

DESIGN OF CAMPUS SOUVENIR BASED ON ART AND CULTURE EVALUATION OF SHANDONG IN CHINA

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ABSTRACT

From the perspective of consumer perception, this paper selects the campus souvenirs of Zibo Vocational College as the research objective, and constructs a comprehensive index evaluation system for campus souvenirs. Combined with the artistic and cultural characteristics of Shandong, this paper extracts six key perception factors, including culture, regionality, artistry, collection, innovation and practicability, which have a significant impact on the evaluation of campus souvenirs. By using factor analysis, this paper conducts an in-depth and objective quantitative analysis of the indicators of these six perceptual factors. At the same time, by surveying consumers' satisfaction with souvenirs and discussing related issues in detail, it aims to provide empirical support and clear direction guidance for subsequent product improvement and optimization design.

Keywords: Shandong Arts and Culture, Campus Memorabilia, Evaluation System, Consumer Perception

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INTRODUCTION

In today's society, campus memorabilia is not only a symbol of school culture, but also a bond that connects the school with students and alumni. Especially in Shandong, China, this culturally rich region, its unique art culture provides a unique resource for campus souvenir design. However, the current campus memorabilia market is in huge demand, but it is facing multiple challenges. At present, the positioning of campus souvenirs in Shandong colleges and universities is generally inaccurate, resulting in consumers' vague cognition and difficulty in stimulating their desire to buy. Some souvenirs have not been fully integrated into the campus culture, have low visibility, unsatisfactory quality, and even have the problem of homogenization, which undoubtedly weakens their market competitiveness. More importantly, the designers and decision-makers of campus souvenirs lack a scientific and effective evaluation system, and cannot make a comprehensive and accurate evaluation of the design effect and market potential of the product. This leads to the lack of clear direction and guidance in the subsequent improvement and optimization design of the product, which is difficult to meet the actual needs of the market and consumers.

Therefore, this paper takes the campus souvenir of Zibo Vocational College as a specific case, aiming to set a model for the souvenir of colleges and universities across the country. From the unique perspective of consumer perception, we build a comprehensive and detailed evaluation system for campus souvenirs. Through this system, we conduct in-depth research and discuss various factors that affect consumers' perception of campus souvenirs, in order to more accurately grasp consumer needs and market dynamics. At the same time, we will also carry out a series of empirical studies to scientifically analyze the market performance and consumer feedback of campus souvenirs with the support of data, so as to provide a strong basis for the optimal design of campus souvenirs and promote the continuous innovation and development of the entire industry.

Design of campus souvenirs for the evaluation of art and culture in Shandong, China. Focusing on the six key perception factors of Shandong's art and cultural characteristics, such as culture, regionality, artistry, collection, innovation and practicability, this paper deeply explores and evaluates the design of campus souvenirs, and finally constructs a scientific, practical and campus souvenir design evaluation system with Shandong art and cultural characteristics.

LITERATURE REVIEWS

Build an indicator system

At present, it is rare to study the evaluation of campus souvenirs from the perspective of tourists' perception, and relevant representative studies are relatively scarce. However, the construction of a consumer perception evaluation system for campus souvenirs is the top priority of this research. In order to improve the reliability and validity of the study, this paper systematically collects and analyzes relevant data from the perspective of consumers. First, an extensive questionnaire survey was conducted among 1,103 potential consumers (University teachers, students, graduates and tourists) to gain a comprehensive understanding of their overall evaluation of campus souvenirs. Subsequently, we further consulted the professional opinions of 16 authoritative figures, including folk art and culture contributors, art and culture experts, and product design experts in Shandong Province. After rigorous analysis and screening, we finally selected 17 core indicators for the evaluation of campus souvenirs and constructed an evaluation index system for campus souvenirs, as shown in Table 1.

