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Symbolic Benefits in Glass Products Incorporating Cultural Heritage Elements

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Abstract

Previous studies have shown that integrating cultural elements into product design can improve the added value of products. However, there are few studies examining the manifestation of cultural added value. In this study, researchers collaborated with 12 designers in related fields to collect 146 glass products featuring cultural heritage elements and identified 10 product samples for case studies. The results show that product benefits were found in six main aspects: beauty, fun, connotation, historicity, identity, and uniqueness. This research will contribute to the innovation of glass products and help improve their added value.

Keywords: Glass products; Cultural heritage; Symbolic benefits; Visual components

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1.0 Introduction

Although every product has meaning, designers try to assign as many values and attributes to products as possible, and sociological and anthropological studies of consumption emphasise the role of people and their interactions in defining the symbolism and meaning of products (Tian, 2021). For example, with all household items essentially losing their functionality, the significance of their existence is bound to become more apparent. Taking the design of the derivatives of the National Museum of China as an example, based on retaining only the most basic product functions, all derivatives were designed to try to add elements of cultural relics to the collection of the National Museum of China. Consumers will feel more emotion, identity, and meaning through these symbols. One of the spin-off products of the National Museum of China, the Rotating Star Night lamp, derives its elements from ancient Chinese astronomical instruments and astronomical observations. It allows users to fantasise about lighting up dreamy stars, rendering a romantic atmosphere. This innovative form retains the original function but gives new meaning through design. Even if the price is higher than a comparable product with the same features, people are willing to pay for extra meaning, novel forms, surprising textures, or unexpected colours (Z. Li et al., 2023). However, there are few studies on the integration of cultural heritage into glass product design at the visual components level, and few studies on understanding the specific expression of added value based on Chinese cultural heritage categorisation.

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Thus, this study aimed to investigate the steps designers take to extract, transform, and apply cultural heritage spatial elements into glass products. The objectives of this study are to identify the visual component and symbolism in glass product design with cultural heritage elements.

2.0 Literature Review

2.1 Glass products design with cultural heritage elements in China

Glass is one of the earliest manufactured materials invented by humankind, and some characteristics of glass material, such as transparency and stability, make it a vibrant material for artistic creation (Almeida, 2020). China has a long history of manufacturing glass, often referred to as “Bo Li” and “Liu Li” in Chinese literature. In China, the development of glass is related to ancient Chinese metallurgy, alchemy, and primitive glaze technology during the Spring and Autumn Period (Guo & Wu, 2020). Ancient Chinese glass objects utilised the inherent properties of the material as a more precious material medium. On the other hand, from ancient times, artisans working in glass factories absorbed and responded to foreign influences, adopting techniques from other crafts to create glass products that we now consider distinctly Chinese.

In recent years, Chinese glassware, decorative glassware, office supplies and souvenirs have brought more innovation and change. Chinese artists and designers use glass art worldwide and integrate traditional Chinese cultural elements to create glass products. For example, the Tiger-head Shoes Glass product (Fig. 1), designed by Liu Li Gong Fang, shows how to incorporate Chinese cultural elements. Tiger-head shoes have practical and ornamental value, and their manufacturing skills have been included in China's intangible cultural heritage. This glass product incorporates elements of cultural heritage at the level of visual components, giving it a specific cultural connotation and aesthetic appearance. The development of cultural and creative products has become an important economic strategy to enhance local cultural influence, promote local and regional economic development, and improve the quality of people's cultural life (He et al., 2024). Moreover, with the development of China's economy, people are more inclined to a high quality of life and a culture that satisfies their spiritual needs (Y. et al., 2022). This change has also brought development opportunities to contemporary Chinese glass product design.



Fig. 1: Tiger-head shoes glass product
(Source: Drawn by the author)

2.2 Hedonic benefits and symbolic benefits

Hedonic benefits refer to the ability of product design to create better feelings, positive emotional feedback, and optimal use experience. From this perspective, hedonic benefits are mainly based on the sensory experience provided by innovative attributes related to sensory experiences, such as shape, colour, decoration, size, material, etc. Hedonic benefits include fun, excitement, enjoyment, imagination, fantasy, and curiosity. These are directly related to people's emotions. In contrast, thinking is voluntary, learned, controlled, and dependent on cultural learning and concepts related to logic, science, and computation. In this sense, the symbolic benefits of glass product design with cultural heritage elements are closely tied to this level of thinking.

