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***Research on the Branding of Museums' Cultural Heritage
Communication Design with Digital Engagement***

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Abstract

The development of museums has undergone a transformation from private collections to places of public education. With the diversification of public needs and the increase of recreational facilities, museums have gradually transformed into commercialization, broadening their cultural communication channels through merchandising and digitalization. Design, as the core of cultural and creative industries, has an important impact on museum branding and product design. Design can not only transform cultural elements into perceptible products, but also enhance brand impression and form brand consensus through narratives. The goal of this study is to analyze the current situation of museum branding and its commercialization measures in various countries and to explore how to promote the communication and development of museum cultural heritage through creative design and digital technology from a design perspective. The thesis makes comprehensive use of qualitative and quantitative analysis methods to propose specific strategies suitable for the development of museum branding, to provide reference for enhancing the influence of museums, and to promote the development of the local culture and economy.

This thesis adopts a variety of methods such as comparative literature analysis, case study, field survey, observation method, qualitative research, questionnaire research, and quantitative data analysis. By combining and summarizing a large amount of literature and incorporating practical case studies, the problems encountered in the process of museum branding and the solution paths are discussed in depth. At the

same time, the interdisciplinary research method is used, integrating theoretical knowledge from economics, management, museology, sociology and other fields, in order to comprehensively and accurately analyze the design and communication strategy of museum branding.

The first chapter of the thesis introduces the background and purpose of the study and discusses the importance of museum branding and the necessity of the research. Chapter 2 analyses the historical development and current status of museum branding through literature analysis and case studies. Chapter 3 focuses on the research and case analysis of museum branding and cultural heritage communication design to understand the approach and current status of museum branding cultural heritage design today. Chapter 4 clarifies the key factors affecting museum cultural heritage communication design by combining and analyzing the existing literature. Chapter 5 is based on questionnaire data and empirically examines the research on museum branding and cultural heritage design. Chapter 6 summarizes the full text of the research results, proposes a strategy of museum branding and the future direction of development, and makes reflections and outlooks.

The study concludes that museum branding and product design are key to cultural communication and business value enhancement. Through innovative design and digital communication strategies, museums can better connect history and modernity and enhance the public's cultural experience. The research proposes a series of specific branding development strategies, including strengthening the symbolic elements of the brand, expanding the brand narrative space, and expanding the brand's

impact through interactions and collaborations. These strategies aim to help museum branding become sustainable and maximize cultural communication in the digital age.

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Chapter 1 Introduction

1.1 Background and Purpose of the Study

1.1.1 Background of the study

The term "museum" is derived from the Greek word museon, muses, which is rooted in Greek mythology. The temple of the muses was a site of worship where artifacts were housed, but they were also utilized as research, study, and contemplation spaces (Murray, 1904). The Ashmole Museum in Oxford, England is generally regarded as the first museum (McLean, 1995). However, it was the kind of museum with private collection; early museums primarily served the aristocracy and were closed to the general public. They also did not serve as venues for public events or for the public to receive education or knowledge. The British Museum was the first public museum, having been established in 1759 and progressively opening to the public from a select group of visitors. Additionally, as the museum developed, it progressively took on the role of social educator. Thereafter, museums began to appear everywhere in the world. Examples include the 1870 establishment of the Metropolitan Museum of Art in New York and the 1830 founding of the Boston Museum of Nature, among others.

The public's expectations of museums are evolving together with the institutions themselves, as the public's disposable income and free time keep increasing. The role of museums has evolved to enable the public to adapt to the rhythm and changes of contemporary life by displaying the past to understand the

present and predict the future. This is in addition to the growth of other entertainment venues, theme parks, and heritage centers. The public's changing fashion preferences and the complexity of their needs also require museums to innovate constantly. Nowadays, museums serve as both educational institutions and have to deal with the challenge of providing high-quality services. Marketing and commercialization are two of the greatest crucial methods to approach this.

The process of museum merchandising is a gradually evolving phenomenon with roots that can be traced back to the mid-20th century. During this period, the Metropolitan Museum of Art in the United States of America took the lead in combining culture and commercialization by selling high-quality reproductions of the works of art on display, which not only created an additional source of income for the museums themselves, but also allowed the general public to bring art into their personal living space, thus bringing the distance between elegant art and the general public closer. This approach not only enhances the self-sustainability of museums but also promotes the popularization and dissemination of culture and art. When it came to the 1990s, the trend of museum merchandising gradually spread. While museums did pursue other forms of commercialization, including raising admission fees as feasible, merchandising seems to have become a strategy of choice (Toepler, 2006). Museums have sold museum merchandise by expanding their on-site shop space while installing permanent or temporary off-site shops in shopping centers, and with the development of the Internet, have gradually deployed merchandising into cyberspace for large-scale marketing and selling through online formats.

Cultural and creative industries have gradually emerged with the development of technology and social changes after the Industrial Revolution. The advancement of technology and the shifts in society following the Industrial Revolution have led to a progressive flourishing of the cultural and creative industries. With time progress, cultural and creative industries gradually become an important driving power for the economic development of a country or territory. Design plays a significant role in it as a vital component of the cultural and creative sectors. According to Pine and Gilmore (2007), innovation is a complex collection of technologies, products, services, and communications. It is a process of giving meaning or introducing new meanings into the cultural microcosm. It can be defined as the attitude of a product or service to embody the symbolic and cultural content of a reference system that is 'real'. The process of design is closely related to culture and creativity, and design research aims to develop culturally meaningful storytelling and to stimulate new meaning-making processes within a given sociocultural context (Bertola, 2001). Design, when used as an artifact, can be seen as a bearer of meanings and narratives, able to act as a vehicle for meaning-giving, capable of encoding deeper meanings and re-configuring them in new stories (Bertola, Vacca, Colombi, Iannilli, & Augello, 2016). Design provides the means for creativity and culture to be realized, design is the key process that can translate creative ideas and cultural connotations into specific products or services. It transforms abstract ideas, stories, aesthetic concepts, etc. into perceptible, touchable, and usable objects or experiences, so that creativity no longer stays at the conceptual stage, but becomes part of real life. The development of cultural and creative

industries also provides space for the growth of design. Museums, which are responsible for cultural communication and reproduction, as well as institutions that collect and display cultural heritage resources, also need to better promote meaningful connections between visitors and heritage, social vitality, artistic and scientific engagement, and cross-cultural dialogue in the rapid development of the cultural and creative industries, which requires the design of products, services, and commercial operations.

The cultural heritage communication design of museums can be considered a design that is created to promote the cultural heritage of museums, including the commercial operation of museums, the commercial design of museum products and IP design, the digital design of communication as a subject, and the design of tourist routes. Cultural and creative design offers museums favorable development conditions. Design as a transformative behavior can unravel and interpret processes, artifacts and intangible elements of narratives inspired by cultural heritage (Bertola, et al., 2016). The cultural heritage of museums can be transformed through the involvement of design into vehicles for experiential delivery, such as merchandise, experiences and digital products, and through the branding strategy of museums, to increase the impression of the brand on tourists in a narrative way and to create a brand consensus, thus fulfilling the function of cultural dissemination and education. Brands established by traditional institutions, such as museums that use their collections to merchandise and innovate, can be understood as a set of identity

values and strategic resources capable of generating innovation and real value. As Urde, Greyser, and Balmer (2007) argue:

Traditional brands are unique in that they are as much about history as they are about a history in the making.

This process of meaning construction uses narrative as a tool to communicate with the target audience about the quality of the product, and the lifestyle it encompasses, and to convey the company's history, its cultural roots, and the brand's future trajectory. Therefore, the narratives of culture-intensive industries support the communication of the sociocultural values embodied by the brand, which they wish to disseminate and communicate to the world (Corbellini & Saviolo, 2009). Today's museums are increasingly focusing on the use of design to drive creative development, create better stories and values for their brands, and extend their own commercialization processes.

In recent years, large museums have begun to gradually deploy their own branding processes. With museums' rich collections and strong architectural presence providing a solid foundation for the creation of souvenirs, it is crucial to address the intangible issues surrounding souvenirs by merchandising them and creating a product that can be purchased and consumed in order to give the consumer a point of reference from which to evaluate the destinations associated with a particular souvenir (Melodena, Ramzi, & Clifford, 2011; Swanson & Timothy, 2012). Souvenirs are not only an integral part of a museum's brand, but they also convey a strong message about the wider place in which the museum is located, such as a city, territory, or

country. If a unique product is created by a museum shop, it may have a positive impact on the branding of that location (Trabskaia, Shuliateva, Abushena, Gordin, & Dedova, 2019). The brand image of the museum can be an important factor in attracting global tourists. Museums can use their brand strengths to not only innovate in physical merchandise but also extend their brands into various fields such as fashion, home, education, and so on through licensing partnerships, in order to diversify their brands.

While in China, although museums have a long history, the exploration of merchandising was relatively late in the process. It was not until 2006 that the Chinese museum sector began to see an important opportunity for commercialization and transformation with the support of China's policy on cultural heritage protection and innovative use. A range of regulatory initiatives pushed museums to actively investigate the economic potential of their cultural assets while safeguarding them, as well as to apply creative design and cultural innovation to turn lifeless historical artifacts into vibrant cultural products and services. Using the rich resources of their collections, China's major museums responded in the years that followed by designing and developing a range of products with strong cultural connotations, such as digital artifacts and derivatives that are both well-received by the market and successfully convey traditional culture to the general public in a contemporary and stylish manner. Especially in recent years, with China attaching great attention to the cultural industry and the market demand brought about by consumption upgrading, the development of cultural and creative products for Chinese museums has entered a

golden period. For example, the National Museum of China has developed more than 2,000 cultural and creative products in recent years, and maintains a new release rate of about 200 new products per year, covering a wide range of fields such as interactive puzzle game books, trendy IPs, and lifestyle products. Large museums have even enhanced the value and influence of their cultural IPs through cross-border cooperation with famous brands, integrating elements of cultural heritage into modern life. The cultural products created by these museums can provide customers with a cultural experience of the product content during their purchase, thereby enhancing their perception of their preferences (Zhang, 2019). These products are developed based on the transfer of cultural symbols and a sense of cultural experience. At the same time, small and medium-sized museums are also following the trend. Although facing the challenge of limited resources, they are still actively developing cultural and creative products with local characteristics and cultural depth through commissioning professional designers and cross-sectoral cooperation, seeking to get a position in the market.

On this basis, as technology develops, more digital technologies are being used in museums for cultural heritage innovation and communication. Chinese museums are also actively using digital media technologies, using the Internet, virtual reality (VR), augmented reality (AR), and other technologies to create diverse forms of cultural communication. For example, online virtual exhibitions, interactive APPs and live guided tours provide visitors with an immersive experience without the limitations of time and space, greatly broadening the scope of the museum's audience

and enabling the cultural influence of the museum to transcend physical boundaries and penetrate the public's daily life. With the rapid development of artificial intelligence (AI) technology, some museums have begun to adopt AI as a next-generation tool for cultural communication and creative development, offering new possibilities for the digital innovation of cultural heritage.

Besides, social media platforms have also become a new position for the communication of museum culture. Through social networks such as Weibo, WeChat and TikTok, museums can quickly share information about exhibitions and stories of cultural relics, and even trigger widespread public attention and discussion with the help of Netflix effect and topic marketing, further promoting the trend of popularization and youthfulness of the museum culture, so that museums are no longer just quiet academic palaces, but have become dynamic and close-to-life places for cultural consumption. The above background reveals the development trend of the integration of creative industries with museums, as well as its far-reaching impact on the innovation of market model and branding development of museums, which provides the background support and reflection for this research.

1.1.2 Purpose of the Study

As previously mentioned, museums are becoming a popular place for tourists to learn about the past and present of a nation or territory. Today, the role of museums has gradually evolved. Major museums are becoming more and more commercialized in an effort to increase visitors and finances, as well as to share their local cultures with tourists from across the globe.

The starting point of this thesis is to think about museum cultural brand construction and digital communication strategy from the perspective of design. In the process of the research, firstly, the current situation and cases of museums branding and merchandising are analyzed, and these cases are sorted out and discussed, and the current academic views and the situation of museums are sorted out for better understanding and analysis. After that, examine consumer perceptions of museum brands from an academic perspective, incorporate findings from earlier research, identify the factors influencing consumers' purchase decisions or involvement in museum purchase activities, and employ a comprehensive research methodology that integrates qualitative and quantitative data, drawing on theories of modern communication as well as digital science and technology. Finally, analyze and discuss data gathered from the core perspective of creative design, and think about the brand creativity development strategy of the museums. At the same time, this research provides ideas for enhancing the influence of museums and promoting the development of culture and economy in the territory where they are located, to improve the overall perception of museums on design and branding communication. Furthermore, the research will examine and reflect on the commercialization path of museums from the depth of sociology and phenomenology, exploring its impact on cultural heritage, public perception, and social value, as well as reflecting on the branding path of museums and their future development.

1.2 Research Methodology and innovation point

1.2.1 Research methodology

This thesis research is divided into six main parts, employing a comprehensive range of methods including comparative literature analysis, case studies, field surveys, observational methods, qualitative research, questionnaire surveys, and quantitative data analysis.

In Chapters 2 and 3, the study systematically traces the historical evolution of museum cultural heritage communication design from its initial commercialization to its current diversified development through comparative literature analysis. It explores the multi-dimensional contexts of society, the public, museums, and communication, alongside the policy support for creative industries and cultural heritage in the European Union and China. Additionally, through field surveys and observational methods, preliminary data on consumer behavior was collected and analyzed in conjunction with specific case studies (e.g., the British Museum, the Palace Museum), revealing key factors influencing museum cultural heritage communication design and consumer preferences.

Chapter 4 organizes the academic research status of museum branding and cultural heritage communication design through literature review. By integrating theoretical frameworks such as the Three-Level Model of Culture, the SICAS Model, the Brand Culture Pyramid Model, and the Culture and Consumption Model, a theoretical model for influencing museum cultural heritage communication design is

constructed, providing a solid foundation for subsequent scale development. A questionnaire was ultimately developed, incorporating dimensions such as cultural cognition, brand attitude, and consumer behavior.

Chapter 5 adopts a scale analysis approach, conducting descriptive statistical analysis on the design and survey of the questionnaire. Data collected were analyzed using SPSS software for regression analysis, factor analysis, and structural equation modeling, validating the applicability of the theoretical model and discussing the practical implications of the findings in depth.

Chapter 6 synthesizes the research findings to explore branding strategies for museum cultural heritage communication design in the digital age. It offers a critical reflection on the current state and proposes recommendations for future development.

Interdisciplinary research runs throughout the study, which primarily adopts design studies as its entry point while drawing upon theories and methodologies from multiple disciplines including economics, management, museology, psychology, and statistics. For instance, economics is used to analyze the market potential of museum branding, psychology to study consumer perceptions and attitudes toward cultural heritage, and statistics for data analysis and model validation. Grounded in design studies, this research integrates multidisciplinary approaches, leveraging methods and tools from other fields to foster cross-disciplinary collaboration. By identifying intersections across disciplines, research areas, and practical applications, the study seeks to achieve breakthroughs in practice and innovation in research.

In summary, this study adopts a mixed-methods research approach, systematically addressing the core issue of "constructing museum cultural brands and digital communication strategies" through phased integration of qualitative exploration and quantitative validation, with the methodology being systematically established through three key analytical dimensions: first, historical trajectories and policy contexts are examined through literature comparison and case analysis; second, participatory observation and targeted case studies capture consumers' interactive behaviors in physical spaces, compensating for the static limitations of purely theoretical deduction; and finally, theoretical model construction and quantitative validation analyze the progressive effects of consumers' cognition (from cultural awareness → brand attitude → consumption behavior), thereby deriving strategic insights for the branding and communication of museum cultural heritage design.

1.2.2 Research innovation point

This study combines qualitative and quantitative research methods to make a more comprehensive study of the research topic. At the same time, the interdisciplinary research method combines the methods of museology, economics, sociology, and phenomenology to discuss the direction of branding and design of museum merchandise from different perspectives. The research then presents a dialectical reflection on the museum economy and cultural communication. Finally, the study starts from the digital era, enumerates the new directions of museum cultural heritage communication in the digital era, and puts forward suggestions for the future

development of museum branding and digital communication strategies. The innovation of the thesis is mainly reflected in the following aspects:

First of all, from the research point of view, the branding of museums has always been a concern of economics and marketing. Still, due to different cultural habits, museums' branding development is not the same in different countries. Many museums still attach little importance to branding and marketing, and not much attention has been paid to the design and communication of the museum's cultural heritage. However, in large museums and Chinese museums there have been some developments and success cases, which have improved the territorial tourism economy. This research explores the development of museum branding and merchandising from a design perspective, using an interdisciplinary approach that combines the findings of cross-disciplinary research in marketing, design, and phenomenology to study the consumer convenience of museum cultural heritage communication design in the digital age, to better propose strategies for museums and territories to promote their development.

Second, in terms of research content and methodology, the thesis first employs case study and literature study methods to examine large museum brand and product design cases. That then investigates the mode of development of branded cultural heritage communication design based on the digital era by analyzing relevant theoretical literature and models such as the cultural theory model, the brand and culture model, the product design model, and the digital communication model. Through the quantitative analysis of the derived influencing factors, theoretical

research results are a priori assumed and a post-confirmation, based on which the branded cultural heritage communication product strategy is refined, and finally, reflections and thoughts on the future development are made.

Therefore, this paper is also able to reflect certain innovations in the research methodology.

1.3 Overall structure of the thesis

The content of this study takes the branding construction of museum cultural heritage communication design as the inner context, using a combination of theoretical framework and case study, and a research idea that starts from the macro background and conceptual discourse and moves into a specific quantitative analysis, and then puts forward strategic recommendations.

The thesis is divided into six chapters, and the general idea of the article can be expressed as follows: thesis framework and research ideas - research background and historical discussion - case study and interpretation - literature review and theoretical research - quantitative research and results analysis - proposal of specific development strategies - future development of the study and reflection.

Specific chapters are developed as shown in the figure below.

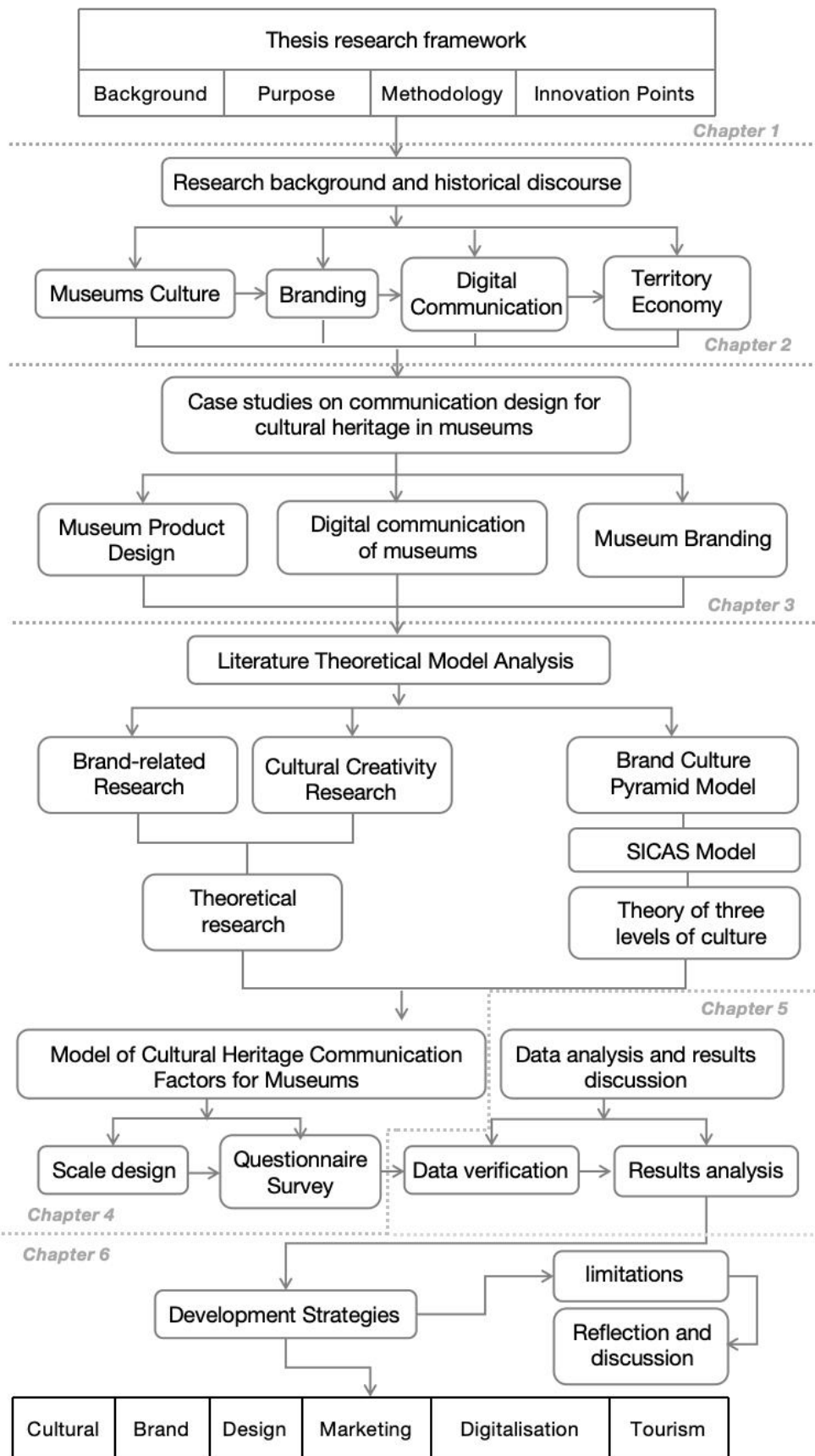


Figure 1, Overall structure of the thesis

Chapter 2 Establishment and Development of Museum Cultural Branding

2.1 Establishment of Museum Culture Merchandising

2.1.1 The process of establishment of museum merchandising

The process of museum merchandising runs through the constant collision of culture and commercialization, and the functions of museums have evolved in the process of adapting to social development and transformation. The value of museums has also developed from the initial focus on self-development to public needs and finally to social issues. Looking back at the historical process of the establishment of commercialization of museums, it is also the process of economic and social development and change. The merchandising of museums is closely related to the development of the economy and the upgrading of consumption. After World War II, as the U.S. economy evolved, the country's manufacturing industry transitioned from war-driven production to consumer goods. Increasing affluence, education levels, and leisure time led customers to demand not only museum visits but also an entertainment experience (Kovach, 2014). According to the data, museum visitors numbered 100 million in 1953, doubling to 200 million by 1962. Within five years, by 1967, the number had almost tripled to 560 million, and by 1974, it reached 700 million (Editorial Research Reports, 1974). The yearly increase in museum attendance and the shift in the public's demand for museums led to the rapid growth of the museum shop, which transformed from a simple cash register selling postcards to a

retail store selling books, postcards, and other merchandise. The museum store fulfilled the consumer's need for information, entertainment, and merchandise, and in 1956 The Boston Museum of Fine Art (BMFA) began to utilize art or museum imagery in its advertising and used design thinking to revamp the museum store's routes, displays, and lighting, which attracted a large number of consumers to the museum and made the museum store the busiest place in the entire museum. By 1976, however, most museums were attempting to sell replicas of collections ranging from earrings to furniture, and museums were reminded to start operating on a smaller scale, taking into account the financial sustainability of their stores.

At the same time, the United Kingdom and Europe are also gradually exploring the path of museum marketing. The British Museum, as the earliest museum established for the public, has developed a relatively mature model of merchandising from the time of its opening to the present day. The earliest concept of museum marketing in British literature can be traced back to 1969 (Kotler & Levy, 1969). By the 1980s, museums had entered a new commercial era, as political debates over museums shifted to funding issues. Arts ministers encouraged museums to seek financial resources outside the public system, including sponsorship, charitable grants, and revenue-generating initiatives such as stores, cafes, publishing ventures, and business clubs (McLean, 1995). As a result, museums have had to introduce the concept of marketing and gradually expand their marketing strategies and merchandising operations. The development of society also requires museums to transform their functions. Due to the rise of mass consumption, the foundation of

mass consumption culture is built on the perspective of the city, the people and the merchandise together. With urban development, public visual art has become commoditized. Museum visits have not only brought pleasure to people but have also evolved into a form of entertainment activity (Galluzzo, 2022). Towards the end of the 20th century, with the depth of globalization and the rise of consumerism, museums began to explore commercialization paths more proactively, including the development of cultural and creative products, digital content, brand licensing, and commercial exhibitions. In the late 1990s, the United Kingdom proposed the concept of “creative industries” for the first time, which brought museums into it, and further promoted the process of museum merchandising.

China's commercialization of museums started at the beginning of the 20th century, when several museums in China began to gradually set up, in this period, the concept of museum merchandising had not yet been clearly put forward, but through the ticket revenue, a small amount of souvenir sales and other measures to maintain the operation of the later commercialization of the exploration of the foundation. With the advancement of reform and opening up in 1978, China's socio-economic environment underwent great changes, and museums began to try more market-oriented operation methods. During this period, scholars began to put forward suggestions for museums, hoping that museums could develop the tertiary industry and generate revenue for museums. This conceptualized a certain role in promoting museums to engage in business activities so that museums are no longer completely restricted by the limitations of “non-profit institutions” and the positioning of public

institutions (Chen, 2019). During this period, museums also explored the path of merchandising, gradually exploring the path of commercialization by setting up chargeable special exhibitions, increasing sales of souvenirs and publications, and accepting corporate sponsorships. By the 1990s, the Shanghai Museum expanded its sales department to a 300-square-meter cultural heritage store, with annual sales rising to about 1 million yuan, and after the completion of the New Museum of Shanghai in 1996, it even set up an independent art development company to implement the path of self-management, independent accounting, and self-sustainability.

