

Factors Influencing Purchase Intentions for Glass Products with Chinese Cultural Elements

Qingfeng Liu*

*Faculty of Art and Design,
Universiti Teknologi MARA,
Kedah Branch, Merbok, Kedah,
Malaysia
Corresponding author
Email: liuqingfeng315@gmail.com*

Wan Noor Faaizah Wan Omar*

*Faculty of Art and Design,
Universiti Teknologi MARA,
Kedah Branch, Merbok, Kedah,
Malaysia
Email: wfaaizah@uitm.edu.my*

Masitah Ahmad*

*Center of Information Science,
Universiti Teknologi MARA,
Negeri Sembilan Branch, Seremban, Negeri Sembilan,
Malaysia
Email: masitah@uitm.edu.my*

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**These authors contributed equally to this study*

ABSTRACT

Glass products featuring Chinese cultural elements are mainly found in collections, exhibitions, and educational institutions. However, their sale as everyday necessities is less common. Research on these products, especially regarding perceived benefits and purchase intentions, remains limited. This study focuses on contemporary Chinese glass products with cultural elements, referencing literature on product innovation, emotional design, and the cultural creative industry, and explores how perceived benefits influence purchase intention. The study begins by classifying glass products based on their cultural aspects and selecting the samples for empirical analysis. Using online questionnaires, 503 valid responses were collected, and hypotheses were tested. The results show that the target group holds a positive attitude towards perceived benefits and also demonstrates a willingness to purchase such products. Hypothesis testing indicates that beauty value and identity benefits significantly influence purchase intention. Finally, the study offers feasible strategies for developing glass products with Chinese cultural elements.

Keywords: *Cultural elements, Glass products, Product benefits, Purchase intention*

INTRODUCTION

Developing cultural and creative products has become a vital economic strategy that can strengthen local cultural influence, support local and regional economic growth, and enhance the quality of people's cultural lives. In glass product design, innovation combined with cultural heritage elements has also become a trend. Furthermore, with the growth of China's economy, people are increasingly seeking a high quality of life and a culture that meets their spiritual needs (Li & Li, 2022). People also have higher expectations for their creative ideas during the process of designing culture-creative products. However, modern design often blindly follows fashion, personality, and Western influences in China, and new ideas and concepts from abroad have unprecedentedly affected traditional Chinese culture and art. How to ensure that cultural and creative design genuinely considers consumers' needs remains an unresolved issue. In other words, when developing glass products with Chinese cultural elements, it is important to examine the relationship between consumer perception of product benefits and purchase intentions.

Additionally, according to Norman's theory, there are two key aspects in the product design process: the designer's conceptual model and the user's psychological model. Ideally, these two can be integrated for a successful design. However, in practice, the designer's interpretation of the product and the user's feelings do not always align. Many products are original and innovative in design but fail to achieve commercial success. This is due to a lack of understanding of users' perception of product benefits and the connection between purchase intention. Therefore, this gap remains a complex issue in product design and development, which scholars and experts have continually sought to address.

In light of this, numerous studies have examined the psychological benefits of cultural and creative products and the purchase intentions (Li et al., 2021; Simo et al., 2022; Wang et al., 2020; Yu et al., 2022). However, whether the product benefits lie in the glass products with Chinese cultural elements and consumers' purchase intentions still require further empirical research. Therefore, it is essential to examine people's perceived benefits associated with these glass products. It is also an urgent problem to verify their role in improving the purchase intention of glass products.

LITERATURE REVIEW

Glass Products with Cultural Heritage Elements in China

The invention of glass is among the most significant milestones in human history. Its fundamental properties, such as transparency, make it an indispensable material for product designers' creations (Almeida, 2020). More innovations and changes have been introduced to glass products, decorative glass, office supplies, and souvenirs in China today. Chinese artists and designers use glass art worldwide and incorporate traditional Chinese cultural elements to create glass items. The materials used in modern cultural creative product design are mainly associated with two properties: transparent materials like glass and plastic, and opaque materials such as metal, wood, and ceramics. Chinese glass products became popular during the Qing Dynasty and gradually entered the homes of ordinary people. Up to now, glass products have become an essential part of everyday life. As shown in the literature review, China's glass products featuring cultural heritage elements are diverse and numerous, so the researcher collected glass samples from various sources to ensure data comprehensiveness. In this study, extensive materials regarding glass products with Chinese cultural elements are mainly obtained from the following sources: graduation projects from major universities and colleges, personal glassmaking studios in China, cultural and creative derivative products from museums across China, and glass product factories in China. Among these, the graduation projects from universities, museum cultural derivative designs, and the

