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Research on Ceramic Technology Innovation and Cultural and Economic Growth Creative Industry

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Abstract

In recent years, with the development of productivity and changes in people's consumer demand, cultural and creative industries have developed rapidly. Jingdezhen, a thousand-year-old porcelain capital, is no exception. Due to the high integration of the cultural and creative industries and the continuous optimization and upgrading of the ceramics industry in Jingdezhen, the ceramic cultural and creative industries have become the products of the new era.This article focuses on the connotation of supply-side reform, the definition of cultural and creative industries, the characteristics of ceramic cultural and creative industries, consumer psychology analysis, investment and financing analysis, technological innovation research, industrial integration and industrial cluster research, business model discussion, and talent training model research. And other aspects to analyze and put forward countermeasures for the development of Jingdezhen ceramic culture creative industry.

Keywords

Ceramic technological,Innovation,Economic Growth Creative Industry.

1. Theories on Technological Innovation and Cultural Creative Industries

(I) Technological innovation promotes cultural and creative economic growth

The theory that technology promotes the economic development of cultural and creative industries, Adam Smith proposed in the "Research on the Nature and Causes of National Wealth" that "the division of labor can promote the growth of national wealth." This is because the division of labor rationalizes the assignment of tasks, reduces the repeated utilization of human and material resources, and improves production efficiency. Other scholars have put forward different views. Schumpeter believes that innovation is a key element of the fundamental driving force of economic growth. Solow believes that technological progress has increased the "residual value" of the economy. Denison proposed the concept of "total factor productivity" to improve resource allocation, scale savings, and knowledge progress. Dennison believes that economic growth requires two factors, one is broad technological progress, and the other is the input of production factors. According to Lucas, Romer and others, the inherent needs of the economic system have affected technological progress, and endogenous technological innovation is an important source of economic growth.

(2) Technology innovation drives the development of cultural and creative industries

Scholars at home and abroad have done little research on technological innovation and the development of cultural and creative industries, and there is no complete theoretical system. However, there are more researches on technological innovation factors in industrial development. Schumpeter proposed that the essence of industrial development is the reform of the internal economic structure led by technological innovation. In studying the law of industrial development, Kuznets pointed out that the emergence and development of industry

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is closely related to innovation. It can be said that the rise and fall of innovation directly affect the survival of enterprises. The representative of the Frankfurt School, Benjamin, was one of the earliest scholars to study the influence of technology on the cultural industry. He pointed out in the "Artwork of the Age of Mechanical Reproduction" that the cultural industrial system of industrial countries has the function of replicating culture. From the perspective of consumption, new technologies create new products and are favored by consumers, and enterprises gain high returns. Technological innovation will not only affect the production efficiency of cultural and creative industries, but more importantly change its production methods.

Aiming at the research on technological innovation and the theory of cultural creative industries, Hu Huilin put forward the view of "leading laws of science and technology", and Wu Zhongze put forward "science and technology innovation is the wing of cultural industry". Deng Xiaohui pointed out that the technology of the cultural creative industry is divided into two categories, one is supporting technology, and the other is embedded technology. The more technology the cultural and creative industries have, the deeper it is embedded. New technologies replace old technologies and become the main force in the production of cultural and creative industries. The combination of culture and technology is a two-wheel drive model for creative industries. In general, technological innovation is the foundation and lubricant of the development of the cultural industry. The cultural industry can obtain new market demands from technological innovation.

(III) Relevant theories of technology innovation and ceramic culture creative industry research in Jingdezhen

People's enthusiasm for creative industries gave birth to ceramic cultural creative industries. Jingdezhen City Government formulated the "Twelfth Five-Year Plan" to build a large ceramic industry structure, develop ceramic cultural creative industries, use the name of Jingdezhen Ceramic Hometown to create an industrial base, embed creative value chains in traditional ceramic industries, and promote ceramic cultural creative industries Sustainable development.