Table 1 Evaluation index system of campus souvenirs

Level 1 indicators	Level 2 indicators	Definition of connotation
Cultural	Depth of cultural heritage	Do campus memorabilia dig deep into and embody the essence of campus culture, such as school history, school motto, campus traditions, etc., so as to emotionally resonate with alumni and students?
	Fusion of cultural elements	Do campus souvenirs skillfully integrate elements of campus culture and regional culture (such as school emblems, landmark buildings, campus landscapes, regional cultural symbols, etc.) into them, making them an effective carrier of cultural information?
	Cultural storytelling	Is there a story behind the campus memorabilia that is closely related to the campus culture, and can such a story spark people's interest and curiosity, and then deepen their understanding and identification with the campus culture?
	Cultural uniqueness	Does design of campus memorabilia highlight uniqueness of campus culture, making it stand out from the crowd and become a unique symbol representing campus culture?
Locality	Inheritance of local art styles	Does the artistic style of the campus souvenir inherit the traditional artistic expressions of the local area, such as specific craftsmanship techniques, use of colors or pattern design, so as to show a unique regional aesthetic?
	Innovative geographical integration	Do campus memorabilia creatively combine regional culture and modern design concepts? Does this innovation not only retain the essence of regional characteristics, but also give the product a new sense of modernity and practical value, making the souvenir both traditional and modern, and more attractive?
Artistry	Artistic beauty	Do campus souvenirs have a high degree of artistic beauty, and are their design elements, color combinations and shapes harmonious and unified, which can bring visual enjoyment to people? Does the overall visual effect of the product meet the standards of a work of art and can arouse people's aesthetic pleasure?
	Artistic expression	Do campus souvenirs successfully express the cultural, historical, or spiritual connotations of campus in an artistic form through unique artistic techniques and creativity? Is its artistic expression strong, and can people feel its unique artistic value at a glance?
	Artistic emotional resonance	Can campus memorabilia touch people's hearts and resonate emotionally with consumers through their artistic design? Can its artistic elements and expressions allow consumers to recall the good times on campus, or feel the unique charm of campus culture, so as to produce a deep emotional experience?
Collectible	Limited and scarce	Are campus memorabilia limited or somewhat scarce? Limited or scarce souvenirs are often more collectible because they are more unique and rare, satisfying collectors' quests for unique collections.
	Cultural values	Do campus souvenirs deeply reflect the school's history, culture, educational philosophy, or campus characteristics? Is it rich enough for collectors to recall the moments of campus life or feel the unique cultural atmosphere of the school through this souvenir? The depth of this cultural value is an important indicator to evaluate its collectibility.

Level 1 indicators	Level 2 indicators	Definition of connotation
Innovative	Cultural integration and expression	Whether campus souvenir cleverly integrates the elements of campus culture into the exterior design, and shows the unique charm of campus culture through patterns, colors or shapes. Whether it digs deep into the history and traditions of campus and how these elements are reflected in the exterior design.
	Originality and uniqueness	Whether the design of campus souvenir is highly original, avoiding the similarity with other products on the market, and whether it shows the designer's unique understanding and expression of campus culture through unique design elements or creative ideas.
	Innovative design and technology converge	Whether design of campus memorabilia shows innovative thinking, such as the use of non-traditional materials, unique shapes, or combination of modern technological elements. Whether it has been enhanced by innovative design, such as the inclusion of smart functions or eco-friendly concepts.
Practicability	Versatile design	Does the design of campus souvenirs consider combining souvenirs with other commonly used items, such as keychains, bookmarks, pen holders, USB flash drives, etc., so that they can be used more frequently in daily life.
	Portability	Whether the design of campus souvenirs takes into account the mobility of students and alumni, and the souvenirs should be designed to be easy to carry, such as small and lightweight, easy to pack, extrusion resistant, etc., easy to carry and transport.
	Durability	Whether the campus souvenir is made of durable materials to ensure that it can be stored for a long time under normal use conditions and is not easy to be damaged.