China Liuli network provide data for this research due to their open resource sharing. Ultimately, 146 glass product designs related to this research are selected as shown in the following Figure 1. These examples were categorised based on the embedded elements according to the proposed classification of Chinese cultural heritage.

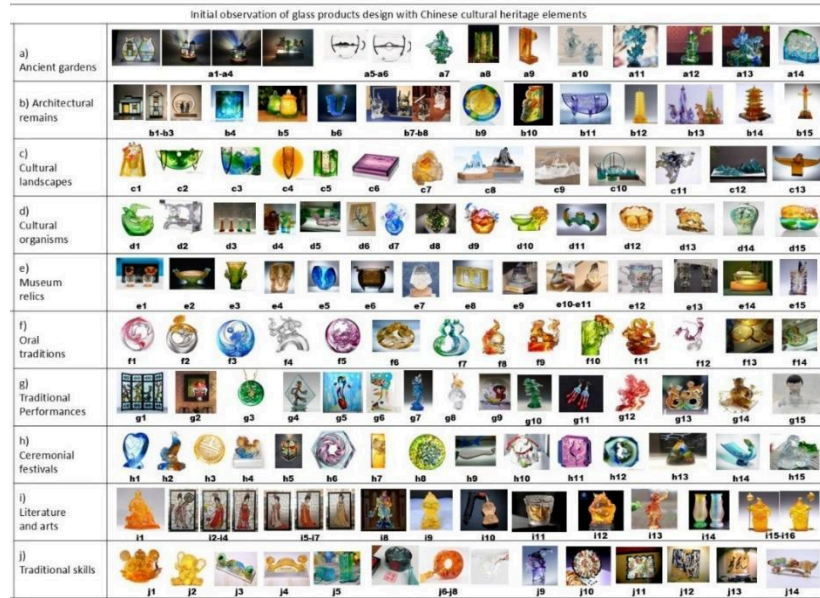


Figure 1. Contemporary glass products with cultural elements in China
(Source: Author's personal collection, 2024)

Theoretical Background

Malik's (2022) theory provides a theoretical basis for research on the benefits of such products. In this theory, the benefits of the products are primarily classified into three aspects: functional, aesthetic, and symbolic benefits. Since this study focuses primarily on the psychological functions of products, particular attention should be paid to hedonic and symbolic benefits. Hedonic benefit refers to the ability of product design to generate emotional pleasure, enjoyment, and sensory satisfaction (Li et al., 2023). This benefit is largely influenced by the sensory attributes of a product such as shape, colour, and decoration detail, which contribute to a positive and engaging user experience. Examples of sensory experiences include feelings of fun, excitement, and enjoyment, as well as imagination, fantasy, and curiosity.

The symbolic benefit of the product relates to the user's personal identity and moral values. It reflects the level at which users connect psychological responses to a product. If the product's innovation aligns with how customers want to see themselves, it can provide symbolic benefits. Symbolic benefits are also linked to the user's message and the message they want to convey to others. In the glass product sales sector, product symbolism generally refers to the symbolic benefits of a product, which are defined as the advantages linked to the cultural connotations embedded in the product. In recent years, an empirical study by Yu et al. (2022) has shown that product symbolic benefits encompass various aspects, including auspicious connotations, historical information, moral standards, educational functions, nostalgic atmospheres, identity associations, and others.

