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BLENDING THE ANCIENT WITH THE NEW: INNOVATION STRATEGIES IN SANXINGDUI MUSEUM CULTURAL AND CREATIVE PRODUCTS DESIGN

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Abstract: This study investigates the strategies employed by the Sanxingdui Museum in designing cultural products that blend ancient heritage with modern design principles. It aims to explore how these products merge traditional cultural elements with contemporary aesthetics, and how visitors perceive and engage with them. By examining the intersection of innovation and heritage preservation, the research provides insights into the evolving role of cultural products in enhancing museum experiences. A mixed-method approach was utilized, combining qualitative and quantitative research methods. In Phase 1, semi-structured interviews were conducted with 7 museum managers and designers to explore their strategies and creative processes. In Phase 2, a structured questionnaire was administered to 120 museum visitors to understand their preferences and perceptions of the products. Data were analyzed using thematic analysis and statistical techniques, including SPSS. The findings reveal that the museum uses innovative approaches, such as digital technologies and collaborative design processes, to merge tradition with modernity. Products that effectively blend ancient cultural symbols with contemporary aesthetics received positive feedback from both designers and visitors. This study contributes to the understanding of how museums can innovate while preserving cultural authenticity. It offers practical insights for museum professionals and designers to create products that resonate with diverse audiences, enhancing cultural engagement and promoting heritage in modern contexts.
Keywords: Sanxingdui Museum, Cultural Product Design, Innovation Strategies, Heritage Preservation, Visitor Engagement

INTRODUCTION

Sanxingdui Museum, located in Sichuan Province in China, has some of the most significant 20th-century archaeological discoveries. The museum introduces the ancient Sanxingdui civilization that lived over 3,000 years ago and are known for their exquisite bronze figurines, jade remains, and other elaborate artifacts (Changping & Wu, 2024). These artifacts, discovered in the 1980s, have transformed our understanding of ancient Chinese civilization and remain one of the greatest cultural heritages of the region (Duan, 2024). Sanxingdui Museum is not only a museum for the conservation of history but also a cultural exchange center, where visitors can experience the well-established traditions and artistic accomplishments of the Sanxingdui people (Huang et al., 2025). The museum plays an important function in conserving and interpreting this old civilization, gaining valuable experience for local as well as foreign tourists to become a part of China's affluent past (Li & Wang, 2024).

Cultural and creative products have now emerged as important means for museums across the globe to improve visitor experience as well as promote cultural heritage further (Abdullah & Aslam, 2024). They, from replicas of artifacts of antiquity to reinterpretations in modern forms, are tangible signs of the pedagogical purpose of the museum and provide access to history on an individual level to visitors (Ariffin et al., 2023). For Sanxingdui Museum, not only are production and sales of cultural products more income-generating but also serve an imperative role in unleashing the rich heritage of the museum and rendering it engaging and accessible to diverse modern publics (Qiu et al., 2023). The products, through fusing ancient tradition with modern style, connect ancient heritage and contemporary consumption culture and make heritage more appealing and usable for today's diverse publics (Li & Wang, 2024).

The demand for innovative product design solutions balancing heritage tradition and modern trends has grown increasingly imperative in the globalized museum world of today, with museums vying for visitors and struggling to stay relevant in the age of digital technology (Ben Yahia & Bouslama, 2023). Providing products that are culturally up-to-date and aesthetically up-to-date is a key strategy for attracting and engaging multicultural consumers (Gui et al., 2024). Classic museum souvenirs like replica artifacts are often culturally valuable but still manage to disappoint younger, design-savvy tourists (Hutson & Hutson, 2023). In contrast, newer product designs that appeal to modern tastes, technology, and interactivity stand a good chance of appealing to these tourists without offending the cultural heritage they wish to represent (Sudirjo, 2023). In the Sanxingdui Museum, the concern is how to create products which not only resonate with the history Sanxingdui culture but also attract the modern consumer whose likelihood of getting interested in pragmatic, innovative, and art-contemporary products is higher (Shi et al., 2023). In this present research, an endeavor will be made to examine the way the Sanxingdui Museum embraces innovation in its process of product development, striking the balance between cultural aspects and modern trends.

In addition, with the museum sector more and more welcoming to digital technologies, including 3D modeling, augmented reality (AR), and virtual reality (VR), there is constantly increasing demand for information on how to use these technologies in order to enrich the design of cultural products (Casillo et al., 2024). These technologies provide new opportunities for the design of interactive and immersive museum experiences, allowing visitors to engage with the museum's collection in ways previously unimaginable (Siliutina et al., 2024). Use of digital tools in product design provides potential advantages not only in visitor engagement but also in increasing design potential for museums (Li et al., 2024). This study aims to examine how the Sanxingdui Museum applies such technologies in the manufacture of its products and how such technologies affect the shape and functionality of the products, thereby enhancing the general discourse on digital integration in cultural heritage conservation.