RESEARCH METHODOLOGY

The quantitative analysis of the indicators was carried out by factor analysis to explore the design of campus souvenirs for the evaluation of art and culture in Shandong, China. By refining the key indicators and analyzing the correlation between the indicators, the core factors reflecting the characteristics of Shandong's art and culture are extracted. These factors not only provide rich cultural connotation for souvenir design, but also ensure the uniqueness and innovation of the design, making souvenirs an important carrier for spreading Shandong art and culture.

Participator

The participants in this paper are 10 folk artists or cultural contributors in Shandong Province, 3 product design experts in Shandong Province, 3 art and culture experts in Shandong Province, and 1103 consumers interested in souvenirs, a total of 1119 people.

Data collection

A survey of campus memorabilia was conducted using a questionnaire survey to collect data. The research was conducted in the form of questionnaires and individual interviews from December 15, 2023 to April 25, 2024, with well-known experts in product design in Shandong Province, art and culture experts in Shandong Province, folk art and culture contributors in Shandong Province, school teachers, students, alumni and tourists as the research objects. A total of 1,119 questionnaires were distributed online and offline, of which 996 were valid, with a valid questionnaire rate of 89%. It fully shows the active participation and cooperation of the respondents. In order to deeply interpret these data, we conducted a detailed factor analysis of the valid questionnaire using SPSSPRO statistical software, aiming to reveal the key elements of campus memorabilia design, market acceptance, and potential areas for improvement. At

the same time, combined with the in-depth communication content of individual interviews, it provides rich background information and auxiliary explanations for the factor analysis results, which makes the research conclusions more three-dimensional, comprehensive and has practical guiding significance.

Data analysis

Population analysis, a total of 1,119 people were involved in the survey, including experts in different fields and a wide range of campus souvenir consumers, forming a diversified research group. Among them, there are 10 folk art and culture contributors in Shandong Province, 3 product design experts in Shandong Province, 3 art and culture experts in Shandong Province, and 1,103 campus souvenir consumers. This composition helps to fully understand the market situation, consumer demand and cultural value of campus memorabilia from multiple perspectives.

The first is the characteristics of the expert group. In the end, 16 experts were interviewed, including 10 contributors to folk art and culture in Shandong Province, 3 experts in art and culture in Shandong Province and 3 product design experts in Shandong Province. Accounted for 1.5%. They have strong regionality, professionalism, authority, academicity and comprehensiveness, and they have in-depth research and unique insights into the art culture and campus SMEabilities of Shandong Province, which can provide in-depth analysis and macro vision for the research.

The second is the characteristics of campus souvenir consumer groups. In the end, 1,103 consumers participated in the survey, including 143 college teachers, accounting for 12.8%; 800 students, accounting for 71.5%; 100 alumni, accounting for 9%; 60 tourists, accounting for 5%; Their participation provided a wealth of data and in-depth insights into the survey, which helped us to have a more comprehensive understanding of the market situation and development trends of art culture and campus souvenirs in Shandong Province.

The third is comprehensive characteristics. From the age characteristics analysis. The age characteristics of the surveyors showed a clear trend of younger people, mainly 19-24-year-old students, and 19-24-year-old consumers accounted for the largest proportion of 72.6%; followed by tourists aged 25-40, accounting for 13.9%; Over 40 years old, accounting for 12.8%, there are also significant differences in consumption characteristics and influence among consumers of different ages. These differences provide an important reference for the product positioning, design style and marketing strategy of the campus souvenir market. From the analysis of educational characteristics. In this survey, the consumption participation of college education and above reached 87.2%, indicating that consumers with college education and above occupy a dominant position in the campus souvenir market, and they have higher requirements for product design and cultural connotation, which not only reveals the characteristics of the main consumer groups in the current market, but also provides valuable market information and marketing strategy suggestions for merchants. Structural features of the occupation. Students account for the largest proportion, reflecting their strong interest in campus souvenirs as a major consumer group. Faculty and alumni followed, indicating that they have a deep emotional connection to the campus culture and pursue the educational and commemorative value of souvenirs. Although there are few tourists, they bring diverse needs to the market and together constitute a diverse consumer group, as shown in Table 2.