In the 21st century, with the rapid growth of China's economy and the expansion of the cultural consumption market, the process of museum merchandising has accelerated significantly. In 2009, the National Museum of China set up the “Cultural Industry Development and Management Center” (Zheng, 2021), which specializes in the operation and management of the cultural industry, and started a more professional brand-building and marketing operation. Museums began to pay attention to the development of cultural products, and the Forbidden City began to pay attention to the development of cultural products. Museums have begun to emphasize the development of cultural products, and cultural creative brands such as “Forbidden City Taobao” of the Palace Museum have quickly become popular and benchmarks in the industry. While large museums have been leveraging their rich resources and influence to gradually build their own merchandising brands, small museums in China are also exploring development opportunities by forming museum cultural and creative alliances (Table 1). These alliances establish partnerships, co-develop themed

products that reflect local cultural heritage characteristics, and promote them through Internet platforms (Liu, 2021). Meanwhile, digital transformation has become an important trend, with museums expanding their influence through websites, social media, digital exhibitions, and other channels, and even venturing into emerging business models such as e-commerce and live streaming with goods.

Cultural and Creative Alliance of China's Representative Museums:

Name	Date of Establishment	Basic form	Characteristics
Jiangsu Bossutang Museum Shop Union	09/2012	Based on the Nanjing Museum, the area contains the museums of Jiangsu Province, including the museum resources of 13 provinces and cities in Jiangsu Province.	Establishment of a chain of museum system stores in Jiangsu Province
Chongqing Cultural and Museum Creative Industry Union	09/2016	Seven Chinese museums, including the Three Gorges Museum in Chongqing, have joined together to establish this organization.	Utilizing the cultural resources of the Three Gorges region to create a Three Gorges cultural IP
Hubei Museum Cultural and Creative Union	05/2017	Hubei Provincial Museum jointly established with 3 universities and 4 companies	Expand and sell cultural and creative products
Zhejiang Wenlangge Museum shop Union	10/2017	Guided by Zhejiang Provincial Bureau of Cultural Relics, organized by Zhejiang Provincial Museum, joined by other museums in Zhejiang Province	Emphasize the protection of intellectual property rights of cultural and creative products of museums
Northwest Museum Cultural Industry Union	05/2018	Established by Shaanxi History Museum, Gansu Provincial Museum, Ningxia Museum, Qinghai Provincial Museum and Xinjiang Uygur Autonomous Region Museum.	Focusing on the development of cultural heritage in the “Belt and Road” region
Yunnan Museum Cultural and Creative Union of IP	05/2018	Initiated by the Yunnan Provincial Culture Expo Company, joined by 22 museums in Yunnan Province	Developing cultural resources of museums in Yunnan Province
Guangdong Museum Cultural and Creative Union	08/2018	Initiated by 9 Cultural and Creative Units of cultural heritage, including Guangdong Provincial Museum, Guangdong Museum of Art and Guangdong Zhongshan Library, and established together with 78	Cultural resources and incubation of cultural creations in Guangdong Province

		Units of the Union	
Yangtze River Delta Museum Cultural and Creative Union	11/2019	Nanjing Museum, Shanghai Museum, Zhejiang Museum, Anhui Museum 4 museums	Developing cultural branding of museum cultural creations with Jiangnan characteristics
Guangdong, Hong Kong and Macao Bay Area (Guangdong) Cultural and Creative Union	09/2020	The Guangdong Museum was initiated by the Hong Kong Federation of Design Associations, the Macau Designers Association and a number of companies.	Promoting cultural tourism industry, cultural and creative exchanges and cooperation among Guangdong, Hong Kong and Macao
Red Cultural and Creative Union	12/2020	Initiated by the National Museum of China and 34 red museums and scenic spots.	Establishing red cultural branding and cultural creation standards to promote red culture
Non-State-owned Museum Cultural and Creative Union	12/2020	Advocated by Guangdong Museum Association, joined by more than 80 non-state-owned museums across the country.	Construct a platform for exchanges and cooperation in cultural and creative resources sharing among non-state museums, and promote the common development of cultural and creative industries in non-state museums.

Table 1, Table of cultural and creative alliance of China's representative museums (Liu 2021).

The history of the merchandising of museums is also, on another level, the history of the evolution of society and the function of museums, which in the beginning were used only as places of display for private collections, and their function was focused on the manifestation of the knowledge and wealth of an individual or a family. Then public museums for the general public began, and at this time museums were called upon to perform few functions. Traditionally, the ideal of the museum (although not always practiced) was to focus on the authenticity of the objects on display and to provide visitors with spaces where they could remember the past (Tufts & Milne, 1999). In the 19th century, with the rise of the concept of public museums, museums began to open their doors to a wider public, and their functions

gradually evolved into education and display, aiming to popularize knowledge and culture. The value of museums, however, is recognized as two main activities, preservation and enhancement, as defined by ICOM, the International Council of Museums. Preservation includes all activities aimed at identifying, protecting and preserving cultural heritage for public use (i.e., acquisition, cataloging, security, maintenance, restoration, etc.). Enhancement, on the other hand, refers to all activities aimed at increasing or improving the value, quality, desirability, or attractiveness of the tangible and intangible human heritage preserved in museums and their environments. These activities are facilitated through services that enable people to engage with and learn about the value of the museum's cultural objects before, during, and after their visit (Simone, Cerquetti, & La Sala, 2021). This needs to be achieved through the merchandising of museums.

At the beginning of the 20th century, the scientific research function of museums began to be emphasized, they not only collect and protect cultural relics but also become an important place for academic research. In the mid-century, the strengthening of the educational function made museums dedicated to the dissemination and popularization of knowledge through exhibitions and educational activities. In the late twentieth century, as awareness of cultural diversity and inclusiveness increased, museums began to emphasize community participation and audience experience, and their functions were expanded to include promoting community cultural development and providing interactive experiences. From the early twenty-first century to the present, the diversification of museum functions has

become more and more obvious, covering the emerging functions of recreation, entertainment, leisure, and commercial operations. Today's museums are viewed not only as providers of knowledge but also as tourist attractions that must be experienced by visitors. To succeed as tourist attractions, museums must engage in the tourism industry like any other commercial entity. This requires them to adapt to the modes of tourism production, just as they previously adapted to social changes (van Aalst & Boogaarts, 2002; McPherson, 2006; Pred, 1991). Digital transformation has become a key trend in the development of museums. Using advanced digital technologies, museums have optimized the process of collecting, organizing, and displaying information about cultural relics, significantly improving operational efficiency and enriching the visitor experience. Today's museums can be used as symbols of urban tourism, as symbols of the city's history and culture, and museums will continue to adapt to the needs of social development, and continue to evolve and innovate.

2.1.2 From souvenirs to museum cultural merchandise

'Souvenir' is a French word meaning 'to return to oneself'. It refers to objects that bring back memories of people, places, and events; objects that allow people to relive the past; and objects that connect people to the past and the "other" in ways that bring back memories of their daily lives (Stewart, 1993). In the age of the prevalent consumer economy, as Galluzzo (2022) writes, the act of consumption cannot be seen simply as the purchase of a functional object, but rather as its role in socialization, where the object purchased certainly has some function, but can also place its owner into a certain role. Souvenirs carry memories; they transform intangible experiences

into tangible memories, enabling us to freeze moments in an extraordinary reality and integrate them into our daily lives (Collins-Kreiner & Zins, 2011).

Souvenirs are inextricably linked to the tourism industry and frequently serve as travel memories for tourists, encapsulating the cultural and experiential aspects of a destination. Eurostat data indicates that in 2020, 2.6% of total household consumption expenditure in the EU will be allocated to culture-related goods and services. Furthermore, there has been an increase in the overall expenditure of individuals on museum and culture-related products (Figure 2). As indicated by iiMedia Research in China, the Chinese gift economy market is expected to reach 1,377.7 billion yuan by 2024, with collections comprising 12.5% of that figure. It is evident that the sale of tourist souvenirs plays a significant role in the tourism economy. This not only provides employment opportunities for local craftsmen and small merchants but also directly contributes to the development of the local economy, particularly in small towns and rural areas that rely on the tourism industry, where the sale of souvenirs is an important source of income. The selection and purchase of souvenirs enables tourists to extend the duration of their travel experience. Furthermore, the act of purchasing souvenirs itself constitutes a cultural experience and source of pleasure, which can enhance the overall satisfaction and depth of the trip.

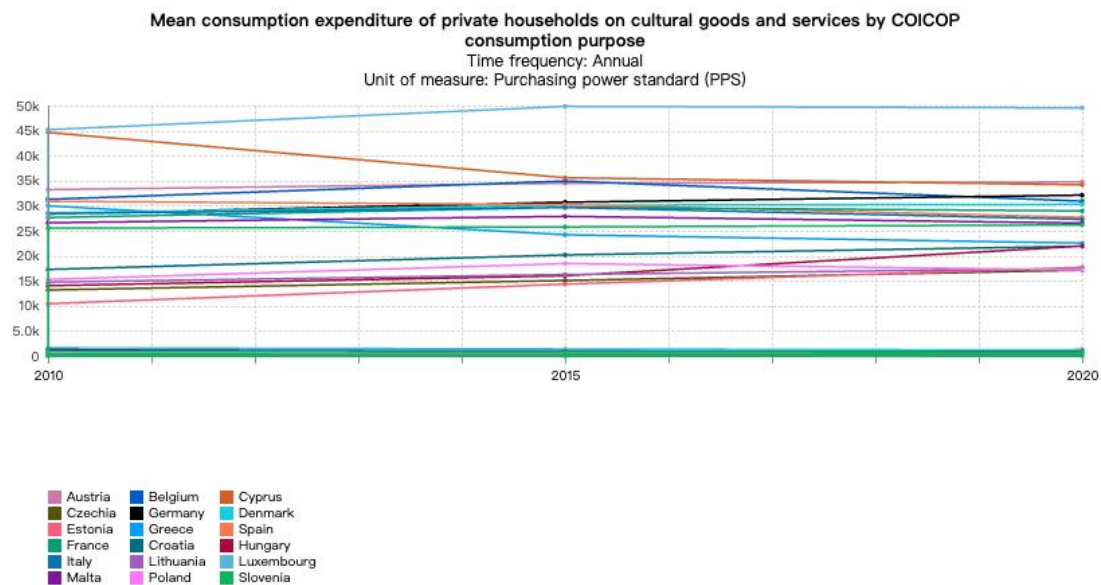


Figure 2, Mean consumption expenditure of household on cultural goods and services by
COICOP consumption purpose on 2010-2020

source :

https://ec.europa.eu/eurostat/databrowser/view/hbs_exp_t121/default/table?lang=en

The commercial value of souvenirs is significant. As commercially produced tangible items, souvenirs are purchased by tourists and serve as a form of intangible memento, evoking memories of their experience at that particular moment. Furthermore, souvenirs serve a dual purpose: they facilitate the communication of a destination's cultural and historical heritage to tourists, while simultaneously assuming a symbolic role. Swanson and Timothy (2012) proposed a typology of souvenirs comprising four categories: symbolic souvenirs, tourist goods, other goods, and miscellaneous souvenirs. First, symbolic souvenirs have been defined as metaphors of events, places, or experiences, imbued with significant meaning and consequence. Such symbolic reminders are frequently positioned in the domestic

environment for observation by family members and visitors, thereby evoking recollections. Secondly, tourism merchandise refers to items that are available for purchase in tourist souvenir shops and handicraft markets and which have an exchange value in the marketplace. There is minimal emotional investment in the production, sale and consumption of tourist goods. Thirdly, the category of other goods comprises souvenirs purchased during a tour or holiday, which evoke memories of the travel experience when used by tourists after they have returned to their home countries. In addition, there are instances where souvenirs are not purchased, yet their mere presence serves to remind travellers of their experience. Such items may include visas in passports or small souvenirs given to travelers as gifts (Li & Ryan, 2018). The commercial role and significance of souvenirs is aligned with that of the museum's products, which serve as the foundation and assurance for the development and sale of museum products.

Museums are repositories of rich collections and powerful architectural images, and they include visual identifiers that extend beyond the collections, buildings, or even the museums themselves. These symbols serve as the embodiment of symbols that provide substantial support for the design and production of merchandise. Gordon (1986) was the first to classify souvenirs into four categories: pictorial souvenirs (e.g., postcards and brochures), rock souvenirs (e.g., shells and rocks), symbolic souvenirs (e.g., miniatures of the Eiffel Tower), and place-marking souvenirs (e.g., T-shirts, coffee mugs, and magnets). This classification also included local products such as food, alcohol, and clothing. In the early stages of the museum

shop, products were frequently printed on items such as postcards, brochures, T-shirts, mugs, and so forth. This approach persists to the present day (Figure 3). Souvenirs have always accompanied tourism. For museums, opening a museum shop may positively affect their tourism potential (Trabskaia, Shuliateva, Abushena, Gordin, & Dedova, 2019). The compelling visuals and reproductions of museum collections confer a competitive advantage upon museum souvenirs, influencing the perception of the city brand in a positive manner.



Figure 3, British Museum Shop Postcard Counter

Source: Photograph by the author

The merchandise sold in the museum's shop can be regarded as souvenirs but is different from ordinary souvenirs as it symbolizes the museum's culture, reflects history, and is likewise uniquely symbolic. Museums have unique value symbols, and

such symbols can promote the spread of merchandise. Similarly in the process of development, from simple replicas in the beginning to a series of handicrafts, artifacts, collectibles and creative products developed more and more based on the collection, to the endless derivatives with interactive nature or digital technology participation by nowadays, the museums are increasingly using more and more methods to express their uniqueness through merchandise, and are paying more and more attention to the needs of the society and the public. By collecting artifacts and handicrafts from different eras, museums with integrated shops can leverage consumers' sense of nostalgia. Through exhibitions, displays, and merchandise, they provide the immersive and entertaining experiences that visitors seek (Kovach, 2014).

Museum merchandise requires the involvement of design if they want to be a tool for presenting the uniqueness of the museum's culture and as a way of attracting visitors to the museum. The act of design, as a transformative behavior, enables the interpretation and reinterpretation of processes inspired by cultural heritage, artifacts, and immaterial elements of narratives. These are innovative and replicable value-generating processes that anticipate diverse contexts of use and explore the persistence and transformative dynamics of authenticity. Designers can leverage their cultural research and aesthetic thinking to embed the immaterial values and history of museums into their designs, transforming cultural capital into narratives of identity and expressions of culture. This process is systematically realized through denial, repetition, reproduction, and re-performance, ultimately generating new forms of authenticity (Bertola, Vacca, Colombi, Iannilli, & Augello, 2016). In order to attract

the maximum number of visitors, the design of merchandise is constantly upgraded and iterated in museums, where culture is embedded in artifacts and merchandise as a symbol, a narrative, an experience, or an event, as a symbol of memory, a means of entertainment, and an economic instrument that constantly attracts visitors to participate and consume. These behaviors are accompanied by social change, capital promotion and policy support, driving museums to transform their identities.

2.1.3 Policy-driven development of cultural business in museums

The development of museum culture as merchandise cannot be separated from policy support. Since the 1980s and 1990s when the concept of cultural industry and creative economy was put forward, cultural and creative industries and economic forms have been continuously developed, and these changes have deeply affected the operation mode and self-positioning of museums. In this context, museums are no longer limited to the traditional functions of collection, protection and display, but gradually transformed into innovation-driven cultural producers and disseminators, and the cultural resources of museums are regarded as valuable assets with creative potential and market value.

Cultural and Creative Industries (CCI), an emerging industrial form emerging in the context of economic globalization, is centered on the use and exploitation of creativity. The concept was first proposed by the UK Creative Industries Task Force as a national strategy and policy (Chen, 2019). It has subsequently been widely adopted globally and adapted to respective national conditions. The UK defines

cultural and creative industries as those that are centered on the creativity, skills, and talents of individuals, covering a wide range of areas such as performing arts, visual arts, literature, music, film and television, design, broadcasting, and software development. The industry emphasizes the development, design, production and marketing of intellectual property of the subject culture or cultural elements through the intelligence, skills and creativity of individuals or teams. Cultural and creative industries span a wide range of fields, including but not limited to broadcasting, film and television, animation, audiovisual, media, visual arts, performing arts, crafts and design, sculpture, environmental arts, advertising and decoration, clothing design, software and computer services. In China, the scope of cultural and creative industries is even broader, including not only traditional and modern cultural industries, but also creative design industries, forming a comprehensive industrial system integrating cultural heritage, innovation and economic value.

Cultural and creative industries are characterized by their innovativeness, high value-addedness, strong integration and high dependence on technological progress. It creates market-competitive products and services by tapping and utilizing cultural resources and modern technology, which not only promotes economic growth but also enriches people's spiritual and cultural life and strengthens the country's cultural soft power. With the development of digital technology, the cultural and creative industry is expanding its boundaries, and the trend of digitization, networking and intelligence is becoming more and more obvious, which brings new development opportunities and challenges to the industry.

The cultural and creative industries, as an important driver of national economic development, are also supported by national policies. Europe has a distinguished position in the arts, creative industries and cultural heritage. Accordingly, Europe has developed a series of policies aimed at increasing the specialized productivity and competitiveness of the cultural and creative industries. In 2015, the United Nations launched THE 17 Goals policy, which sets out 17 sustainable development goals, of which the eighth is to promote sustained, inclusive and sustainable economic growth, full with productive employment, and decent work for all in focusing on the tourism sector, emphasizing the importance of developing tourism, with the target aiming to ‘develop and implement tools to monitor the impact of sustainable tourism on sustainable development, to create jobs and promote local cultures and products’ (United Nations, 2015). This has contributed to the development of international tourism in a significant way by providing policy support for tourism promoted through cultural heritage and creative production in disadvantaged areas.

The European Union is committed to promoting the integration of cultural heritage and innovative industries through a series of policies and measures. In 2019, the European Union renewed its European Horizon policy, which invested around €500 million in cultural heritage-related research actions from 2014 to 2020 through the Horizon 2020 program, focusing on ‘innovation in cultural heritage research’ (European Commission, 2019). Meanwhile, the Creative Europe programme, which has been running since 2014, has invested a total of €3.91 billion to protect, develop

and promote Europe's cultural and linguistic diversity and its heritage. The programme enhances not only the competitiveness and economic potential of the cultural and creative sectors, especially the audiovisual sector, but also promotes inclusiveness, digital transformation, and environmental sustainability in these areas (European Commission, 2021). These policies and funding have provided a strong impetus for the preservation of Europe's cultural heritage and the development of the creative industries. Within this policy framework, museum heritage can also be seen as being within the scope of policy support, as museums can take advantage of the creative industries to further develop their cultural tourism resources. This combination will not only attract more tourists but also enable the sustainable development and utilization of museum resources through the power of design and innovation. Through this policy guidance and financial support, the EU is working to integrate cultural heritage with creative industries to achieve the protection of cultural diversity, the exploitation of creative potential, and the creation of economic value, thereby promoting the continued prosperity and development of Europe in the cultural and creative fields.

Influenced by the creative industries, the Chinese Government has also noted the importance of the commercialization of museums and the development of cultural heritage. The Outline of the National Cultural Development Plan for the Eleventh Five-Year Plan Period, issued by the State Council of the People's Republic of China in 2006, emphasizes the need to encourage and guide cultural consumption. To adapt to the changing consumption patterns of urban and rural residents, it is essential to

innovate cultural products and services, cultivate consumption hotspots, expand consumption areas, and guide public cultural consumption (State Council, 2006). This policy encourages people to engage in cultural and entertainment consumption, while also laying a solid foundation for cultural self-confidence and a strong cultural nation.

At the same time, the Chinese government is also concerned about the integration of culture and creative industries, proposing to ‘rely on rich cultural resources, enrich the connotation of creativity and design, expand the ways of inheritance and utilization of tangible and intangible cultural heritage, and promote the inheritance and sustainable development of cultural heritage resources by integrating them with industries and markets. Strengthen the combination of science and technology with culture, promote the production, trading and transformation of results of creative and design products and services, create new modern products with Chinese characteristics, and realize the organic unity of cultural value and practical value (State Council, 2014).’ Support was provided in order to promote the development of cultural and creative industries and the development of cultural heritage.

The Chinese government has also paid attention to the in-depth integration of culture with tourism, science and technology, education and other fields, and has promoted the modernization of traditional culture and its consumer-oriented transformation through digital technology, cultural creative product development, and cultural tourism integration projects. For example, in the Ministry of Culture's ‘13th Five-Year Plan for the Development of Cultural Industries’ published in 2017, the

Ministry of Culture wrote: ‘Promote the strategy of “culture +” and “Internet +”’. Promote the application of the Internet and other high-tech in the creation, production, dissemination and consumption of culture, and promote the integration of the cultural industry with manufacturing, construction, design, information, tourism, agriculture, sports, health and other related industries. This has laid the foundation for the multi-industry integration of culture. As a result, the number of cultural and creative products developed by the Palace Museum in Beijing had reached 10,500 by December 2017. At the 19th annual meeting of the China Entrepreneurship Forum in Yabuli in 2019, Shan Jixiang, then president of the Palace Museum in Beijing, announced that the museum's cultural and creative sales revenues had reached RMB 1.5 billion in 2017 (Li, 2020).

In 2018, the European Commission (DG DEVCO) & UNESCO and the Chinese government have invested funds and policy support to promote the development of cultural heritage along the Silk Road in order to focus on cultural heritage from Europe to China. For example, China's 2018 Opinions on Strengthening the Reform of the Protection and Utilization of Cultural Relics, issued by the State Council, refers to ‘..... Implement a special plan for the protection of cultural heritage and exchange and cooperation along the ‘Belt and Road’, and improve the transnational cooperation mechanism for the protection and inscription of cultural heritage along the Silk Road and the Maritime Silk Road’ The Silk Road Programme launched by the EU and the UN in 2019 is also encouraging cultural exchanges along the Silk Road to protect and promote the exchange and development

of cultural heritage in Asia and Europe(Figure 4).

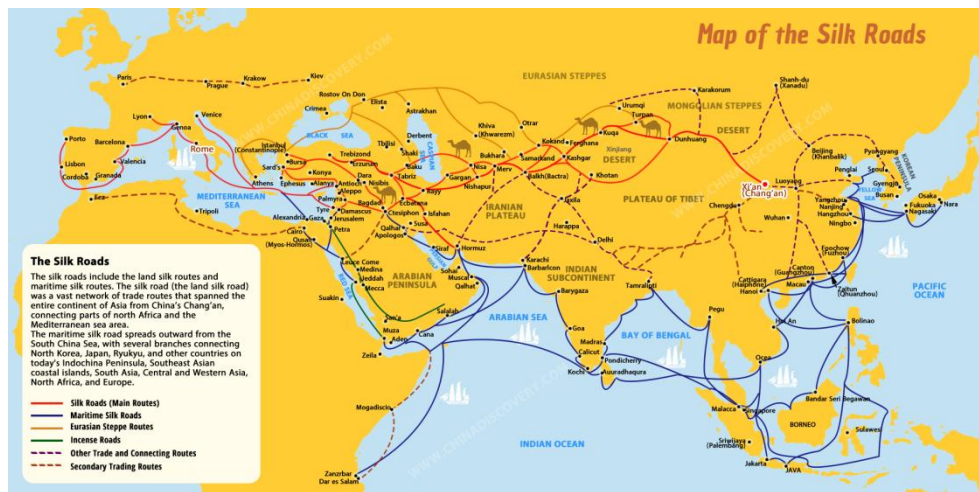


Figure 4: Silk Road

Source: chinadiscovery.com

In addition, governments across China have responded to the central government's call to increase investment in the cultural industry (Table 2). For example, in 2021, Henan Province announced its '14th Five-Year Plan' for the integrated development of culture and tourism, which states that it is necessary to give full effect to the advantages of the Central Plains urban group, metropolitan areas, national central cities, regional central cities, important node cities, small towns with special characteristics in terms of the richness of cultural resources, the convergence of creative elements, and the advantages of the consumer market, and to insist on taking cities as the main site for the integrated development of culture and tourism, and to build urban theme-based cultural creativity and innovation spaces in combination with urban organic renewal. Insisting on the city as the main field for the integrated development of culture, tourism, culture and creativity, combining with the organic renewal of the city, constructing urban theme-based cultural creativity and

innovation space, and creating a future-oriented and global network of cultural and creative cities... ... Upgrading the urban cultural and museum districts with the Henan Museum, Zhengzhou Museum and Luoyang Museum as the core, supporting Zhengzhou in building a world cultural tourism hub and a national cultural innovation highland, and supporting Luoyang in building an international humanities exchange centre and the 'Cultural Capital of East Asia' (People's Government of Henan Province, 2021). It can be seen that the local government attaches importance to the cultural creativity of museums.

Main Policies related to cultural creativity and heritage in China :

Policy titles	<i>Release Date</i>
Outline of the National Cultural Development Plan for the Eleventh Five-Year Plan	2006
Cultural Industries Revitalisation Plan	2009
Shenzhen Cultural and Creative Industries Revitalization Development Plan (2011-2015)	2011
Outline of the Plan for Building a Strong Cultural Province in Guangdong Province (2011-2020)	2011
Decision of the Central Government on Several Major Issues Concerning the Deepening of the Reform of the Cultural System	2011
Several Opinions of the State Council on Promoting the Integrated Development of Cultural, Creative and Design Services and Related Industries	2014
Proposal of the Central Committee of the Communist Party of China on the Formulation of the Thirteenth Five-Year Plan for National Economic and Social Development	2015
Several Opinions on Promoting Cultural and Creative Product Development by Cultural Heritage Units	2016
The Ministry of Culture's Cultural Industry Development Plan for the 13th Five-Year Plan	2017

Several Opinions on Strengthening the Reform of Cultural Heritage Conservation and Utilization	2018
"The 14th Five-Year Plan for Tourism Development	2020
Several Measures to Further Promote the Development of Cultural and Creative Products by Cultural Heritage Units	2021
"The 14th Five-Year Plan for Heritage Conservation and Scientific and Technological Innovation	2021
Henan Province's "14th Five-Year Plan" for the integrated development of cultural tourism announced	2021
Guidance on Promoting the Reform and Development of Museums	2021

Table 2: Main Policies related to cultural creativity and heritage in China

The support of these policies has helped China's museum commercialization process and cultural heritage development develop step by step. By 2021, China's above-scale cultural and related business revenue was RMB 119.64 billion, a year-on-year increase at 20.9%. Among them, China's above-scale cultural and creative design business income was 1956.5 billion yuan in 2021, and above-scale cultural and creative design business accounted for 16.4% of the total. Using policy support, museums have developed different types of merchandise through the advantages of creative design and cultural resources, and have gained huge attention and revenue by taking advantage of policies and communication. This has created a good foundation for brand building.

