

Research on Sustainable Development of Kesi Industry Based on Digital Age

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Abstract: In the society with the rapid development of modern economy and culture, strengthening the protection and inheritance of intangible cultural heritage has become an important topic and task of the whole society. Kesi, as one of the representative intangible cultural heritages in Suzhou, is no exception. After the founding of the People's Republic of China, the Kesi industry in Suzhou has been reborn, but today it also faces some problems, such as lack of professional and technical personnel, poor market circulation, and lack of novelty in subject matter. By combing the origin, changes and inheritance of Kesi, summarizing the laws, and according to the characteristics of the digital age, seeking the scientific inheritance mode of Kesi is helpful for the sustainable development of Kesi, an important intangible cultural heritage.

1. Introduction

Kesi, the essence of Chinese silk art, is a silk handicraft with mulberry silk as raw material, raw silk as warp and colored cooked silk as weft. The difference between Kesi's weaving method and ordinary brocade is that it adopts the weaving method of "warp-breaking and weft-breaking", in which warp threads run through the fabric longitudinally, and then weft threads are interwoven with warp threads by color shuttles according to the pattern of the manuscript. The strength of silk is much higher than other silk crafts, so it can stand touching, rubbing, kneading, kneading and washing [1]. Among the silk artworks that have been preserved since the past dynasties, Kesi is well preserved, so it is called "the artistic fabric that is not bad for thousands of years" [2].

Looking at the Kesi market in China at present, most of them are ornamental classical calligraphy and painting and Buddhist painting Kesi works, which are weak in independent creation ability and the products can not meet the requirements of the times [3]. On the basis of literature research, combined with the field investigation and inductive analysis of Kesi industry and product status, and based on the characteristics of digital age, this paper makes a series of research from the aspects of Kesi technology inheritance and development and product innovation design. Focus on closely combining Kesi industry with modern life, and reappear the style of traditional handicraft Kesi. Therefore, the traditional handicraft Kesi can achieve sustainable development.

2. History and Development of Kesi

2.1 Cultural Value of Kesi

Kesi is a traditional handicraft in China and the essence of fabrics. Kesi, together with cloisonne, ivory carving, jade carving and embroidery, is called “the four special handicrafts in China”. Kesi mainly uses silk as the raw material, and interweaves raw warp threads and ripe weft threads dyed in various colors according to needs. Kesi is different from ordinary fabrics with its unique weaving method of “warp-breaking and weft-breaking”. The cloth made under this weaving method has delicate texture and strong stereoscopic impression. Kesi has the reputation of “Holy in Weaving”, and is also called “the art that is not bad for thousands of years”.

2.2 The History and Evolution of Kesi

China's Kesi started as early as the painted pottery and earthenware era, and existed around 2500 BC. by the Shang dynasty (1600-1046 BC), Kesi technology had been relatively perfect. With the continuous development, Kesi gradually evolved into silk as raw material in Tang Dynasty, and at the same time, Kesi technology was further developed and improved in Tang Dynasty on the basis of Han Dynasty. In the Tang Dynasty, Kesi patterns simplified overly complicated patterns and patterns, and the selected patterns were mainly geometric patterns.

In Song Dynasty, Kesi has made great progress in its original techniques, and its artistic style is mainly fresh, natural, beautiful and elegant. Many works in this period have become indispensable works in the development history of Kesi.

In Yuan Dynasty, gold was highly regarded, so gold silk was added to Kesi's works. Kesi's works in this period are gorgeous and rich, and have the characteristics of the times. Most of Kesi's works are portraits of emperors or queens, and another major theme is “religion”, which is mainly used for making Buddha statues and Thangka.

In the Ming Dynasty, “Kesi Works” was set up in the court to manage and control the production and product flow of Kesi in the whole country. Because the Ming government respected frugality, the development of Kesi slowed down during this period. In the Qing Dynasty, Kesi in the south of the Yangtze River continued to be monopolized by the royal family, and gradually Kesi became a symbol of “imperial power”. During the Republic of China, Kesi stopped production almost completely due to social unrest, and it didn't return to people's sight until liberation. At present, Kesi is mainly produced in Suzhou. However, under the impact of industrial mechanization, Kesi is gradually declining in the market, and now KESI is facing great challenges [4].