Table 2 Basic characteristics of campus souvenir samplers

Serial number	Features	Category	Number	Effective percentage
1	Gender	Man	589	52.6%
		Woman	530	47.4%
2	Age	19-24 years old	812	72.6%
		25-40 years old	188	10.5%
		Over 40 years old	119	16.9%
3	Degree	University Students	820	73.3%
		undergraduate	156	13.9%
		Graduate student	143	12.8%
4	Colony	Consumer groups	143	12.8%
		Current students	800	71.5%
		alumnus	100	9%
		visitor	60	5%
	A group of experts	Contributor to folk art and culture	10	0.09%
		Product design specialist	3	0.03%
		Specialist in art and culture	3	0.03%

Sampling credit analysis, In the in-depth analysis of the dataset of campus memorabilia evaluation, we not only used the Cronbach reliability coefficient to conduct a detailed reliability evaluation, but also further tested the validity of the questionnaire through factor analysis.

RESEARCH RESULTS

First of all, the reliability analysis results showed that the Crohnbach reliability coefficient was as high as 0.814, which fully proved that there was a very high internal consistency within the scale. It means that the results can stably and truly reflect consumers' personal feelings and perceptions of campus memorabilia, which enhances the reliability of the research results. Then, in order to verify the validity of the questionnaire, principal component analysis (PCA) was used to test the KMO value (Kaiser-Meyer-Olkin), which is an important indicator to measure the suitability of the sample data for factor analysis. After performing the calculations using the SPSS pro software, we came up with a KMO value of 0.789, which is a very desirable value and well above the threshold required to perform factor analysis. At the same time, the significance level of Bartlett's Test of Sphericity reached 0.000, indicating a high correlation between the variables, which further verified the suitability of the questionnaire data.

Exploratory factor analysis, The results of the credit analysis clearly indicate that the data are suitable for factor analysis, so we use SPSSpro software to efficiently reduce the dimensionality of the questionnaire data. In the process of extracting factors, we strictly follow the double standard of eigenvalue >1 and factor load >0.5 to ensure that the extraction of new factors is both scientific and representative. After fine-tuning the variance maximization rotation, we have successfully extracted six core common factors: culturality, regionality, artistry, collectibility, innovation and practicality. The naming of these common factors accurately captures the core meaning of their respective high-load evaluation indicators, and clearly reveals the information dimensions they contain.

In the test of commonality of descriptive items, we found that the commonality of all descriptive items was <0.5 , which ensured the integrity of the data and the comprehensiveness of the analysis, and there was no need to exclude any evaluation items. In addition, the reliability evaluation of each factor is even more exciting, and its reliability coefficients far exceed the baseline of 0.6, especially the reliability coefficients of cultural, regional, artistic,

innovative and practical factors are maintained above 0.8, highlighting the high degree of consistency and reliability within scale. Although the reliability coefficient of the collectible factor is 0.641, it also shows a good level of reliability. This is shown in Table 3.

Finally, from the perspective of cumulative explanatory variance, the contribution of these six common factors to the total variance is 74.579%, which fully verifies the effectiveness and comprehensiveness of factor extraction, and lays a solid foundation for subsequent data analysis and conclusion derivation.