Many scholars at home and abroad agree that technological innovation is an important factor for the creative industry of ceramic culture. For example, Ye Xiaolan believes that technological innovation is a key factor in the formation and development of Jingdezhen ceramic characteristic industrial clusters. Zhang Chun believes that the innovation and improvement of production technology is the key to the evolution of the classical cluster of Jingdezhen ceramic industry. Liu Shanqing believes that the ceramic industry in Jingdezhen has formed a dependency in the long-term monopoly process, unable to be technologically innovative, thus reducing technological reforms, and eventually leading to the decline of industrial clusters. It can be seen how important technological innovation is to the ceramic culture creative industry. Guo Jianhui believes that Jingdezhen ceramic industry cluster innovation system has weak structural strength and low economic benefits. It should improve the innovation system and promote the development of ceramic industry clusters.

2. The Mechanism of Technological Innovation Promoting the Development of Jingdezhen Ceramic Culture Creative Industry

(I) Technology is a key supporting factor influencing the development of Jingdezhen ceramic culture creative industry

The fusion of technology and culture is the focus of much discussion. After the Industrial Revolution, the nature of technology has changed. Technical innovation not only meets the needs of people's lives, but also meets people's needs from the emotional aspect. In this environment, popular culture has become the spiritual pursuit of ordinary people. Jingdezhen ceramics is a combination of technology and art. After integrating technology and art,

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Jingdezhen ceramics has brought out the charm of craftsmanship through innovative technology, showing a cultural connotation. At present, people have a very fierce debate on the contemporary value of Jingdezhen ceramics, whether it is more technical or more cultural. In essence, the technical and artistic aspects of Jingdezhen ceramics are complementary, and both are indispensable. No matter which aspect is missing, it will make it degenerate.

The world's cultural and creative industries have been hitting a flood, and Jingdezhen's ceramic cultural and creative industries have developed under the combined effects of technology and culture. Modern technology brings challenges to Jingdezhen ceramic culture and creative industry. The new technology has changed the traditional technology's manufacturing process, using intelligent new equipment to manufacture ceramics, making the manufacturing process and scale more standardized and unified. Driven by new technologies, global ceramic manufacturers have made great progress, and Italy has become a leading monopoly on high-end ceramic machinery and equipment, which has brought considerable pressure on Jingdezhen Ceramics. Modern technology brings opportunities to Jingdezhen ceramic culture and creative industries. Relying on new technologies, Jingdezhen has achieved good results in developing ceramic culture and creative industries. For example, French blue porcelain uses advanced chamfering demoulding technology to make the product more three-dimensional. Modern porcelain making technology is the supporting force for the development of Jingdezhen ceramic culture and creative industry. The new technology of Jingdezhen ceramic culture and creative industry has multi-level and comprehensive direct or indirect effects. From an indirect perspective, people's creative thinking is limited by the level of productivity, and creativity cannot be dreamy. The development of modern technology is not limited to the consumption of ceramics in Jingdezhen, but to spread to the masses through a media platform in a cultural form. From a direct perspective, the key stage of Jingdezhen ceramic culture and creative industry is creative design, which is guaranteed by the development of science and technology. Good creative development must rely on technological support. In general, cultural creativity and technical support are the two major elements for the development of Jingdezhen ceramic cultural creative industry.

3. Technological Innovation Drives the Development of Ceramic Culture and Creative Industries in Jingdezhen

(I) Technological innovation changes consumer demand

1. Ceramic product innovation and process innovation change consumer demand

Jingdezhen ceramic cultural creativity requires not only product innovation, but also art innovation. Product innovation is led by technology, observes the ceramic needs of the market, develops personalized ceramic products, and realizes product value. Process innovation uses different methods and production materials for manufacturing. Meeting market demand, product innovation and process innovation can drive changes in market demand. According to their own characteristics and market needs, ceramic culture and creative enterprises seek the most optimal combination of income, guide market consumption trends, and promote product production.