3. Problems in the Development of Kesi Industry

3.1 Inheritance and Lack of Successors

Suzhou Kesi is extremely labor-intensive and has high labor costs, especially Kesi artworks, which often take years to complete. Most enterprises of Kesi artworks and handicrafts are small in scale, with only 40 or 50 people in number. Most other Kesi artists are scattered among the people in the form of self-employed, with a small number and mostly middle-aged and young people. In addition, there are many folk Kesi artists who are also older. among those engaged in Kesi industry, the proportion of local or urban young people is very small, and most of those who study Kesi are foreign or rural people.

3.2 The Employment Treatment of the Industry is Relatively Low

Kesi mainly produces artworks, and its skills must be accumulated by predecessors and studied

for decades before reaching a considerable level. However, the employment treatment in this industry is relatively low, and it is difficult to achieve results in the short term. Kesi is different from mechanical manufacturing, which relies on the change of manual techniques and frequently changes shuttles, so it takes time and labor.

At the same time, under the market economy, relevant enterprises can no longer bear the heavy responsibility of cultivating inheritors. With the retirement and death of a group of elderly Kesi artists, there is no successor in Kesi skills. The inheritance of Kesi skills is facing a severe test of survival.

3.3 There Are Problems in the Way of Inheritance

At present, traditional handicrafts have been inherited in four ways: consanguinity, mentoring, enterprise and society. There are many problems in inheritance.

The first is blood relationship, which can be said to be the best way of inheritance at this stage, and the second is mentoring relationship, which is also the most common way of inheritance at present. However, due to the weakening of the relationship, teachers often have reservations about inheritance, resulting in a gap in inheritance.

Then there is the enterprise inheritance, which is based on the original technology to carry out short-term training to improve the skills of craftsmen. Moreover, the enterprise aims at profit, and cannot grasp the comprehensiveness of skill inheritance.

Finally, it is the way of social inheritance. Kesi is a skill that takes a long time. The general social organization studies it, and its main purpose is to understand and publicize Kesi, which can only reach the level of understanding at most, but it is only the fur in the fur.

3.4 There Are Defects in the Industrial System

Many Kesi enterprises in Suzhou have been restructured one after another, and many Kesi production has been transferred to rural areas. These Kesi farmers are at the end of the industrial chain, and they generally operate in a decentralized way. Kesi products are sold in the form of sample processing, and their own lack of product or pattern design and marketing ability, so the economic development space is limited. Moreover, the fairness of trade cannot be effectively guaranteed, and the extension and integration of traditional handicrafts into fashion industry, design industry and modern living space are insufficient, so it is difficult to become a symbolic industrial form in modern times.

4. Exploration on Sustainable Development of Kesi Industry in Digital Age

4.1 Innovative Design of Kesi Products

Kesi has exquisite workmanship and high artistic value. By using digital design, Kesi products are expanded to high-end fashion homes, apparel products, high-end customized ready-to-wear and dresses, which makes Kesi art practical, integrated into modern life and become high-end daily necessities.

High-end Kesi living products can be personal tailor. According to customer needs, computer software is used to design, such as the design of high-end wedding dress partially decorated by Kesi art, and the exquisite and practical clothing such as scarves and handbags partially decorated by Kesi, which can improve the taste of the wearer, and make the high-end handbags made by Kesi technology combine tradition with fashion, and have both use and collection value. High-end clothing products can be decorated with Kesi at the neckline, cuffs, pockets, hem and local key

decorative parts, which can improve the exquisiteness and value of clothing, set off the temperament and taste of the wearer, and become the carrier of high-end clothing brand value and create a unique brand style.

4.2 Optimization and Update of Kesi Production Tools

On the premise of not changing the technological characteristics of Kesi fabrics, the ancient traditional Kesi manufacturing process has become standardized and scientific by formulating unified product specifications and technological standards. Improve and optimize Kesi mechanical equipment, and improve Kesi mechanical equipment with reference to the research and development principles and working characteristics of computerized embroidery machine and electronic plain weaving machine [5].