Table 3 Exploratory factor analysis of perceptual evaluation of campus souvenirs

Level 1 indicators	Level 2 indicators	Factor assignment	Eigenvalue	Variance Contribution Rate/%	Reliability effective coefficient
Cultural	Depth of cultural heritage	0.866	6.25	20.28	0.862
	Fusion of cultural elements	0.823			
	Cultural storytelling	0.816			
	Cultural uniqueness	0.859			
Locality	Inheritance of local art styles	0.845	3.36	10.23	0.851
	Innovative geographical integration	0.868			
Artistry	Artistic beauty	0.853	5.54	14.45	0.764
	Artistic expression	0.825			
	Artistic emotional resonance	0.834			
Collectible	Limited and scarce	0.659	2.11	5.825	0.641
	Cultural values	0.812			
Innovative	Cultural integration and expression	0.819	4.45	11.231	0.842
	Originality and uniqueness	0.826			
	Innovative design and technology converge	0.726			
Practicability	Versatile design	0.811	5.36	12.563	0.829
	Portability	0.852			
	Durability	0.819			

Common factor 1 "culturality" includes "four key indicators: the profound heritage of cultural inheritance, the exquisite integration of cultural elements, the attractiveness of cultural stories, and the uniqueness of cultural characteristics." This dimension profoundly reflects consumers' recognition and cherishing of the historical and cultural essence and traditional cultural charm contained in campus souvenirs, and is an indispensable core element in building a comprehensive and in-depth campus souvenir evaluation system.

Common factor 2 "regionality" includes indicators such as "the inheritance essence of local art styles and the deep integration of innovative regional cultures", which accurately captures consumers' strong interest and preference for those souvenirs with unique local style. The core of the dimension of regionality is to emphasize that each campus souvenir should become a vivid display of the cultural characteristics of its location, rather than simply copying and being the same.

Common factor 3 "artistry" covers the three core indicators of artistic beauty, artistic expression and artistic emotional resonance. "Artistry" emphasizes the aesthetic value of souvenirs in terms of design, color, form, etc., which can touch people's visual senses and arouse people's perception and appreciation of beauty.

Common factor 4 "innovation" includes "cultural integration and expression, originality and uniqueness, innovative design and technology integration." "Three indicators. It

comprehensively reflects the comprehensive ability and level of souvenirs in terms of innovation. It encourages designers to continue to explore and try new creative paths and methods, inject more creativity and vitality into souvenirs, and meet consumers' yearning and pursuit of a better life.

Common factor 5 "practicality" includes three indicators, such as "multi-functional design, portability, and durability", which comprehensively reflects the comprehensive performance of souvenirs in terms of practicality. It encourages designers to pay attention to the actual needs and experience of consumers, and provides consumers with both beautiful and practical souvenir choices through careful design and production.

Therefore, according to the above analysis, a complete comprehensive evaluation index system can be obtained to measure the perception of tourists of campus cultural and creative products, as shown in Table 4.

Table 4 Consumer perception and evaluation system of campus souvenirs

Subsystem	Original information
Cultural	Depth of cultural heritage
	Fusion of cultural elements
	Cultural storytelling
	Cultural uniqueness
Locality	Inheritance of local art styles
	Innovative geographical integration
Artistry	Artistic beauty
	Artistic expression
	Artistic emotional resonance
Collectible	Limited and scarce
	Cultural values
Innovative	Cultural integration and expression
	Originality and uniqueness
	Innovative design and technology converge
Practicability	Versatile design
	Portability
	Durability

Campus memorabilia satisfaction analysis, the survey, which covered 1,119 participants, was designed to collect feedback on their satisfaction with campus memorabilia, with a summary of the results as shown in Table 5. Overall, campus souvenirs were satisfied by more than 78% of respondents, with about 45% being particularly satisfied, and about 5% of visitors expressing dissatisfaction. In-depth interviews revealed that most consumers appreciate the unique charm and creativity of souvenirs that can reflect the traditional culture of Shandong, and believe that they have purchase value. However, there is also feedback that some products are too expensive and of poor quality, and there is still room for improvement in creativity. Further analysis pointed out that the main problems faced by souvenirs were inflated prices, accounting for 40.5%, followed by insufficient quality and lack of practicability, accounting for 13% and 18%, respectively, and insufficient cultural connotation and creativity, accounting for 18% and 21.6%, respectively. In contrast, consumers have higher expectations for the artistic, cultural and innovative nature of souvenirs, all of which are more than 70%. The consideration of practicality and collectibility attracted about 43% and 10% of consumers, respectively. In terms of purchase purposes, more than 84% of visitors prefer to keep campus souvenirs as souvenirs, followed by gifts for friends and relatives or based on personal hobbies and collection needs,

while only 32% of consumers said they would incorporate them into their daily lives. These data provide a valuable reference for optimizing the design, pricing and market positioning of campus souvenirs.