2.1.4 Museum merchandising - preservation or destruction?

One of the problems that museum merchandising has to face in the process of development relates to the thinking about identity. As mentioned above, the basic functions of museums are collection, display and education, but with the development of society and the changes in consumer demand, and then with the addition of services and merchandising, museums have had to move from purely thought and

research into the preservation and transmission of culture to thought about the needs of the consumer and adapting to the changes in society. Since then, the discussion of whether to maintain a serious cultural and educational institution or to turn it into an experiential and entertaining place to satisfy the audience was born.

In Balloffet, Courvoisier, and Lagier's (2014) view, heritage institutions, broadly defined, are currently undergoing fundamental changes. These changes affect not only traditional museums, but also planetariums/astronomical observatories, science centres, historical monuments, nature parks and eco-museums. Many heritage institutions, regardless of their architectural uniqueness, are key attractions that enhance the image of a city or contribute to the development of a territory. They often have to balance a number of different objectives, some of which go beyond the function of museums as defined by the International Council of Museums (ICOM) - i.e. to conserve and study collections for the education and recreation of the public. As Johanson and Olsen (2010) note, mass travelers always seek to gaze at the spectacular and new in a familiar setting. This trend has led to the beginning of a fusion between culture and entertainment in the museum's offerings. Due to the addition of creative industries, museums are trying to regulate the seriousness of the atmosphere and content, museums have started to focus on innovative transformations by adding elements such as lively environments and entertainment to enrich the visiting experience. In the tourism industry, Ritzer and Liska (1997) introduced the concept of 'McDonaldisation', drawing inspiration from the fast-food chain 'McDonald's.' This concept highlights that tourism production is characterized by

predictability, efficiency, calculability, and controllability. The concept of McDonaldisation is primarily concerned with the demand for production comparable to mass tourism. The immersive and service-oriented nature of museum-based cultural heritage tourism, combined with the need for amusement parks to enrich visitors' entertainment experiences through cultural content, has led to a convergence of these two services and perspectives. Concepts such as 'McDisneyization' and 'Disneyfication' (Bryman, 1999) are increasingly viewed as applicable to the evolving trends in museum tourism.

The establishment of Disneyland began in 1955 by Walt Disney who created the first family entertainment empire of dreams and innovations in Anaheim, California. With the initial success of the park, Disney rapidly expanded its commercial footprint, building an all-encompassing entertainment empire through continuous expansion, innovative rides, and diversification of peripheral merchandise, food and beverage, and hospitality services. Its commercialization model relies on ticket sales, merchandise catering, hotel accommodation and value-added services while enhancing visitors' sense of immersion by transforming characters and stories from animation and films into physical items. Disney focuses on industry chain linkage and in-depth IP (Intellectual Property) development, using high-quality film and television works to integrate marketing and derivatives development to achieve long-tail revenue. It has achieved a magnificent transformation from a single park to a global comprehensive leisure destination, and the success of its business model has become an industry model. The success of Disney's business model has given great

inspiration to the cultural industry. The entertainment industry needs to further enhance the entertainment experience of tourists through the vehicle of culture. In turn, the cultural industry needs to add entertainment content to enrich visitors' senses and experience.

Since museums create a spatially 'fully immersive' environment for visitors, which is in line with the efforts made by amusement parks such as Disney, museums naturally have such an atmosphere. In Europe, for example, many museums have a long history and the buildings themselves are part of the culture and history. Nowadays, when tourists walk into a museum, it can arouse their nostalgia and desire to explore, and the museum can then make use of reasonable guidance, combined with interaction and commercialization, to provide tourists with the entertainment experience that they are looking forward to. Nowadays, with the support of digital technology, allowing visitors to have an immersive experience has gradually become the primary goal pursued by various museums, but considering the application of entertainment in the commercialization of museums, it has faced many arguments.

In their article *From Museum to Amusement Park: The Opportunities and Risks of Edutainment*, Balloffet, Courvoisier, and Lagier (2014) discuss the advantages and challenges of integrating entertainment into museums. They write:

In both the museum realm and the retail world, the emergence of new, experience-based economic forms is a clear trend. Traditional offerings of products and services now come with an important new ingredient. The "e-factor," or entertainment factor, has become a driving force in the global economy.

As the concept of education has evolved, the idea of 'teaching for fun' has resulted in a shift in focus from the transmission of content to the facilitation of experience. The immediate gratification and thrill that such experiences offer can contribute to a more positive and memorable experience. The concept of entertainment and experience has been introduced by museums, with the utilization of playfulness by exhibition designers serving to alleviate boredom and the perception of time wasted by visitors. The incorporation of entertainment has increased the likelihood of visitors attending museums to occupy their leisure time (Chaumier, 2005). Some authors have identified a significant shift in perspective, from museums that are primarily focused on objects to organizations that are increasingly oriented toward information (Freedman, 2000). The museum has evolved into a centre of information and culture, embracing the principles of edutainment. Balloffet et al. (2014) argue that culture can be transmitted through a variety of methods, employing diverse techniques such as entertainment, education, static displays, interactive exhibits, and design elements that range from minimalistic to highly elaborate. Those engaged in the study of museology and the operation of science parks tend to view cultural mediation that discourages visitors from inquiring beyond the fundamental sensory experiences afforded by a cultural venue with skepticism. In contrast, those responsible for the promotion of cultural or commercial activities are increasingly willing to integrate educational components into their entertainment offerings. In previous literature, most museum professionals did not reject the idea of museums offering entertaining experiences. In Balloffet et al.'s (2014) study, none of the

museum professionals expressed concern that the integration of museums and amusement parks could be dangerous or negative, as all of them believed they acted in a morally responsible manner to ensure that their work remained central. However, they also believe that this entertainment needs to be limited in order to avoid overuse with long-term detrimental effects - distorting the mission of their institutions - and therefore emphasize that museums are, first and foremost, cultural centers, and secondly, centers of entertainment and activity.

And as time progresses, it seems as if this boundary is becoming increasingly blurred. Digital communication has broken the boundaries of space and form, and the cultural heritage of museums can be freely combined and reconstructed with other elements through special effects, post-production, sound and light technologies. In China, moreover, in order to adapt to the entertainment consumption of society, it cooperates with cartoon images, toys, and even games, a move that blurs the boundaries between the real and virtual cultural heritage, making the museum's culture and entertainment further mixed, which will bring new challenges for the society, culture and museums.

Based on the people who visited the museum, the museum is a suitable place for all ages to visit and explore, but due to the increasing number of young tourists nowadays, the demand for museums to be more entertaining is gradually increasing. Young tourists' experience in museums is often characterized by seeking interactivity, participation and education, and they are more inclined to gain knowledge and enjoyment through novel display technologies and participatory activities. Young

people are concerned about entertainment, life, games and fresh experiences, etc. Adding more entertaining elements can arouse their interest in visiting museums, which can further promote the consumption of museum merchandise. For middle-aged and older visitors, the authenticity of the museum is often more important. Finally, for younger visitors, the entertainment aspect of museums often has the potential to confuse them with the authentic heritage of the artifacts, so developing a more authentic, educational rather than over-entertaining experience for younger visitors will be more effective in the long term. An analysis of the advantages and disadvantages of commercializing museums can facilitate the development of more effective merchandising strategies for museums.

2.2 From IP to Museum Cultural Branding

2.2.1 Cultural and creative industries and IP culture

The merchandising of museums promotes the establishment of museum branding, and merchandising cannot be separated from the support of cultural and creative industries, the basic definition and development of which have been mentioned above. Since the concept of cultural and creative industries was put forward, it has provided great support to the development of cultural industries. According to EU statistics, the ecosystem of cultural and creative industries (CCIs) accounts for about 3.95% of the EU's value-added and employs about 8 million people, including about 1.2 million companies, of which more than 99.9% are small and medium-sized enterprises (SMEs). In 2021, the 1.9 million cultural enterprises in

the EU generated about €183 billion of value added. The evolution of world exports of creative products and services between 2002 and 2011 (Figure 5) shows that revenues generated by the creative industries have grown very rapidly and that the proportion of design products among creative products has nearly tripled. All this proves the pull effect of the creative industries on the cultural industries, and the cultural and creative industries of museums have evolved along with it (UNESCO, 2013). After COVID-19, the cultural and creative business of museums continues to grow as the economy and tourism recover. While focusing on creativity, the concept of IP licensing incubation was also introduced into the commercial operation of museums.

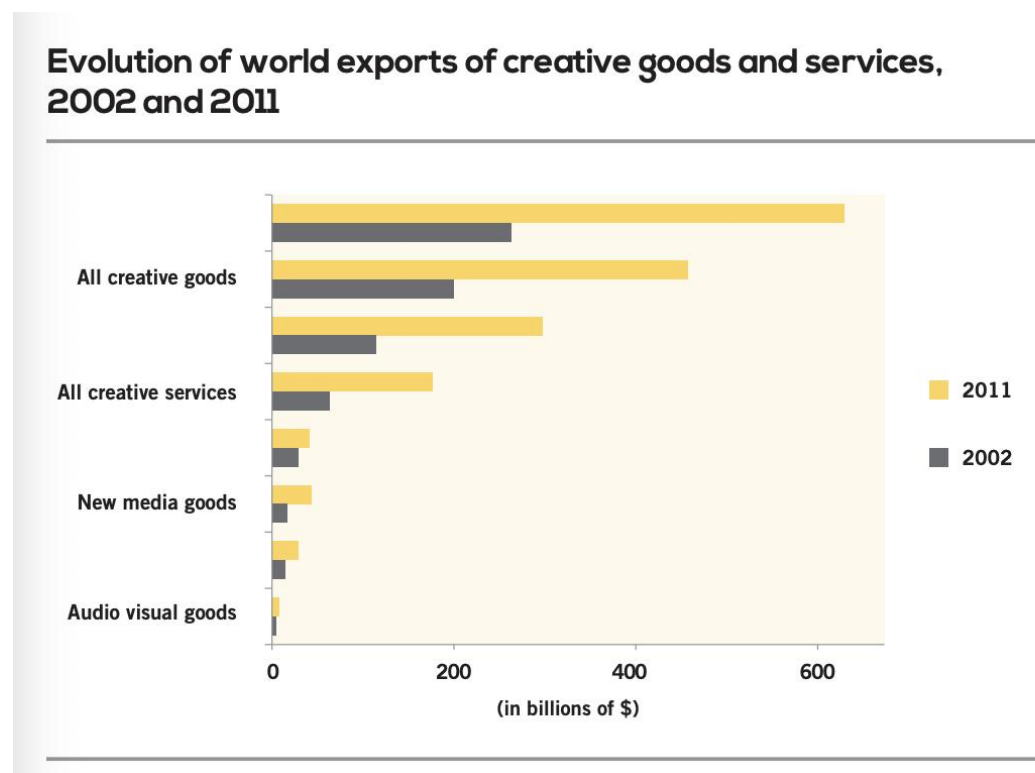


Figure 5 Evolution of world exports of creative goods and services, 2002 and 2011

Source: (UNESCO, 2013)

Intellectual Property (IP), as defined by the World Heritage Organization, is a

category of property that encompasses intangible creations of the human intellect (WIPO, 2016). The modern concept of IP originated in England in the 17th and 18th centuries. It encompasses rights in the traditional sense of authorship (copyright), trademarks and patents and all other rights arising from intellectual creative activity in the fields of industry, science, and literature and art (Han XF, 2014). The most well-known types of intellectual property rights are patents, copyrights, trademarks and trade secrets. After World War II, the international consensus on intellectual property protection increased, and the establishment of the World Intellectual Property Organization (WIPO) (1967) as well as the promotion of international treaties, such as the Berne and Paris Conventions, constructed a global framework for intellectual property protection. The history and development of the industry have been a process closely linked to technological innovation, market demand and the policy environment. The early IP industry was centered on protecting the property rights of creators to their intellectual achievements. Furthermore, the fact that trademarks, images, technologies, and other elements of IP are licensable means that, over time, protected IP can be monetized through licensing, collaboration, and other means. This allows for the transformation of intangible intellectual property rights into tangible income. Moreover, it can be observed that the IP industry plays an important role in cultural development.

Take the image of Mickey Mouse created by Disney as an example, in 1928 the world's first animated short film synchronized with music and action, *Steamboat Willie* was published, in which the image of Mickey Mouse was deeply popular, and

after that, cartoon images and comic strips about Mickey Mouse began to be serialized in daily newspapers. In 1932, Italy took the lead in publishing a comic magazine of Mickey Mouse, with the United Kingdom following closely behind. The publications were effective in maintaining the popularity and craze of the image and turning viewers and readers into fans with a certain degree of loyalty while realizing a profit. And then, Mickey Mouse became the first cartoon character to be widely used in business, hundreds of Mickey Mouse toys and souvenirs flooded the market, both catering to the needs of the fans, but also Mickey Mouse further penetrated into the hearts of the people. 1955, the first Disneyland opened; in 1983, the Disney Channel began to broadcast, and so Disney has realized a from online to offline. Since then, Disney has achieved a layout from online to offline, and the major business sectors have worked closely together to launch a whole industry chain operation. Even in the 21st century, Mickey Mouse, though no longer prominent in animation, has achieved significant success in consumer products. Through cross-border collaborations with global brands like Apple, Gucci, and Coach, Mickey Mouse has become a widely recognized cultural symbol and the most iconic figure under Disney's banner. Its universal appeal has fostered a thriving fan economy (Cui, 2016).

The case of Mickey Mouse is a good example of a successful IP operation. In addition, cases of realizing intellectual property rights through the operation of trademarks and images abound. Cartoon images such as Japan's Hello Kitty and South Korea's Line, or film and TV IP images such as Marvel and DC rely on licensing to gain a large amount of revenue every year, and according to a report by the Licensing

International, global sales of licensed goods and services reached a record \$356.5 billion in 2023, up 4.6% year-on-year from 2022. Sales of licensed goods and services continue to grow globally across categories such as fashion, entertainment, music, live entertainment, sports and more. Ms Maura Regan, President of the International Licensing Industry Association, said. ‘The global brand licensing industry shows no signs of slowing down. In 2023, consumers have demonstrated greater loyalty than ever to their favorite brands, characters, and intellectual properties (IPs). In fact, the global brand licensing industry continues to outperform the overall retail market, highlighting the effectiveness of brand licensing as a powerful tool for differentiation (International Licensing Association [ILA], 2024).

As a result of the growing IP licensing industry, the cultural industry has seen the opportunities involved. In the late 20th and early 21st centuries, museums began to realize the enormous cultural value and commercial potential of their collections and brands. As the concept of ‘intellectual property’ (IP) became more widely used in the cultural industry, museums began to incorporate IP strategies into their operations, drawing on the experiences of other industries. During this period, museums began to systematically organize and evaluate their collection resources, and explore how to transform their IP resources into economic benefits and social impact through licensing and cooperation. Globally, in many countries and regions, including China, governments and industry organizations began to formulate relevant policies and standards to support the development and protection of museum IP and promote the healthy development of the industry.

The British Museum chose Anderson's Cat as the IP image to develop among its many collections (Figure, 6) and developed a wide range of merchandise that has gained a consumer following. In China, the major museums also look down on the huge gains brought by the IP industry, as the commercialization of museums started late, but the development is very rapid, not only museums, but even major cultural heritage institutions, have begun to incubate their IP image, and through various forms of media to promote their IP. The Forbidden City cultural creation through the emperor's 'Yongzheng' series of images of the cultural creation, in 2018, has gained 1 billion in cultural creation revenue, for other Chinese museums to make a good case for IP development, after which the major museums have followed suit, trying to create their museums through entertainment or cute image of the IP.

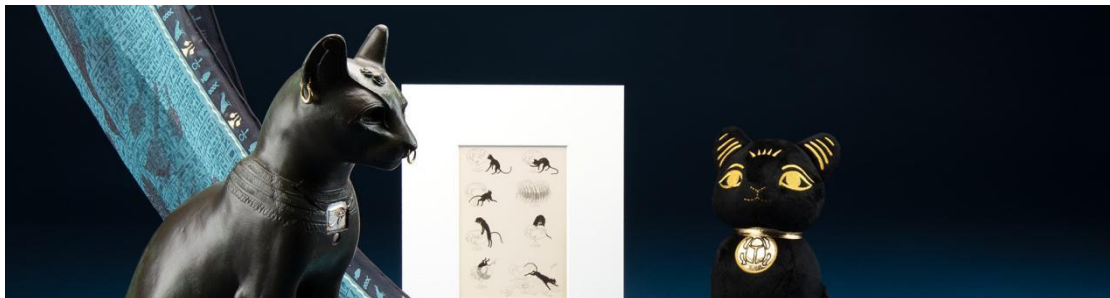


Figure 6 The British Museum's Gayer-Anderson Cat and its products.

Source: <https://www.britishmuseumshoponline.org/inspired-by/inspired-by-cats.html>

Nowadays, the application of digitalization has brought more possibilities to the IP industry, and the development of the media industry has brought great opportunities for the promotion and marketing of IP. Technological advances, especially the application of emerging technologies such as Augmented Reality (AR), Virtual Reality (VR) and 3D printing, have provided the IP industry with new means

of expression and business models and promoted the innovation and diversified development of content. In addition, with the advancement of globalization, China's IP industry has begun to expand into the international market, enhancing its international influence through the export of cultural products. Currently, the IP industry is at a critical stage of development, with head platforms accelerating the integration of industry chain resources, while the convergence of science and technology offers more possibilities for IP development and presentation. In the future, the IP industry is also expected to continue to deepen its integration with science and technology, culture, entertainment and other fields, forming a more open and diversified ecosystem. In this ecosystem, the emphasis on original content, the cultivation of high-quality IPs and the tapping of the fan economy will be the key drivers for the industry's continued growth and innovation. And the development of cultural heritage in museums will become more unique in order to attract more visitors.

2.2.2 Brand building of museum culture

IP creation is largely about building symbolic cultural symbols and laying the foundation for branding. The term "brand" has numerous academic interpretations. One of the more prominent definitions is provided by Aaker (2005), who defines a brand as a name and/or a distinctive symbol (e.g., logo, trademark, or packaging design) that identifies the products or services of a producer or group of producers and distinguishes these products or services from those of competitors. A symbolic

identity is the most fundamental characteristic that a brand possesses. Given the existing cultural diversity, brands are seen as symbols full of meaning and emotion that are cherished by society (Briciu & Briciu, 2020). Whereas the consumption of culture and art is largely based on symbolic, hedonic and aesthetic dimensions (Bourgeon-Renault, 2000). Rooney (1995) and others define a brand as a name, logo, symbol, picture or a combination of these elements whose main purpose is to identify a company's products and services and to distinguish them from those of its competitors. This emphasises that the core purpose of branding is to embody differentiation and uniqueness in order to differentiate from other competitors. It can be seen that the main vehicle of a brand is made up of symbols and emblematic signs, while what constitutes the brand is intrinsically the meaning, value and operation of the brand ascribed to it through the company. A company's brand serves as a strategic resource that enables the creation of value through its unique characteristics and reinforces its role as a creator of meaning, value, and experience (Bertola et al., 2020). By considering the museum as a company and its heritage as an element of brand development, the museum also sees new possibilities on the road to branding.

Museum branding is a name, symbol, design, terminology or marking element unique to a museum that, in a single or combination of elements, distinguishes the museum's products and services from other competitors in the field (Zhang, 2020). Museum products can legitimately be regarded as museum 'experiences', and as Fiona McLean (1995) writes, museums have recognized since the 1980s that the development of museum experiences does not necessarily compromise the integrity of

the museum. Instead, the museum's product, as a symbol of the museum's brand, became an integral part of the museum's branding strategy and part of the museum experience. Kapferer (1998) argues that, in the fashion industry, branding constructs a world in which 'objects' become 'products' ' worlds. And in these worlds, objects are the interface between production and consumption (Baudrillard, 1970). The product connects extensions and structures of the self and possesses a symbolic nature. The brand itself becomes a product with a strong identity, meaning it can be traded in the marketplace (Aaker, 1997).

Museums can discover many symbols, and images through their heritage, and these symbolic symbols are presented to the audience in the form of products, thus further consolidating their brand. Museum cultural brand is not only a logo or a symbol, it represents the cultural concept, value pursuit and social image of the museum. The establishment of the brand helps to enhance the social recognition and influence of the museum, which in turn enhances its function of cultural education and cultural dissemination. For audiences, visiting a museum is not only about viewing exhibitions but also about experiencing the diverse public services offered by the museum. Their experience can encompass multiple dimensions, including what they see, use, and even engage with, all of which can be integrated into the scope of cultural creativity for branding construction and operation (Fu, 2021).

Just like ordinary brands, museum cultural brands also need to consider the positioning of the brand, brand narrative and so on. However, due to the cultural attributes of the museum itself, it has its own unique historical background. Therefore,

museum brands also need to have certain considerations when selecting their own symbolic products as brand IP. Chinese scholar Jiang (2017) summarizes the conditions that a high-quality museum IP needs to have as the following seven points:

1. Rich cultural connotation, knowledge content can be tapped, with educational significance.

2. Have a very high degree of image recognition. It is easy to leave a deep impression on the audience and meets the modern aesthetic taste.

3. have wide popularity and mass foundation, and have a sense of familiarity and affinity for the public. It can create emotionally sticky products and services.

4. have enduring vitality, can become a classic in the hearts of the audience, rather than a fast food culture that will be quickly eliminated.

5. It can allow the audience to distinguish whether it is an objective fact or an artistic creation, and cannot distort, intentionally mislead or exaggerate the relevant facts.

6. The content should be healthy and positive, in line with the core socialist values and the mainstream thinking of the society, and free from historical, political and ethnic controversies and cultural taboos. The content should be elegant and close to the life of the public, without vulgarity, malice or discriminatory bias.

7. It will not have a negative impact on the research, education and dissemination of the museum's collections, and will not weaken the museum's information-sharing and public service equity and public welfare.

8. It will not be contrary to the mission and purpose of the museum and its

public image.

It can be seen that the establishment of museum's cultural brand is a complex process that integrates brand theory, market strategy, public participation cultural communication, and another multi-dimensional process, through in-depth excavation of the cultural connotation of the museum, shaping a unique brand image, to enhance social influence and economic benefits. And museum culture needs brand to express its identity, disseminate culture and promote tourism. The museum brand comes with its own culture and has its unique narrative. To be able to establish a unique relationship with the audience, museums use direct or profile heritage as an invention of images and narrative/design assumptions that define the identity of the museum brand and allow for the construction of communication and service content that can represent their heritage and values.

2.2.3 From culture to brand, ubiquitous communication

Starting from the museum's culture, the museum gives the cultural content and the concept of the museum itself to the brand and expresses the identity of the museum through products and marketing to build the loyalty of the audience. Museum merchandise, as a subcategory of cultural heritage merchandise (Dal Palù et al., 2018), serves not only as products but also as educational tools that carry cultural value. In many cases, people purchase these items in museum gift shops, where they serve to extend and enhance the visitor experience (Bozzola & De Giorgi, 2016). Some people buy museum cultural products as souvenirs, symbolic reminders

described as metaphors for events, places, or experiences, full of meaning and consequences (Li & Ryan, 2018). This provides a tangible vehicle for the dissemination of cultural brands as a continuation of memories and offers infinite possibilities for cultural consumption. The role played by brands in consumer culture is enormous. As noted by Corbellini and Saviolo (2009), branding can be viewed as a product with a narrative that incorporates shared myths associated with cultural identity and transforms them into consumable experiences. According to the empirical interpretation, consumption is the experience that emerges from the interaction between a subject (consumer) and an object (an object, a product, an event, an idea, a person). It is only from the interaction of these two entities that an experience can arise. Museums add more experiential and cultural value to consumption. Adding the event of the interaction between the subject and the object creates an innovative interpretation of cultural consumption. Consumption of art and culture can be interpreted as a form of edutainment as individuals enjoy themselves and learn at the same time (Addis, 2005), however, these marketing research questions do not preclude the value or even the possibility of a better understanding of how people can enjoy art and cultural displays in museums (Kawashima, 1998). Instead, they deepen this possibility. People's interest in merchandising products goes beyond the privileging of a mere commercial asset to being part of a holistic experience (Bozzola & De Giorgi, 2016). Therefore, it is worth paying attention to how museums can be branded through marketing and how their cultural heritage can be better merchandised to capture audiences.

Museum merchandise cannot be developed without marketing. Museum organizations have seen the importance of marketing in their ongoing operations and gradually in their development they have started to employ some professional marketers. In the beginning, the marketing of the museums was just like a promotional approach but for the museums, the marketing should not be just promotional. Marketing works most effectively to promote a museum's goals and strategies when marketers can be involved and bring their expertise to bear on all of the museum's tasks, including programs and education, facilities and interiors, as well as membership and development. From a marketing perspective, successful organizations, including museums, must address the needs of their audiences, particularly different groups and segments, as well as the benefits they seek as consumers (Kotler & Kotler, 2000). The marketing of museums is not just a process of reviewing a selection of the museum's heritage, but also a process by which the museum builds its audience and community through its brand.

Museums can quickly build brand equity and reverse the tourism effect of a territory through marketing. The Guggenheim Museum in Bilbao, Spain, provides a vivid example. In the economically depressed Basque Country, the city of Bilbao invested \$100 million and commissioned renowned architect Frank Gehry to design this extraordinary building. This rising cultural star almost instantly lit up the European tourist map, rising to become one of the most sought-after destinations. The museum's brand, an intangible but valuable asset, underwent a revolutionary reinvention with former Guggenheim Foundation director Thomas Krens at the helm.

One of the core elements of Krens's innovative and controversial strategy was to internationalize the Guggenheim brand and export its cultural influence through franchising. The rise of the Guggenheim Bilbao is one of the most spectacular achievements of this strategy, which has not only reversed Bilbao's fortunes but also transformed it from a declining industrial town into a European cultural treasure and thriving center of the service sector, creating the world-famous 'Bilbao effect'. The story of Bilbao's transformation has sparked the interest of cities around the world, which are looking to replicate this success with the power of the Guggenheim brand. Krens has made it clear: 'My job is essentially to manage a brand, and that brand is the Guggenheim.' (Jiang, 2017). This suggests that a museum's brand is not only a symbol of its cultural value but also an important driver of urban development and economic growth. Through careful brand management and strategic use, museums can transcend their physical boundaries and become important platforms for global cultural and economic exchange.