Lastly, one should also value the attitudes of visiting publics towards museum products when considering whether innovative design solutions work or not (Abdullah & Aslam, 2024). The diversified demographic status of visiting publics to museums leads to different visitors having different needs for cultural commodities (Ben Yahia & Bouslama, 2023). Some may value history and traditional forms more than others, while others may consider modern appearance or interactive functions as more desirable (Casillo et al., 2024). The ability to determine these likes can allow museums to tailor their products to meet more of the needs of their patrons, making their products appealing to a diverse array of visitors (Zhang et al., 2023). This study will examine how age, nationality, and prior experience at a museum affect the attitudes and likes toward cultural products at the Sanxingdui Museum, providing guidance on future product design.

The three major purposes of this research are as mentioned below. Firstly, the study will analyze the innovation approaches adopted in cultural product design at Sanxingdui Museum. By looking into design processes, creative strategies, and issues encountered by museum designers, the study seeks to provide more informed input into the knowledge of innovation application in cultural heritage preservation. Secondly, the research will explore the manner in which the products manage to integrate cultural elements of tradition with contemporary principles of design. This goal is especially significant in that it will determine how historical cultural symbols and materials are interpreted in line with new design protocols while maintaining balance between heritage protection and the concerns of contemporary consumers. Finally, the research will examine visitor opinions regarding these innovatory products. By examining how various visitor segments react to the museum products along demographic traits such as nationality and age, the study will provide insights into how museums can create products that are multi-pershing in appeal and yet culturally authentic. This study seeks to address the following research questions: What strategies are used in designing cultural products at the Sanxingdui Museum? How do museum managers and designers integrate traditional and modern elements in product design? What are the visitor perceptions and preferences regarding these products?

The importance of this research is in its potential to offer significant insight into the future role of museum products in promoting and preserving cultural heritage. With museums moving toward engaging with wider audiences, learning how to innovate while being consistent with cultural tradition is paramount. This study not only enriches theoretical conversations on cultural product design but also provides practical insights for museum practitioners looking to develop their product offerings. Through the particular case of the Sanxingdui Museum, the research offers in-depth examination of the issues and solutions involved in designing museum products that simultaneously incorporate tradition and modernity. Furthermore, the results can be used to inform wider debate regarding the application of digital technology in cultural product development and visitor interaction, with practical recommendations available for museums that wish to remain relevant in an increasingly dynamic cultural environment.

LITERATURE REVIEW

Cultural Heritage and Creative Products

Museums are custodians of cultural heritage par excellence, having a dual role to preserve and re-interpret the artifacts of the past (Buragohain et al., 2024). Traditionally, their role has been to serve as repositories documenting, conserving, and exhibiting items that contain a people's or civilization's collective memory (Del Soldato & Massari, 2024). In the last few decades, museums have evolved towards a more active,

inclusive ethos, as sites of cultural creativity. This trend is in tandem with the worldwide development of the cultural and creative industries (CCIs), wherein museums push themselves forward by reading history into material, consumable commodities (Knapik & Król, 2023). Museum-housed-based cultural and creative products (CCPs) stationery, clothing, domestic decor, and digital products are not necessarily, nor always, just commodities but are a communicative bridge between past and present (Wang et al., 2024). Such products pass beyond artifacts into venues that communicate with today's audiences, in the main, younger audiences, hence entrenching ongoing relevance and underpinning revived interest in cultural heritage (Yan & Li, 2023).

For China, this transformation is especially evident. Museums such as Beijing's Palace Museum and Sichuan's Sanxingdui Museum used CCPs as a means of cultural diplomacy and pedagogy (Xi & Chung, 2023). The Sanxingdui Museum stands out because of its mysterious Bronze Age artifacts, not only visually different from the rest of Chinese archaeology but also culturally distinct (Xu, 2025). With their incorporation into new designs, the museum not only serves to preserve culture but also supports the national cultural soft power and industrial innovation agenda (Tian et al., 2024). Museum-led scholarship on CCPs highlights the conflict between authenticity and accessibility preserving cultural narratives' integrity and making them accessible to contemporary consumer design and functionality (Li & Wang, 2024). This dual role of museums to preserve and to innovate has been the target of growing scholarship in heritage commodification research, user design in cultural environments, and museums as cultural entrepreneurs.

Innovation in Cultural Product Design

Merging new designs with old cultures is a range of new processes that attempt to distill heritage while being brought into accommodation with contemporary ways of life (Abdullah & Aslam, 2024). Design processes begin from ethnographic fieldwork such as motif observation, symbol observation, narrative observation, and material culture observations from ancient artifacts (Xu, 2025). The elements are abstracted or stylized based on contemporary aesthetic sensibilities, materials, and technology (Gui et al., 2024). For example, the integration of augmented reality (AR) and 3D printing enabled designers to reinterpret ancient artifacts as immersive and interactive experiences (Luekveerawattana, 2024). Designers at the Sanxingdui Museum often leverage the dreamlike and surreal nature of the enormous eyes and facial features of the bronze masks and statues to produce lasting visual identities on merchandise and promotional items (Xi & Chung, 2023). Local crafts people's co-creation and cross-disciplinary collaboration with technologists further enrich these design products so that they become meaningful not only as souvenirs but as tools for storytelling, learning, and advocacy (Duan, 2024). The strength of the combination of old and new in CCP design is because it has multiple benefits. It is culturally reviving age-old tales and rendering them meaningful for modern-day masses (Vaz, 2024). It is educationally turning passive consumption into active knowledge acquisition, especially when products are coupled with online platforms (Wang et al., 2024). Economically, it enhances the creative industries' value proposition and heritage tourism on domestic and international fronts (Yan & Li, 2023). Socially, it provides a sense of pride and identity, particularly among young consumers who could otherwise be severed from cultural roots (Ariffin et al., 2023). Analysts argue that this type of innovation does not dilute cultural content but rather maintains continuity by integrating heritage into the texture of daily life (Knapik & Król, 2023). In addition, by demonstrating the timeliness and flexibility of ancient culture in new forms, CCPs can transcend stereotypes regarding tradition as old or stagnant (Huang et al., 2025). Hence, cultural product design innovation is not an entirely visual process but a conscious act of cultural revival and dissemination.