The symbolic benefits of the product are related to the personal identity and self-worth of the customer. According to Smith and Colgate, they are the level at which users associate thinking meanings with a product. A product can provide symbolic benefits if its innovation matches the way customers want to see themselves. Symbolic benefits are also associated with the user's message and the message they want to convey to others. Verganti's research suggests that specific languages, designs, and ICONS may produce symbolic benefits. Many companies have made reasonable attempts to do this with their products. The development of cultural creativity at the Palace Museum is relatively well established in China, and many of its products are outstanding examples of using elements of cultural heritage to provide symbolic value to customers (Z. Li et al., 2023). Perhaps the best example of the distinction between symbolic and functional benefits is the fact that people's love for the Forbidden City's cultural creations is often based on the product's unique symbols, identity, and feeling, rather than the product's function. Therefore, the symbolic benefit of a product is different from the utilitarian benefit since the symbolic benefit refers to the symbolic imagination and cultural identity. They are consumers' identification with the surrounding social psychological environment, searching for group characteristics through the purchase of products, and obtaining positive feelings and experiences.

2.3 Classification of design elements from Chinese cultural heritage

Regarding the classification of cultural heritage, UNESCO has given a detailed explanation on its official website. However, many scholars give different ideas. They believe that the categories of cultural heritage are complex and cross-cutting, and it is necessary to give a more reasonable categorisation according to the actual situation. According to scholar Li Shurong, cultural heritage resources are all material or spiritual objects that leave traces of human beings, reflecting the life and values of different regions or ethnic groups, and can be applied to cultural industries. All the resources that carry the process of human practice have the attributes of culture and have the potential to become cultural heritage resources, which causes the difficulty in classifying cultural resources. From this point of view, he divided cultural heritage resources into four categories: material evidence, cultural resources, written or video recordings, and behavioural inheritance. Although this classification gives a clear definition according to the form of cultural heritage elements, it is still not comprehensive enough to include all resources. For example, shadow puppetry is identified as intangible cultural heritage according to UNESCO's classification criteria, but it cannot be well defined in its definition. Nevertheless, his definition of behavioural inheritance of cultural heritage has also inspired researchers. Based on the expressions of Chinese scholars (Qian & Zainol, 2023; Qin, 2023; Xuemin et al., 2023) and the author's previous research findings, it is proposed that design elements for glass products from Chinese cultural heritage be classified from the following levels to continue the subsequent research better. In terms of tangible heritage, Chinese cultural heritage is classified into five aspects, namely a) ancient gardens, b) architectural remains, c) cultural landscapes, d) cultural organisms, and e) museum relics. Intangible cultural heritage is categorised as follows: a) oral traditions, b) traditional performances, c) ceremonial festivals, d) literature and arts, and e) traditional skills.

3.0 Methodology

3.1 Interviews

Twelve designers who incorporate cultural elements into their glass designs were interviewed to gather information about them. The interview questions were decided upon based on the designers' knowledge and experience, and a semi-structured interview format was employed. In the flexible semi-structured interview, open-ended questions were used to gain as much feedback as possible from respondents. Although the author prepared the questions before the interview sessions began, they could vary or other details could be asked according to the respondent's answers to gather more information when appropriate (Sayuti et al., 2022). The author recorded the interviews through WeChat, as the selected respondents came from all over China. The number of participants in the interviews was in line with sample size recommendations for the most common quantitative and qualitative research designs.

3.2 Initial observations and classification of glass product design with cultural elements

The sources of initial observation of glass products with cultural heritage elements mainly concentrated in the following aspects: websites about glass products, such as Art Alliance for Contemporary Glass, Chinese glass art website, Xiao Ran's glass notes etc.; the museum's cultural and creative product design flagship store, such as Palace Museum, Shaanxi History Museum, Nanjing Museum, Shanghai Museum, Xi'an Museum, Henan Museum, etc.; personal glass studio, such as TITOT, Liu Li Gong Fang, Wang Sanmao Glass Studio, etc.; Glass products from the educational institution, such as China Academy of Art, Changzhou Textile and Garment Vocational Technical College, School of Fine Arts, Tsinghua University, etc. The researchers finalised 146 glass products based on the compilation and categorisation of Chinese cultural heritage elements.

First, twelve designers were invited to screen 146 initially observed glass products, eliminating those that were unrepresentative. The purpose of this step was to minimise the subjective bias of the researchers as much as possible, as shown in Fig. 2. Then, semi-structured interviews were conducted with designers and educators to explore their rationale, purpose, and inspiration for designing the selected glass products.