In addition to relying on marketing plans for space, design and services, museum branding cannot be separated from the help of communication in the age of mass media. At the beginning of the 19th century, the free distribution of mass pictures, as the first mass medium for brand marketing, was driven by market forces resulting from the industrialization of production means, which facilitated the establishment of brand capital and a culture of collective consumerism (Galluzzo, 2022). And then mass media has continued to undergo changes with the development of technology, from pictures to magazines, to the cinema to the current evolving

television and online media, the constant development of media has allowed businessmen to continue to see ways of constructing the world of consumption and guiding the imagination of the audience. As Galluzzo writes in his book, 'With the spread of media, consumer culture has become more complete, with brand names directly replacing the original names of objects and commercial slogans becoming familiar proverbs. The specter of the commodity enters the daily dialogue. Most importantly, it subliminally entered people's spirit.' And nowadays, the development of the Internet has provided the opportunity for the dissemination of commodities by leaps and bounds. The interoperability of TV media, online media, and short videos can quickly bring brand IPs to the forefront in an overwhelming way.

A successful case is the Tang Palace Night Banquet of Henan TV in 2021, which attracted the attention of the national audience through its unique creativity and superb performance art and realized the 'out-of-circle' effect. Through the combination of media communication and modern technology, 'Tang Palace Night Banquet' uses new technologies such as '5G+AR' to present an audio-visual feast for the audience. With the theme of ladies of the Tang Dynasty, the program recreates vivid scenes of ancient palace banquets through the lively performances of 14 dancers, and its unique artistic expression and deep cultural heritage quickly attracted a lot of attention. The program achieved over 40 million views on the Internet, an achievement comparable to the viewing figures of CCTV Spring Festival Gala's traffic stars. In addition, the success of 'Tang Palace Banquet' also drove the traffic of the Henan Museum. The program not only showed the rich historical and cultural

resources of Henan but also stimulated the public's interest in the related cultural relics and history, prompting many people to visit the museum and experience more of the charm of traditional culture, which realized a good interaction and traffic-drawing effect between the cultural program and the physical cultural heritage. After the popularity of the program 'Tang Palace Night Banquet', Henan Museum keenly captured the huge potential of this cultural IP and acted quickly to transform the program's popularity into actual cultural creative products. By digging deep into the Tang Dynasty cultural elements contained in the program, the museum not only launched blind boxes, souvenirs and other cultural and creative commodities related to 'Tang Palace Banquet', but also developed a series of daily necessities, stationery and clothing using the images of the characters and scene designs in the program, which became a hot-selling hit once they were launched, with sales reaching RMB 2 million in just one month, reflecting the strong demand for high-quality cultural derivatives in the market. This reflects the market's strong demand for high-quality cultural derivatives. This series of cultural and creative initiatives of the Henan Museum not only enriches the operation mode of the museum but also makes the static cultural relics 'alive' with the influence of the popular culture of 'Tang Palace Night Banquet', bringing the public closer to the traditional culture and successfully realizing the inheritance of culture and innovative expression. It can be seen that communication is crucial to the shaping and development of the museum brand.

2.2.4 Merchandise Form and manufacturing, localized entertainment transformation

In museum branding, products can be a very important part of the process. Merchandising can extend the museum experience.

As a place full of diverse sensory experiences, museums often challenge visitors with information overload and physical exertion. For this reason, by optimizing service configurations, such as adding rest areas, event spaces, special souvenir shops and food and beverage services, museums have not only effectively relieved visitors' physical and mental fatigue, but have also successfully enhanced visitors' willingness to stay and overall satisfaction, prompting them to enjoy a more enjoyable and extended visit in a culturally rich atmosphere.

Museums improve their services by improving the products and programs, including external and internal design, which constitute the product or deliver the objectives. Kotler and Kotler (2000) grouped these four objectives into organizational and competitive categories: redefining the museum's image and increasing public visibility; increasing earned income; creating a more customer-centered organization (of which staff training is a major factor); and establishing collaborations and partnerships with other museums and organizations in the community, which can include joint marketing, cost-sharing and other functions.

In order to attract visitors and generate revenue, museums have made a lot of improvements. The first one is to provide museum merchandise that can prolong the memory. Museum merchandise is mainly functional products designed and printed with the symbols of the museum, such as cultural collections, museum logos and

other elements, such as postcards, mugs, clothing, household items, collectibles, etc.

However, not all museums have their own products.

In previous studies, more than 18% of museums could not be described as having a unique product inventory (Trabskaia et al., 2019). The museum's merchandise is partly functional and partly ornamental due to the fact that it contains some replicas of the collection or other products in the design category. Products are a means of exposing a brand, and merchandise can also be used for commercial purposes, where the product is functional and aims to promote a brand or cultural resource (consumers spontaneously decide to buy such goods). Palù et al. (2018) categorized merchandise as (1) generic and customizable, that is, general-purpose industrial products with a museum's or institution's logo (e.g., mugs, hats, T-shirts). (2) Specialized, which means merchandise specifically designed for all of the previously listed areas of action (City of the Arts, Museum Bookstore, or permanent/temporary exhibitions, etc.). (3) Original, that is objects related to a design function (household items, simple and specialized objects, or products designed by leading designers), which does not necessarily refer to the location or the museum collection. Different museums may develop different product categories based on their development routes and marketing plans. For example, traditional historical museums prefer generic and stereotyped products that can be quickly landed and sold. Art museums, on the other hand, will choose temporary, designer products to sell as museum merchandise.

Most of the museum products in the manufacture, generally speaking, will be selected through the museum with representative products, match the designers to the

product design processing, and then send the design to the product production contractor, the contractor to the factory order production, and then finally send the goods to the museum for sale. However, too many customized homogeneous products will not produce sustained attraction to the audience, which requires the museum to change the product form, function and mode of play through the design, to bring novel experiences and stimulation for the tourists, in order to promote the tourists to consume, and at this time, the museum will have to consider the audience of the crowd, the form of the product, the environment, as well as to make the adjustment of the entertainment.

This transformation occurs when museums take a radical, rather than incremental, approach to revamping their facilities and product offerings, with the aim of attracting new audiences, increasing competitiveness with a wide range of leisure options, and transforming themselves into entertainment destinations for a broad and diverse range of visitors. In some cases, a fundamental repositioning of the market means a significant departure from the established audience base, and with it the need to build an entirely new audience base. The transition of museums to an entertainment orientation may lead to significant changes in their core activities, such as collecting, conserving, displaying, and educating, but defining when these adjustments reinforce their educational mission and when they push museums to shift to an entertainment-centered equilibrium is not always clear-cut. The definition of 'entertainment' has changed over the past century or so. Charles Willson Peale, a pioneer of American museums, believed that visitors had to perceive an attraction to

exist and then to learn. The contemporary concept of ‘edutainment’ embodies the same idea: engaging, entertaining displays and design can contribute to educational goals.

The entertainment transformation of museum products means that museums are focusing on attracting more young people and families by using fun to engage visitors. In China, for example, young people have become increasingly keen to pursue cultural consumption in recent years as a result of social development and policy support. ‘Generation Z’ refers to the generation born in China between 1995 and 2009, which has gradually become a mainstream consumer group today. Growing up in an era of highly developed Internet and social media, this group is extremely skilled in the use of digital technology, highly receptive to new things, with distinctive personalities, self-expression, strong consumer desire and unique consumption habits. Their demand for brands is not only limited to the quality and function of the product itself but also focuses on the cultural value, social influence and emotional resonance that the brand conveys. In order to cater to the unique aesthetics and needs of Generation Z young people, cultural and tourism departments and museums across China have keenly captured the opportunity of new media communication and consumption transformation, and have continued to innovate and seek changes in the design and development of cultural products. They are no longer confined to the traditional souvenir mode but have set their sights on more fashionable, personalized, storytelling and interactive cultural and creative product designs. For example, young people in China love cute cartoon images, and major

museums in China have seized the young people's favorite points and developed a series of IPs with cartoons, Q versions, and cute elements, and the Forbidden City Museum of China has even combined with young people's favorite pet culture to create the image of the 'Forbidden City Imperial Cat' (Figure 7), and made use of the Internet to spread the power of communication, such as blind box marketing. Using the communication power of the Internet, such as blind box marketing, attracted a large number of young consumers' attention and purchases, successfully activating the potential for brand rejuvenation. These initiatives reflect the Palace Museum's accurate insight into the psychology and behavior of young consumers, and the transformation of entertainment, combining the brand value with the consumption itches of Generation Z, and realizing the transformation of the brand image into a younger one.



Figure 7 Forbidden City Imperial Cat

Source:

https://item.taobao.com/item.htm?ali_trackid=41_b6b34c3316e7574d511f05a4c4372ed

International museums have also seen the business opportunities brought by China's huge market and made a series of localized improvements in order to gain more revenue through Internet marketing. The British Museum can be a very successful case, the British Museum in the official website and the offline museum shop sell products mostly in the exhibition of the cultural elements of the development of customized products, such as printed Rosette stone shopping bags, cups, etc., or Anderson cat replicas, key chains and so on. When the British Museum's products to China, in order to cater to the love of Chinese young people, the image of the Anderson cat has been redesigned, cartoon, cute image of both practicality, and fun, hot products are mobile phone holders, can forecast the weather of the storm bottle, kaleidoscopes, and cute Anderson cat plush products, these products are sold through China's shopping platforms, a more diversified form and play to attract a lot of Chinese consumers to buy. Even if they have never been to the UK, they still want to own these products due to their beautiful design and branding. Adapting to the needs of the market with localized entertainment is a key focus for museum brands in an evolving society.

2.2.5 From product to experience, from the tangible to intangible

Today's museum is a comprehensive facility that provides services and experiences for visitors through the design of the building, environment, displays, culture, education, and products. At the same time, in order to continue the museum experience and memory, the museum product assumes such a responsibility. The

products of museums can be categorized as tangible products, which are designed to be produced through the manufacturing industry, and which have practical or enjoyable value so that visitors can buy them and take the products back to their homes. These products are often used as a kind of souvenir, which contains the culture of the museum and carries the memory of the tourists. And intangible products, such as museum activities, courses, or experiences. Through another way of creating more memorable memories for the audience, the experience is often intangible, yet very effective. Some museums conflate the notion of product. McLean (1994) argues that the 'experience' created by an object is often viewed as a product, although it can also be perceived as education or entertainment. An 'experience' as a product does not necessarily work for every visitor to a museum. A 'product' can be many things: a specific item in the collection; a café; or even social recognition. The product is defined by the visitor and may be more than just an 'experience'. In fact, there are many different things that can be included in a product. Especially with the addition of digital technology, the product is no longer confined to the interior of the museum.

After 2019 due to COVID-19, the travel industry has been greatly affected. People were unable to travel freely and more companies started moving their products online. Museums seized this opportunity at this time and developed online apps, applets, exhibitions, etc., and also gained a lot of attention as a result. With the gradual rise of tourism after 2023, the tourists attracted by the museum's online products flocked to the museum to visit in large numbers, which also brought huge profits for the museum. Museums have begun to deploy a wider range of experiences,

from media outreach to event planning, to space and service improvements, and product design optimization, as well as digitally immersive tours. The museum has been actively transformed to attract more visitors. Visitors to museums expect an entertaining and social experience and see the museum visit as an interconnected mosaic that begins with an outing and encompasses all aspects of the visit, including departures. Convenient parking, easy access to the museum building, cleanliness of the facilities, and the friendliness of the staff are all ranked as important factors, alongside high-quality exhibitions and programs (Falk & Dierking, 1992). This series of experiences in the minds of the audience will gradually form an impression of the museum as a brand itself, thus gradually building brand loyalty. High-quality visiting experience, coupled with high-quality products, will lay the foundation for the subsequent dissemination of the museum and the sales of the online mall. At the same time, the museum will also change the theme of the exhibition and products from time to time, in order to attract tourists to keep returning to the museum for a visit. Museum visitors seek diversity in exhibits. Many people have a reverence for the objects and collections in museums. Visitors look for celebratory experiences linked to the past, encounter inspiring examples, express pride in their heritage, commemorate important events, and enjoy great achievements in art culture, science, and governance. Regular visitors to art museums, in particular, show a desire for aesthetic experiences and things of beauty, which can sweep them away in an awe-inspiring and fascinating experience. Visitors also seek learning and cognitive experiences, as well as opportunities to encounter things in museums that contrast

with their daily routines and lives (Kotler & Kotler, 1998).

Mauri (2006) identifies key stages in the museum visit experience. The first stage is the selection of the exhibition/museum to be visited; the second stage is the visit to the cultural site itself; and the final stage is the stage at which the cultural site/museum merchandise finds its place, i.e. the museum gift shop. Such a final stage may thus become a continuation of the visit itself: the purchase of merchandise - when the product is well designed and aligned with the content of the exhibition or museum - follows, extends and completes the experiential visit, thus 'becoming richer and more intense, lasting indefinitely' The visit to the museum shop at the end of the museum route could be translated as an appendix to the museum itself, in which the user has the opportunity to explore its meanings, add to the information gathered, and engage in a process of assimilation through the use of other products. When purchasing an item, if it is well-designed and aligned with the content of the exhibition or museum, it allows the user to extend and integrate the experience, retracing it at a later moment through other experiential codes: in this way, the experience is augmented and intensified, extending to an infinite time (Mauri & Cirrincione, 2006). The stage following the visit, which includes the processes of memory, recollection and learning, is crucial for understanding the experience and shaping future behavior (Vannoni, 2009). It is in this subsequent phase that the museum merchandising function can be used as part of the experience, giving value to the brand with the memories and emotions of the complete experience and further attracting more visitors and value to the brand.

As more and more museums see the value in modeling the complete experience, uniqueness becomes a competitive advantage to consider. There is no single formula that museums can use to shape a visitor's museum experience. Different types of museums will strike different balances. Museums need to embody their uniqueness if they want to stand out from the competition they face today and escape the trap of homogenization. Whether seeking uniqueness in design from a product perspective or uniqueness in experience, museums need to build their brand loyalty. From a consumer perspective, managers should view their museums, with varying degrees of sophistication, as a well-designed arrangement of environments and activities, services, and experiences that will be of value to their visitors. Managing services and orchestrating experiences is direction managers are taking to transform museums from simple places to visit on the occasion of special events or 'heavy exhibitions' to places to visit on a regular basis as they provide exceptional services, environments and atmospheres in every season (Kotler & Kotler, 2000). At the same time, eye-catching products can be part of a museum's strategy, labeled as cultural, quality and high quality, and are products through which people can continue the experience and emotions while enjoying the whole experience of visiting.

The value of a museum's brand is shaped by the museum's own culture and products, both tangible products and intangible experiences that reflect the museum's brand culture. Once a museum has established a strong brand, it can generate more revenue through brand licensing, co-branding and other means, but all of this is based on creating a good impression of the brand through the creation of high-quality

products and experiences.

2.2.6 Co-branding, cooperation & win-win

Museum co-branding is a kind of cooperation mode that has gradually emerged with the development of the cultural industry and the needs of the market. Influenced by Disneyfication, commercial brands need richer cultural content to enhance the value of cultural brands, while museums need more influential communication effects and more mature product systems to increase the popularity and product power of the brands. With brands' pursuit of cultural value and storytelling and consumers' increased demand for personalized products with storytelling backgrounds, museums have gradually become important partners for co-branding and cooperation due to their rich cultural resources and unique historical values. According to Park et al. (1996), definition, co-branding is the pairing of two or more branded products (constituent brands) to form a single and unique product (composite brand). Brand alliances can take different forms such as joint promotions, joint advertising and physical product integration. Co-branding strategies offer some advantages that cannot be ignored. The combination of two well-known brands on the same product is likely to be perceived by consumers as a guarantee of quality. When the two partners are well known, the new product will benefit from high brand awareness, loyal customers and lower start-up costs (Spethman & Benezra, 1994). A central idea behind the practice of brand extension is the use of brand equity to facilitate the acceptance of new products (d'Astous et al., 2007).

Meanwhile, co-branding can increase brand equity through brand association. Brand association is defined as anything in memory that is associated with a brand (Washburn et al., 2000). Accumulated over time, repeated exposure strengthens these associations. Brands enjoy a high degree of equity due to the abundance of positive associations. They help consumers to better process information, recognize brands, and inform brand choice while generating positive emotions and attitudes. In addition, such associations build a natural bridge between the brand and the new product, laying a solid foundation for brand expansion. More importantly, a strong brand association network lays the foundation for brand expansion into new territories or product categories, ensuring market acceptance and success as consumers naturally associate the core values of the original brand with the new product, creating an inherent consistency of perception. Therefore, co-branding is not only a marketing tool, but also a powerful tool for brand equity accumulation and strategic development. Co-branding allows two brands to merge with each other, influencing consumers' perceptions of each single brand and generating a new and unique cognitive experience of the co-branded product.

Co-branding has the potential to bring a huge amount of attention and conversation nowadays. A very successful case in point is the 2023 co-branding campaign in China between the Luckin Coffee brand, which specializes in coffee, and Moutai, China's traditional baijiu company. As Moutai is well known among middle-aged and older people in China, its sales among young people have been very limited in recent years. Luckin Coffee, on the other hand, represents a more popular

drink among young people but is relatively homogeneous in terms of its user circle.

Both brands need to break the original user circle to increase attention and awareness.



Figure 8 Soy Latte Poster

Source: <https://weibo.com/u/6349791448>

In September 2023, Luckin Coffee released the co-branding drink ‘Soy Latte’ with Moutai (Figure, 8), and as a marketing concept to let young people drink the first luxury liquor ‘Moutai’ at a low price. Under the marketing concept, only on the day of release, the Luckin soy latte single day sold 5.42 million cups +, single product sold more than 100 million yuan. At the same time, it brought great attention to the flow and discussion of the two brands. ‘Sauce latte’ on the line, according to the U.S. stock pink sheet market, September 5, Luckin stock price continued to rise, as of the close of the day, Luckin coffee shares reported 33.60 U.S. dollars, up 5.07%, the total market value of more than 9 billion U.S. dollars. Moutai shares shocked also upward, with the highest increase of 1.5%, as of the close of the day rose more than 0.81%, and the market value rose about 20 billion. On public media platforms such as Weibo, the co-branding topic garnered 180 million reads and over 250,000

interactions (News, 2023). This co-branding marketing campaign is considered a 'win-win' linkage. On the one hand, 'national brand' Moutai has been trying to rejuvenate its brand in recent years; on the other hand, 'new-generation ten thousand stores brand' Luckin is facing the need for 'high-end competition', and the two sides are taking advantage of each other's needs to maximize the advantages of co-branding.

Museum co-branding involves several industries and fields, such as the fashion field, food and beverage industry, cultural field, banking app, games, and so on. The form of museum co-branding is mainly from the product and digital aspects, mainly the museum's visual elements and cultural symbols and other brands of products for cooperation, joint launch of some products or activities, and so on. Dunhuang Museum has a very rich collection and visual cultural elements, so in recent years it has actively carried out a series of creative co-branding cooperations with many famous brands, which not only promotes the modern expression of traditional culture but also brings new vitality to the brand. For example, during the 'Single day' period in 2019, Dunhuang Museum co-branding with the national beauty brand Baidu Antelope launched an eyeshadow palette, which became a hit in the pre-sale stage, helping the 'Dunhuang set' to rank among the Tmall 'Single day'. The 'Dunhuang Set' was among the fastest new products to break the 10 million sales in the pre-sale stage of Tmall's 'Single Day'. At the beginning of 2021, Li-Ning and Dunhuang Museum joined hands to launch the 'Dunhuang - top series', the classic elements of Dunhuang frescoes into the design of sports equipment, not only to enrich

the cultural connotation of the product but also for the brand to win a high degree of social attention and cultural identity (Figure, 9).



Figure 9 Li-Ning and Dunhuang Museum co-branded sneakers

Source: <http://www.fengsung.com/n-200417152228872.html>

As museums need to break the circle and penetrate more into the popular culture of young people, in recent years, museum co-branding has also been used in games. The 2023 March surreal love management hand game Evol & Love announced that it had launched a collaboration with Dunhuang Cultural Creation. Focusing on the two-way empowerment of digital game IP and cultural creation IP, the two sides have created a joint activity, 'Covering the colorful millennium', through the fusion and collision of digital carriers and traditional culture, connecting

the aesthetics of the young circle, and interpreting the traditional culture in a 'youthful' way. With the help of advanced digital game technology and the integration of the online virtual world and offline physical experience, it shows the depth and charm of Dunhuang culture in an all-round and multi-level way. In 'Evol&Love', players will have the opportunity to experience the 'mural restoration simulation experience'(Figure, 10) , an innovative design that not only reproduces the key steps of Dunhuang mural restoration, but also guides the game character, allowing players to learn about the rich history and cultural heritage behind the mural in a relaxing and enjoyable interaction, and to deeply understand the unique flavor of the art of Dunhuang. In addition, the co-branded campaign also planned flash mob parades in Chengdu, Beijing, and Shanghai, extending the colorful charm of Dunhuang culture to the offline space and providing participants with an opportunity to 'touch' Dunhuang culture up close and personal. Through this combination of online and offline, the dissemination of Dunhuang culture is no longer limited to traditional exhibitions and explanations, but in a more vivid, three-dimensional form, so that more people can intuitively feel and personally experience the profoundness of Dunhuang culture. Similarly, Tencent's game King of Glory cooperates with the Jinsha Museum, adding images from the legend to the game's skin. As King of Glory has a huge user base in China, it can increase the attention of the museum's brand in a high number of people, and add heritage and cultural attributes to the game, making it a successful case of

win-win brand cooperation.



Figure 10 The collaboration of Evol & Love and Dunhuang Cultural Creation

Source: <https://www.chinalicensingexpo.com/exponews/1920.html>

2.3 Branding Strategies Driven by Digital Media

2.3.1 Digital museums

With the development of science and technology, museums are constantly pursuing the transformation of their functions, ways of displaying collections and ways of merchandising to meet the growing needs of the audience. Museum digitization refers to the museum's collection-based conversion of text, images and videotapes into digital data that can be processed by computers through digital scanners and digital cameras; digital collection refers to the data and documents of various vessels, paintings and calligraphy, specimens and documents that have been digitized. The licensing of digital collections originated at the beginning of photography in the 19th century. The British Museum accepted donations of

photographic images as well as collections of photographs from professional photographers and sold records of museum-photographed collections and photographs of museum events; this was the beginning of museum image documentation and image licensing. In the 20th century, international museums and governments began to implement various programs for digitizing museum collections based on the mission of preserving collections and promoting cultural policies. In the 21st century, museums have embraced the digital era through the extensive integration of digital technology (Wang et al., 2021).

Today, the common characteristics of emerging digital technologies are the condensed processing of information, the acceleration of management processes, the increase in the volume of data, the diversification of interaction methods, the personalization of the user experience, the convenience of round-the-clock access, and the ability to integrate across borders. These features not only accelerate the flow of information, effectively reduce communication costs and operating expenses, but also promote the innovation of sales and marketing strategies, enhance the organization's visibility in the market, and stimulate the potential for innovation and the vitality of community sharing. In the wake of digital technologies, cultural and arts organizations such as museums and galleries are undergoing a profound digital transformation, aiming to consolidate their social position and achieve their goals. Museums are increasingly being transformed into hybrid spaces where virtual (digital) information coexists with tangible artifacts (Dal Falco & Vassos, 2017). This transformation is not merely a technological graft; it is a revolution that is

comprehensively reshaping the mode of operation of organizations, demonstrating far-reaching implications, especially in terms of communication strategies, institutional governance, branding, marketing, financial management, and sustainability strategies. Consequently, the implementation of digital technology necessitates that museums possess the requisite adaptive capacity to facilitate the concurrent enhancement of both wisdom and technology within the institutional framework, management model and communication mechanism. This ensures that the mission and sustainability of art, culture, and institutions align with technological advancements (Güner & Gülaçtı, 2022).

The digital transformation of museums is conducive to the establishment of a comprehensive digital system, encompassing digital collection management, space management, personnel management, and other aspects, as well as museum activities, learning planning, museum product design and development, production management, marketing and promotion strategy, and communication strategy. This system facilitates the tracking of feedback and other aspects, ensuring a seamless experience for visitors. It is possible for museums to be interconnected as a whole through the use of databases, the Internet, block-chain technology, digital media and the Internet of Things.

In the digital transformation in museums, as collection management and digital presentation aspects are actively researched by museums and many scholars, the main focus here is on the transformation made by museums regarding product development and marketing as well as communication.

In terms of museum marketing, the digital transformation of museums may subliminally affect the daily lives of individuals, families, business organizations and nations through media, marketing. As Galluzzo (2022) writes, digital information, such as images and videos, can be used as a way to 'invade people's minds', to be 'made aware' of, then normalized and taken for granted, and ultimately communicate a 'mindset conducive to the development of commodities'. As the digital economy grows at a rapid pace across the globe, digital transformation cannot be reduced to a mere turnover of production technologies, it also includes the transformation of people, creators and users of digital media information, thus enabling the creation of a hybrid digital society (Plenković & Mustić, 2020). At the same time, it is more favorable for museums to build their user community through digital marketing and promotion.