Visitor Perceptions of Museum Products

Cultural and creative products (CCPs) play important roles in determining how visitors experience and interact with museum encounters (Ausat et al., 2023). New museum visitors, particularly in the post-digital age, want to search for more than observation; they want experiential and memorable experiences (Cordova-Rangel & Caro, 2023). CCPs function as sensory and affective projections of the museum story, enabling visitors to bring home a piece of the experience (de Morais Sarmento, 2024). Based on Falk and Dierking's context model of learning, the post-visit experience is crucial in order to generate knowledge and affective connection, and well-developed CCPs precisely fulfill that function (Yan & Li, 2023). With products that are well designed regarding cultural meaning, functionality, and aesthetic value they can potentially maximize visitor satisfaction through enhanced perceived visit value (Derda, 2024). This move from pure educational to experience planning highlights how museums compete no longer merely as institutions of learning but also as cultural brands competing in an overcrowded tourist and leisure marketplace (Rosemary, 2025).

Studies have also shown that CCPs' affective and symbolic meaning is pivotal to the tourist experience. Goods that embody cultural richness, stand out as uniquely having stories or possessing better quality craftsmanship tend to elicit more powerful affective resonance (Tongpaeng et al., 2024). Museum consumer research also observes that users are more likely to interact with an exhibit if they have some hope of getting meaningful, well-designed goods from it (YiFei & Othman, 2024). In this context, Sanxingdui’s unusual bronze artifacts such as masks, statues, and totems offer compelling source material that deeply intrigues visitors (Xu, 2025). When these motifs are transformed into creative products such as stylized stationery, jewelry, or wearable tech they evoke curiosity, encourage social sharing, and extend the cultural conversation

beyond the museum walls (Verma & Monga, 2023). In the end, CCPs don't merely enhance the museum experience they actually create it, and thus they are potent instruments for emotional connection, cultural learning, and return visits.

Designers' and Managers' Role in Innovation

Designers and museum curators stand at the center of CCP innovation in development, as they are the ones that connect cultural heritage and commerciality (Cordova-Rangel & Caro, 2023). Designers must reinterpret historical and symbolic contents respectfully and creatively, such that cultural meaning is not lost while being transformed (Ariffin et al., 2023). This requires becoming deeply familiar with cultural semiotics, material science, user culture, and market trends (Wang et al., 2024). Effective design of cultural products is half about transformation and half about replication taking the essence of an ancient relic and grafting it into a new, modern context (Zhang et al., 2023). This is most difficult in scenarios such as Sanxingdui, when archaeologically beautiful meets the visually bewildering and the culturally confusing (Huang et al., 2025). Designers then have to struggle between creative freedom in design and cultural verisimilitude, often being dependent upon inter-disciplinary liaison with historians, archaeologists, and anthropologists in order to root their ideas in verisimilitude (Vaz, 2024).

Museum administrators, in turn, manage CCP innovation's strategic and operational sides. They establish direction, resource allocation, partnerships to be monitored, and the making sure products serve institutional missions and public needs (Voorde, 2023). Managers are also tasked with quality control, intellectual property, and brand management (Xi & Chung, 2023). Literature promotes "cultural stewardship" on the part of museum administrators with the qualification that innovation not be at the expense of historical integrity (Shi et al., 2023). On a practical level, this involves creating open dialogue among curatorial teams and design teams and sharing goals and values in a common language (Derda, 2024). At the Sanxingdui Museum, managers have adopted digital technologies, narrative formats, and experiential product campaigns to spread the museum's influence and value (Tian et al., 2024). Their collaborative work with designers guarantees that every CCP not only appears visually appealing but also functions as an effective medium of cultural memory and innovation.

METHODOLOGY

Research Approach

This study employed a mixed-method design that incorporated both qualitative and quantitative methods of research to understand deep-seated innovation strategies for the production of CCPs at the Sanxingdui Museum. The reason behind the employment of the mixed-methods design lies in the multidimensional nature of the research problem, which involves subjective, lived experiences from experts (designers and managers) and measurable perceptions from visitors at the museum. The qualitative component provided detailed examination of the decision-making motivations, creative processes, and situational stimuli underlying CCP innovation, whereas the quantitative component provided empirical data regarding public reception and interpretation of such products.