Number	Categories	Name	Diagram	Product Description	Number	Categories	Name	Diagram	Product Description
p1	a) Ancient gardens	Suzhou Garden Lamps		The appearance of the product is derived from the Suzhou garden, China's cultural heritage.	p6	f) Oral traditions	Yin Yang Gourd Glass Decoration		The design is inspired by the Chinese legend "Eight Immortals crossing the Sea".
p2	b) Architectural remains	"Ji Shou Long" Pen Holder		The design inspiration of the product comes from the construction of the traditional Palace Museum.	p7	g) Traditional Performances	Glass Shadow Puppets		The decorative pattern of the product comes from the traditional Chinese performance "shadow play".
p3	c) Cultural landscapes	"Dan Qing Qian Li" Study Supplies		The design is inspired by ancient Chinese people's color profiles of famous mountains.	p8	h) Ceremonial festivals	Cartoon Zongzi Glass Paperweight		The appearance of the product is derived from the zongzi in the Dragon Boat Festival, a traditional Chinese festival.
p4	d) Cultural organisms	Plum Blossom Goblet		The innovation of the product lies in the use of plum blossom, a favorite plant of ancient literati.	p9	i) Literature and arts	Glass Mosaic of Tang Dynasty ladies		The innovation of the glass decoration is the manifestation of the traditional Chinese painting again.
p5	e) Museum relics	Oracle Weather Bottle		The appearance of the product is derived from an oracle bone with writing in the museum.	p10	j) Traditional skills	Calligraphy Decorated Glass Clock		This practical glass product is decorated with Chinese calligraphy.

Fig. 2: Glass product samples
(Source: Drawn by the author)





















3.3 NVivo Qualitative Software Analyses

The use of NVivo analysis software required the development of themes, which were first established as Parent nodes. These were then followed by the specific creation of related Child nodes in the application of this software to analyse the participants' responses to the questionnaires received from the designers.

4.0 Findings

4.1 Results of case studies of glass product samples

After performing the same analytical steps for the ten glass products identified, it is clear that the designers tried to extract and apply cultural heritage elements through shape, colour, and decoration in each of the ten samples. Five products have a clear connection with cultural heritage elements at the shape level, and they are Case 1, Suzhou Garden Lamps; Case 2, "Ji Shou Long" Pen Holder; Case 5, Oracle Weather Bottle; Case 6, Yin Yang Gourd Glass Decoration; Case 8, Cartoon Zongzi Glass Paperweight. From the perspective of innovation sources of glass products, three are derived from tangible cultural heritage elements, and two are derived from intangible cultural heritage elements. In contrast, only Case 3, "Dan Qing Qian Li" Study Supplies, clearly connects glass products and cultural heritage at the colour level. Five products are clearly connected with cultural heritage elements at the decoration level, and they are Case 4, Plum Blossom Goblet; Case 5, Oracle Weather Bottle; Case 7, Glass Shadow Puppets; Case 9, Glass Mosaic of Tang Dynasty Ladies; and Case 10, Calligraphy Decorated Glass Clock. Regarding the distribution of cultural heritage types, two of the five products are derived from tangible cultural heritage, and three are derived from intangible cultural heritage. As shown in Fig. 3 below.

	Name	Picture	Cultural Heritage	Picture	Shape	Color	Decoration	Symbol of cultural heritage
Case 1	Suzhou Garden Lamps		Suzhou Garden		Pavilion, Tower, House	Red, Green, White	Stained glass texture	The most beautiful garden in China, the shape of the door has the symbolic meaning of peace.
Case 2	"Ji Shou Long" Pen Holder		Imperial Palaces of the Ming and Qing Dynasties		"Ji Shou Long"	White	Traditional fire pattern	The building component has the meaning of the town house to avoid the murderer.
Case 3	"Dan Qing Qian Li" Study Supplies		Mount Taishan		Mountain	Blue, Green	Traditional water pattern	The combination of rigid and soft landscape became a poetic yearning.
Case 4	Plum Blossom Goblet		Plum blossom		Goblet	Red, Green	Plum blossom pattern carving	The plum blossom symbolizes the character quality of perseverance.
Case 5	Oracle Weather Bottle		Oracle Bone Inscription		Oracle bone	Yellow	Oracle	Oracle bones were used for blessing, representing the pursuit of a better life.
Case 6	Yin Yang Gourd Glass Decoration		The legend of the Eight immortals crossing the sea		Gourd	Green	Traditional water pattern	The gourd is a powerful tool in the legend, representing good fortune.
Case 7	Glass Shadow Puppets		Shadow Puppets		Rectangle	Blue, Red, Green, Black	Shadow Puppets	The shape and color matching of shadow puppets are beautiful and deeply loved by people.
Case 8	Cartoon Zongzi Glass Paperweight		Dragon Boat Festival		Triangular pyramid shape	Colourful	Ancient official dress patterns	Zongzi in the Dragon Boat Festival are endowed with connotations of academic progress.
Case 9	Glass Mosaic of Tang Dynasty Ladies		Collection of Tang Dynasty Ladies		Rectangle	Red, Black, White	Tang Dynasty Ladies	This painting vividly depicts the pleasant life of the maid in the Tang Dynasty.
Case 10	Calligraphy Decorated Glass Clock		Chinese Calligraphy		Rectangle	Black, Yellow, White	Calligraphy	Chinese calligraphy uses shape to integrate people's thinking about nature, society and life.

