions (99.74%), text design (98.7%), and sample image display (97.92%) are key packaging design elements. Over half (56.25%)

	<p>are willing to pay more for attractive packaging. However, nearly half (47.4%) find current Dongjiang fish packaging inadequate. Recommendations include improving portability, enhancing brand image and information transmission, and prioritizing attractive and practical packaging design to meet consumer preferences.</p>
5 Dongjiang fish shops	<p>The survey collected 5 valid questionnaires, indicating a favorable performance of Dongjiang fish products in stores, yet revealing deficiencies in convenience, characteristics, environmental protection, and appearance. Canned products dominate the market, reflecting popularity due to convenience and preservation benefits. However, only 20% find Dongjiang fish products easy to carry, suggesting a need for enhanced portability in design. Dissatisfaction with reflecting regional characteristics (80%) and environmental protection (60%) underscores the necessity for innovative design and packaging, incorporating more Dongjiang Lake elements and prioritizing eco-friendly materials. Furthermore, dissatisfaction with appearance (80%) highlights the importance of improving visual aesthetics to attract consumers. Recommendations include enhancing design innovation, portability, and aesthetics, integrating more regional elements, and prioritizing environmental sustainability and user experience.</p>

Source: Designed by researchers

Results indicate a balanced gender distribution and age concentration between 18-35 years and 35-60 years. Nearly half of respondents find Dongjiang fish products inconvenient to carry, and packaging style influences purchasing decisions for over half of them. Canning is preferred by the majority, and clear text descriptions, text design, and sample image display are crucial packaging elements. More than half are willing to pay extra for attractive packaging. However, almost half find current Dongjiang

fish packaging inadequate. Recommendations include improving portability, enhancing brand image and information transmission, and prioritizing attractive and practical packaging design to meet consumer preferences. can be seen in Table 4.

4.4 Dongjiang fish packaging design

4.4.1 The historical characteristics of Dongjiang Lake product packaging design





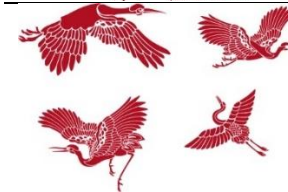
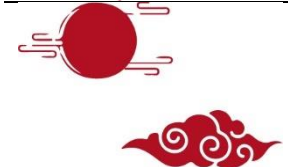
Figure 14 The historical characteristics of Dongjiang Lake Product packaging design

Source: Designed by researcher

The packaging design scheme of Dongjiang Lake products designed by researchers based on the historical characteristics of Dongjiang Lake¹. Through Packaging Design Theory, 8 major principles should be followed when designing packaging design and Elements of art. To study the culture of Dongjiang Lake, By extracting the characteristics of the two major themes of "Shennong Mythology" and "Crane Legend", 1. Shennong's body is heavy and his expression is majestic. The three-dimensional and richly decorated figure of Shennong is outlined by straight lines and arcs. The overall design uses red lines. Red is used as the main color. In China, red is the representative color of auspiciousness and mythology. The crane's shape design presents an and triangular wings. The cloud elements and red smoke elements are used as special textures. The overall design layout is compact and the layers are clear. Let consumers understand the historical stories of Dongjiang Lake. can be seen in Figure

14. And analyze the current problems existing in Dongjiang Fish packaging Then Questionnaire survey of tourists from Dongjiang Lake, Dongjiang fish shop and adds text and design icon descriptions of National drinking water grade one standard, 5A-level tourist attractions, Vegetation coverage reaches 80%, catfish, China National Geographic Products, Crude protein $\geq 18\%$; unsaturated fatty acid $\geq 5.9\%$ and Dongjiang fish element table, food safety table, food safety mark, genuine mark. The packaging is made of PET. can be seen in Table 5.