Triangulation was also made easier through the use of mixed methods, providing more valid and reliable research findings. Through comparison and combination of data from both strands, the research aimed to unveil relationships between institutional innovation strategies and user engagement outcomes. In addition, the mixed-methods approach enabled the detection of patterns and relationships among variables namely how innovative strategies (independent variable) affect visitor perception of product efficacy in engaging audiences and conveying cultural value (dependent variable). This two-pronged approach facilitated a more informed and actionable comprehension of CCP design in the dissemination of cultural heritage.

Research Phases

Phase 1: Qualitative Data Collection

The qualitative stage consisted of semi-structured interviews with seven informants who were purposefully chosen for their direct roles in the conceptualization, design, and management of the Sanxingdui Museum's cultural and creative product projects museum managers and product designers. The interviews sought to reveal rich, contextual information about the approaches taken to combine ancient Sanxingdui cultural imagery with modern design elements, and to learn about the wider creative processes, institutional objectives, and challenges faced during product development.

Interviews were done face-to-face or through video call and took around 45–60 minutes each. An interview guide was prepared that addressed important topics like sources of inspiration, dynamics of collaboration, perceived audience preference, models of innovation, and conflicts between commercialization and authenticity. All the interviews were audio-recorded and transcribed for analysis. Data were subsequently analyzed through thematic analysis, (Braun & Clarke, 2006) six-step process: familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. This facilitated the identification of recurring patterns and distinctive insights, which were then utilized to inform and contextualize the quantitative phase.

Phase 2: Quantitative Data Collection

The second stage of the study used a pre-coded questionnaire completed by a sample population of 120 museum visitors. The aim was to measure quantitatively visitors' perceptions of cultural and creative

products and, in particular, how well the products involved and communicated the cultural significance of the museum's heritage. Respondents were recruited by convenience sampling at the exit point of the museum, and response was voluntary and anonymous. The survey instrument contained Likert-scale items assessing perceived innovation, involvement, cultural expression, and purchase intention, and demographic questions for contextual analysis.

During this stage, the independent variable (IV) was the new style applied in product design (e.g., contemporary reinterpretation, technology application, creative narrative), and the dependent variable (DV) was perceived effectiveness of product design in reaching out to audiences and conveying cultural significance. Data were entered and analyzed with SPSS (Statistical Package for the Social Sciences). Descriptive statistics were applied to summarize responses, and inferential tests like correlation and regression analysis were employed to analyze the connection between innovation and audience reception. This quantitative information offered empirical validation of the qualitative findings so that a complete interpretation of the effectiveness and impact of innovation strategies in cultural product design could be established.

Triangulation was also made easier through the use of mixed methods, providing more valid and reliable research findings. Through comparison and combination of data from both strands, the research aimed to unveil relationships between institutional innovation strategies and user engagement outcomes. In addition, the mixed-methods approach enabled the detection of patterns and relationships among variables namely how innovative strategies (independent variable) affect visitor perception of product efficacy in engaging audiences and conveying cultural value (dependent variable). This two-pronged approach facilitated a more informed and actionable comprehension of CCP design in the dissemination of cultural heritage.

FINDINGS

Findings from Qualitative Data

Innovation Strategies

The interviews of the Sanxingdui Museum designers and managers were analyzed and discovered multiple innovation strategies employed to merge ancient cultural symbols with contemporary design sensibilities. Symbolic abstraction emerged as a principal technique in which iconic elements from artifacts like giant bronze masks, exaggerated facial characteristics, and mythical symbols were reduced into simplified, symbolic forms that can be adapted for daily use in objects such as jewelry, clothing, and digital paintings. Designers explained how abstraction permitted broader application without compromising the distinctiveness of Sanxingdui beauty. According to a designer, "We like to take the eyes and motifs of the bronze statues and reinterpret them into soft curves or minimalist icons to appeal to modern consumer aesthetics" (Respondent 3). This corroborates previous research emphasizing the importance of visual reinterpretation in cultural product design (Duan, 2024). Managers found this creative freedom to be supported, stating that innovation approaches were best when anchored in both past content and current lifestyle applicability.

Another high-profile strategy was cross-disciplinary collaboration with historians, local craftspeople, and digital media experts. As respondents noted, this collaborative structure not only linked design decisions with genuine knowledge, but also experimented with novel forms such as augmented reality, interactive installations, and 3D-printed representations. One manager put it like this, "Our cooperation with archaeologists prevents misuse of symbols, and the tech team helps us appeal to younger people through intelligent, interactive designs" (Respondent 1). Such collaborative culture mirrors research by (Gui et al., 2024), who contend that innovation in cultural product development is greatly facilitated by multi-stakeholder input. The designers also emphasized the significance of the narrative bridge from the past to the present integrating stories into packaging, product labels, and digital media content. The narrative strategy not only maintains meaning but also invokes emotional engagement, bringing ancient culture closer to users today.