In the context of museum media communication, digitization has not only transformed the format and dissemination of information but has also had a significant impact on the construction of identity and social interaction patterns, resulting in unprecedented diversity and creativity. This is largely due to the influence of digital media. The essence of digitization is the transformation of visual information into a digital signal format for transmission and processing. In the context of a flourishing visual communication culture, the advent of the Internet and digital media has become a prominent symbol of this process. The influence of visual communication culture is pervasive, extending to every aspect of cultural activity. This includes graphic arts, music interpretation, visual images, design innovation, media content, film and

television productions, and even the everyday practices of everyday life. All of these areas have been transformed by the impact of visual communication culture. The Internet provides a vast repository of information, which can exert subtle influences on individuals' behaviors and perceptions. The term 'electronic visual culture' is used in the context of visual culture and visual and cultural media policies to achieve specific objectives. An image can be defined as a visual representation or impression in the public domain, as well as the overall behaviour towards the audience, the public and society (Plenković & Mustić, 2020). In the context of the digital age, individuals are constituted as symbolic beings, and their identity markers undergo a process of deepening and expansion that is in a state of constant evolution. In the context of social networks, individuals construct distinctive and multifaceted representations of themselves through a range of symbolic resources, including text, images, audio, and even virtual characters. These representations are employed to convey personal identity attributes and social roles, and to engage in meaningful communication and interaction with others. In this process, the digital self reflects the interaction between an individual's inner world and the external environment, as well as the cultural change and identity reconstruction of human society. Consequently, museums can utilize digital graphics and information to construct their own distinctive brand identity and foster a sense of community. When coupled with marketing initiatives, these elements can be employed to enhance brand value and foster brand loyalty, thereby promoting museum tourism and consumption.

The rise of digitization has undoubtedly opened up a new path for the

innovation and transformation of museums, and injected unprecedented vitality into the performance of their core functions. In terms of collection management, digital technology has enabled the recording, preservation and research of cultural objects to enter a new era of efficiency and precision, not only safeguarding the safety of precious cultural heritage, but also greatly enriching the material base for academic discussion and public education. The museum's marketing strategy has also benefited from the digital transformation, enabling instant connection with the global audience through social media, virtual exhibitions, online interaction, etc., and significantly increasing brand awareness and attractiveness.

In terms of communication effectiveness, digital tools break down geographical and time constraints, enabling museums to transcend physical boundaries, spread their unique stories and cultural values to the rest of the world, and stimulate the interest and resonance of a wider range of people. In addition, digitalization provides fertile ground for museums to explore commercialization models and branding. Through the sale of digital content, brand licensing and online education services, museums are able to develop diversified sources of income and enhance their economic self-sufficiency, while at the same time demonstrating their uniqueness and sense of the times in branding and establishing a deeper emotional connection with the public.

Therefore, digital transformation not only reshapes the traditional role of museums, enabling them to play a more active and innovative role in the information age, but also supports them in achieving sustainable development and passing on their

cultural mission. Through digitalization, museums are able to fulfill their social responsibilities more efficiently, and at the same time make breakthroughs on the commercial and branding levels, creating a win-win path that combines cultural heritage preservation and market expansion.

2.3.2 Digital marketing promotion of museum brands

The promotion of digitalization has undoubtedly created a powerful environment for the marketing and communication of museum brands. The application of digital technology enables museums to break the limitations of time and space across media, organizations and platforms. Through such innovative applications, museums not only provide audiences with the opportunity to participate in museum construction but also expand their brand promotion concepts (Liu, 2020). Museums can increase brand awareness and interaction with audiences through digital marketing. The main way is to expand the narrative space of the brand and increase the interaction between the brand and the audience through digital media, so as to form their own fan colony group, which is often realized through online methods, such as videos, apps and applets. It is also possible to combine digital media and installation art with offline activities and exhibitions to go out from the museum and further broaden the audience base. Finally, it is possible to collaborate with other brands through brand licensing to spread the museum brand more widely to the audience through the media.

Marketing and digital communication are inseparable nowadays, Güner and

Gülaçtı (2022) writes that the widespread use of IT and rapidly evolving digital technologies have prompted museums and some galleries to define new business models that require digital skills, such as experience directors and digital directors. The areas of the new business lines are focused under three main headings: exhibitions and presentation of works, commercial activities, and communication.

And one way to market is to increase the means of communication. Increased exposure to a museum's brand or culture through digital media leads to greater appeal to a wider audience. Visitors' interest in interacting with artifacts in original and participatory ways increases, especially through the use of features offered by new digital media. In such a dynamic environment, where marketing and communication objectives converge, the educational role of museums can contribute to audience development (Dal Falco & Vassos, 2017). For example, in September 2021 Samsung entered into a global partnership with the Musée du Louvre, and then for three months from mid-October, owners of The Frame TV in France will be able to enjoy 24 iconic pieces from the Louvre Museum for free. At the same time, Samsung has strengthened its partnership with France's major museums by offering owners of the TV around 60 works and photographs from the world's most visited museum, including the Mona Lisa or the Marriage of Cana, and also find photographs of the Louvre's magnificent rooms, its buildings and their surroundings (the Louvre pyramids, the Jardin des Tuileries, etc.). Each piece is accompanied by a description that enables the viewer to understand its history. The museum communicates its exhibits and concepts through the dissemination of informative images so that the

museum can be seen and understood by a wider audience.

And Chinese museum brands are more aware of using public media platforms to create hot events and form collective effects, to attract fans and promote consumption. For example, in 2017 CCTV and video websites aired the program 'National Treasure' (Figure 11), which is a large-scale cultural and biological exploration TV program. With the innovative mode of the program, combining traditional culture with modern means of communication, it has successfully created an audio-visual feast, giving China's rich cultural heritage a new lease of life. Through the rendition of the stories of cultural relics by celebrity guardians and in-depth interpretation by experts, the program, combined with cutting-edge technologies such as AI, VR, and naked-eye 3D, tells the story of the past and present life of each national treasure, so that viewers can feel the weight of history and the flavor of culture in an immersive experience. This attempt at cross-border integration not only made 'National Treasure' gain high evaluation among young viewers, such as up to 9.9 points of positive feedback on Bilibili but also triggered extensive discussions and heated debates on social media, with the total number of readings of related topics reaching 8.2 billion and the number of video views on the whole network exceeding 93 million, making it a phenomenal cultural program. The program has collaborated with several cultural museums, including the Palace Museum, Nanjing Museum and Shaanxi History Museum. Through all-media linkage, National Treasure has achieved online and offline interaction, allowing traditional culture to go out of museums and reach a large number of people and families through the media, inspiring the whole

society to pay attention to and love cultural heritage. At the same time, the program also launched a series of derivative products and special exhibitions, further expanding its cultural influence. The broadcast of National Treasure has not only created a cultural boom within China, but also attracted widespread attention internationally. The program has revitalized ancient cultural heritage through modern means of communication, becoming a cultural bridge connecting the past with the future and bridging hearts and minds.



Figure 11 Chinese TV program National Treasure

Source:

<https://news.cctv.cn/2024/08/03/ARTITxdjzXS3uq1KXTSam8KO240803.shtml>

In the context of the digital age, museums have the opportunity to engage with the public in novel ways, including through licensing agreements with well-known brands. Such partnerships can serve to enhance brand awareness. The cultural industry ecosystem encompasses the entirety of the creative process, from its inception to its ultimate consumption. This chain is primarily constituted of four core links: innovation and research, product manufacturing, market distribution, and end

consumption. Along with the rapid growth of the cultural industry, the concept of licensing has become increasingly prevalent, with its definition and scope of application evolving to encompass a wider range of activities. This has led to a heightened focus on licensing in the museum field. Wang et al.(2021) identifies two perspectives on the definition of digital image licensing of museum collections. The first perspective defines licensing as the process by which museums grant digital images of their cultural relics to licensees under contractual terms. The second perspective views licensing as a transaction and management process for related intellectual property rights. The fundamental objective of digital licensing of museum collections is to enhance economic benefits through the dissemination of culture and the fulfillment of educational functions. Furthermore, the intellectual property licensing of museums pertains to the copyright licensing of museums for their collection resources. This encompasses cultural relics, specimens and artifacts, which are employed to develop cultural derivatives, transform cultural resources into cultural products and establish effective communication with consumers. In the context of brand licensing, the licensor (typically a museum) grants the licensee the right to utilize specific intellectual property rights, including but not limited to reproductions of artwork, design patterns or brand logos, for the purpose of product development, marketing and promotion, and other areas. In exchange, the licensee is required to pay a certain percentage of royalties or royalties to the licensing party, which brings a stable economic income to the museum, and at the same time provides financial support for its cultural heritage and conservation work.



Figure 12 Collaboration with Horizon Forbidden West and Amsterdam's

Rijksmuseum

Source:

<https://www.rijksmuseum.nl/en/press/press-releases/unique-collaboration-between-the-rijksmuseum-and-guerrilla>

While in the digital age, more brands are collaborating for marketing purposes. Collaboration between different brands can arouse the interest of the audiences. Especially when museums are working with some entertainment industries to create products and services that are both culturally valuable and entertaining, it creates a great attraction to the audience. For example, the collaboration between the 2022 video game Horizon Forbidden West and Amsterdam's Rijksmuseum (Figure 12) represents an innovative project bridging virtual gaming worlds with physical artistic treasures. In the game, some of the Rijksmuseum's prized collections have been meticulously reproduced and embedded into the world of Horizon: West of Extinction. This means that players can encounter and enjoy digital versions of these artifacts as they explore the post-apocalyptic Earth. For the Rijksmuseum, such a collaboration is

an innovative way to reach a younger audience with the museum's collection and increase interest in Dutch history and art, as well as increasing the museum's visibility. By collaborating with companies such as gaming companies and presenting their culture digitally as a form of marketing, this approach is being used by more and more museums today and has yielded excellent results.

2.3.3 Immersive experiential museum communication design for digital engagement

When digital engagement is involved in museums, it is not only in terms of digital marketing that it promotes a certain degree of development. The experience is also seen as a crucial part of a museum visit or in an exhibition. More and more museums today are utilizing media and interactive elements to expand the immediacy and engagement of visitors. Museums creating an immersive tour experience through digital participation is also a direction of digital transformation that many museums are now taking to increase the experience.

As the communication activities of museums become increasingly central to their operations, they assume a pivotal role as a cultural medium, tasked with conveying the narratives of museums and their collections to a diverse array of audiences. The value of such communication lies in its capacity to facilitate profound engagement with the audience, whether in the context of a physical museum, where visitors can experience the ambiance of history and the allure of art first-hand, or through digital platforms and social media, which transcend geographical boundaries, enabling immediate sharing and exchange of information. One of the principal

functions of museum communication is to disseminate the brand identity. However, in this context, it is of paramount importance to endeavor to cultivate a connection between visitors and artifacts in an experiential and emotional manner (Dal Falco & Vassos, 2017).

In the actual space of the museum, activities such as exhibitions, guided tours and workshops form a bridge for direct dialogue with visitors, with each interaction being a transmission of knowledge and cultural interpretation, deepening the audience's understanding and appreciation of the stories behind the exhibits. The museum creates an immersive experience for the audience through sight, sound and environment. Visual communication is a logical, spiritual, ethical, aesthetic and metaphysical communication, a reflection on the creation and mediation of information, in which the human being (the creator) on the way to the modern 'human being' (the playful man in science and art) 'the man who works with digital tools' (Plenković & Mustić, 2020). In the digital age, museums use websites, apps, virtual reality, and other technological tools to create 24/7, borderless learning environments that make it easy for people around the world to access museum resources, participate in online discussions, and share personal insights, thus building a global network of cultural exchange.

The core of museum communication lies in the fact that it is not only a one-way information output, but also a two-way or even multi-way communication and co-creation process. Audience participation, feedback and re-creation give life to museum communication, making it a dynamic and open system. The immersive

design of museums is not only reflected in the design of the space and the creation of the experience but also provides a way to express the narrative of the museum's brand. Museums integrate all aspects of the museum experience into an ongoing narrative experience by creating interesting and interactive experiences that create a personalized story through interactions within the museum, as well as before and after the visit. To this end, new technologies provide the basis and possibilities for storytelling and experiential roles for artifacts, historical figures, buildings and events to unfold in the form of a dialogue between the visitor and the museum (Dal Falco & Vassos, 2017). In terms of branding, digital solutions can guide visitors through narrative paths within a clear collection, making logical connections between different elements more visible (Micoli et al., 2020). Through the digital narrative approach, museums effectively enrich and integrate the user's perceptual experience with diverse media platforms, while complementing multiple levels of information. The core of this narrative strategy lies in the fact that it transcends the limitations of a single medium and encourages users to establish connections between knowledge in cross-media exploration. When immersed in this narrative system, users can take the initiative to mobilize their own imagination and analytical ability to stitch together the information fragments from various media into a complete map of meaning, thus reconstructing the full picture of cultural heritage at the psychological level and realizing a grasp of the overall meaning of it.

In addition to creating an immersive experience through space and narrative in museums, digital communication and display in contemporary museums are no longer

limited to the Internet and digital displays within museums, but through digital exhibitions, 3D virtual tours, etc., it can bring cultural displays about museums to visitors, and also generate a certain amount of revenue through exhibition tickets. Digital exhibitions are more conducive to the use of exhibition halls to create an immersive experience, thus driving visitors to the culture and brand identity. For example, the Sanxingdui Museum in Sichuan has organized several immersive digital exhibitions in China and internationally using digitization, 3D technology and AI technology. Exhibitions such as ‘Everything Has a Spirit - Sanxingdui and Jinsha Ancient Shu Civilisation Digital Art Exhibition’ at the China Cultural Centre in Paris in 2023 use 3D scanning technology to build interest in cultural relics through immersive digital exhibitions for visitors.

Museums have been able to create a digital experience through these methods, which have contributed to the museums' ability to narrate their brand stories, engage audiences, and build their own fan bases. By designing and creating symbols for the brand, together with marketing and media communication, the museum enriches the experience of the audience and establishes an emotional link with the audience, thus achieving the goal of enhancing education and the social impact of the museum.

2.4 From Museum to Territory

2.4.1 Museum branding and territorial culture building

The incorporation of merchandise with symbolic value into a branding strategy can serve to enhance the identity of a place, an institution, or a cultural site

(Palù et al., 2018). Furthermore, such merchandise can also be utilized to convey the culture and history of a destination to visitors. Museums occupy a pivotal position in urban and regional contexts, serving as custodians and disseminators of cultural and historical knowledge. The contribution of museums to the spiritual and cultural enrichment of individuals is significant. Additionally, they facilitate the inheritance, exchange and innovation of local culture, exerting a profound impact on the comprehensive development of cities. It can be argued that museums constitute an integral element of a city's brand. Museums possess their own distinctive brands, which in certain instances become integrated into a more expansive brand consciousness. This forms one of the associations that contribute to the overall brand identity of a particular place. Museums play a significant role in cities that seek to project an image of academic prestige and those with a brand identity based on cultural and historical heritage (Gordin, 2011).

There are many cases of tourist cities or deeply rooted city brands. Cities often use landmarks or symbolic images, elements and cultures to build up the personality of the city brand and realize it through souvenirs. For example, souvenir shops selling red phone booths and teddy bears can be found everywhere in the streets of London, many shops are selling Scottish scarves in the centre of Edinburgh, as well as different food and wine tastings and landscapes in various regions of Italy, which has a rich cultural heritage. This coincides with the values that museums are meant to create, and museums can be part of the city brand, enriching it and reflecting the culture of the territory on the one hand, and on the other hand attracting tourists as

museums themselves to empower the regional economy.

Museum branding can first and foremost be used as a part of regional branding and bring richer experiences and cultural journeys to regional excursions in the form of souvenirs and other items. In Trabskaia et al. (2019) discourse on museums as a sub-brand of the regional brand, it is considered that museums play a huge role in enhancing the image of the city. And these are mainly realized through souvenirs. Souvenirs such as cities and museums should be different and also related to each other so that there is a coherent traveling experience from the city as a whole to the museums, but at the same time, museums' souvenirs should have their specificity and perpetuate the visitor's experience. Therefore, to be a vehicle for shaping these impressions, souvenirs need to be closely linked to the museum's collection, its architectural features and its iconic elements, and play a key role in conveying these core elements. It is for this reason that the design of museum memorabilia should complement its core mission and purpose, rather than simply seek to maximize profit. Souvenirs should be crafted for uniqueness and to differentiate themselves from common items on the market. This will be a strong driver of brand enrichment and enhancement, not just support for existing brands. Museum staff should have a clear and well-defined product development strategy for their shops.

Like the Victoria and Albert Museum in London, the V&A Museum has become a very attractive and culturally rich business card for brands in the London area. In turn, the brand image and resources of the London region also provide strong support and guarantee for the development of the V&A Museum. London, as an

important global financial, cultural and artistic center, attracts a large amount of capital, talent and resources, enabling the V&A Museum to continuously expand its collections, hold high-quality exhibitions and events, and carry out a wide range of cooperation and exchanges with museums and art institutions all over the world. The V&A Museum is also closely linked to the London regional brand in terms of product development and the sale of souvenirs. The souvenirs sold in the Museum Shop, such as jewelry inspired by London landmarks and decorative items based on the Museum's collections, are a reflection of London's culture and creativity. These unique souvenirs not only provide tourists with souvenirs with regional characteristics but also further promote London's city brand. At the same time, London's urban infrastructure, transport network and tourism service system also provide convenient conditions for the V&A Museum to attract more tourists and visitors. In recent years the V&A Museum has actively developed a lot of products through the products on display and has gained a lot of visits and income, according to the V&A Museum's financial report for 2022-2023, the museum's total retail sales reached £11.3 million in the year (of which £10.1 million sales of line, and £1.3 million online sales), an increase of 57 % compared to the budget for 2021- 22, and 20% higher than budgeted. In the physical shops, the sales conversion rate was 11.6%, with an average transaction value of £24.16 and total sales of £8.7million. The Beatrix Potter product alone - Drawn to Nature - generated a turnover of £900,000 for the Museum, exceeding expectations by 168% and gaining a large number of visitors. The museum's exhibitions and souvenirs have also brought more exposure to the city's

tourism.

The relationship between the museum's brand and the territory's brand is always mutually reinforcing and co-developing. Therefore, the museum branding strategy can also be part of the city branding strategy. The city can form a specific psychological mapping for consumers through brand association, combining the museum with the image of the city as a whole, forming an overall impression of the region for tourists, and increasing the traveling experience. At the same time, museums also need to play a differentiating role through products from the city's souvenirs, which do not always compete with the souvenirs offered by ordinary souvenir shops. Such products will not enhance the museum's brand because what visitors take home is their trip to the city, not the museum (Trabskaia et al., 2019). Therefore, museums also need to make a distinction from the city's merchandise to create tourist loyalty to the museum brand.

2.4.2 Museum branding and the tourism economy

As mentioned above, museum branding can be used as part of the territory's branding strategy, and naturally, it also has a great role to play in promoting the economy of the museum and even the territory. Museums are inseparable from the tourism economy. For local tourism, a place with a positive and appealing image is highly likely to stimulate the traveling interests and planning of potential tourists, thus increasing the likelihood of visiting (Leisen, 2001). Consumers' decisions about destinations begin with the information they gather before spending and purchasing,

and their ability to make sense of large amounts of information (Kotler & Gertner, 2004). This information is often obtained from social media and other sources.

Museum brands often contribute significantly to a destination's tourism economy, and the construction of a destination's brand relies heavily on the influence of its museum sub-brands and the paths they take to cultivate them. Specifically, this involves how museum sub-brands establish a unique and distinctive image in the public mind, and how these brands evolve synergistically to shape the overall perception of the destination. In this process, it is crucial to formulate a well-thought-out development strategy and implement effective marketing initiatives that not only strengthen the museum's own brand positioning but also significantly enhance the destination's overall appeal. Through these efforts, museums and their destinations grow together and establish a strong and unique brand position in the tourism market. According to Jacobs (2012), 'iconic art museums can help reshape the image of a place for economic gain' and 'the image of museums located around the world ...give cities a unique identity and whet the appetite of potential visitors'.

There is no better-known case of a museum boosting a destination's tourism economy than the Guggenheim Museum, and it is the most discussed case in academia. There is a close symbiotic relationship between museum brands and regional tourism. When tourists embark on a journey to a destination with a distinctive museum brand, they not only inject economic vitality into the local lodging and transport systems, but also indirectly contribute to a thriving restaurant, retail, and

other service sector. The knock-on effect of this visitor activity is not only seen in direct consumer spending, but also in its ability to stimulate job growth, diversify the local economy, and enhance the region's overall attractiveness, thus creating a positive cycle that contributes positively to the economic and social development of the entire territory. The development of the territory's brand image will bring the resources of tourists to the museum in turn, as part of the city's business card.

Like Nuremberg, the world's 'toy capital' in Bavaria, Germany, the city is not only famous for its toy manufacturing industry, but through the Nuremberg Toy Museum (Figure 13), it has successfully integrated toy culture into the city's branding, creating a unique toy economic region. With a collection of over 10,000 toys, it covers the history of toys from ancient times to the present day, including puppets, dolls, games, model trains and electronic toys. Through carefully arranged exhibitions, the museum tells the story of the relationship between toys and children's development and social change, and shows the evolution of toys as cultural symbols. Nuremberg cleverly uses the dual advantages of the toy museum and the toy industry to closely integrate its city brand with toy culture. The city government and related organizations actively promote the concept of 'Toy Town', such as the annual Nuremberg International Toy Fair, which is an important event for the global toy industry. The five-day toy fair in 2024 received 57,000 visitors from 125 countries (Spielwarenmesse, 2024), while the local income from the accommodation, business, etc. increased dramatically during these days. Through the toys and trade fairs, Nuremberg became one of the ten most dynamic economic zones in Europe, with a

GDP of 151 billion euros, as well as a significant increase in manufacturing and tourism. Likewise, the Nuremberg Museum has become one of the most important landmarks to visit in the city. Unfortunately, however, the Nuremberg museums do not have any specialized shops or products other than the toys on display during the visit. For a city amid a growing production and tourism industry, the development of the museum's brand and products should also receive a certain amount of attention, pending subsequent research and development by scholars.



Figure 13 Nuremberg Toy Museum

Source: Photograph by the author

In general, museums play a very important role in the tourism economy as cultural centers and tourist landmarks of territories. As well as being an important

showcase for local history, art and culture, museums are one of how to attract tourists from all countries. Through unique exhibitions and educational programs, museums provide educational experiences that are often closely linked to regional cultural heritage and identity, thus deepening tourists' knowledge and enjoyment of local characteristics. Museums are also able to drive the development of related industrial chains, such as catering, accommodation, transport and souvenir sales, further contributing to employment and income growth. More importantly, museums have a critical part to play in shaping and enhancing a city's brand image. With the development of digitalization and social media, museums can reach a wider audience through online exhibitions, virtual experiences and social media interactions, and the branding of museums can further open up new development space for local tourism through the Internet, enhancing the revenue growth of local tourism.

Chapter 3 Creative Design and Case Study of Museum Cultural Heritage

3.1 Case Study of Museum Branding Cultural Heritage Creative Products

3.1.1 Museum case studies and integration analysis

With the development of globalization and information technology nowadays, museums, while experiencing the transformation of functions, commercialization, design innovation and digital transformation, are continuously enhancing their competitiveness and advantages through creative products and branding as cultural

heritage collections and inheritance institutions. International museum brands such as the British Museum, the Louvre, and the Metropolitan Museum of Art in New York have become the cultural symbols of the respective cities and even countries by virtue of the wealth of collections, long history and global influence. Then continue to enhance the international visibility and brand value of the museums through innovative exhibitions, international tours, and cultural exchange activities. Chinese museums, such as the Palace Museum and the Shanghai Museum, are also actively promoting brand building and enhancing interaction with the public and brand influence through digital transformation, cultural and creative product development, and social media marketing.

At the same time, a large number of museums have launched products designed through cultural heritage, conveying cultural values in the form of merchandise and enhancing interaction and emotional connection with audiences. These products range from books and picture albums to lifestyle products, apparel, and even digital content and experiences, and have gained a lot of audience and fans through marketing and online dissemination. Some of these museums have even used the model cooperation of brand cooperation to collaborate with the fashion industry and technology companies to jointly launch limited edition merchandise, attracting the attention of a large number of young consumers.

There are many forms of combining museums with cultural and creative industries, and Chinese scholar Chen (2019) summarizes the diversified forms of museum cultural and creative industries as combining with the film and television

industry, Internet technology, fashion commercial brands, education and tourism, and catering and socializing, which has given rise to museum variety shows, museum animation games, museum live broadcasting applications, museum commercial exhibitions, museum education and tourism, Museum amusement activities, museum-themed restaurants and other rich, flexible and varied forms of content (Figure 14), the content and shape of these numerous forms is called the new era of the ‘museum +’ model.

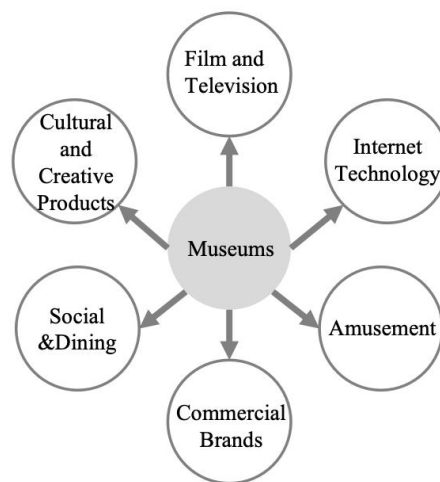


Figure 14 Museum cultural and creative industries diversified industry

Source: (Chen ,2019)

In order to better analyze museum-branded cultural heritage products and to facilitate subsequent research, the strengths, weaknesses, opportunities and threats (Gürel & Tat, 2017) of museum-branded creative cultural heritage products, using ‘SWOT’

analysis (Learned et al., 1969; Helms & Nixon, 2010) here to gain a comprehensive understanding of the internal and external environments of museum branding and cultural heritage product design and to consider relevant aspects in the case study and final strategy development. The following is a SWOT analysis of museum branding cultural heritage products (Table 3).