The intelligent computer robot can be designed jointly with scientific researchers in the fields of machinery, IT, artificial intelligence, etc., and the Kesi pattern, longitude and latitude arrangement and combination method and other elements can be programmed into the textile robot to replace the pure manpower weaving, and finally the master will check it, and the mistakes will be corrected manually. The research and development of this textile robot can greatly shorten the production cycle, and can also meet the small batch production of traditional Kesi fabrics. There is no pollution in the whole production process. Through information-based intelligent management, clothing brand companies can independently purchase equipment for Kesi fabric production, which initially solves the problems that Kesi process techniques are difficult to learn and craftsmen are difficult to hire.

4.3 Expand Diversified Development Channels of Kesi

Most of the industrial forms of traditional handicrafts are family workshops and front shops and back shops. The existence of a traditional handicraft culture can remind people of the history and culture of this place, but we can not only preserve and protect traditional handicrafts, but also use them as a tourism resource and employment channel, and also as the basis for the nationalization and diversification of modern design.

These new forms, derived from the traditional forms of handicrafts, can be used as a part of the development of modern handicrafts, and at the same time, they can be combined with market economy and become a means to increase the added value of products. Kesi is suitable for weaving small-sized clothing and decorations, and can stand rubbing and washing. We can make use of these characteristics to produce in the field of advanced customization of modern clothing and household textiles with the requirements of small batch, fashion, individuality and humanity. On the basis of ensuring the quality of traditional handicrafts, we will further broaden the diversified development channels of traditional handicrafts.

4.4 Constructing the Entity of Talent Training

It is an urgent task to gather Kesi technical talents scattered among the people and train subsequent professionals. Through the mode of government support, industry cooperation and multi-party cooperation between enterprises and schools, relying on vocational schools or institutions of higher learning, an order-based talent training entity and Kesi research and development base should be established. Actively hire Kesi inheritors, celebrities and senior engineers to come to the site for guidance and teach some professional, targeted, practical and operable skills and techniques courses; School teachers can teach basic courses such as art appreciation, color composition, pattern, design and computer, and build a relatively complete

professional curriculum system, so that people can master professional systematic knowledge and skills.

According to the required talents, send employees with certain professional qualities to relevant schools for training; At the same time, experts and scholars are hired to give special lectures in enterprises, and through on-the-job training within enterprises, the requirements of the quantity and quality of talents to adapt to the development of Kesi industry are met, and a talent continuing education base and mechanism are established to promote the healthy growth of talents [6].

4.5 Establish Digital Virtual Museum and Expand the Popularization of Kesi Skills

The virtual museum constructed by virtual technology and network technology can break the limitations of physical museums, maximize the functions of museums, and meet the multi-level and all-round needs of consumers. Virtual museum can have both digital knowledge base of information resources and exhibition platform of works.

Through the promotion and publicity of virtual museums, Kesi skills will get more people's attention and love, and become a very effective way to promote the sales market of Kesi works. The establishment of digital virtual museum of Kesi handicrafts can greatly expand the exhibition space of the museum. You can also create a virtual manual workshop in the form of 3D animation in the virtual digital museum, so that the vast number of Kesi craft lovers can learn from the masters through the virtual workshop, so that young artists can master this traditional craft technology and keep learning and improving, and effectively promote the inheritance and development of Kesi craft.

5. Conclusion

Kesi inherits the great achievements of Chinese silk weaving technology and is a rare artistic treasure. In the digital age, it is necessary not only to restore Kesi's industrial innovation and make it reappear, but also to carry forward it. What belongs to the nation is the world. Kesi inherits the great achievements of Chinese silk products. Because of its profound cultural connotation and unique Chinese characteristics, through the addition of innovative design, it can produce modern products that fit the life of contemporary people and are endowed with humanistic connotation. As long as we constantly innovate Kesi techniques, themes and product forms, and use reasonable and effective management methods, the traditional Kesi technology will surely glow more brilliantly and realize the sustainable development of Kesi industry.

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