Challenges in Design

Even as the innovative dynamism of Sanxingdui Museum takes its place in history, respondents always identified the struggle between historical integrity and contemporary consumer acceptability as a key issue. Managers and designers were concerned with misrepresentation or oversimplification when cultural aspects are used in market consumption. As one of the designers admitted quite frankly, "Sometimes we have to sacrifice detail because most buyers won't understand the full symbolism and that feels like we're reducing the artifact to decoration" (Respondent 5). This is the difficulty that (Huang et al., 2025) point out, whereby designers tend to find it hard to maintain cultural richness while trying to make their product accessible to wider markets. There have also been reported cases of internal controversies between curatorial and marketing departments on the amount of adaptation permissible without eroding cultural worth.

This problem is associated with the challenge of appealing to varying consumer preferences, particularly among younger consumers who prefer minimalist or technology-infused products. Designers explained how although traditionalists anticipate true imitations or well-delineated symbolism, younger consumers are more attracted to witty or blurring-of-genera designs. One manager has said, "It's difficult to create something that is both historically true and trending on social media it's a tightrope we dance on a daily basis" (Respondent

2). The result is a balancing act between authenticity to Sanxingdui's cultural story and market appeal. Moreover, certain motifs like ritual or totemic imagery carry spiritual or sacred meanings that must be treated with utmost caution. Some of the interviewees reported instances where outside feedback caused them to redesign products so as not to result in cultural misinterpretation. This is an expression of the need for ongoing critical discussion at the museum-product boundary to ensure that cultural expression is neither lost nor misrepresented (Changping & Wu, 2024).

Creative Process

The design creative process for products at the Sanxingdui Museum is highly collaborative and incorporates inputs from various stakeholders including museum historians, archaeologists, museum curators, and designers. The designers emphasized the significance of collaboration in achieving aesthetics as well as cultural authenticity. As one of the designers described it, "The initial point typically begins with an in-depth dive into the artifacts, but the concept only really starts to formulate once we discuss things with our team members from other departments. They provide insight that refines and expands our vision" (Respondent 4). The process is cycled through to merge the final design with historical accuracy and contemporary tastes. Brainstorming and feedback loops, which are ongoing revision based on internal discussion and external feedback, are also carried out at this stage by the team. Curatorial feedback by museum team is especially essential as it ensures the originality of ancient culture is not compromised but continues to appeal to modern-day consumers.

In addition, the feedback and collaboration process is not limited to the museum alone. Designers themselves collaborate with local artisans and outside consultants, tapping their skills and craftsmanship in order to make the products more culturally appropriate. According to one manager, "Working with artisans who understand the local heritage permits us to guarantee that our designs are not only beautiful but also appropriate culturally" (Respondent 2). Such an exercise is also a reflection of previous research findings, where value in cross-disciplinary feedback towards ensuring cultural responsive product innovation is emphasized for ensuring that products will be extremely successful (Li & Wang, 2024). The designers also explained how running feedback loops can enable them to make design adjustments according to market needs and consumer feedback. This process of adjustment is one where products are constantly changing, both drawing from previous depth as well as current relevance. The engagement of creative teams with outside contributors allows the products to move beyond static representations and become dynamic expressions of culture that involve consumers in the modern world in new terms.

Role of Technology

The incorporation of digital technology into the design process has been the foundation for the Sanxingdui Museum's innovation strategy. The interviewees reported that augmented reality (AR) and 3D modeling are the major technological tools utilized to improve the museum's cultural and creative output. These technologies offer an opportunity to redefine old relics as interactive and visually enhanced media that enable museum-goers to interact with cultural heritage on a more personal level. A designer explained, "With AR, we can make ancient artifacts come alive in ways that were not possible before. Museum visitors can also engage with digital copies of the Sanxingdui bronzes, learning about their detail in 3D, which then influences the way we design the actual products" (Respondent 6). This method not only actively engages visitors more but also gives useful insight into how product designs can establish a stronger emotional relationship with the past. Through the application of 3D modeling, especially product prototyping, designers can also visualize and shape product ideas before production, thereby making the design process more efficient and cost-effective.

Furthermore, the role of technology is expanded beyond product to internet forums employed for marketing and communication. A manager said, "We put interactive digital elements into our products, e.g., QR code or AR experience, where the customer can read more about the cultural origin of the design which they are purchasing" (Respondent 1). This cross between technology and narrative is paralleled by greater trends across the museum sector as a whole, in which digital technologies are increasingly employed to enrich educational experience and facilitate more people's access to cultural heritage (Xi & Chung, 2023). In doing so, the museum is facilitating communication between the past and present and giving tourists access not only to material products but also experiential ones through which their own knowledge of Sanxingdui culture can be increased. Technology here is not simply a design technology but one that connects the past and the present, pushing cultural heritage near and more engaging to modern-day audiences.

Findings from Quantitative Data

Table 1 provides the demographic composition of the 120 museum patrons who took part in the study. The sample is an equal split between males and females, with each sex representing 50% of the participants. Of the respondents by age, the majority of the visitors fall between 18 and 24 years, representing 37.5% of the total sample. This is closely followed by those visitors aged 25 to 34 years and comprise 25% of respondents. Visitors within the age range of 35 to 44 years constitute 16.7%, while 20.8% of the visitors are older than 45 years. For education level, 50% of respondents hold an undergraduate degree, while 41.7% have acquired graduate or postgraduate education. A mere 8.3% of the visitors indicated having a high school education or lower. When it comes to the frequency of visits to museums, 41.7% of the respondents were first-time

visitors, whereas 33.3% of the respondents indicated visiting the museum 1-2 times annually, and 25% reported visiting the museum three or more times annually.