Table 5 The historical characteristics of Dongjiang Lake Product packaging design
Element table

	<p>National drinking water grade one standard, 5A-level tourist attractions, Vegetation coverage reaches 80%, catfish, China National Geographic Products, Crude protein $\geq 18\%$; unsaturated fatty acid $\geq 5.9\%$</p>
	<p>legends of fairy cranes</p>
	<p>Shennong myths</p>
	<p>Xiangyun element, red yen element</p>



Source: Designed by researchers

4.4.2 The cultural characteristics of Dongjiang lake Product packaging design



Figure 15 The cultural characteristics of Dongjiang Lake Product packaging design

Source: Designed by researcher

The packaging design scheme of Dongjiang Lake products designed by researchers based on the cultural characteristics of Dongjiang Lake². Through Packaging Design Theory, 8 major principles should be followed when designing

packaging design and Elements of art. To study the history of Dongjiang Lake, extract the four elements of Dongjiang Dam, Mi Man Xiao Dongjiang, Tushita Lingyan and Dongjiang Huayue Night, use straight lines and curves to outline the landscape of Dongjiang Dam, use arcs to draw the abstract shape of Mi Man Xiao Dongjiang, and use curves to draw the landscape of Tushita Lingyan District and the scene of colorful lights and towers. Then use straight lines to draw the scene of colorful lights and towers in Dongjiang Huayue Night District. can be seen in Figure 15. And analyze the current problems existing in Dongjiang Fish packaging. Then Questionnaire survey of tourists from Dongjiang Lake, Dongjiang fish shop and adds text and design icon descriptions of National drinking water grade one standard, 5A-level tourist attractions, Vegetation coverage reaches 80%, catfish, China National Geographic Products, Crude protein $\geq 18\%$; unsaturated fatty acid $\geq 5.9\%$ and Dongjiang fish element table, food safety table, food safety mark, genuine mark. The packaging is made of PET. can be seen in Table 6.

Table 6 The cultural characteristics of Dongjiang Lake Product packaging design
Element table

	<p>National drinking water grade one standard, 5A-level tourist attractions, Vegetation coverage reaches 80%, catfish, China National Geographic Products, Crude protein $\geq 18\%$; unsaturated fatty acid $\geq 5.9\%$</p>
	<p>Dongjiang Dam, Mi Man Xiao Dongjiang, Tushita Lingyan, Dongjiang Huayue Night</p>



Source: Designed by researchers

4.4.3 The cultural characteristics of Dongjiang lake Product packaging design




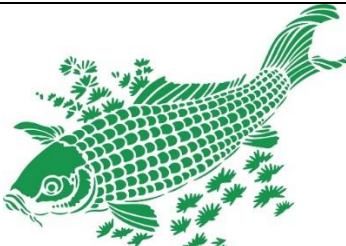




Figure 16 The Features characteristics of Dongjiang Lake Product packaging design

Source: Designed by researcher

The packaging design scheme of Dongjiang Lake products designed by researchers based on the Features characteristics of Dongjiang Lake³. Through Packaging Design Theory, 8 major principles should be followed when designing packaging design and Elements of art. Researchers analyze characteristics of Dongjiang fish Its lines are mainly composed of curves and arcs, showing the shape of silverfish, with a curved body covered with scales. Its main colors are silver and green, and its skin is smooth and fine in texture. In terms of value, its scales are richly decorated, and it also has flowing water and landscape decorations. The table points out that digital printing is used as a production method to present these characteristics. can be seen in Figure 16. and analyze the current problems existing in Dongjiang Fish packaging Then Questionnaire survey of tourists from Dongjiang Lake, Dongjiang fish shop and adds text and design icon descriptions of National drinking water grade one standard, 5A-level tourist attractions, Vegetation coverage reaches 80%, catfish, China National Geographic Products, Crude protein $\geq 18\%$; unsaturated fatty acid $\geq 5.9\%$ and Dongjiang fish element table, food safety table, food safety mark, genuine mark. The packaging is made of PET. can be seen in Table 7

Table 7 The Features characteristics of Dongjiang fish Product packaging design Element table

 <p> •天下第一鲜• 100% 来自东江湖 东江湖养殖 富含DNA 天下第一鲜 湖南东江湖鱼 5.9% 不饱和脂肪酸 18% 粗蛋白含量 </p>	<p> National drinking water grade one standard, 5A-level tourist attractions, Vegetation coverage reaches 80%, catfish, China National Geographic Products, Crude protein $\geq 18\%$; unsaturated fatty acid $\geq 5.9\%$ </p>
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	The Features characteristics of Dongjiang fish																		
	flowing water decoration, scenery decoration																		
<div><div></div><div><p>● 营养成分表 ●</p><table><tr><th>项目</th><th>每100克</th><th>营养素参考值%</th></tr><tr><td>能量</td><td>1549千焦</td><td>18%</td></tr><tr><td>蛋白质</td><td>30.1克</td><td>50%</td></tr><tr><td>脂肪</td><td>27.2克</td><td>45%</td></tr><tr><td>碳水化合物</td><td>1.8克</td><td>1%</td></tr><tr><td>项目</td><td>1208毫克</td><td>60%</td></tr></table></div></div>	项目	每100克	营养素参考值%	能量	1549千焦	18%	蛋白质	30.1克	50%	脂肪	27.2克	45%	碳水化合物	1.8克	1%	项目	1208毫克	60%	Dongjiang fish element table, food safety table, food safety mark, genuine mark
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碳水化合物	1.8克	1%																	
项目	1208毫克	60%																	
	PET																		