2. Changes in consumer demand drive the formation of industrial competitive advantage

Technology, demand, and resources are factors that influence the competitive advantage of Jingdezhen ceramic culture and creative industries. Only after the enterprise fully understands the needs of consumers can it produce products. Therefore, the combination of consumer demand and technological innovation can promote the development of ceramic enterprises. Creativity is not a rush, it is an enterprise that observes the changes in consumer demand, makes an analysis and summary, then carries out ideas and gains an advantage from market competition.

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(2) Technology innovation guides the cultivation and growth of creative talents

1. Technology innovation guides the cultivation and growth of personalized talents

Digitalization has become an important part of the cultural industry and creative research and development. Digital survival is closely related to human thinking. The technological innovation of the ceramics cultural creative industry is based on people, which stimulates people's creative potential. The training of creative talents can be achieved by establishing a non-guided training and growth model for creative talents. This model is not controlled by the mentor and is freely played by talents. The process includes identifying auxiliary situations; exploring problems; developing insights; planning And decision-making; integration, the process reflects the core position of talent.

Technological innovation attaches importance to creative thinking and fostering independent personality. Individualized talents can independently complete tasks, solve problems, enhance their own personalized differences, and promote the creative development of enterprises.

2. Technological innovation guides the cultivation and growth of socialized talents

The integration of information technology and cultural resources has enhanced the value-added ability of the cultural industry and promoted the development of cultural creativity. In the second half of the 20th century, computer technology and Internet technology have developed rapidly, and have played a significant role in the manufacturing industry. Use computer to control production process, sales process, logistics, etc. Therefore, people have introduced computers and digital technologies into the industry, and technological innovation can improve the socialization of talent training and growth through cooperative learning.

4. Technological Innovation Promotes the Development of Jingdezhen Ceramic Culture Creative Industry

(I) Technological innovation promotes the diversification of ceramic cultural creative products

The company changes the original products by introducing multiple materials and adding design styles to produce diversified products to meet the needs of different consumers and promote the development of the industry.

1. Material innovation enhances the visual diversity of ceramic cultural creative products

As technology continues to advance, intermingling multiple fields has become a popular trend. Ceramic cultural and creative products have begun to be made from one material and turned to multiple materials. Use a variety of materials to enrich ceramic cultural creative products, giving a strong visual effect.

Recycling has become the focus of the country's vigorous promotion. Everything can become a material for ceramic creation, but it does not mean that any material can be used. The formation law of visual art has different physical and chemical properties. The artist's personality and product area are also different, all of which are the Tao of creation. There is no need to emphasize the synthesis of ground materials, and a reasonable mix may all produce personalized artistic effects. For example, ceramic, metal, wood, glass and other materials are used. Metal has plasticity and strong deformation ability. It forms a strong contrast with ceramic materials to enhance the visual impact of the product. Wood materials are rustic and rich in texture. Wood materials are used as accessories in ceramic manufacturing to add creativity to the product. Glass materials are often added to make ceramic products. This is because glass can act directly on ceramic works as an enamel material, forming "ice cracks". In addition, glass can also be used as an auxiliary material to fuse with rough ceramic materials to produce a delicate glass bond. effect.

2. The innovation of molding technology, glaze preparation technology and firing technology makes the ceramic creative products vivid and changeable.

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Now, many consumers are beginning to pursue individual needs. Traditional ceramic shapes can no longer meet consumer needs, and creative ceramics are sought after. Modern mechanical production methods, the shape of ceramics has always been developed in the direction of simple concentric circles, without creativity. The molding process lays the foundation for the creation of ceramic cultural creative products. The gypsum molds provide guarantee for special-shaped products. Using gypsum molds can make any complicated shape. The special-shaped ceramic creative products are refreshing and quickly become hot products.

Ceramic glaze is an indispensable material for traditional ceramics. At present, China's ceramic products have been organically combined with metal materials and organic polymer materials to make the glaze natural.

In the development of Jingdezhen ceramic culture and creative industry, to develop a reasonable calcination process, it is necessary to understand the physical or chemical reactions that occur when the materials are fired. Many reactions during the firing of the materials are carried out simultaneously, resulting in a lower firing rate of the product under the traditional technical methods.