TABLE 1 Visitor Demographics

Demographic Characteristic	Frequency	Percentage (%)
Gender		
Male	60	50%
Female	60	50%
Age Group		
18–24 years	45	37.5%
25–34 years	30	25%
35–44 years	20	16.7%
45+ years	25	20.8%
Education Level		
High school or less	10	8.3%
Undergraduate	60	50%
Graduate/Postgraduate	50	41.7%
Frequency of Museum Visits		
First-time visitor	50	41.7%
1-2 visits per year	40	33.3%
3+ visits per year	30	25%

Table 2 presents descriptive statistics for the main variables measured in the research: the innovative orientation and the product design's capacity to capture the audience and convey cultural value. For the innovative orientation, the mean rating is 4.35, with a standard deviation of 0.74, reflecting that the majority of respondents evaluated the product designs of the museum quite positively in terms of innovativeness. The lowest score for this variable was 1, and the highest was 5, indicating that respondents held a wide range of views regarding how innovative the museum's products were. For variable "product design able to engage the audience and convey cultural value," the mean score is a bit higher at 4.52, with a standard deviation of 0.68. This suggests that, overall, visitors found the product designs of the museum to be extremely effective in connecting with them and conveying cultural worth. Like with the innovative approach, the range of minimum and maximum values for this variable is between 1 and 5, indicating variability in visitor sentiments.

TABLE 2 Visitor Demographics

Variable	Mean	Standard Deviation	Mini	Maxi
Innovative Approach	4.35	0.74	1	5
Product design that can engage the audience, can express cultural value	4.52	0.68	1	5

Table 3 provides the correlation test between the innovative strategy and the product design's capacity to involve the audience and convey cultural value. The correlation coefficient for these two variables is 0.75, significant at $p < 0.01$. This positive and strong correlation implies that as the innovative nature of the product design increases, the effectiveness of the product in engaging visitors and communicating cultural value also tends to increase. In other words, visitors who perceive the product designs as more innovative are likely to also score those designs high on their capacity to engage and communicate cultural significance. This conclusion highlights the interconnectedness between cultural communication and creativity in the production of museum products.

TABLE 3 Correlation Analysis

Variable	1	2
Innovative Approach	1.00	0.75**
Product design that can engage the audience, can express cultural value	0.75**	1.00

Note: Significant correlation at $p < 0.01$ level.

Table 4 is the result of regression analysis of the effect of the innovative approach on product design that can capture the audience and convey cultural value. The coefficient (B) of the regression is 0.48 with a standard error of 0.07, reflecting a positive and strong correlation between the independent variable (innovative approach) and the dependent variable (product design that can capture the audience and convey cultural value). The Beta coefficient of 0.75 indicates that the innovative approach exerts a big influence on the

perceived capacity of the product design to connect and convey cultural worth. The t-value of 6.86 and p-value of less than 0.01 imply that this relationship is statistically significant. The R-squared value of 0.561 implies that about 56.1% of the product design effectiveness variance can be accounted for by the innovative approach. This result reaffirms the idea that innovation has a key contribution to make towards creating products which both interact with visitors and succeed in conveying cultural value.

TABLE 4 Regression Analysis

	B	**Standard Error**	**Beta**	**t-value**	**p-value**	**R^2**
Innovative Approach -> Product design that can engage the audience, can express cultural value	0.48	0.07	0.75	6.86	< 0.01	0.561

Comparison of Qualitative and Quantitative Results

A comparative analysis of qualitative and quantitative outcomes indicates a positive correlation between strategies used by designers of museums and visitor preferences. Qualitative research, conducted based on interviews among museum designers and managers, mentioned the focus laid on developing products that combine aspects of ancient culture with contemporary designing principles. In all instances, designers pointed out that their style was centered around balancing historical factuality with innovative approaches to entice modern taste. This is consistent with the quantitative data, which revealed that the products of the museum were highly rated in terms of both innovation (mean = 4.35) and the extent to which they engaged the audience and communicated cultural value (mean = 4.52). The products were greatly appreciated by the visitors, suggesting the effectiveness of the designers' strategies to satisfy the demands of modern consumers while maintaining a connection to cultural heritage. The positive association between the creative style and effectiveness of products ($r = 0.75$, $p < 0.01$) lends further support for this congruence, inferring that innovative products perceived also proved to be more effective at engaging and transmitting cultural relevance. Both data confirm the necessity for integrating classic elements of design into modern sensibilities in order to create museum products that resonate with museum visitors.