Source: Designed by researchers

Researchers Through Packaging Design Theory, 8 major principles should be followed when designing packaging design and Elements of art. And studied the cultural history of Dongjiang Lake and designed 3 packaging design schemes

through questionnaires of 384 Dongjiang Lake tourists and 5 Dongjiang fish shops: 1st scheme the historical characteristics of Dongjiang Lake Product packaging design. 2nd scheme the cultural characteristics of Dongjiang Lake Product packaging design. 3rd scheme The Features characteristics of Dongjiang fish Product packaging design.

4.5 Interviews with Dongjiang fish shop (1 person) and designer (2 person)

4.5.1 Expert Interviews

The researchers designed three packaging for Dongjiang Lake products and, through communication with Dongjiang fish expert Li Zhiping, came up with suggestions for improving the packaging of Dongjiang fish products.

Table 8 Dongjiang fish expert advice Element table

Dongjiang fish expert advice	
Researcher	Li Zhiping
1. What advantages do you think the improved Dongjiang fish packaging has compared to the original Dongjiang fish packaging?	The improved packaging of Dongjiang fish is excellent. The correct improvement method shows that a lot of research has been done on the cultural history of Dongjiang Lake and the Dongjiang fish products themselves. I am very happy about this. Compared with the original product packaging, the improved product packaging will make consumers more memorable, making the characteristics of Dongjiang fish and Dongjiang Lake very clear on the product packaging. At the same time, it is also very good to use canned packaging. The original Dongjiang fish used multiple packaging, which was difficult to manage and

	the cost was not uniform. This is a good improvement. My favorite is the second solution. It shows the characteristics of Dongjiang Lake vividly. Great!
2. Which of these three options do you like best and why?	My favorite is the second one. It shows the characteristics of Dongjiang Lake vividly. The history emphasized in the first one is too old, which is difficult to understand if you are not a local or a researcher. The third one uses Dongjiang fish, which is similar to other similar products. Although it is also very distinctive, I think the second one is the best among the three packaging designs.
3. Could you please give some guidance and suggestions based on your own experience?	You can add some text descriptions next to the illustrations on the second packaging solution, so that consumers can understand it better. Then use PE materials for packaging, and don't use glass jars, which are not convenient for transportation and need to control costs. Finally, you need to evolve another solution from the second packaging design solution, because Dongjiang fish has two flavors, spicy and original, and it is best to have a more obvious distinction.

Source: Designed by researchers

Through communication with Dongjiang fish expert Li Zhiping, the concluded that the improved packaging of Dongjiang fish demonstrates excellent

research into the cultural history of Dongjiang Lake and the products themselves. It enhances memorability for consumers, clearly highlighting the characteristics of Dongjiang fish and Dongjiang Lake. Canned packaging is appreciated for its convenience and cost efficiency. Among the three packaging designs, the second one vividly portrays the essence of Dongjiang Lake, preferred over others for its clarity and distinctiveness. Suggestions include adding text descriptions to illustrations, using PE materials for packaging instead of glass jars for better transportation and cost control, and developing another solution to distinguish between spicy and original flavors effectively. can be seen in Table 12.

4.5.2 Designer Discussions

The researchers designed three packaging for Dongjiang Lake products and, through communication with Designer Discussions Lu Qiang and Gao Shenghui, came up with suggestions for improving the packaging of Dongjiang fish products.