The firing changes of the materials originate from the composition of the minerals. Although the raw materials in different regions have the same chemical composition, they will also obtain different firing properties. The firing change of the material is related to the physical state of the material (the density of the material, the uniformity of mixing, etc.). During the pouring process of the material, a large amount of chemical components will be produced when it comes into contact with air, and it will also react with liquids and crystals. In addition, temperature, time, atmosphere, etc. also affect the firing changes of the material. It is very difficult to summarize the reactions of these factors affecting the firing of the material. With the application of computer technology and the control of mechatronics, the firing of ceramics has been greatly improved, the firing temperature of the glaze and the glazing operation procedures have been improved, and various firing technologies have been used for the batch and diversified production of creative ceramic products. Foundation.

3. Technology embedded enhances the function of ceramic cultural creative products

Creative ceramic products must meet both the visual needs of consumers and the functional needs of consumers. The integration of electronic technology into ceramic creative products has become a new bright spot. It has enriched people's lives, changed the traditional use of ceramic products, and has been sought after by consumers. For example, ceramic electric kettles, ceramic rice cookers, etc. that are common in life. This type of product uses high-temperature firing of high-quality ceramics, uses a thermostat to control the temperature, and provides an automatic power-off function. The boiling water has no odor and is easy to clean. The use of modern high-tech technology and ceramic products makes the appearance of the product more artistic appreciation, adding decorative embellishment to home life.

(II) Technological innovation has enriched the creative means of artists

Creativity is the core of Jingdezhen ceramic culture. Digital technology provides new design ideas for ceramic artists. Artists can use different application software to draw when they conceive a design, and get unexpected results. After they are conceived, they can use AutCAD to draw sketches, including front view, side view, and top view. Compared with traditional manual drawing, AutoCAD drawing effects are more accurate and visual effects are more realistic. In addition, 3DMAX software is also a good drawing software, this software can draw the product's three-dimensional effect and render. Photoshop, Illustrator, etc. are also commonly used drawing software, users choose according to their proficiency in the operation of the software. Use these drawing software to draw the effect map, and you can also do 3D printing. In general, compared with traditional drawing techniques, modern digital technology has broken through

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traditional drawing techniques, which has saved artists time and brought different levels of inspiration to their creations.

(3) Technology innovation reduces the cost of ceramic creative products

1. Technological innovation reduces costs through energy saving and consumption reduction

Jingdezhen Changyu Porcelain Industry has improved the raw material and energy consumption processing technology, and the firing temperature is controlled at 1200 degrees to achieve energy saving, increase efficiency and reduce costs. In addition, it has also improved the combustion kiln technology and gas furnace technology, promoted the insulation kiln refractories and low heat capacity kiln cars, and used energy-saving kiln and energy-saving air combustion technology to achieve low-carbon production. During the technical transformation of the old and old kiln, the material structure of the kiln was improved, and high-efficiency energy-saving ceramic fibers were used, which saved more than 50% in energy consumption.

2. Technological innovation reduces costs through process change

Under the traditional glaze preparation technology, the damage rate of ceramics is relatively high. By removing the spots on the ceramic surface, the company reglazes and fires it. This improved process improves the yield of the product, reduces the damage rate of the ceramics, and saves product costs.

3. Technological innovation reduces costs by shortening the creative cycle

Using AutoCAD to draw product sketches saves 6-7 hours of time compared with traditional drawing methods, saves the trouble of measuring with a ruler, and avoids small data differences. Most of the ceramic creative products on the traditional market are made by hand, and the product production cycle is long, from design, molding, and finished products to at least 3-4 days, and even up to 1 month. Using computer technology for creation and production, the production cycle of finished products will be shortened by more than 80%, and products can flow into the market as soon as possible to grasp the competitive advantage.

5. Conclusion

Technology Innovation and Optimization of Jingdezhen Ceramic Culture Creative Industry Value Chain Value chain refers to a series of value activity aggregates that can bring economic benefits to enterprises, which is reflected in the production to sales of products.

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