Moreover, both quantitative and qualitative outcomes point to the fact that the most successful products were those that maximally blended conventional and modern design elements. Designers observed that products with symbolic abstractions or modern technology, such as augmented reality or 3D modeling, were greatly accepted. Similarly, the same observation was mentioned in visitor feedback, where such products were greatly graded for innovation and cultural interaction. Visitors' preference was also determined based on demographic characteristics, as observed in quantitative analysis. For instance, younger travelers, especially those aged 18 to 24, had a liking for new products with contemporary design features, including minimalist representations of ancient symbols and interactivity. Older travelers (ages 45+) had a liking for products with explicit historical references and higher degrees of conformity to traditional forms. The population imbalance between local and foreign travelers also significantly influenced product preference. Domestic visitors were more concerned with goods that highlighted more abstract cultural symbols and values of their own, whereas foreign visitors were more concerned with goods that provided a more general, visually appealing depiction of Sanxingdui culture. These findings establish the fact that customer demographics, particularly nationality and age, significantly determine cultural and creative product demands and that designers have to consider such an influence so that there may be optimal interaction among various publics.

DISCUSSION

The findings of the study present the nexus between innovation and cultural heritage in museum product design process with a specific reference to the Sanxingdui Museum. One of the main contributions of the study is the nexus between innovative design practices utilized by designers and those preferred by museum visitors. Quantitative and qualitative findings showed that customers preferred highly those products that have the ability to combine traditional culture and current design features. Symbolic abstraction as well as inter-disciplinary teamwork throughout the process of designing were also emphasized by designers to allow the use of traditional motifs together with modern trends. This is consistent with previous research that underlined the necessity of historical authenticity through innovation in order to address the needs of modern consumers (Shi et al., 2023). The strong ratings offered by the public to those products that are discovered to be innovative and engaging culturally (mean = 4.35 for innovation and 4.52 for engagement) reflect that the approach of the museum for balancing tradition and modern times has found acceptance from the public (Castiblanco Jimenez et al., 2023). The strong positive correlation between the innovative strategy and perceived effectiveness by consumers indicates the success of the strategies in creating designs that not only reflect the rich cultural heritage of Sanxingdui but also resonate with modern consumers.

The research also highlights the effectiveness of applying digital technologies in product interaction and creation. Sanxingdui Museum architects have increasingly used techniques like augmented reality (AR) and 3D modeling in order to project ancient relics and artifacts in new, innovative ways. Use of these technologies not only supports in creating an environment that is more interactive, dynamic, and immersive for users but also provides an opportunity for creating more contemporary, dynamic products (Xi & Chung, 2023). Qualitative interviews also discovered that use of AR in the product design i.e., making visitors able to

engage with the digital copies of the bronze statues was seen as an effective medium to bridge the old and new. Quantitative findings affirm the same through demonstration that guests exposed to novel and interactive layouts assigned high marks for their potential in imparting cultural value and captivating the viewership. This affirms similar works that have previously highlighted technology as key to reversing how culture and heritage is imparted (YiFei & Othman, 2024). The research points out that technology, if incorporated into the design process, can be at the center of making cultural products more accessible and interactive for particularly younger, technologically literate visitors.

Another significant consideration of the research was trying to balance historical accuracy with contemporary tastes. Designers commented on being unable to be culturally authentic yet make products acceptable to diverse consumer tastes, especially among young consumers who might not be concerned about historical accuracy. The struggle over respecting Sanxingdui cultural integrity versus the production of economically viable and visually appealing goods in front of a larger audience was one of the prominent issues arising in the qualitative data (Qiu et al., 2023). Information regarding visitor demographics, revealed during the course of the research, helped create the tension. Younger consumers, especially 18-24 year olds, had a greater preference for minimalist products and those with modern meanings of cultural symbols, i.e., abstract representations of older relics. Older consumers, especially those 45 and older, preferred products with more traditional presentation of cultural heritage. This difference in taste among demographics calls for designers to walk a fine line in balancing preservation of culture and innovation so that their products are desirable to varied museum visitors (Derda, 2024). The research indicates that recognizing the unique taste and expectation of various groups of visitors is important in developing products that matter to the people without compromising the integrity of the cultural heritage.

Additionally, the comparison of the impact of visitor demographics on product choice illustrates the importance of culture and nationality in museum product experience. Home-country visitors preferred products highlighting more cultural symbolism and history, showing a greater sense of identification with the heritage of the region. Foreign tourists, meanwhile, were more drawn to merchandise that offered beautified, generic readings of Sanxingdui culture, often with less interest in the intricacies of cultural symbolism. Such a distinction would mean that products in museums should be created not only to comply with prevailing fashion in aesthetics but also to different levels of interest and knowledge regarding culture among the visitors (Wang, 2023). The difference in tastes among foreign and indigenous tourists shows the importance of contextual culture in designing museum products. Indigenous tourists may be seeking products that allow them to have a greater sense of connection with their heritage, while foreign tourists might enjoy more globally compatible designs that allow them to access the culture without having to go deep into its origins. Designers should thus consider these segments when developing products so that they can effectively reach domestic and international audiences. Implications of this research are that one-size-fits-all product design is not suitable and that more context-driven and custom-designed strategies must be employed in order to counteract the diverse expectations of museum visitors.