Table 9 Designer Discussions advice Element table

Designer Discussions advice		
Researcher	Lu Qiang	Gao Shenghui
1.What advantages do you think the improved Dongjiang fish packaging has compared to the original Dongjiang fish packaging?	From the perspective of visual design, the improved packaging is more in line with visual logic and aesthetic trends than the original packaging. It is also very helpful for the cultural dissemination of Dongjiang Lake. Overall, it is a good improvement. My suggestion is that the overall color is a bit monotonous, and you can try	The new packaging is obviously better than the old one, but the Chinese characters "湖南东江鱼" need to be redesigned, which lacks characteristics. It is too ordinary. Another thing is that the overall color matching can be tried a little more, trying to reflect

	more color combinations. Then you can also try more layouts.	the characteristics of Dongjiang Lake and meet the aesthetic trends of young people.
2.Which of these three options do you like best and why?	Of these three options, I prefer the second one because although I have never been to Dongjiang Lake, I can feel that it is a scenic and quaint tourist attraction.	I prefer the second option. I have been to Dongjiang Lake for tourism, and the illustrations on the packaging remind me of the scenes I saw when I went there. It is a wonderful feeling. But the overall design can be cut down a bit, and it looks a bit messy now.
3.Could you please give some guidance and suggestions based on your own experience?	As I said, there are many ways to try color combinations, and all three options are horizontal stripes. The lid of the can can also be designed in a certain way, which needs to be supplemented. Overall, it is an excellent improvement.	There are three aspects: font design, layout design, and color matching. Then, you can make some deletions to the illustrations and add some text descriptions.

Source: Designed by researchers

Through communication with designer Lu Qiang, he believes that the improved packaging of Dongjiang fish is praised for its alignment with visual design principles and cultural dissemination goals. While considered a good improvement

overall, suggestions include diversifying color combinations and layouts to avoid monotony. Among the three options, the second one stands out for its scenic representation, even for those unfamiliar with Dongjiang Lake. Further enhancements such as lid design and color exploration are suggested to maintain excellence in the improvement process.

Through communication with designer Gao Shenghui, he believes: The improved packaging is acknowledged as better than the old one, yet criticism is directed towards the lack of distinctiveness in the Chinese characters and the need for more vibrant color matching. Preference is expressed for the second option, as it evokes nostalgic feelings for Dongjiang Lake tourism. Suggestions include refining font, layout, and color matching, as well as streamlining illustrations and adding text descriptions for clarity.

Through communication with Dongjiang fish expert Li Zhiping, they believe that the improved Dongjiang fish packaging shows excellent research on Dongjiang Lake cultural history and products, highlights the characteristics of Dongjiang fish and Dongjiang Lake, and is remembered and welcomed by consumers. The canned packaging is appreciated for its convenience and cost-effectiveness. Among the three packaging designs, the second design best shows the essence of Dongjiang Lake and is favored for its clarity and uniqueness. Suggestions include adding text descriptions to illustrations, using PE materials instead of glass bottles for packaging to improve transportation and cost control, and developing another scheme to effectively distinguish between spicy and original flavors. In communication with designer Lu Qiang, he believes that the improved packaging meets the visual design principles and cultural communication goals, but suggestions include increasing the diversity of color combinations and layouts to avoid monotony. Among the three options, the second option stands out for its landscape expression, even for people who are not familiar with Dongjiang Lake. Further suggestions include lid design and color exploration to maintain excellence in the improvement process. In communication with designer Gao Shenghui, he believes that the improved packaging is better than the old one, but

criticism points to the lack of uniqueness of the Chinese characters and the need for richer color matching. He prefers the second option because it evokes nostalgic feelings about traveling to Dongjiang Lake. Suggestions included refining the font, layout, and color palette, and simplifying illustrations and adding text descriptions to improve clarity. can be seen in Table 13.

4.6 Final design

The researchers summarized Dongjiang fish expert advice and Designer Discussions advice and came up with 5 suggestions for modification. Experts in Dongjiang fish suggest enhancing packaging by incorporating text descriptions into illustrations, opting for PE materials over glass bottles, and devising innovative methods to distinguish between flavors. Additionally, they emphasize the importance of increasing diversity in color schemes and layouts. Designers further recommend enhancing the uniqueness of Chinese characters and enriching color combinations. Suggestions also include optimizing fonts, layouts, and colors for improved clarity, simplifying illustrations, and introducing text descriptions. Moreover, they propose focusing on lid design and exploring a wider range of colors to maintain excellence throughout the improvement process. can be seen in Table 14.

Table 10 Dongjiang fish expert advice and Designer Discussions advice Element table

Dongjiang fish expert advice and Designer Discussions advice
1. Add text descriptions to illustrations, use PET materials and develop new solutions to differentiate flavors.
2. Increase color and layout diversity.
3. Chinese characters need to be more unique.
4. Optimize fonts, layouts, colors, simplify illustrations, and add text descriptions.
5. Design lids and explore colors.