● There is a clear connection between products' visual components and cultural heritage elements
● There is a weak connection between products' visual components and cultural heritage elements
● There is no connection between products' visual components and cultural heritage elements

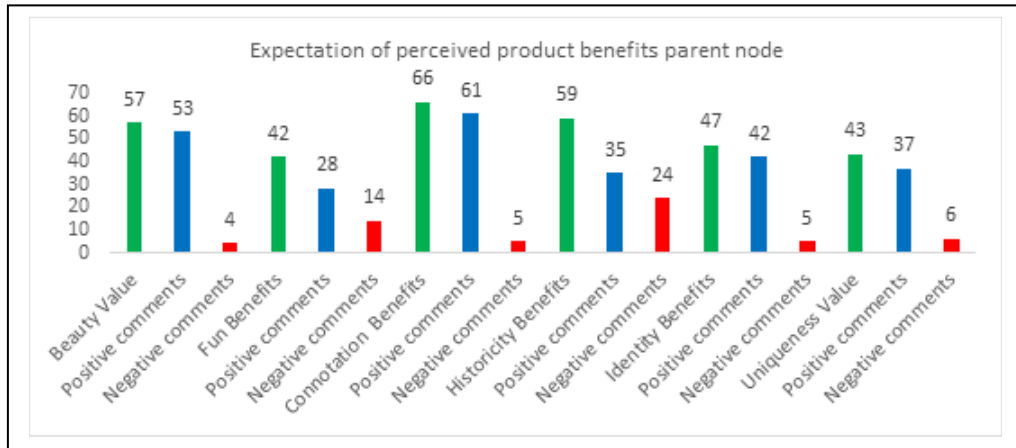
Fig. 3: Application of visual elements of product samples and analysis of symbolic meaning
(Source: Drawn by the author)

4.2 Expectation of perceived product benefits parent node

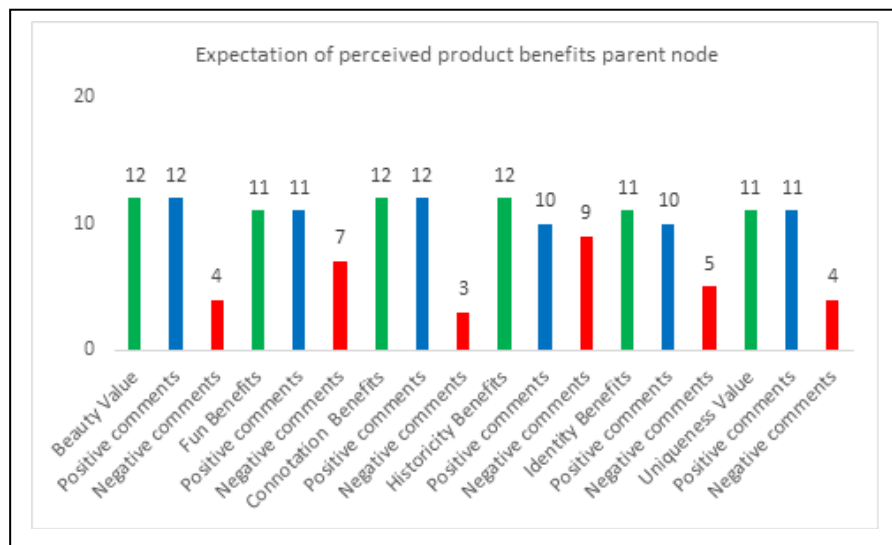
The author established eight themes in the interview, but only reports the expectation of symbolic benefits of the parent node hereunder, as it is related to this study. Fig. 4(a) lists the frequency of individual comments/opinions for this node and the associated Beauty Value, Fun Benefits, Connotation Benefits, Historicity Benefits, Identity Benefits, and Uniqueness Value child nodes side by side. Fig. 4 (b) shows the number of participants who answered these questions.