CONCLUSION

In conclusion, this study has illuminated the innovative strategies employed by museum architects in integrating ancient cultural elements with modern-day design principles with especial importance attached to such integration in attaining appeal in modern-day consumers and preserving cultural heritage. Findings indicate that effective product designs, attuned to a balance between historical significance and innovation, are positively appealing to consumers, creating emotional attachment and enhanced cultural sensitivity. The study further reinforces the mounting importance of new-age digital technologies like augmented reality and 3D modeling for their role in enlivening museum life by providing dynamic interactive and immersive person-cultural object engagement. Also, visitor preferences were further ascertained on demographic factors such as age, nationality, and experience with museum attendance, a marker of significance regarding a more tailor-made context-related product form developed in consideration of the diversity demands of consumers within museums. Despite its limitation, the study contributes meaningfully to theoretical knowledge regarding how innovation works in the development of cultural products, bringing pragmatic implications to museum practitioners for creating interesting and culture-relevant products that would engage a general group of museum visitors. In the future, the study is also left open for further research into how museums manage to stay ahead of shifting visitor needs and emerging technologies to continue making cultural heritage relevant, interactive, and significant in a more globalized, digital age.

Implications

The real-world applications of this research are extensive, offering valuable lessons to museum managers, designers, and cultural organizations that want to create innovative, culturally responsive products. First, the research highlights the importance of reconciling historical authenticity with modern design principles in creating museum products. By looking for a design sensibility that brings traditional cultural materials into balance with new sensibilities, museums can now respond to the interests of more than one set of constituents without losing any aspects of culture. Designers will be able to use the outcomes of this work in the way they approach product design such that the outcomes themselves are both handsome and intriguing so that people may more effectively sense the cultural depth in the products. Moreover, the research highlights the

increasing role of digital technologies like augmented reality and 3D modeling to improve product designs and provide interactive experiences that balance the past and present. Museum managers should therefore consider integrating such technologies into product development processes, as they represent a distinctive avenue for reaching younger, technology-oriented consumers while at the same time enhancing the learning value of museum visits. Besides, research shows the relevance of considering visitors' demographics i.e., age, nationality, and past museum visits in product development. Home-based visitors are expected to adopt products that reflect more intense cultural symbolism, while foreign tourists will expect more abstracted, aesthetically pleasing products. By adapting products to meet the specific tastes and cultures of different cohorts of visitors, museums can facilitate greater participation and satisfaction. Overall, the study provides a model for museum professionals to create culturally and commercially viable products that embody the heritage of the past while engaging visitors in meaningful, up-to-date ways.

The theoretic contributions of this study build on an extension of knowledge surrounding the nexus among cultural heritage, innovation, and visitor interaction within the museum experience. Through explorations of blending traditional cultural design elements with innovative design philosophies, this work builds on established literature regarding the design of cultural products by introducing how innovation as a means for preserving and rediscovering heritage. The results indicate that the integration of traditional and modern design styles is not only effective in creating a more aesthetic appeal for museum products but also in establishing an emotional connection with visitors, spanning the temporal gap between past and present. This study also adds to the body of knowledge regarding the use of digital technologies in cultural heritage presentation, demonstrating how technologies such as augmented reality and 3D modeling can take passive museum experiences and turn them into interactive, immersive experiences that both increase learning and engagement. In addition, by examining the impact of visitor demographics on product preferences, the research deepens theoretical insights into consumer behavior in cultural environments, highlighting the ways in which variables such as age, nationality, and prior museum experience condition visitors' experiences with museum products. Such findings counter prevailing conceptions of museum products as unchanging objects, suggesting instead that they are dynamic, changing forms of cultural expression that must be attuned to varied audience demands. In this manner, the research enhances theoretical understanding of innovation's role in cultural preservation and provides a more sophisticated framework for understanding how museums can engage with audiences in ways that are culturally meaningful.

Limitations and Future Directions

While this research has made some important contributions, there are a number of limitations that should be taken into account. A major limitation is the sample size and demographics, which were limited to 120 museum visitors and 7 museum designers and managers, mostly from the Sanxingdui Museum. The sample may not reflect the whole large, multifaceted group of visitors or a wide variety of museum professionals from a diversity of cultural institutions, and hence the findings may not be generalizable. Second, the study had been undertaken on the basis of self-report data from the visitors and the designers, which could be subject to social desirability bias or personal impression. Another limitation is the study's cross-sectional design, which captures visitor taste and design aesthetic at a specific moment in time but cannot ascertain possible changes in preference or design trends in the long term. Future studies could address this limitation by utilizing a larger and more representative sample of visitors and museum professionals, possibly enlisting museums from different regions and cultural contexts. Longitudinal studies may prove useful in examining how taste among visitors and the place of innovation in the formulation of museum products change over time, providing more penetrating observations on shifting patterns in cultural attendance. Additionally, the effect of certain design elements such as the application of augmented reality or 3D modeling on visitor learning and emotional connection, discussed here but not further explored, would be a worthwhile research area in the future. Further investigation of the effectiveness of such technology to enrich visitor experience would yield insights for museums planning to incorporate digital technologies into their product offerings. Lastly, future research can investigate how sustainable material use and green design practices in museum artifacts influence visitor engagement, which is ever more crucial as part of an environmentally aware world.

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