Source: Designed by researchers



Figure 17 Final design

Source: designed by researcher



Figure 18 Jar size

Source: designed by researcher



Figure 19 Final design

Source: designed by researcher

The key insights from the consultation with Dongjiang fish expert Li Zhiping and designers Lu Qiang and Gao Shenghui highlight the significant improvements made to Dongjiang fish packaging. These enhancements effectively capture the essence of Dongjiang Lake's cultural history and products, resonating positively with consumers. The canned packaging is particularly appreciated for its convenience and cost-effectiveness, with a preference for the second design due to its clarity and uniqueness. Suggestions for improvement include incorporating text descriptions into illustrations, using PET materials for better transportation, and refining color combinations and layouts to prevent monotony. And a red package was added because Dongjiang fish products have two flavors, one is regular and the other is spicy. can be seen in Figure 10. Because the canned samples collected by researchers

from Dongjiang Lake store were 85mm wide and 100mm long, the improved packaging size is also 85mm wide and 100mm long. can be seen in Figure 11

In the final design iteration, improvements were made to text design, color schemes, and pattern designs on the can lids, culminating in a packaging solution that effectively communicates Dongjiang Lake's cultural heritage and product attributes while meeting consumer preferences and industry standards. can be seen in Figure 12.



CHAPTER 5

CONCLUSION DISCUSSION AND SUGGESTION

This study focuses on the cultural and historical materials related to developing a packaging design for dongjiang fish: "a distinctive hunan specialty", then analyzes the existing packaging problems of Dongjiang fish products, and finally investigates and studies relevant personnel through online questionnaire interviews. After analysis and research, the statement and discussion of the conclusions are divided into three parts.

1. Conclusion

1. The researchers concluded through studying the cultural history of Dongjiang Lake: Dongjiang Lake is surrounded by mountains and has clear water, making it an ideal place for leisure, vacation and eco-tourism. Dongjiang Lake has four famous cultural symbols: Dongjiang Dam, Mi Man Xiao Dongjiang, Tushita Lingyan, Dongjiang Huayue Night. Dongjiang Lake also has wonderful historical stories such as Shennong tasting hundreds of herbs and the legend of the crane.

2. The researchers concluded through analyzing the existing packaging of Dongjiang fish products: the current Dongjiang fish packaging materials have 9 different shapes, which are divided into three categories: canned, vacuum packaging and plastic packaging. After analyzing the eight principles of packaging design, the researchers concluded that the existing Dongjiang fish packaging style is single, lacking the principles of safety, profitable sales, green packaging design and creativity. Although it meets the basic functions of packaging design, it fails to effectively convey the cultural and historical characteristics of Dongjiang Lake.

3. The researchers concluded through questionnaire surveys of tourists and shops in Dongjiang Lake that the packaging design of Dongjiang fish products should improve portability, strengthen brand image and product information dissemination, increase attractiveness, focus on clear text descriptions and sample picture displays, design unique and practical packaging, and meet consumers' needs for portability,

brand value and aesthetics; in addition, canning and vacuum packaging should be given priority to better preserve fish products, and innovations should be made in color and material selection to attract more potential consumers.

4. The researchers concluded through the design of Dongjiang fish product packaging that in the packaging design of Dongjiang fish products, 8 packaging design principles need to be followed, and canning should be used as the basis, and characteristic designs should be made from three perspectives: culture (Shennong tasting hundreds of herbs, crane legend), history (Dongjiang Dam, Mi Man Xiao Dongjiang, Tushita Lingyan, Dongjiang Huayue Night.), and Dongjiang fish.

2. Discussion

1. When studying the packaging of Dongjiang fish products, researchers suggested the need to use Dongjiang Lake's culture (Shennong tasting hundreds of herbs, the legend of the crane), history (Dongjiang Dam, Mi Man Xiao Dongjiang, Tushita Lingyan, Dongjiang Huayue Night.), and Dongjiang fish to highlight the product characteristics. This is similar to the research of Chen Rong (2017). Chen Rong proposed that the design of Dongjiang fish product packaging should be designed from three perspectives: farming culture, etiquette culture, and landscape culture. This is similar to the view of Xiao Diaoyi, a professor at the College of Biotechnology of Hunan Agricultural University, who believes that the connotation of the Dongjiang fish brand should be continuously enriched. The product packaging should be designed with fish as the theme to enrich the brand connotation.