RESEARCH METHODOLOGY

This study examines the hedonic and symbolic benefits of products, influencing consumers' intention to purchase glass products. As revealed by previous literature review, hedonic benefit refers to a product's ability to evoke better feelings, positive emotional responses, and an optimal usage experience. In other words, these are primarily reflected in the beauty and fun of the glass product. The symbolic benefits are mainly seen in the product's identity, connotation, historical context, and uniqueness. The author also conducted interviews with 12 experts (glass product designers and glass product design educators) in the early stage, and the results further verified these findings (Liu et al., 2025). Thus, a conceptual model was developed to provide a theoretical foundation for the subsequent research project, as illustrated in Figure 2 below.

Previous research suggests that the hedonic benefits of products influence consumers' purchase intention (Li et al., 2023). Therefore, the following hypotheses are proposed: Hypothesis 1: The beauty value of glass products with cultural elements positively influences consumer purchase intentions. Hypothesis 2: The fun benefits of glass products with cultural heritage elements positively influence consumer purchase intention. Symbolic benefits also impact consumers' willingness to buy cultural and creative products (Yu et al., 2022). Among the symbolic benefits of products, the benefit of consumer identity is significant. In addition, cultural and creative products also carry cultural connotations, which may attract consumers' purchase intention. Cultural and creative products also carry much historical knowledge, which may give consumers a sense of educational satisfaction. Such historical information provides consumers with additional product experience. Therefore, the following three hypotheses are proposed: Hypothesis 3: The identity benefits of glass products with cultural heritage elements positively affect consumer Purchase Intention. Hypothesis 4: The connotation benefits of glass products with cultural heritage elements positively affect consumer Purchase Intention. Hypothesis 5: The historical benefits of glass products with cultural heritage elements positively affect consumer Purchase Intention. Besides, the benefits of innovation are expected to influence consumers' purchase intentions (Li et al., 2021). Therefore, recognising the distinct benefits and their influence on the purchase intention of glass products featuring cultural elements, the following hypothesis is proposed: Hypothesis 6: The uniqueness of glass products with cultural heritage elements positively influences consumer purchase intention.

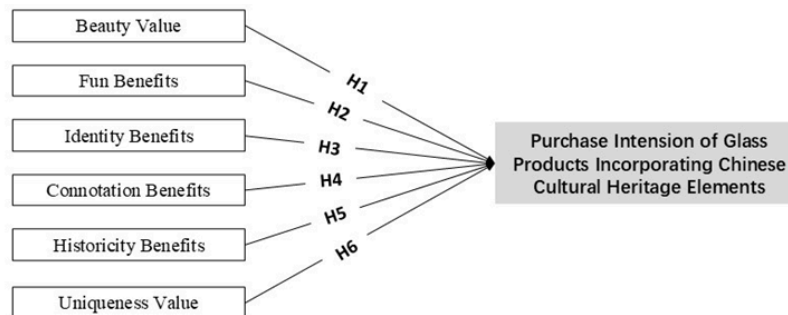


Figure 2. A proposed conceptual model of factors influencing the purchase intention of glass products with cultural elements

(Source: Drawn by the author, 2025)

Research Instruments

According to the literature, 28 questionnaires containing the research topics were collected, as shown in Table 1 below.

Table 1. The Components of the Online Survey were Created According to the Relevant Research

Dimensions	Sources	Components of Online Survey
Hedonic Benefits	(Li et al., 2023)	Q01. The product has an appealing appearance. Q02. The product reflects current fashion trends. Q03. The product exhibits a sense of design. Q04. The product has balanced proportions. Q05. The product sparks my interest. Q06. The product tells a story. Q07. This product piques my curiosity. Q08. The product is thought-provoking.
Symbolic Benefits	(Yu et al., 2022)	Q09. I believe owning the product can make others think I have good taste. Q10. The product would help me feel accepted. Q11. Products can help others recognise me. Q12. Owning this glass product enables me to receive more appreciation. Q13. I believe this product has a cultural connotation. Q14. The product contains a cultural aspect of faith and ethics. Q15. The product makes me feel that it holds a certain cultural significance. Q16. The product will make me feel the honour of traditional culture. Q17. The product can be seen as an allusion to ancient things. Q18. The glass product makes me think of a specific historical moment. Q19. The glass object evokes the historical memory of Chinese culture. Q21. The product provided me with additional information about Chinese traditional culture.
Innovation Benefits	(Li et al., 2021)	Q21. I believe this glass product is unique. Q22. I believe this glass product is innovative. Q23. I believe this glass product is highly creative. Q24. I believe the product is original.
Purchase Intention	(Li et al., 2021); (Yu et al., 2022)	Q25. I will consider purchasing the glass product. Q26. I want to recommend others to buy the glass product. Q27. I want to praise the glass product in front of others. Q28. I will buy similar glass products in the future.