As shown above in Fig. 4(a), there is again noticeable consistency with the data in Fig. 4(b) in terms of the number of participants providing positive and negative comments, respectively, in relation to the frequency numbers. However, on the Historicity Benefits child node, the frequency of comments shows some ambivalence (35 +ve and 24 -ve versus 10 +ve and 9 -ve), in the frequency data case

shown in Fig. 4 (a), although the level of positive comments was still high. Overall, this check on numbers again provides additional assurance about the validity of the NVivo frequency data. These results suggest that the designers were more focused on the connotation benefits and identity benefits when designing glass products with cultural heritage elements.



(a)



(b)

Fig. 4. (a) Overall frequency of references for expectation of perceived product benefits parent node; (b) Number of participants who responded to the expectation of perceived product benefits parent node

(Source: Drawn by the author)

5.0 Discussion

5.1 Designers' extraction, transformation, and application of cultural heritage elements

In accordance with the interview results, designers have an uneven understanding of the sources of cultural heritage elements. However, this understanding does not reflect tangible and intangible cultural heritage differences. The use of cultural heritage elements is related to whether their specific expressions are easy to find and understand. This is consistent with the design premise mentioned by the designer that the design is based on sufficient depth and understanding of cultural heritage. When applying cultural heritage elements, the extraction of shapes and decorations is more common. This stems from the fact that the shape is the most straightforward visual component directly reflecting cultural heritage elements (X. et al., 2020), and the current glass products are more decorative. From the results, it can be seen that few glass products directly draw on cultural heritage elements in colour, mainly because of the material characteristics of glass products. Some characteristics of glass materials, such as transparency, brightness, stability, etc., make it a dynamic material in artistic creation (Almeida, 2020). This makes the colour choice of glass products to highlight the material characteristics rather than cultural heritage elements as the first.

5.2 The symbolic benefits of glass products combined with cultural heritage

Based on the interview results, designers desire multiple benefits when integrating cultural heritage into glass products, including hedonic benefits, innovative benefits, and symbolic benefits. These results imply that designers pay more attention to connotation

benefits and identity benefits. These results are because designers intend to give products more benefits than aesthetic value when applying cultural heritage elements to glass products to gain a competitive position. Nevertheless, whether these aspects of product symbolic benefits found in the interview results can significantly affect consumers' purchase intention needs further empirical research.

6.0 Conclusion & Recommendations

6.1 Conclusion

Incorporating cultural heritage elements into glass products plays a vital role in disseminating culture, preserving cultural heritage, and enhancing cultural self-confidence. China's rich cultural heritage resources can be used to apply cultural elements to contemporary glass product design at the visual component level. In this way, it can also improve people's spiritual quality of life and protect China's cultural heritage. This study utilises contemporary glass products with Chinese cultural heritage elements as sample sources. Through designer interviews and case studies, the design concepts of incorporating cultural heritage elements into glass products and the symbolic benefits that designers want to achieve are explored. The design concept of integrating cultural heritage elements into glass products, as revealed through designer interviews and sample case analysis, along with the symbolic benefits designers seek to achieve, is examined. This research presents new suggestions and directions for the innovation of contemporary glass product design, promoting the protection of traditional cultural heritage and the development of cultural and creative products.

6.2 Recommendations

Due to energy and cost limitations, this study still has some room for improvement. The following suggestions are made for the reference of subsequent research.

(1) Due to various factors, including experience and cost constraints, interview data were collected from 12 designers engaged in glass product design. Although this sample size met the minimum suggested by researchers, half of the interviewees had less than five years of relevant experience, which may limit the universality of the results. Future studies could collect more experienced designers to refine the findings further.

(2) The symbolic benefits model proposed in this study is based on a literature review and designer interview data, and it will need to be verified by empirical research.

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Paper Contribution to Related Field of Study

The contributions of this research to related fields are mainly in the following aspects:

(1) The symbolic benefits model proposed in this study fills a gap in the theoretical field of cultural and creative products, providing researchers with relevant knowledge.

(2) China currently pays attention to conserving traditional Chinese culture in various ways, and creative cultural products are one essential means. Utilising cultural heritage can help enhance the Chinese cultural identity, which is a significant driver of cultural diversity and sustainable development.

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