Table 5 Campus Souvenir Satisfaction Survey

Satisfaction	Shortcoming	Quality	Use
Satisfied	78% Lack of culture	18% Cultural	80.23% Commemorate 84%
Very satisfied	45% The quality is not good	13.23% Innovative	76.25% Daily use 32%
Dissatisfied	5% The price is inflated	40.5% Artistry	60.75% Gifts for friends and family 40%
	Practical is not strong	18% Collectible	10%
	Lack of creativity	21.6% Practicability	33.75%
		Locality	62.25%

Therefore, this paper innovatively uses factor analysis to deeply understand the perspective of consumers, preliminarily constructs the framework of a comprehensive evaluation system for campus souvenirs, and analyzes the satisfaction and multi-dimensional evaluation of campus souvenirs in detail, which provides valuable insights and enlightenment for optimizing the consumer perception evaluation system and product design strategy of the future campus souvenir market.

The core findings of this study include: First, through rigorous field investigation and empirical analysis, we extract the core structure of the consumer perception evaluation system for campus souvenirs, which is composed of six key factors and 17 specific evaluation indicators under its jurisdiction, covering multiple dimensions affecting consumer perception. Second, based on extensive consumer satisfaction feedback, although a whopping 78% of respondents were satisfied with the existing campus souvenirs, the study also revealed a number of areas that need to be improved, indicating that there is still a lot of room for improvement. It is particularly noteworthy that, in addition to the three cornerstones of cultural depth, regional characteristics and innovative design, consumers' pursuit of commemorative value, artistic beauty and practical functions carried by souvenirs is also strong, which points out a new creative direction for campus souvenir design, that is, more attention needs to be paid to the integration of emotional resonance, aesthetic enjoyment and daily practicality to meet the increasingly diversified needs of consumers.

DISCUSSION & CONCLUSION

In the practical application of campus souvenir design based on the evaluation of art and culture in Shandong, China, we conducted in-depth exchanges with experts and scholars such as folk art and culture contributors, art and culture experts, and product design experts in Shandong Province, and jointly discussed the necessity and feasibility of the construction of a consumer perception evaluation system for campus souvenirs. Experts and scholars generally agree that the system focuses on the six key perception factors of culture, regionality, artistry, collection, innovation and practicability, combined with 17 core indicators such as the depth of cultural inheritance, and provides a scientific and comprehensive guidance framework for the design of campus souvenirs rich in cultural connotation and regional characteristics. This will not only help to enhance the cultural value and market competitiveness of souvenirs, but also promote the dissemination and inheritance of Shandong's excellent traditional culture.

The establishment of the consumer perception evaluation system of campus souvenirs has had a positive and far-reaching impact on the optimization and upgrading of campus souvenirs. On

the one hand, the system provides designers with the direction and motivation for continuous improvement. By collecting and analyzing consumer feedback, designers can clearly understand market demand and changes, adjust design strategies in a timely manner, and make souvenirs closer to consumer expectations and needs. This kind of iterative optimization based on consumer perception can continuously improve the quality and competitiveness of souvenirs, and realize the continuous upgrading and iteration of products. On the other hand, the establishment of the evaluation system also promotes the shaping and promotion of the brand image of campus souvenirs. By strengthening the cultural, regional and artistic characteristics of souvenirs, as well as enhancing their collectibility and practicability, the brand awareness and reputation of souvenirs can be significantly enhanced. This will not only help attract more consumers' attention and purchases, but also lay a solid foundation for the long-term development of the campus souvenir industry.

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Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

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