The questionnaire for this study consists of images, textual descriptions, and single-choice items. Participants' basic information includes gender, age, design background, and other options. Based on the participants' opinions, a 5-point Likert scale was employed to assess the perception of product benefits. The perception intensity is rated from 1 to 5, with 5 representing the highest perception and 1 the lowest.

Sampling

This study selected individuals aged over 18 as research participants and categorised them into groups: Art and Design/Creative, Educational/Academic/Research staff, Students, and others. The respondent is a person engaged in cultural and creative industries or a student studying related fields. The purpose of doing so is to minimise bias in the sample as much as possible. Based on the total population involved in relevant industries, the sample size for this survey meets the requirements after calculation. The online survey used social network snowball sampling to gather 538 questionnaires from potential consumer groups between August and September 2024. After excluding 35 invalid questionnaires, 503 valid responses were collected and analysed statistically.

FINDINGS

Detailed analysis was conducted on essential personal data of the subjects, including gender, age, work background, education background, and design background. As shown in Table 2, 59.4% of the respondents were female, and 36.6% were between the ages of 31 and 40. The educational, academic, and research staff respondents make up 33.4% of the samples. The second largest group (32.3%) comes from art and design/creative fields, while the third (23.9%) are students.

Table 2. Demographic characteristics (n = 503)

Categories	Items	Frequencies	Percentage
Gender	Male	204	40.6%
	Female	299	59.4%
Age	18~25	120	23.9%
	26~30	153	30.4%
	31~40	184	36.6%
	41~50	29	5.8%
	more than 50	17	3.4%
Working background	Art and Design/ Creative	162	32.2%
	Educational/academic/research staff	168	33.4%
	Students	120	23.9%
	Other	53	10.5%
Education background	Research institute and above	284	56.5%
	University and below	219	43.5%
Design background	With a design background	253	50.3%
	Without a design background	250	49.7%

Exploratory Factor Analysis and Cronbach's Alpha Analysis

The KMO measure of sampling adequacy was calculated for all variables before conducting exploratory factor analysis. The results showed that the KMO value (0.902) exceeds the acceptable threshold. Bartlett's test of sphericity also confirmed the appropriateness (Sig. = 0.000). Therefore, the questionnaires meet the criteria for factor analysis. After assessing the KMO measure, common factors were extracted using principal component analysis. The results indicated that the seven extracted factors explained a total variance of 62.023 percent, providing initial validation of the conceptual model of glass products with cultural heritage elements. All variable loadings surpassed 0.6, making them suitable for further analysis. The Cronbach's alpha (α) for all online survey items was 0.907. The Cronbach α coefficients for the seven subscales- beauty value (BV), fun benefits (FB), identity benefits (IB), connotation benefits (CB), historicity benefits (HB), uniqueness value (UV), and purchase intention (PI)- were as follows: $\alpha_{BV} = 0.741$, $\alpha_{FB} = 0.746$, $\alpha_{IB} = 0.824$, $\alpha_{CB} = 0.779$, $\alpha_{HB} = 0.787$, $\alpha_{uv} = 0.787$, $\alpha_{PI} = 0.805$. The reliability of the overall scale and each variable ranged from 0.7 to 0.9, indicating strong internal consistency of the questionnaire, as shown in Table 3. Consequently, the online survey items used in this study demonstrate good internal reliability.