Internal factors	
Strengths (S)-positive influence	Weaknesses(W)-negative influence
<u>Definition:</u> Advantage are characteristics that give a product an advantage over other products (Huang & Wei, 2024). <u>Advantages of the museum branding cultural heritage products:</u> S1-Cultural assets: museums have rich cultural resources and historical collections, which provide materials with uniqueness and symbolism for the development of creative products. S2-Branding effect: the brand influence of famous museums endorses creative products, which is easy to gain market recognition. S3-Educational value: Creative products often contain educational significance, which can teach for fun and promote cultural inheritance.	<u>Definition:</u> weaknesses are characteristics that put a product at a disadvantage relative to other products. A quality that prevents the fulfillment of a mission and the realization of full potential. <u>Disadvantages of museum branding cultural heritage products:</u> W1-Cost control: high-quality creative product development and production costs are high, and pricing strategies need to be cautious so as not to affect market acceptance. W2-Innovation ability: continuous innovation and product upgrading ability is a challenge, need to constantly capture trends and changes in consumer demand. W3-Uneven development: some museums are deficient in creative product design, market positioning and branding.
External factors	
Opportunities(O)-positive influence	Threats(T)-negative influence
<u>Definition:</u> Factors from the environment that a product can use to its advantage to give it a competitive edge over other products. <u>Opportunities for museum branding cultural heritage products:</u>	<u>Definition:</u> Factors from the external environment that may cause trouble and jeopardize the development or profitability of a product or brand, and when associated with weaknesses, they can increase vulnerability (Bakar & Rosbi, 2023). <u>Threat of museum branding</u>

O1-Spatial experience: the overall environment of the museum provides an immersive experience for the product and enhances the emotional link for the audience. O2-Digital technology: the application of virtual reality, augmented reality and other technologies adds a novel interactive experience to creative products. O3-E-commerce channels: the popularity of e-commerce platforms and social media provides a wide space for the sales and promotion of creative products. O4-Cultural confidence: with the emphasis on global cultural diversity, creative products with local cultural elements are becoming popular.	<u>cultural heritage products:</u> T1-Market competition: the market for creative products is becoming increasingly saturated and homogenization is serious, and constant innovation is needed to maintain competitive advantages. T2-Copyright protection: the protection of intellectual property rights of creative products has become a problem, and they are easily infringed and imitated.
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Table 3: SWOT analysis for museum branding cultural heritage products

Currently, museum branding is developing in a more interactive, inclusive and sustainable direction. The performance of cultural heritage products of museums presents the characteristics of diversification, personalization and technology. On the one hand, product design is increasingly focusing on integrating the characteristic elements of the museum, telling the story behind it, and satisfying consumers' pursuit of cultural depth and personalization. On the other hand, with the development of science and technology, creative products are no longer limited to physical objects, and digital experiences with virtual products have gradually become a trend, such as online interactive exhibitions and digital collections, which broaden the dimension of interaction between museums and audiences. In addition, museums have begun to pay attention to the social responsibility of creative products, launching environmentally friendly material products and advocating sustainable lifestyles, reflecting the social

value and commitment of the branding. At the same time, the museum not only focuses on the richness and educational value of the exhibition content, but also pays more attention to the interactive experience and emotional connection with the audience, and strives to create a brand image with temperature and stories. Through cross-border cooperation with science and technology, art, education and other fields, museum branding is constantly expanding its boundaries and becoming a frontier of cultural innovation.

To maximize the understanding of the current state of design and branding of museum cultural heritage products, this paper used a combination of fieldwork and online research, visiting several museums in the field and focusing on their museum shops and products and related experiences. For other museums that could not be reached but are representative of significance, research was conducted to collate online data. These case studies can reflect the practices and strategies of museums that are more successful in promoting branding at this stage, examine the current situation of product design and development in small, medium and large museums, and analyze cases of cultural heritage product design and dissemination, to be able to understand the policies of some museums on the road to branding at this stage. In the case analysis of the form, design, composition, production and marketing methods of museum products can be further reflected in the level of branding. At the same time, it can also be reflected in the level of interaction and enjoyment of the brand by visitors. For the museums researched in the field, or even heritage organizations with related developments, such as art galleries and cultural parks, 67 museums (Table 4) within

the UK, Europe, and China were covered, of which 20 were researched by actual visits and 47 were researched via the internet. In between, the museums for the online research were selected from The Art Newspaper's research on the world's 100 most popular art museums in 2023 (Cheshire & da Silva, 2024), excluding museums that had been physically visited, and as the study was affected by the epidemic at the time and did not cover the majority of Chinese museum cases, the online research added the most visited Chinese museums with the highest number of Chinese tourists, which were the most popular among Chinese tourists. The study added 14 representative museums with the highest number of Chinese visitors.

Field Research Museums	
- <i>China</i> Guangdong Thirteen Line Museum Shanghai Museum of Contemporary Art Henan Museum Palace Museum Xinxiang City Museum Luoyang Ancient Tomb Museum Shaanxi History Museum Shanghai Museum - <i>UK</i> National Museums Scotland Scottish Art Gallery British Museum Victoria and Albert Museum Natural History Museum, London	- <i>European Union</i> National Museum of the Netherlands Van Gogh Museum Nuremberg Toy Museum Louvre Centre Pompidou National Gallery of Modern Art, Rome MAXII Museum of Contemporary Art, Rome
Online Research Museums	
- <i>China</i> M+ Hong Kong Palace Museum Hong Kong Museum of Art Hong Kong Heritage Museum National Museum of China Taipei National Palace Museum	- <i>America</i> Metropolitan Museum of Art National Gallery of Art Museum of Modern Art (MoMA) National Portrait Gallery Museum of Fine Arts, Houston Cleveland Museum of Art

Nanjing Museum Mausoleum Museum of Qin Shihuang Nanjing Museum Hunan Provincial Museum Sanxingdui Museum Dunhuang Museum Gansu Provincial Museum Suzhou Museum Jingdezhen Museum of Chinese Ceramics - <i>Russia</i> State Hermitage Museum State Russian Museum Moscow Kremlin Museums - <i>Japan</i> National Art Center Tokyo Tokyo Metropolitan Art Museum National Museum of Modern Art - <i>Republic of Korea</i> MMCA Gwacheon - <i>Singapore</i> National Gallery Singapore	- <i>UK</i> Tate Modern The National Gallery, London - <i>European Union</i> Musée d'Orsay Museo Nacional del Prado Galleria degli Uffizi Humboldt Forum Kunsthistorisches Museum Guggenheim Museum Bilbao Museu Picasso Museo Nacional Thyssen-Bornemisza Madrid National Gallery of Ireland Musée d'Art Moderne de Paris Museum of Fine Arts Louisiana Museum of Modern Art Vatican Museums - <i>Australia</i> Art Gallery of New South Wales Museum of New Zealand Te Papa Tongarewa - <i>Canada</i> Art Gallery of Ontario
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Table 4: List of researched museums

In this thesis research which focuses on the products designed for the cultural heritage of museums, the research was conducted based on the following questions: what is the state of cultural heritage products in museums? What are the categories of cultural heritage products in museums? Does the museum have a clear brand image? As well as the state of operation of the museum branding, its design style and the way it is sold. Overall, 92% of these 67 museums have cultural heritage products or souvenirs for sale. Since most of the museums selected for the research are large-scale museums with a large number of visitors, most of them pay more attention to the

aspect of merchandising development. For the many smaller museums and art galleries, however, this percentage will drop significantly. Offline shops or selling museum-related souvenirs at museum outlets accounted for 94% of the museums studied. The percentage of museums with an online mall or selling products on an online platform is 76%. There is still a portion of museums that do not have an online mall or online selling channels. Whether or not a museum sells products related to cultural heritage is somewhat related to the country or region where the museum is located, which may depend on the local cultural, political and social environment. From the table in Appendix II, it can be seen that museums located in Russia, many of them do not have relevant cultural heritage products or only have a small number of souvenirs for sale, and the main marketing focus of the museums is to express the richness of their collections and the grandeur of their buildings. For museums in Japan, more products and souvenirs are sold offline through the museum itself. For European museums, large museums such as those in France and Germany focus more on cultural heritage products. They tend to have a large number of products and inventories, and their category coverage is more comprehensive. In Europe, the United States and other areas, the categories of museum products are more focused on the dissemination of knowledge, which can be reflected in the large number of books and quotes sold. For museums in China, more attention is paid to branding and marketing, so museum products are more focused on design and practicality, playability and entertainment, hoping to maximize the attention of tourists and increase sales.

Among them, 43% of the museums have a very clear branding IP, which includes the museum's logo, visual identity, or the image of one or several representative collections of the museum, or cartoon images developed by the museum itself or related to the museum's culture, and so on. Museums with clear branding are often well known for their collections, or the types of collections on display are more vertically specialized, so that they can give visitors an intuitive and easy-to-remember branding symbol. However, the study found that as some Western museums' collections may be from different works of several well-known artists or are mobile, there is a certain degree of crossover in the products sold by some museums, which is not conducive to the audience's memory of the museum branding itself. At the same time, art museums and historical museums are also very different in the types of products sold, most of the products of art museums are not fixed, mostly based on the development of derivatives of the works of the artists exhibited at a certain period, and even some of them are directly made by the artists, which are often mostly related to fashion or home furnishings. The products sold by natural history museums tend to be more fixed, mostly prints of well-known collections or peripheral derivatives.

Most of the museum's cultural heritage products are manufactured through OEM (Original Equipment Manufacturer) or ODM (Original Design Manufacturer), etc. OEM is customized production or label production, which means that the museum entrusts the production to other manufacturers, and this way can maximize the compression of costs and improve efficiency, however, the disadvantage is that it

is easy to cause the problem of homogenization, so basically all museums have printed postcards, mugs, canvas bags, notebooks and other products, which are just pictures printed on the relevant items, but in terms of design and practicality is poor, can only be purchased as a souvenir of the significance of the product, but these products are inexpensive and easy to obtain, and therefore tend to have a large stock in museums (Trabskaia et al., 2019). The other approach, ODM, in which museums commission manufacturers to provide all services from research and development, design to production, and post-maintenance, tends to produce products with a certain sense of design that can further satisfy the needs of a wide range of people and create a uniqueness advantage for the museum. Some museums sell some of the products that are homemade by designers or hand-called people, which tend to be more special, but are expensive and can only meet the needs of specific visitors. Other museums buy products directly from external companies and sell them in the museum shop, often as souvenirs of the city or the building, or as children's toys.

Experiential programs are also offered as part of the museum's offer (Vannicola, 2018), and almost all museums have some experiential programs or excursions. Some of them organize night tours or some interpretative activities for children. However, some museums also get creative and organize more interesting experiential projects and activities, or summer camps to enrich the visitor experience, but due to the small number of people that can be carried by the museum activities, they can only be experienced by limited number of visitors.

In the course of field research, it is possible to learn more about museum

products. For example, offline shops of museums tend to guide visitors' movement and consumption through the location of the shop, space design and placement. The museum's most symbolic products or popular products are often placed in the most prominent position. Some museums have a special section for postcards, which are the most purchased products. Also, museums with seasonal popular exhibitions or co-branding will place these products in the most prominent position. In terms of shop location, most shops are located at the exit of museum exhibitions, to make it easier for visitors to take the experience and emotions with them after they visit the museum and make purchases. Some museums, such as the Natural History Museum in London, have a shop at the exit of each large exhibition category area, selling merchandise of that category theme, which is similar to the way Disneyland sells its products, and this method can generate more income for the museums as visitors may make more than one purchase. Some museums build more than one museum shop or separate the museum shop from the bookstore and sell the products in a separate classification. Although most of the products sold in the museums are produced through labeling or subcontracting, the labels of the products basically show that most of the products are printed with the words 'locally made', as it is very important for tourists to know that the products are 'locally produced' (Wilkins, 2010), which have local regional or cultural characteristics, rather than products that are mass-produced from a manufacturing plant, as in the case of daily necessities. Therefore, creating a unique cultural aspect for visitors is also an issue that museums need to focus on. Uniquely designed products and artifacts are often more valuable for

visitors to purchase, and even though they may be more expensive than branded products, visitors are more willing to pay for unique memories and experiences.

3.1.2 Case study of the Van Gogh Museum in the Netherlands

As mentioned earlier, museums with more vertical or highly symbolic collections tend to have a clearer branding plan and brand symbols, and a very representative case is the Van Gogh Museum in Amsterdam, the Netherlands. Opened in 1973, the Van Gogh Museum has the largest collection of Van Gogh's works in the world. The museum's collection also includes paintings, drawings and some sculptures, paintings and several sculptures. The Van Gogh Museum contains 205 paintings and 500 drawings by Van Gogh, as well as by his friends and contemporaries and artists inspired by him, almost all of Van Gogh's letters to and from his friends, and a great deal of related documentation.

The Van Gogh Museum uses Van Gogh's iconic elements, bright colors, starry skies, yellow sunflowers, and Van Gogh's self-portrait as key symbols in its space design, web design, and product design, including books, prints, jewelry, toys, tableware, home furnishings, stationery, and gifts.

Van Gogh Museum in recent years, especially after COVID-19 gradually became a popular destination for people to travel, according to the Van Gogh Museum 2023 financial report, nearly 1.7 million people visited the van Gogh Museum in 2023, the number of museum visitors is much higher than expected, compared with the previous year, a significant increase of 24%, and even from March

onwards, every day's tickets are almost snapped up, and later on even had to be booked two or three days in advance. The Museum's total income for the year was, therefore, €66.8 million, well up from €58.6 million in 2022, while the number of visitors rose from 1,364,023 in 2022 to 1,686,766, which enabled the Van Gogh Museum to achieve a financial surplus of €2.8 million. The per capita spending of visitors in the museum shop was also higher than in previous years. In the end, the turnover of the museum shop reached €10 million in August of that year, almost as much as in the whole of 2022 (Van Gogh Museum, 2024).

Such an achievement was made possible by several branding collaborations and marketing campaigns launched by the Van Gogh Museum. The most widely publicized was on 28 September 2023 when the Pokémon company and the Van Gogh Museum joined forces to launch a crossover collaboration, a move that sparked an overwhelming response around the globe. To commemorate the Van Gogh Museum's 50th year of excellence, Pokémon and the museum have launched this collaboration, which aims to bring Vincent Van Gogh's artistic treasures to a wider audience. In honor of Van Gogh, Pokémon artists have created a series of unique artworks inspired by iconic pieces from the museum's permanent collection. These works cleverly blend Pokémon characters with the style of Van Gogh's paintings, such as a creative piece that combines elements of *Self-Portrait with a Grey Felt Hat* (1887) and Pikachu, a Pokémon sunflower design based on *Sunflowers* (1889), and an image of a Capybara and a Pokémon lounging around in a *Bedroom* (1888) scene, all of which are refreshingly different (Figure 15) .



Figure 15 Van Gogh Museum product design with Pikachu

Source: <https://cj.sina.com.cn/articles/view/1159525867/451cf5eb01901c40j>

This collaborative project is not only a visual feast but also a series of activities carefully designed to give young Dutch audiences an insight into Vincent van Gogh and his artistic achievements. The mysteriously prepared program includes an exhibition of six Pokémon paintings inspired by Van Gogh, the organization of an in-museum scavenger hunt suitable for children aged six and upwards, and online educational material for upper primary and lower secondary school students. Of particular note is Van Gogh's deep interest in Japanese culture, whose woodblock prints profoundly impacted him and changed his perspective on the world. Through this project, students could glimpse the connection between Van Gogh and Japanese art, and how creative inspirations cross borders and intermingle. The event not only enhanced the students' understanding of Van Gogh and his works, but it was also enjoyed by a large number of young people. In less than an hour, three rows of visitors lined up to admire the six small paintings inspired by Van Gogh (NetEase,

2023). The limited edition Pokémon Go and Van Gogh Museum promotional cards launched to attract visitors triggered a rush by tourists and scalpers, with visitors scrambling to take part in a scavenger hunt to win the free cards, leading to the museum filling up, many toys selling out, and within days people began selling them online for 80 euros or more (Figure 16), but the situation created a safety hazard and consumer dissatisfaction.

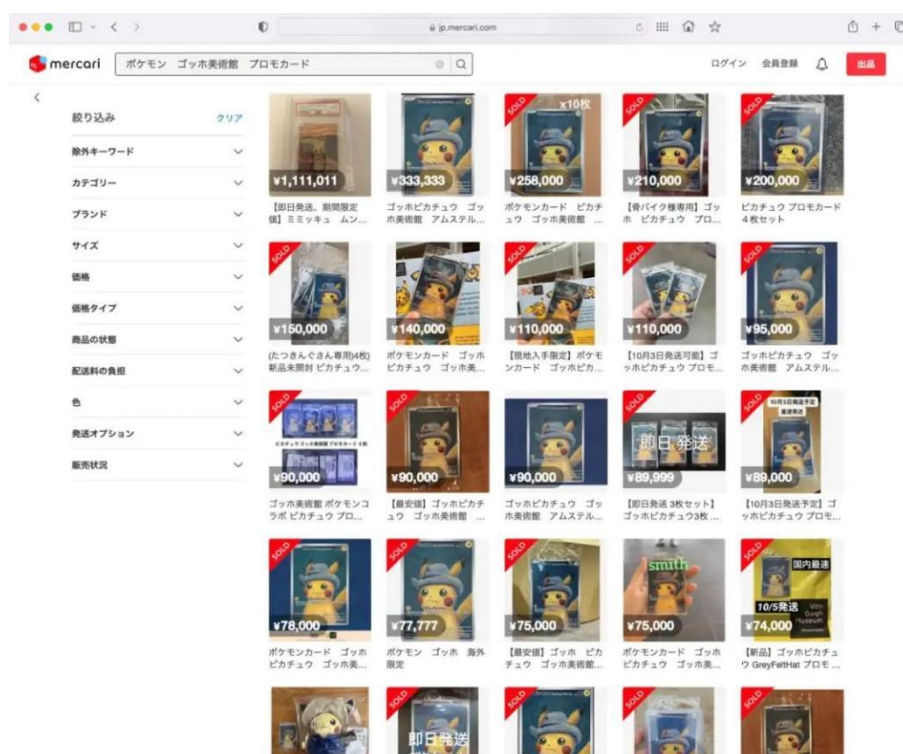


Figure 16 Co-branded cards sold on the secondary market

Source: <https://www.163.com/dy/article/IQ8QVML00526D7MA.html>

So the museum decided to stop distributing the Pikachu x Van Gogh Museum special promotional cards as of 14 October. Instead, the displays and scavenger hunts will continue until 7 January 2024, and Pokémon officials have put in place remedial measures to re-stock the cards in other chain shops, since then, the price of the card on second-hand platforms has started to drop steadily. Although this incident had some

unpleasant consequences, it still led to the Van Gogh Museum gaining a great deal of attention, in a field study of the Van Gogh Museum offline, the author also found that even though a little over half a year had passed since the release, the Van Gogh Museum and Pokémon co-branded products were still displayed in the most prominent and most frequented areas of the museum shop, and had a large number of children and young people purchasing them as a first choice.

In addition to the Pokémon event, the museum has hosted numerous other co-branding initiatives that have also attracted considerable interest. To illustrate, the museum's collaboration with Miffy on plush toys and the development of Van Gogh toys with Playmobil have been met with considerable acclaim from visitors and have even attracted significant attention on China's social media platforms. As a consequence of the museum's emphasis on brand partnerships and development, on 12 June 2023, the museum's branding was bestowed with a highly sought-after accolade: it was designated the 'Best Brand' in the 'Art, Design, Museums' category at the International Licensing Excellence Awards. The museum was named the "Best Brand" in the "Art, Design, Museums" category. This constitutes an international acknowledgement of the Van Gogh Museum's excellence in the field of brand licensing. This is not only an international recognition of the museum's outstanding contribution to the field of licensing, but also a testament to its significant influence and professionalism in this domain.

In terms of digital communication, the Van Gogh Museum's official website was visited more than 9.1 million times in 2023, while more than 217 million visits

were made through social media and other channels. In November of that year, the Van Gogh Museum's Instagram account reached 2.5 million followers. A large fan base and popularity are what bring in more visitors and fans than a throwback museum.

The case of Van Gogh museum branding can reflect the importance of brand cooperation, as well as a product design focus on the needs of young people and favorite images, and with them, can bring greater attention and achievements for both brands. At the same time, it can be seen that today's young people's pursuit of entertainment elements and cultural combination of characteristics, may be a universal phenomenon, which is not limited by nationality and culture. The innovative development of entertainment images and IP by museums will also be the key to revitalizing museum heritage.

3.1.3 Case study of Henan Museum

China's museums began to pay attention to the development of cultural and creative products in 2016, in which the National Museum of China and the Palace Museum were the pioneers of cultural heritage product development. After that, with the support of this policy and the development of the cultural industry, large museums around the world began to compete to develop cultural products in order to attract more visitors through the medium and product services. In China, the cultural heritage products of museums are also known as museum cultural creative products. With the development history of museums, as well as changes in media, technology and

production methods, the development of cultural creative products in China has gone through four stages, that is, the stage of products generated by simple printing and superimposition of simple imitations and photocopies of cultural relics. To the stage where elements of cultural relics can be extracted and some simple creative designs can be made. And then to start through cross-border cooperation and branding to establish heritage or museum branding stage. Finally, it is the stage to start exploring new innovative transformations and development through integrating resources from all walks of life in terms of intelligence, greening and integration. During these periods, the cultural heritage products of museums have been constantly updated and iterated, so that nowadays, the categories are constantly renewed, covering all aspects of aesthetics and practicality as well as digitization. These products and the development of cultural heritage products in Chinese museums can be seen in the case of the Henan Museum.

Henan Museum, located in Zhengzhou City, Henan Province, China, was founded in 1927 and belongs to the first-class museums in China. It has a building area of about 55,000 square meters, and the existing collection has more than 170,000 pieces of cultural relics, collecting a large number of cultural relics resources with high historical, cultural, and artistic value. Henan Museum pays great attention to the development of service space and cultural heritage products, and in 2019, it set up a special cultural and creative organization to start developing cultural products, and until now, according to the statistics of Henan Museum, there are close to 2,000 cultural and creative products developed, including bookmarks, postcards, make-up

mirrors, badges, educational handmade game chess, blind boxes, keychains, refrigerator stickers, etc., and the annual turnover has also risen from 100 million until 2021 when it exceeded 40 million (Yao & Yang, 2024). Until now, the number of daily visitors of Henan Museum has been refreshed again and again, the tickets through reservation are snapped up as soon as they are online, and it is even necessary to make a reservation five days in advance, and its products are also competitively purchased by tourists.

At the end of 2020, when museums were still using many replicas and prints of cultural heritage products, Henan Museum seized the opportunity of interaction and experience to launch the 'Archaeological Blind Box' format, which successfully attracted widespread attention and discussion from the public (Figure 17).

The product of the Archaeological Blind Box is called 'Lost Treasures', and is designed with levels of inheritance, epic, and legend, each of which may unearth different 'treasures', such as zodiac animal head seals, tiger symbols of the great generals, gold medallions of Wu Zetian, or imitations of Duling's tripods, and so on. These 'treasures' are not real ancient relics, but beautifully crafted imitations of cultural relics with deep historical and cultural connotations. This kind of excavation toys the very early, but most of the children's dinosaur excavation toys. The Henan Museum uses the concept of Chinese archaeological excavation combined with interactivity, and adds the concepts of 'archaeology' and 'cultural relics'. In the marketing, the 'soil' in the blind box is advertised to be mixed with the soil from the North Mang Mountain in Luoyang, adding to the mystery of the ancient tombs, while

the miniature version of the archaeological drilling tool, the ‘Luoyang Shovel’, is included, allowing the consumer to experience the work process of the archaeologists. This innovative and interactive approach not only increases consumers' interest in the product but also allows them to learn cultural knowledge in the game. As a result, Henan Museum's Archaeological Blind Box has been warmly received by the market since its launch. From its release on 2 December 2020 to the end of the month, more than 20,000 pieces have reportedly been sold, generating revenues of more than 2 million yuan, and the online release at 8 p.m. every day was basically ‘sold out in two or three minutes.’ The hot level of sales led to an oversupply, and the Henan Museum urgently restocked and increased its production line to meet market demand.



Figure 17 Henan museum blind box

Source:

https://www.chnmus.net/sitesources/hnsbwy/page_pc/wbzx/mtgz/article1e0ef58e999e

[4b3784e77de628c25956.html](https://www.chnmus.net/sitesources/hnsbwy/page_pc/wbzx/mtgz/article1e0ef58e999e4b3784e77de628c25956.html)

The success of the 'Archaeological Blind Box' of the Henan Museum has provided new ideas for museums' cultural heritage products. The reason why the Archaeological Blind Box is so popular is that it cleverly transforms traditional culture into something innovative. This transformation not only transforms the acceptance of cultural knowledge from traditional passive indoctrination to an active exploration process but also successfully promotes the dissemination of culture and the upgrading of consumption. In this way, the archaeological blind box enables participants to absorb historical and cultural knowledge naturally while enjoying the fun of excavation, achieving an organic integration of cultural education and entertainment experiences (Xinhua News Agency, 2020).. At the same time, it also lets the major museums see the possibility of hitting the cultural market through marketing, after that, the major museums have learned it and launched more interactive products, such as blind boxes, handicrafts, and so on. And Henan Museum has also developed more blind box products on this basis. In addition to blind boxes, Henan Museum has also developed a series of food products according to the style and pattern of cultural relics, such as lollipops(Figure,18), desserts, etc., which are also loved by the audience.



Figure 18 Henan museum jade pendant lollipop

Source: https://www.sohu.com/a/542335120_121107011

Until the last one or two years, due to the massive influx of cultural and creative products into the market, China's museums have begun to fall into a kind of homogenization craze, with many tourists purchasing but no uniqueness, with stagnant development due to constant involution, but with no better way to promote development and without a good way to bring in better designers to develop improved products due to the constraints of the museum's system and development. From the social aspect, because of the lead of social media and marketing, more and more people abandoned their original aesthetics, choosing to follow the public's purchasing trend, so that now most of the tourists to the museum's cultural heritage products are still the attitude of purchasing those relatively popular and low-priced products such as refrigerator stickers, and museums at this time are also catering to the public's needs, but in terms of creativity and design began to deviate from the original.

China's museum cultural products have also shifted from the stage of rapid development to the stage of stable development.