2. The core of this study is to analyze the existing problems of Dongjiang fish packaging and provide help for subsequent packaging design and development. The researchers found that the existing Dongjiang fish packaging styles are single, they fail to effectively convey the cultural and historical characteristics of Dongjiang Lake. This is similar to Zhou Xiaowen's view. Zhou Xiaowen (2013) believes that Dongjiang fish products should have unified standards, unified packaging, and unified brands. The researchers concluded through research 8 major principles should be followed when

designing packaging design, namely: 1. Safety principle: Check the performance of existing packaging in protecting Dongjiang fish products from damage to ensure the safety and integrity of the product. 2. Profitable sales principle: Evaluate whether the packaging design is eye-catching and attracts the interest of potential consumers. 3. Principle of visual recognition convenience: Check whether the information on the packaging is clear and easy to understand and whether it contains sufficient product information. 4. Principle of series packaging: Evaluate whether the packaging design is consistent with the overall brand image and whether it can be quickly recognized by consumers. 5. Green packaging design principles: Check whether the packaging uses recyclable materials, whether it reduces environmental burden, and whether there are measures to reduce packaging waste. 6. Opening convenience principle: Evaluate whether the packaging design takes into account the ease of use of the product, including ease of opening, closing and storage. 7. Creativity principle: Examine whether the packaging design is creativity and adopts novel designs, shapes or structures. 8. Safety supervision principles: Check whether the packaging design complies with relevant regulations and standards such as food safety and drug labeling. This study is similar to the viewpoints in Gao, P., & Huo, K. (2015). The current situation, principles and innovative thinking of packaging design. This article proposes that packaging design should follow 1. Affinity principle. Packaging design should make people feel friendly and happy. 2. Eye-catching principle. In most cases, consumers always buy goods in many commodity stores and supermarkets, and sometimes they buy them impromptu. 3. Identifiability principle. The main function of packaging is to protect products. If consumers cannot identify the quality, capacity, characteristics, origin and usage of the packaging content, or even what the material inside is, then the ultimate purpose of protection will be affected. 4. Energy saving and environmental protection principle. While modern society meets human needs, it also brings about the problem of a large amount of resource and environmental damage, which makes people have to pay attention to the resource consumption and environmental pollution problems in the production and use of products.

3. The packaging design of Dongjiang fish products should improve portability, strengthen the brand image and product information dissemination, increase attractiveness, focus on clear text descriptions and sample picture displays, design unique and practical packaging, and meet consumers' needs for portability, brand value and aesthetics; in addition, canning and vacuum packaging should be given priority to better preserve fish products, and innovations should be made in color and material selection to attract more potential consumers. This is similar to Zhao Zihan's research. He believes that the packaging takes into account the particularity of Dongjiang fish food. The packaging is divided into inner and outer packaging. The inner packaging is vacuum compression packaging, and the outer packaging is aluminum foil paper bag packaging, which can prevent moisture and mildew, is easy to transport and protect the product, and does not take up space.

3. Suggestion

In the future, the packaging design of Dongjiang fish products can be designed with more environmentally friendly materials and more humanized designs and combined with the government's tourism products. 8 major principles that should be followed when designing packaging designer-depth analysis of the relationship between packaging design, brand image and marketing strategy, and further tap the potential of packaging design in enhancing brand value and achieving market competitive advantage. Continue to collaborate with industry experts and designers to collect feedback and continually improve product packaging design to ensure it is aligned with consumer needs and industry standards.

In order to improve the packaging design of Dongjiang fish products and effectively convey the cultural and historical characteristics of Dongjiang Lake, we suggest starting from the two aspects of environment and design. In terms of environment, give priority to the use of degradable or recyclable environmentally friendly materials, reduce packaging waste, design simple green packaging with environmental labels, and promote the use of multifunctional packaging and recycled materials. In

terms of design, integrate the natural landscape and historical and cultural elements of Dongjiang Lake into visual design and storytelling to enhance the cultural connotation of packaging. Pay attention to the functionality and portability of packaging, design packaging that is easy to open and close and easy to carry, and enhance the market recognition and attractiveness of products through unique shapes and innovative color and material combinations.



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