Table 3. Reliability Analysis

Factor	Name	Item	Factors Loadings	Cronbach's α
Factor 1	Beauty Value	BV1	0.746	0.741
		BV2	0.670	
		BV3	0.630	
		BV4	0.712	
Factor 2	Fun Benefits	FB1	0.697	0.746
		FB2	0.689	

		FB3	0.646	
		FB4	0.737	
Factor 3	Identity Benefits	IB1	0.713	0.824
		IB2	0.726	
		IB3	0.746	
		IB4	0.785	
Factor 4	Connotation Benefits	CB1	0.76	0.779
		CB2	0.63	
		CB3	0.681	
		CB4	0.753	
Factor 5	Historicity Benefits	HB1	0.748	0.787
		HB2	0.683	
		HB3	0.71	
		HB4	0.753	
Factor 6	Uniqueness Value	UV1	0.734	0.787
		UV2	0.741	
		UV3	0.731	
		UV4	0.712	
Factor 7	Purchase Intention	PI1	0.759	0.805
		PI2	0.746	
		PI3	0.676	
		PI4	0.789	
Overall reliability/Cronbach's α				0.907

Structural Model

Finally, the researcher utilised SEM to examine the hypotheses relating to the product's symbolic benefits and the purchase intention of glass products with cultural heritage elements. The simultaneous maximum-likelihood estimation method tested the hypotheses across variables such as beauty value, fun benefits, identity benefits, connotation benefits, historicity benefits, uniqueness value, and purchase intention. The values obtained were: RMR of 0.035, RMSEA of 0.037, NFI of 0.894, IFI of 0.953, TLI of 0.946, CFI of 0.953, PCFI of 0.829, PNFI of 0.778, and χ^2/df of 1.701. All these indicators met acceptable standards. Although NFI is 0.894, slightly below the criterion of 0.9, it still remains at a high level and exceeds the criteria recommended by Segars and Grover. Therefore, this suggests that the structural model is a good fit. Subsequently, the researcher tested the hypotheses, as shown in Table 4 below.

Table 4. Path Relationship Test Results of SEM Model on Influencing Factors of Purchase Intention

Path			Estimate	t-Value	Hypothesis Test
Purchase Intention	<---	Beauty Value	0.320	4.180***	Support
Purchase Intention	<---	Fun Benefits	0.163	2.165	Reject
Purchase Intention	<---	Identity Benefits	0.231	3.400***	Support
Purchase Intention	<---	Connotation Benefits	-0.003	-0.045	Reject
Purchase Intention	<---	Historicity Benefits	0.130	1.844	Reject
Purchase Intention	<---	Uniqueness Value	-0.069	-1.003	Reject

*** $p < 0.01$

This table reports the results of the hypothesis tests, and Figure 3 below presents the model's parameter estimates. Regarding the path between perceived beauty value and purchase intentions (Hypothesis 1), the estimation results indicated that this path was significant ($p < 0.01$). In other words, the beauty value ($\beta = 0.320$, $t = 4.180$) significantly influences purchase intention. This finding also supports previous research. It suggests that when consumers purchase glass products with cultural heritage elements, their perception of the product's beauty value aligns with that of other daily life goods, leading to a significant effect of this fundamental value on purchase intention. The possible reason why the benefits of fun do not significantly influence purchase intention is that product fun is not preferred by older users. Concerning the four symbolic dimensions of perceived value for glass products with cultural heritage elements, the study examined the influence of these factors on purchase intentions (Hypothesis 2–Hypothesis 5). The results showed that only identity benefits ($\beta = 0.231$, $t = 3.400$) significantly positively affect purchase intentions at $p = 0.000$. However, fun benefits ($\beta = 0.163$, $t = 2.165$), connotation benefits ($\beta = -0.003$, $t = -0.045$), and historicity benefits ($\beta = 0.130$, $t = 1.844$) do not have a significant influence on purchase intentions. A possible explanation for this is that the historical and connotation information conveyed by the glass products creates a kind of information overload for consumers. Regarding the path between uniqueness value and purchase intention (Hypothesis 6), the results indicated that this path was not significant ($p > 0.01$). The uniqueness value ($\beta = -0.069$, $t = -1.003$) does not significantly influence purchase intention. This outcome contradicts previous research. It suggests that when consumers buy glass products, their perception of uniqueness may differ from that of other everyday products, resulting in this value having an insignificant effect on purchase intention. One possible explanation is that some consumers may not readily accept overly unique designs, and the distinctiveness of glass products cannot be closely aligned with consumers' real needs and life scenarios; therefore, it fails to stimulate their purchasing instincts.