At the same time, due to the limitations of the internal structure of the museum and the product development department, the process of development is relatively closed, and many of the products do not take into account the fundamental needs of the market, or cooperate with better designers, so the creativity and design of the products developed are relatively insufficient. On the contrary, some cultural products developed by individual studios in the Chinese market tend to achieve better results. When the author interviewed a ceramic artist in Jingdezhen—a historic Chinese city renowned as the "Porcelain Capital" for its millennium-long ceramic craftsmanship—about the situation, he said: ‘It is very difficult for us to cooperate with the museums, even though we have a lot of very creative artists here, due to the problems of the museum system, it is almost impossible for ordinary craftsmen or designers to establish contact with the museums. ’ This is not conducive to the development of design creativity and products in museums themselves, and in the subsequent development of Chinese museums, creativity and design will be an opportunity to ‘break the circle’ again. It should be noted that this primarily stems from China's institutional context, not a universal issue. Regarding museum development, different countries and cultures have distinct circumstances, which naturally leads to variations in product development—including form, design, and aesthetic approaches. Such diversity, however, precisely meets the needs of a broader range of visitors and stimulates creativity.

3.2 Case Study of Digital Marketing for Museum Branding

3.2.1 Digital marketing for museum branding

Rapid advances in technology have profoundly reshaped every area of people's lives, leading to innovative products, services and activities. In the midst of this transformation, digital museums have emerged as pioneers of technological innovation in the travel experience. As the digital transformation of museums is gaining popularity, museums are also focusing on social media campaigns. Social media are considered to be a driving force in generating new ideas and competitive advantage because they allow businesses to gain insight into the needs of their customers (Piller et al., 2012). Digital museums use cutting-edge technologies including augmented reality (AR), virtual reality (VR), multimedia technologies, and web technologies, aiming to enhance visitor engagement, enrich their interactive experience, and provide customized information and targeted services. In terms of digital communication, museums mainly increase their visibility and influence through their online exhibition halls, offline immersive digital exhibitions, publicity and marketing through social media, videos and pictures, and online marketing or games made by museums through branding partnerships with digital technology and information technology companies.

Today, many heritage museums have begun to adopt 3D display technology for their interactive exhibitions, allowing visitors to gain a deeper understanding of the stories behind the exhibits through such immersive displays. The newest trends in

exhibitions offered by museums create a complex and detailed interactive experience through a combination of visual, auditory, olfactory, spatial, and other environmental factors, making visitors feel as if they are in a multi-sensory world of wonder. Driven by multi-sensory digital technologies such as AR and VR, the visitor experience in museums has transformed from traditional viewing of exhibitions to a visitor-centered co-creation experience. This shift not only enriches visitors' perceptions but also enables them to engage more actively with the exhibition narrative. At the same time, people's motivations for visiting museums are quietly changing. The modern visitor seeks more than the acquisition of knowledge and expects hedonistic, personalized, interactive, and destination-relevant experiences. To meet the market demand for enhanced experiences, museums have begun transitioning from traditional collection-centered environments to community-focused interactive spaces, while also offering more personalized guided services in virtual settings.

The digital marketing of museums is mainly based on social media and fusion media, such as TV, film, Facebook, Twitter, LinkedIn, Google +, YouTube, Instagram, Weibo, etc. Fusion media strengthens the role of the relationship between the transmitter and the receiver in the communication process, and the interaction also plays an important role, as well as changes the status and role of the audience. With the help of the platform, real-time interaction between the public and the museum becomes possible, and their experiences and feelings can be feedback to the museum at any time. The public has changed from a passive 'visitor' to an active 'participant', and the two-way exchange and transmission of information are conducive to

enhancing the effect of cultural communication in museums (Yang, 2024). In the middle of this process, the audience participates in the dialogue with the museum, and on the other hand, becomes the disseminator and evaluator of the museum culture, and participates in the creation of the museum together.

Kidd (2011) suggests three frameworks for social media activity, which are, the marketing framework: used to inform people about upcoming events and other activities and to promote the 'face' of the organization. Inclusivity framework: helps social media to create an online community of competence museums can also be used to build and maintain communities of interest around them. Collaborative framework: Related to user-generated content and the possibilities that social media offers to consumers, users can co-produce the museum's narrative. This illustrates the important role of digital media in the marketing of museums, a transformative process that signals an evolution in the role of museums, which are no longer just guardians of history, but have become bridges between the past and the future, the physical and the virtual, and the audience and the experience. In this way, museums can offer visitors a richer, more diverse, and in-depth cultural experience that meets their new expectations of the traveling experience.

3.2.2 Cases of museum branding product design and brand cooperation

The primary way for museum branding to build loyalty in the digital age is to build brand stories through culture and narrative. Interacting with audiences through media platforms with narratives helps to keep them engaged. For example, the 2006

film series 'Night at the Museum', set at the American Museum of Natural History, brought the museum's exhibits into a fantastical storyline. The films have been a global success, raising the profile and appeal of the museums and stimulating interest in the natural sciences. A History of the World in 100 Objects, which began airing in January 2010, is a joint British Museum-BBC podcast and radio program hosted by Neil MacGregor, who was at the time the director of the British Museum. The programme tells the story of human history across two million years through a selection of 100 objects from the British Museum's collections. As a multi-media project, 'The British Museum 100' not only showcases the richness of the British Museum's collections but also demonstrates the important role of integrated media marketing in cultural communication, enabling the museum's collections and historical stories to reach a wider public across time and space through innovative narratives. Based on the success of '100 Things of Great Britain', the British Museum has since organized a number of exhibitions on related themes, taking some of the collections mentioned in the program on tour around the world. One example is 'The British Museum's Hundred Objects: A Condensed History of the World' held at the Shanghai Museum in China in 2017, which also received widespread attention and acclaim. In this way, narrative and media platforms are more conducive to deepening the audience's perception of and loyalty to the brand.

The process of museum branding relies on design to give it more meaning, design from the symbolic dimension gives the museum branding uniqueness, such as the museum brand logo, some unique product design, and even narrative design is an

important means of differentiation for museum products. In 2014, the Palace Museum launched the Yongzheng Emperor's image 'Feeling Cute'(Figure 19), which is a redesign of the Emperor's image in the Palace Museum's collection with contemporary popular gestures and elements. The combination of the traditional and popular way with its unique design aesthetics and deep excavation of cultural concepts will be a clever blend of tradition and modernity, to create both historical flavor in line with modern aesthetics of the cultural and creative products, and through the microblogging and other social media quickly became popular, especially the iconic 'I know' paper tape, with its Yongzheng emperor image of fun and creativity, quickly became a popular product, led to a wave of consumption. This made the cultural products of the Forbidden City has gained great popularity and love, in the subsequent products, the Forbidden City paid more attention to the important role of design and marketing, launched a lot of popularity of technical reform of the product, at the same time, the Forbidden City also pay attention to the brand cooperation, combined with a large number of brands to further expand its cultural influence and economic effect.



Figure 19 Yongzheng Emperor's creation 'Feeling Cute'

Source: <https://live.fatiao.pro/article/26091.shtml>

Brand partnerships often work better for both parties, especially with the addition of digital engagement. Museums are also pursuing partnerships with gaming companies to inspire more young people. For example, the National Museum of Scotland's collaboration with Nintendo, Game On (Figure 20), a major interactive exhibition on the history and culture of video games, launches in June 2024. Conceived and curated by Barbican Immersive, Game On explores the creativity and technological advances that have built new media and art forms. From Sonic the Hedgehog to Mario, explore the rich history of gaming by playing many of the important games produced over the past 50 years. As the exhibition has developed and evolved, more than five million people of all ages have visited the interactive exhibition in 24 cities around the world. The exhibition first opened at the Barbican Centre for the Arts in London in October 2002, followed by its first touring exhibition at the National Museums of Scotland, which is about to reopen more than 20 years later. National Museums Scotland has undertaken a number of promotional and program initiatives, including a series of evening tours and the production and sale of souvenirs based on the game, to attract more young people to the museum and to engage with the program.



Figure 20 Game On

Source: <https://www.nms.ac.uk/past-exhibitions/game-on>

Another success story is the collaboration between a very popular 3D game in China, Shining Nikki, and the Nanjing Yunjin Museum(Figure 21). The collaboration, which began in July 2021, involved digitally reproducing the Ming Dynasty's standard Yunjin gi dresses in the game, which were not only highly sought after by players in the game, but also displayed in an offline exhibition at the Nanjing Yunjin Museum, allowing players and viewers to get a close-up experience of the exquisite craftsmanship and profound culture of Yunjin. The cooperation took 8 months and involved a number of complex processes such as pattern design, artisan design, and weaving, which fully embodied the fineness and craftsmanship of Yunjin craftsmanship. In addition, through multi-dimensional displays such as a documentary film on the theme of Yunjin, on-site restoration of artisan drawings, and interactive sharing on social media, this linkage has successfully brought the culture of Yunjin

into the vision of young groups and promoted the popularisation and inheritance of traditional culture. This cooperation not only brought new vitality to the intangible cultural heritage of Yunjin but also provided valuable experience in the innovative dissemination of traditional culture, demonstrating the great potential of games as a cultural carrier. This activity has brought great attention and topic volume to the museum, and brought more revenue for the game, as well as a lot of attention and popularity for the museum.



Figure 21 Cooperation with Shining Nikki and the Nanjing Yunjin Museum

Source: <https://weibo.com/u/6498105282>

In short, the building of museum branding loyalty in the digital age relies on its deep excavation of cultural stories, innovative design expression, and cross-media

communication. By combining modern technology and popular culture, museum branding can not only attract young audiences, but also enhance its influence and appeal globally. This culture-centered and innovation-driven branding strategy provides new ideas and directions for the future development of museum branding.

3.2.3 The case for immersive digital tours of museums

Except for the online media platform and branding-based cooperation, some museums also open immersive digital exhibitions or tours through new media art, installation art and new digital technologies, which stimulate visitors' senses through sound, light and electricity to bring an immersive cultural experience. Compared with traditional museums, which are dominated by static displays and exhibitions, digital museums present a potentially unique form of immersive experience (Guo et al., 2021).

With the popularity of digital museums today, more and more museums and researchers are focusing on issues such as how to create novel immersive experiences for visitors and how digital technology-driven multi-sensory interactions can reshape the visitor's experience. The application of technology in traditional museums can significantly enhance the dynamics of information delivery and the level of interaction. Specifically, cutting-edge technologies such as Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR) enable a seamless connection between online and offline scenarios, allowing visitors to interact with exhibitions in real time, which optimizes the display effect and enhances their sense of participation. These

emerging digital tools, such as AR/VR/MR, construct a brand new space where physical and digital elements are intertwined, cleverly combining the real world with the virtual realm to create an unprecedented visitor experience. By fusing physical exhibits with digital information, these technologies not only enrich the presentation of museums, but also expand the cognitive boundaries of visitors, enabling them to understand the stories and cultures behind the exhibits more intuitively and profoundly. The new digital museum redefines the museum setting as technology-driven and shifts the focus to hedonism (Mirghadr et al., 2018).

Multi-sensory immersive digital exhibitions are becoming increasingly influential as an innovative form of display, as demonstrated by teamLab Borderless(Figure 22), the digital art branch of the Mori Art Museum in Tokyo, Japan, which has taken the concept of a digital museum to its logical conclusion and provides an immersive and interactive experience for visitors, often through the use of multi-sensory cues, including visual, auditory, olfactory and tactile and touch. As sensory cues can provide tourists with vivid details that shape their impression of the destination, thus influencing the perceptions, emotions and behavioral intentions of tourists toward their travel experience (Huang & Gross, 2010). Thus since its opening in 2018, teamLab Borderless has attracted an impressive record of over 2.3 million visitors in its first year of operation, which not only highlights its immense appeal to the art world and the public, but also confirms the extraordinary potential of immersive experiences in contemporary art exhibitions. teamLab's success has not been confined to its home territory, as it's unique The success of teamLab has not

been limited to its home country, as its unique artistic concept and use of digital technology quickly gained international recognition, leading to the rapid expansion of the exhibition brand to other key cities in Asia, such as Macau and Shanghai in China, as well as Singapore. In Shanghai, teamLab even pioneered the launch of its first immersive nightclub, En Tea House, which combines digital art with the entertainment industry to create a new venue for social and cultural experiences, a move that not only broadened teamLab's business territory, but also pushed the concept of its digital park to a broader lifestyle (Guo et al., 2021). teamLab Borderless's global reach and commercial success have opened up new paths for digital exhibitions, proving that art can achieve wider and deeper dissemination through high-tech means, and at the same time, it also provides museums and art organizations with valuable lessons on how to use digital technology to create a more attractive and participatory exhibition experience, and thus stimulate the public's enduring interest in culture and the arts.



Figure 22 TeamLab art project

Source: <https://art.team-lab.cn/e/botanicalgarden/#modal-1>

Cases of multi-sensory immersive experiences used in tourism are not uncommon. The Scotch Whisky Tour, for example, brings the functions of immersive digital tours into good play and combines the senses of sight, sound, smell, and taste to give tourists an immersive experience. Visitors will not only be able to witness the whisky-making process but also learn about its long history and culture through professional guided tours. The visual presentation combines well-designed videos and images that make visitors feel as if they are traveling between the fields and distilleries of Scotland. Aurally, a serene and vibrant atmosphere is created through live music and the simulation of natural environmental sounds. The olfactory and gustatory experiences, on the other hand, enable visitors to directly experience the unique aromas and flavors of different types of whisky by tasting them. This type of immersive tourism experience, which combines multi-sensory stimulation, not only provides visitors with unforgettable memories, but also serves as an effective way to promote local culture and special industries.

When museums add such immersive digital tours to their museum experience marketing, the inclusion of cultural connotations in the museum space often leads to a more immersive experience. As in the case of the immersive theatre and study tour Ancient Capital Study Tour launched in April 2023 by four Luoyang museums, the event is a joint effort by the Luoyang Tomb Museum, Erlitou Summer Capital Site Museum, Luoyang Museum and Luoyang Sui and Tang Dynasty Grand Canal Culture

Museum, which is an immersive theatre and study tour that combines theatre, light and shadow, puzzle solving and discussion. Participants will spend the night at the museum, where staff will present a drama that combines elements of heritage guarding and tomb exploration, providing an experience where history meets reality (Figure 23). The audience will be brought into the situation to solve the mystery, the audience becomes part of the history as a participant, and at the end of the tour, the museum curator will talk about the history and knowledge of the museum with the audience and have a discussion, and at the end of the tour, the museum's cultural and creative products will be sold. This is a very immersive experience in terms of environment, space, light and perception, giving an emotional and educational experience. Each night-stay program is limited to only 50 participants, covering dinner, scripted kills, a night stay in a tent and a gold-medal interpretation service on the following day. Despite the cost per person up to RMB 1,688 and the limitation of accommodation, the project has been booked hotly online and is particularly popular with young people.



Figure 23 Immersion Tour - Ancient Tomb Exploration

Source:

https://www.xiaohongshu.com/user/profile/6032130000000000001007bc7?xsec_token=ABfxZ-EE2u0GGUlcNVqL4g7rsc30635VSQN0b_QqYCL70%3D&xsec_source=pc_search

Museums use digital and immersive methods to increase the tour experience, this format increases the museum experience and better mobilizes the emotions of visitors. At the same time, the combination of digital technology is also more conducive to the inclusion of design, through the creation of space, the creation of immersive digital scenes can create a better effect for the construction of the museum branding story and the sensory and emotional experience of tourists, in order to bring more attention to the museum and fans.

3.3 Discussion on the design and aesthetics of the museum's cultural heritage

The cases mentioned above demonstrate the impact of design and creativity on museum branding. As previously discussed, design, experiential engagement, and commercialization contribute to brand-building. Setting aside commercial considerations, museum design differs from generic souvenirs in the aesthetic experience it offers audiences.

Museum cultural heritage design serves a symbolic function, acting as a "translator" of culture. This is because museum heritage inherently carries cultural symbols—patterns, colors, forms, and other surface-level signifiers that engage the viewer perceptually. These elements acquire meaning through association and

ultimately evoke emotional resonance (Dufrenne & Casey, 1989). Cultural heritage products intensify this process: their designs often retain the symbolic features of the original artifacts while incorporating utilitarian functionality. At the conceptual level, they activate the metaphors embedded in cultural archetypes, enhancing the product's narrative potential. For example, the 'A Thousand Miles of Rivers and Mountains' silk scarf from the Palace Museum (see figure 24) employs dynamic "ripple" motifs and the softness of silk to reinterpret the painting's landscapes, simultaneously alluding to the political ideal of enduring sovereignty and nature's timelessness. These symbols operate across layers—from perceptual immediacy to deeper cognitive meaning—sustaining the dissemination of museum culture through design. By compiling cultural symbols from heritage, museums can construct a "symbolic repository," deconstructing, translating, and recombining elements to create designs that continuously evoke emotional and experiential connections.



Figure 23 A Thousand Miles of Rivers and Mountains silk scarf

Source: The Palace Museum Taobao

Museum cultural heritage design plays a significant role in shaping aesthetic

experiences and emotional engagement. The commodification and IP-driven adaptation of museum brands often leverages preexisting cultural cognition, using design to awaken perception and aesthetic emotion while deepening interaction to deliver lasting affective impact. As Langer (1979) posited, art is "the creation of expressive symbols," and museum heritage products function precisely as such symbols—extending the museum visit into an enduring emotional experience. The value of museum aesthetics lies in this synergy between culture and design: through product design, culture gains enhanced functionality and symbolic value, enriching brand narratives and concretizing experiences. It embodies a dual temporality—simultaneously an excavated past and a designed future. When patterns are adapted onto phone cases, backpacks, or other everyday objects, their aesthetic significance transcends mere decoration, becoming a conduit to revisit museum experiences and historical culture. This exemplifies design's transformative role for both brands and heritage.

3.4 Museum Cultural Heritage Branding Discussion

The concept of branding has always been the concern of many researchers, and there are numerous studies and analyses of branding in the academic world, in recent years, the branding of museums has also gradually received attention. And in the studies exploring museum branding, the marketing of museums is more often analyzed from the perspective of marketing. However, there are not many research ideas on the design-oriented product design aspect of cultural heritage, or the product

design of museum shops and the online derivative design based on museum branding. For museums, the audience's experience during the visit is a holistic process, and even the audience's perception of the branding will be built up from before the audience comes to visit the museum, and continue through the products and experience until some time after the visit, and in between, it involves all aspects of the audience's experience, experience and emotion. The success of Disneyland's branding is also attributed to the construction of the brand story and IP in the early stage, the shaping of perceptions and emotional experiences in the middle stage, as well as the guidance of consumption and the enhancement of brand value in the later stage. This has strong implications for museums, and although some researchers may not agree with the 'Disneyfication' of museums, as described earlier, museums, as cultural and service organizations, need to adapt to the needs of today's consumers and change as consumerism becomes more prevalent. A study by Ataman and Ülengin (2003) found that consumers 'tend to choose brands whose perceived image is similar to the consumer's image of the actual, ideal, social, desirable society, and situationally desirable society', which means that it affects brand preference and therefore sales. The process of museum branding for consumer perception is also the process of branding, in which museums not only need to shape the impression of the brand for the audience through the daily role of the media, but also need to deepen the audience's actual feelings through the experience and the product, and for the product, the branding requires museums to have their uniqueness and recognition, to provide the audience with a deep impression.

As for the use of branding among museums, the authors believe that the development of museums in different countries and systems can be cross-referenced. For example, Chinese museums pay more attention to publicity, topics and attention, and tend to use more entertaining elements, which are more oriented towards the general public, but this also results in a large number of homogeneous products flowing into the market, and in the long run, the audience's interest in cultural creations will gradually diminish. At the same time, due to the influence of the media and the ‘ network famous’ effect, if a museum has a product that is popular, other museums will start to imitate it. In the beginning, the audience may be curious and have the sensibility to follow a certain product, but when there are more and more similar products on the market, the audience will start to have aesthetic fatigue and rationality will start to prevail. Rationality begins to gradually prevail. At this time, differentiation, or even customization for specific groups of people, or even taking the high-end route, will be more able to attract the attention of different tourists. Concerning the western museums, more design-oriented products, even with high-end jewelry and fashion products can be more differentiated and unique in the market, and clever use of co-branding and branding collaboration, to avoid falling into the homogeneous and common cultural and creative market. As for the museums in the West or Europe, a part of tourists will tend to buy museum products as souvenirs due to their expectation of the continuation of memories during the process of traveling. And most age groups of visitors will choose reproductions or prints. But from the Van Gogh Museum and the National Museum of Scotland, the case can be seen, that the

museum branding and entertainment industry's well-known brand cooperation is more in line with the expectations of young people, so in the development of products, can pay more attention to novelty and entertainment, digital so that young people can also experience the collision of entertainment and culture, which will be the key for museums to 'break the circle'.

At the same time, for children, museums should also pay more attention to their products, not only in terms of conveying the museum's culture and philosophy, but also in terms of promoting the family's experience at the museum to continue the museum's sustainable development. It can be seen that a large number of museums now sell children's products that have not been thoughtfully designed and are often dominated by plush toys and externally purchased toy products. But for the museum culture, exhibits and concepts of the transmission of attention are not enough, which requires a special designer and department responsible for the development of museum products contain a lot of entertainment elements adapted to young people but not applicable to children, children's knowledge system is not perfect, it is easy to confuse the entertainment elements and culture itself. For children, it is more necessary to make special designs and knowledge layouts in the products to convey the culture and concept of the museum, to help children become interested in the cultural heritage of the museum. More experiential activities can also be used to convey more knowledge of the museum to children.

The branding of museum cultural heritage is crucial to the marketing of museums, which involves many of the elements analyzed above, and how to enhance

the recognition of museum cultural heritage through design, in order to better create brand IP and value for the museum is the direction of in-depth thinking and future research.

Chapter 4: Theoretical Model Analysis of /museum Branding and Cultural Heritage Design

4.1 Theoretical Background and Hypothetical Development of Museum Branding and Cultural Heritage Design

Museum branding needs to be constantly adapted to the times and technology as it adapts to social change. The design of cultural heritage in museums has taken on many forms as it has undergone changes in different situations in different countries today, but the ultimate aim is to help the audience to continue the memory and to achieve a branding effect for the museum, which requires the involvement of numerous conditions. Branding and the cognitive-emotional and environmental effects of museums have been discussed from a very early stage, and the purchasing behavior and communication effects of museums have been gradually emphasized by academic research in recent years. Cultural heritage design and services for museums can be inspired by previous research on product design and applied to museum design environments. Therefore, the theoretical background of museum branding and cultural heritage design will be discussed and hypotheses developed from these aspects. It is important to state that the following hypotheses are based on museums and apply to the museum context, where the variables are set in terms of museum-related factors

affecting the audience.

4.1.1 Museum social and environmental effects

Museums face multifaceted challenges when adapting to societal transformations (Cerquetti, 2016). Social change has fuelled the expansion and unleashing of cultural diversity, giving rise to a growing number of emerging consumer groups with unique cultural needs. As a result, museums are more concerned with emphasizing social dynamism, active participation, and multiculturalism to promote artistic heritage (Ayala et al., 2019).

Most visitors do not expect satisfaction from the exhibition itself, they come to museums in the hope of engaging with the museum, experiencing the history, heritage, and development of the museum (Easson & Leask, 2019), and co-creating value with the museum by interacting with the museum and other visitors ((Payne et al., 2008), while completing the overall museum experience. The marketing of museums is conditioned by the social environment, which in turn can be influenced and promoted through socializing. This is due to the fact that consumers are always influenced by their surroundings and their perceptions of society. Museum use is essentially a dialogic social practice i.e. a series of actions and cognitive processes that are implemented in specific social relations according to a specific socio-cultural context (Coffee, 2007).

The physical environment can help organizations play an organizational strategic role in service and marketing and thus achieve the organization's marketing objectives (Bitner, 1992). As museum buildings are often landmarks in their own right

and maybe historical buildings or have been carefully designed by architects, they can have a psychological impact on visitors in terms of their external environment or internal space. Donovan and Rossiter (1982), in his study from the perspective of environmental psychology, argued that the ambiance within a shop can induce emotional consumption to a certain extent. In some cases, the ambiance of the location is more influential than the product itself in the shopping decision, and can even be called the primary product (Kotler, 1974). Environmental cues like socialization, design and setting of the shop can also influence the intention to consume to a certain extent (Baker et al., 2002), while the social elements of the shop environment, that is, the service and the environment also provide clues for consumers to infer quality (Baker et al., 1994). To create a good experience, the consistency of the shop's environment, odors as well as music, and even the visual elements of the shop are taken into account (Wirtz & Mattila, 2001; Spangenberg et al., 1996; Chébat & Michon, 2003). Consumers' positive emotions towards these environments trigger impulsive purchasing behavior, and hedonic motivation moderates the relationship between the social characteristics of the retail environment and consumers' positive emotional responses (Chang et al., 2011). The influential role of these factors in the physical environment is also increasingly being focused on by museums and heritage organizations and is one of the conditions that creates an attraction advantage (Bonn et al., 2007).

It follows that social and environmental factors shape museum operations and audience experiences in complex and intertwined ways. Social factors play a key role

in the consumer composition and interaction patterns of museums, influencing the structure of museum visitors, such as families, educational groups, or individual tourists, whose expectations and values derived from their social environments shape perceptions and experiences of museums. For example, museums are often seen as places for families to spend time together or for educational learning, and this social perception shapes visitor behavior and expectations. In the actual museum environment, environmental factors such as spatial design, layout, and sensory stimulation are critical to the visitor experience. Spacious corridors, interactive exhibits, and clear orientation systems can enhance the comfort and engagement of a visit, while crowded spaces, confusing layouts, or a lack of guidance can lead to confusion and frustration for visitors. In addition, the aesthetic quality of the environment, such as lighting, color and sound, can affect mood and attention, and thus the overall experience. From this, the hypothesis is formulated:

H1 Social and environmental effects can positively influence cognitive emotions

H2 Social and environmental effects can positively influence purchasing behaviour

4.1.2 Design effects of museum cultural heritage products

The design of museums encompasses the architectural design of museums, spatial design, experiential design, service design, strategic design, and product design of shops. Research related to the architectural and spatial design of museums is often

included in the study of the environmental factors of museums. Palù et al. (2018) referring to the different operational levels at which design operates, argue that one may consider a variety of implementation possibilities, including product, service, and strategy, for which design plays the role of a multidimensional operational tool. These three different levels show a great deal of overlap; in fact, service design often includes product design actions, just as strategic design may involve the development of products and services. The definition of a 'high cultural value-added' product depends on the ability of the cultural industry to incorporate cultural, symbolic, and emotional values into the goods or services, starting from the initial stages of design and production, to communicate and reinforce the core attributes and value propositions of the company. A process of meaning construction begins with reading and coding systems that determine a company's values, a design process, and a particular mode of production (Bertola et al., 2016). Symbolic elements play a large role in the construction of meaning in museum design, it is the basis for museum branding. Products designed specifically for new audiences may appeal to other new and old audiences and have a broader appeal (Easson & Leask, 2019). Lin & Ryu, (2023) demonstrated that product design inspires product loyalty and museum visit intentions and that aesthetics positively affects the sense of enjoyment and satisfaction of the product's interactions with people impact, while the feeling of enjoyment, aesthetics, and satisfaction, as well as symbolism all make a positive impact on the museum branding consumer's passion for the brand.