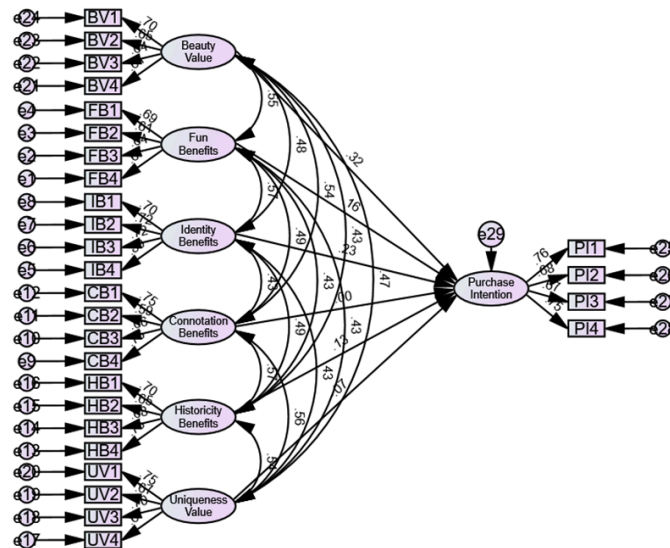


Figure 3. The Estimated Model
 (Source: Drawn by the author, 2025)

DISCUSSION

As Eytam (2022) states, cultural preferences are characterised by universality, diversity, stability, and a sense of coercion, and consumers are more inclined to buy products and services aligned with their cultural values. This emphasises the importance of understanding how people feel, and exploring ways to incorporate cultural heritage elements into product design to enhance acceptability and foster a deeper

connection with traditional culture (Zhou et al., 2022). In this survey, participants demonstrated a positive attitude towards the six benefits proposed for glass products featuring Chinese cultural elements, but four of these did not significantly affect purchase intention. The reason might be that the target group has different preferences for fun, possesses limited understanding of certain cultural meanings and historical significance, and overly prioritising uniqueness while neglecting product practicality. These reasons were reflected in the negative comments given by the experts during the interviews conducted earlier by the author. For instance, the negative comments from the glass product designer group revealed that older groups may not recognise the enjoyable benefits, and overly direct or implicit presentation elements can lessen the product's fun. The negative comments from glass product design educators indicate that excessive historical information will add to users' burdens and foster negative resistance to the product. Some negative comments noted that the misunderstanding of cultural meaning may lead to distorted cultural connotations and unhealthy emotional pursuits. As highlighted by the negative comments from designers, products that are excessively distinctive tend to diverge from mainstream aesthetic trends. This is also apparent in certain glass products that mirror the architectural characteristics of regional ethnic groups. Despite their individuality, these products face difficulties in establishing a clear market position. Although this study has examined the relationship between perceived benefits and purchase intentions in glass products featuring cultural elements, it has some limitations worth noting, which could suggest avenues for future research. Firstly, the respondents are limited to specific groups but could be extended to other potential consumer groups in the future. Secondly, there may also be other factors that influence purchase intention beyond a product's symbolic, innovative, and hedonic benefits. Research has indicated that satisfaction, loyalty, and brand preference also affect purchase intentions (Li et al., 2021). Additional variables should be introduced to broaden the research framework of glass products with Chinese cultural elements.

CONCLUSION

With changes in consumption and demand, alongside a reluctance towards the homogenisation of industrial products, stylistically and culturally distinctive products tend to capture aesthetic interest more rapidly. This research will open new avenues for innovating product design styles while enabling traditional culture to be inherited and revitalised, allowing the new generation to experience the allure of culture. The conceptual model investigates factors affecting glass products with Chinese cultural elements. The findings can help glass products with Chinese cultural elements transition from school studios and art exhibitions to the market. When Chinese glass product design encounters the influence of scientific and technological modernisation and foreign cultures, it maintains distinct cultural characteristics while adapting to the market.

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