Research on product and experience design for museums has focused mainly

on the literature of Chinese scholars. This is due to the attention paid to creative design for cultural heritage and cultural communication in China in recent years. Therefore, in the creative design of cultural heritage, investigating cultural elements including aesthetic awareness, behavioral norms and moral values from the product design of many museums in China, combined with design attributes including powerlessness, logic, and emotional aspects have become the main factors to be considered by many designers and museums in developing their products (Sun et al., 2017). And for the indicators that need to be considered in the design of museum cultural heritage products are categorized as creativity, emotional dimension, novelty, usefulness, and significance (Cheng et al., 2023). With more and more cases of cultural product design in museums, ‘sensory quality’, which emphasizes the emotional value or the feeling of quality goods, has also been considered in design (Huang et al., 2011), and the design and development of museums have begun to focus on the texture and quality of their products. In the digital era, the addition of technology has led to more use of design in the development of museum products, these digital products through image information technology and multimedia media to better create an immersive experience environment for the audience, and through the form of multi-sensory experience to enhance the emotional resonance between the audience and the product (Zhang & Ye, 2021).

Design factors are thus seen to play a very important role in the branding of museums, and also influence the cognitive and emotional as well as purchasing factors of the audience. Hence the hypothesis:

H3 Design effects can positively influence cognitive emotions

H4 Design effects can positively influence purchasing behaviour

4.1.3 Museum branding effect

The brand effect has been studied in marketing since very early times. The concept of branding gradually entered the public consciousness with the rise of commodities and media. In the last few years, the role of branding has been widely discussed in academia (Kapferer, 1998). Fournier (1998) analyzed the interrelationship between consumer goods and brands from the perspective of relational metaphors, proposing the concepts of brand loyalty and brand personality. Aaker (1992) further underscored the critical role of brand equity, proposing five major brand assets, namely: brand loyalty; brand awareness; perceived brand quality; brand associations; and other proprietary brand assets - e.g. patents, trademarks, and channel relationships - are also elements of success that brands need to focus on. Also, brand personality dimensions are considered in the process of brand development (Aaker, 1997). The brand experience becomes the criterion for evaluating the brand, which is derived from the consumer's perceptions and emotions about the brand (Schmitt et al., 2009) and a good brand creates a certain degree of emotional attachment in the consumer (Thomson et al., 2005; Batra et al., 2012). This is to some extent a reflection of brand loyalty. And the real value of brand heritage lies in how it translates into impact (Urde et al., 2007).

The concept of branding has provided new ideas for the development of marketing for museums, Pine and Gilmore (2011) include four dimensions in the

Museum Experience Scale: education, entertainment, aesthetics, and escapism. The worlds of branding and art are intersecting in several ways, with museum shops playing an increasingly important role in revenue and visitor experience. Brand marketing is the process of building emotional connections and image management (Schroeder, 2005). Symbolic symbols play a decisive role in the construction of a brand, and to position the museum branding clearly in the minds of consumers, the creation of ambiance and the development of a clear brand identity becomes crucial (Caldwell, 2000). Therefore, bringing the concepts of branding, which are widely used variables in business environments, into the marketing of museums can be a good way to understand visitors' willingness to visit and revisit a destination. Branding stimulates the perceptions and minds of the audience, which helps to better support the brand's marketing campaigns, and today's brands are more likely to stimulate the audience's perceptions and cognition through packaging and advertising, and even through digital means in the media, which stimulate the audience's imagination and emotions (Schmitt, 1999). In terms of branding and management of emotional experience, the emotional experience of tourists is directly related to tourist satisfaction, which also has a significant impact on behavioral intentions (Hosany & Gilbert, 2010). Positive emotions (e.g., happiness, pleasure) intrinsically enhance satisfaction, with pleasurable physiological experiences fostering brand loyalty. This underscores the strategic value of delivering both hedonic pleasure and existential fulfillment (Bigné et al., 2005). The experiences that brands create through their products can be pleasurable for the viewer and, through this physiological pleasure,

help to build memories for the visitor, which in turn serves to enhance brand promotion and build brand loyalty.

Museum branding can mainly attract more tourists and establish loyalty, thus increasing the dissemination of museum culture, playing the educational role of the museum, and ultimately achieving the effect of sustainable development. From previous research on branding, it can be seen that positive emotional perception can have a certain impact on brand loyalty, and thus affect the consumption of tourists, so the hypothesis can be assumed for museum branding:

H5 Brand effect can positively influence cognitive emotions

H6 Brand effect can positively influence purchasing behaviour

4.1.4 Museum communication effects

Digital marketing and the use of social media are becoming increasingly important for museums to attract visitors and promote their branding. With the rise of social media, leading museums around the world have utilized blogs, podcasts, and content sharing to engage with users on social platforms. The adoption of this type of participatory communication has not only changed the way museums publicly display their identity as cultural bearers, but has also sparked a debate about cultural authority and institutional attitudes. At the same time, it signaled a new direction in museum learning (Russo et al., 2008). During the COVID-19 era, tourism was severely affected, leading to a decline in tourist interest in heritage sites such as museums. To address this, museums have turned to online and social media marketing strategies,

including the use of virtual museums, to increase visitor engagement. In turn, museums and cultural organizations are increasingly aware of the role of social media communication in guiding visitor perceptions and experiences. This can be seen in the cyclical relationship between visits to museum websites and in the case of visitors to museum websites, online visitors often use museum websites to complement their experience of visiting physical museums (Marty, 2007). Digital marketing strategies, including social media engagement, have been recognized as an important tool for libraries, archives, and museums to reach wider audiences and promote their collections. Social media platforms provide museums with opportunities to showcase exhibits, interact with fans, and attract new visitors. Major museums now leverage social media platforms (e.g., Facebook, Twitter, Instagram) to execute audience development strategies. Through curated content and targeted digital campaigns, they cultivate fan communities, extend institutional reach, and drive visitation (Fletcher & Lee, 2012; Weilenmann et al., 2013).

When entering the Web 2.0 era, the Internet has become a place for participation, collaboration and social exchange. And museum websites integrate information technology and emerging digital media tools to create approaches and experiences that go beyond the physical museum visit and engage audiences as a result (López, et al., 2018). Information and communication technologies enhance audience development strategies by creating new interactive experiences that evolve through both consumer connection and engagement (Pine & Gilmore, 1998). The effect of brands' internet communication also influences brand trust and familiarity,

which is based on the brand experience and brand messaging, as well as audience familiarity with the brand and customer satisfaction (Ha & Perks, 2005). From the above statistical analysis of museums, it can be seen that many large museums open online shops to sell their products, and the ambient cues of the online shops affect the emotional and cognitive states of shoppers, stimulating positive responses and thus influencing their shopping outcomes (Eroglu et al., 2003).

Nowadays, social media has become an essential communication tool for museum exhibitions and for highlighting their educational and entertaining features (Marakos, 2014). By utilizing social media platforms, museums can effectively promote their exhibits, engage with their audiences, and create a richer museum experience for visitors. At the same time, these new marketing methods can further stimulate the perceptual experience of visitors and shape and perpetuate their experiences and emotions. Relevant experiential marketing strategies developed using digital technologies, such as virtual tours and interactive content, can shape the immersive experience for visitors and remain relevant in the digital age. The use of media and digital marketing can also help museums increase visitor interest and engagement. By adopting innovative marketing strategies and utilizing technology, museums can attract more visitors, effectively promote exhibits and adapt to changing tourism trends. The resulting hypothesis:

H7 Communication effects can positively influence cognitive emotions

H8 Communication effects can positively influence purchasing behaviour

4.1.5 Museum audience perceptions and emotions

The term 'emotion' is often seen as encompassing a range of specific mental activities, such as moods, states of mind, and underlying attitudes. Emotion can thus be understood as a broad category of psychological experience rather than as a single specific mental activity. Emotions represent a mental state that is based on a cognitive appraisal of an event or idea; has a phenomenologically basic affective overtone; is accompanied by physiological responses; is often expressed through body language (e.g., gestures, postures, facial expressions); and may elicit specific behaviors that confirm or express the emotional qualities experienced by the individual. (Bagozzi, et al., 1999). The cognitive and emotional aspects of marketing have been extensively researched early on (Richins, 1997; Laros & Steenkamp, 2005). Consumer emotions and experiences are crucial factors in marketing. For today's museums, faced with social and functional transformation, museums in today's increasing focus on audience-orientated experiences and return to loyal visitors is the essence of survival, so museums must cater to audience preferences and create good services and experiences for the audience in order to be successful (Piancatelli et al., 2020). Museums provide the perfect environment for personal connection, communication, and reflection by transmitting culture, and also when the audience responds to the emotions provided by the museum's exhibits or artifacts, visitors are motivated to find meaningful individuals and connections (Alelis et al., 2013). The ways in which a museum's collections, spatial layout, or historical context are presented and interpreted have a profound effect on visitors. This impact may extend to the way

visitors interact with exhibits, exhibition spaces, and interpretive tools and systems on a physical level, mental state, and emotional response (Bedigan, 2016).

The visitor experience has been recognized as a key driver and deterrent to the success of artistic and cultural products (McLean, 2012), and this is also true for museums, where the consumption of the museum experience is equally tied to the cognitive and affective experience of the visitor. A visit to a museum can be seen as an experiential fusion of artifacts and services under a unified branding, providing visitors with an integrated perceptual journey that is profoundly influenced by subjective factors such as the visitor's respective cultural background, motivation for the visit, and personal past experiences. All types of consumer experiences can be linked to the behavioral outcomes and loyalty concepts of experiential marketing. According to Attitude Theory, every experience brings cognitive and affective impacts - these are the memories of the experience - thus enhancing consumer loyalty by increasing satisfaction (San Martin, Collado, & Rodriguez del Bosque, 2013). In today's competitive environment, organizations must aim to develop followers and build loyalty among visitors.

The museum visitor participates in the museum experience as both visitor and consumer, an experience that is shaped by the museum space and environment that influences perception through perception, shaping experiences and memories for the visitor. In the museum shop, the visitor acts as a consumer, perpetuating the emotion of the visit and influencing consumption through the shaping of the shop atmosphere. Perception and emotion are involved and play a vital role in this, and this emotion

may continue to carry on in the future, creating a positive effect on museum branding, thus becoming a reflection of visitor loyalty to the museum and influencing the museum's revenue. Hence the hypothesis:

H9 Cognitive emotions can positively influence purchasing behaviour

4.1.6 Museum purchasing behaviour

Holbrook and Hirschman (1982) claimed that consumption is important, researched the symbolic, hedonic, and aesthetic needs of consumption, and considered the consumption experience as a phenomenon that pursues fantasy, sensation, and pleasure.

Within the experience economy paradigm, Gilmore and Pine (1998) suggest five design principles for creating memorable experiences: 1) Start with a coherent theme and ensure that this theme resonates throughout every aspect of the experience. 2) Reinforce the theme with positive cues, such as intuitive signage. 3) Remove negative cues, whether visual or auditory, that may be distracting or incongruent with the theme. 4) Provide souvenirs that can be kept as a reminder of the unique experience. 5) Stimulate all five senses through visual, auditory, and other sensory means to make the experience more profound and unforgettable. This continues to play a great role in the practical application of museums and promotes purchasing behavior to a large extent. Since the mid-1980s, consumer researchers have begun to explore new perspectives beyond traditional satisfaction studies, which have traditionally viewed satisfaction as a cognitive state. The current experiential

perspective provides a more comprehensive framework for understanding consumer satisfaction that takes into account both cognitive factors (that is, the assessment of uncertainty) and affective factors (the emotional response). In other words, the process of perceiving and dealing with uncertainty may impact consumer satisfaction and willingness to pay (Bigné et al., 2005).

Museum purchases are often associated with travel and souvenirs, which play a crucial role in the travel experience as tradable merchandise as well as conveyors of meaning (Swanson & Timothy, 2012). Shopping may be a necessary activity for some tourists (Sthapit & Björk, 2019), and souvenir shopping accounts for a significant portion of people's total traveling expenditure (Kong & Chang, 2016). Therefore, attributes such as the utility, quality, appropriateness of the gift, and the name or design of the place visited are determinants of tourist purchases (Amaro, Ferreira, & Henriques, 2020). Museum shops can use souvenirs to contribute significantly to museum branding (Trabskaia et al., 2019). In the case of art museums, visitors ‘consume’ artworks and exhibitions designed by artists and curators in museums, while their own opinions are often marginalized, especially in public museums that are product-centred (Goulding, 2000). Therefore, museum purchases need to take into account a number of integrative factors, which often have to focus on the orientation and experience of the audience.

In the above analysis museum purchasing behavior involves a number of influences; social and environmental influences affect the visitor experience, design effects appeal to the sensory experience of purchasing from an aesthetic point of view,

while branding and communication effects shape the experience and perception of the visitor, and finally affect the purchase from an emotional point of view. These assumptions are interrelated and together they form a theoretical model of audience consumption of museum cultural heritage products and loyalty to museum branding.

4.2 Theoretical Models and Scales Related to Museum Cultural Heritage Design and Branding

The model building of museum cultural heritage design and branding is not only based on the above assumptions and related research but also needs to refer to previous literature and research in the design of models and questionnaires that have been verified by the mature scales and models, through the examination of the research field, the research in this paper uses the three-level model of culture, the SICAS model, the cultural pyramid model of branding and the culture and consumption model. These models can be used to inform the construction of the scale in terms of museum branding, cultural heritage, marketing, communication, and consumer psychology, and ultimately based on the development of relevant theoretical models and scales based on museum cultural heritage design and branding.

4.2.1 Three-level model of design culture

The three-level model of design culture was originally developed by Benny Ding Leong of the Hong Kong Polytechnic University in a dialogue paper in 1999, based on the dialectical thinking of Chinese and Western cultures and the theory of

design integration. His theory, which is widely used in his teaching of product design, was derived from his reflection on the specific cognitive characteristics of traditional Chinese culture and Western culture as relative opposites and optimized in the context of cultural differences in Hong Kong. This set of values involves issues of subjectivity, comparative cognition objectivity, and the inevitable process of cultural adaptation (the result of the interpenetration of Chinese and Western and Chinese cultures). It also combines the ‘collectivism’ and ‘inner ethics’ of the Chinese design strategy of harmony to find a balance between people, objects, and nature (Tao) with the rational thinking of the Western progressivist strategy and finds three common aspects, namely: 1) physical or material. 2) social; and 3) spiritual (Leong & Clark, 2003). This theory incorporates the ‘spatial perspective’ of culture proposed by He (1992) in his book ‘The Worship of Chinese Gods of Nature’ and divides culture into an outer ‘tangible’ level, a middle ‘behavioral’ level, and an inner ‘intangible’ level.

Leong adds the process of ‘goal realization’ to this, and finally arrives at the design method of ‘cultural integration’. This theory continues the framework of ‘cultural space’ by adding ideas, behaviors, or systems and materials (as shown in the figure 25), and becomes a new model of product design practice that integrates and revitalizes culture and injects vitality into its development.

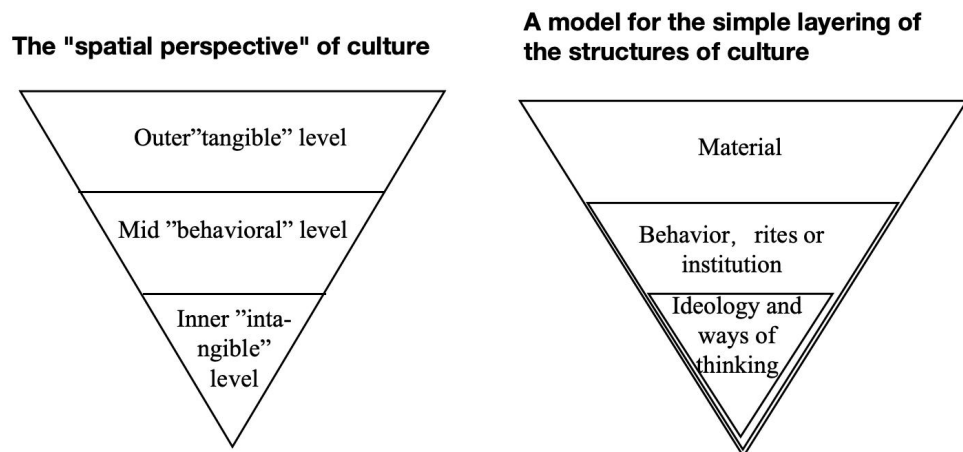


Figure 25, Evolution of the three-level theoretical model of culture

Source: (Leong & Clark, 2003)

Following this, Lin (2007) developed a three - level theory of culture in his study of design for Taiwan's cultural heritage. He combined theories related to design and culture to propose a new three - level framework of culture as (1) material or physical culture - including food, clothing, and transport-related objects; (2) social or behavioral culture - including interpersonal relationships and social organizations and (3) spiritual or ideal culture - including art and religion. These three levels of culture can be aligned with the three levels of culture proposed by Leong above. Incorporating cultural objects into cultural design allows for the identification of the following three design characteristics: (1) the inner level, which encompasses special content, such as stories, emotions, and cultural traits; (2) the mid-level, which involves function, operational issues, usability, and safety; and (3) the outer level, which involves colors, textures, forms, decorations, surface patterns, line qualities, and detailing (Figure, 26). Lin's theory can better integrate product design with traditional cultural elements and perpetuate traditional values to consumers.

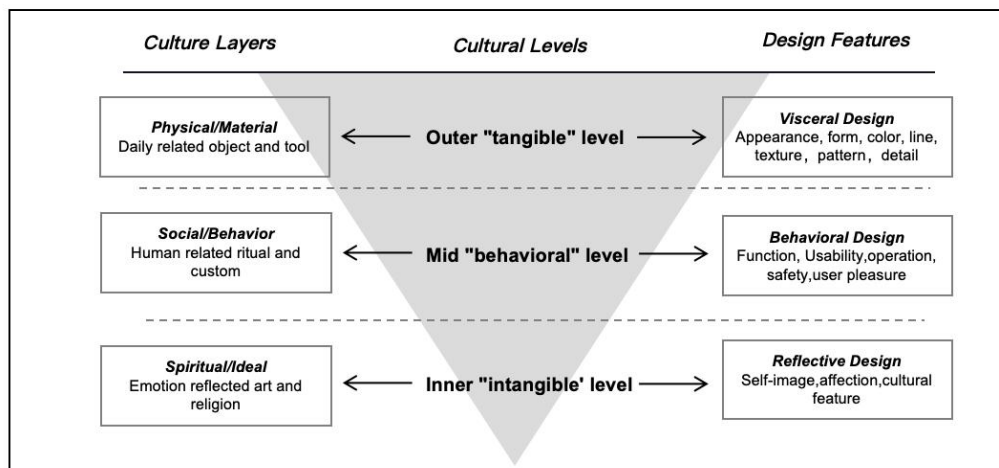


Figure 26, The Three-Level Model of Culture

Source: (Lin, 2007)

Many scholars have later applied the cultural three-level theoretical model to the product design of cultural heritage, such as Bao (2017), who combines the cultural three-level framework with cultural imagery and cultural satisfaction, explores the relationship between the interactions and proposes the theory of interactive system design for cultural products. The three levels of culture design theory are highly applicable to the design of cultural heritage products in museums, and it is also a key factor to be considered in the design of products based on the collections in the museum and the symbolic elements of the museum itself, and in this way influences the consumer's purchasing decision factors.

4.2.2 SICAS Model

SICAS model is a kind of theoretical model for the consumer behaviour pattern in the digital marketing era, which was proposed by the China Internet Network Information Center in 2011, in the field of marketing, the SICAS model is

usually understood as a kind of model for the change of consumer behaviour in the digital era, which combines the digital is with the consumer's behavioral pattern, SICAS model is a comprehensive innovation and upgrading of the traditional AIDMA and AISAS model. The AIDMA model was proposed by E.St.Elmo Lewis, an American advertising scientist, in 1989, which believes that users need to go through Attention, Interest, Desire, and Memory to complete their consumption behavior, Action (make purchase behavior), and other five processes.

In 2005, based on the characteristics of the market in the Internet era, Dentsu Group proposed the AISAS model, namely Attention, Interest, Search, Action and Share, which emphasizes that under the environment of Internet application and popularization, users have changed from passively accepting product marketing information to actively searching and sharing. It emphasizes the shift from passive acceptance of commodity marketing information to active search and sharing in the environment of Internet application and popularization(Figure 27).

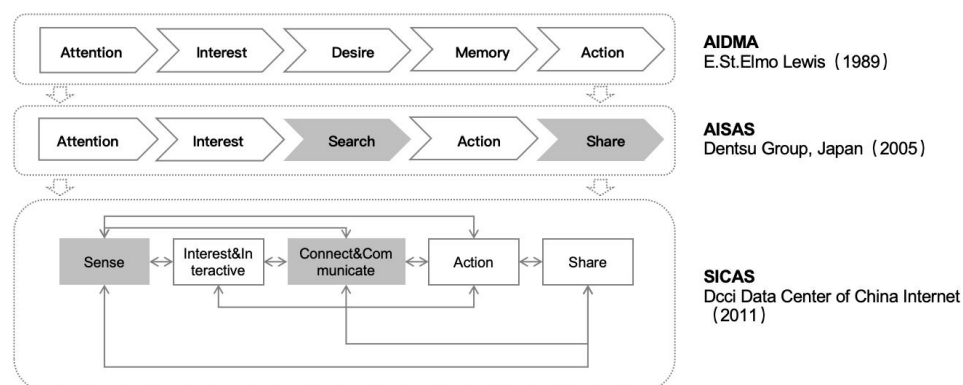


Figure 27 ,SICAS model development process

Source: Made by the author

As the Internet enters the 2.0 era, consumers are no longer just passive

receivers of information but have become active searchers and sharers of information. This change in consumer behavior makes it difficult for the original marketing model to be fully applicable. Therefore, a model that better fits the characteristics of the digital marketing era is needed to guide the interaction between brands and consumers. As a result, based on long-term, continuous, and real-time online consumer behavior tracking, consumption measurement, contact analysis, and digital insights, DCCI (DCCI Data Center of China Internet) comprehensively describes the non-linear, multi-point, and two-way marketing behavior mechanism between the marketing subject and the client in the era of digital marketing, and puts forward a new model in the 'China Social Media Marketing Blue Book' published in 2011. The SICAS model was proposed in the Blue Book of China's Social Media Marketing. The SICAS model is a panoramic model of the multidimensional interactions between companies and consumers through user behavior and Internet communication (Huang, 2019).

The SICAS model contains five components, which are:

- 1, Sense: That is, the mutual perception of users and brands. The construction of an extensive and multidimensional perception network between businesses and consumers is at the heart of the SICAS model. This model emphasizes the need for firms to develop an interactive perception network with consumers and to actively capture consumer needs to gain a dominant position in their interactions with consumers. Perception is a two-way process of interaction that involves not only insights into consumer preferences but also consumer awareness and trust in the brand. In order to effectively build this network, companies must carefully design brand

communication strategies to ensure that consumers clearly perceive brand activities.

2. Interest & Interactive: Enables users to become interested and interact with the brand. After users perceive a brand in the online environment, they may be inspired to learn more about the brand and share their views and attitudes about the brand on social platforms. This interaction can cover multiple channels such as communities, search engines, and video platforms. The key lies in whether the enterprise's content and form can meet users' psychological expectations and resonate with their interests. Enterprises should start from the user's point of view and stimulate or guide the user's point of interest when conducting marketing. The quality of interaction not only depends on the number of interactive contacts, but also lies in the depth of the topic of communication between the two sides, the way, and the closeness of the relationship. Effective interaction can deepen the psychological connection, emotional resonance, and interest resonance between enterprises and consumers, thus enhancing the interest and attention of the brand in the minds of consumers.

3. Connect & Communication: To establish connection and interactive communication with the brand. Connecting users to the brand and communicating effectively requires brands to integrate different channels such as advertisements, content, and relationship networks to achieve precise positioning of mobile advertisements and ensure that the brand message is accurately conveyed to the target audience. Business networks need to be interconnected with user communication networks, emphasizing the need for enterprises to build the most effective paths to

connect with users, and to continuously strengthen their interactions with users to build strong connections for real-time management, timely response, and effective communication. The connection between enterprises and consumers is a relationship-building process from shallow to deep, through multi-channel, high-frequency, and diversified communication content, which requires enterprises to take the initiative to establish contact with consumers and respond quickly to their feedback.

4. Action: User interactions with a brand may trigger a purchase decision if the user continues to have a fondness for the brand. In the internet service architecture, all mediums can be transformed into pathways to purchase, which requires companies to build and strengthen not only channel support and paid touch points. In the digital age, purchases are not limited to offline shops, but occur more often through online platforms such as websites, apps, WeChat, social groups, and so on. Businesses must optimize their marketing strategies by effectively utilizing and maintaining these online platforms as the primary channel for transactions, and by analyzing and evaluating key metrics with the tracking and statistical capabilities of online transactions.

5. Share: It means experience and sharing. After purchasing a product, users have the opportunity to share their experience on social platforms. In the Web 2.0 era, users are more willing to express their uniqueness and stance, and they openly share content, which not only helps brands with word-of-mouth marketing, but also expands users' social connection network. This experience and sharing is no longer just the end

of the consumption behavior but gradually becomes the starting point of the consumption behavior and the key factor driving the consumption power. The decentralized and open nature of information on the Internet facilitates the flow of experiences and sharing among users, transforming them from the end to the beginning of the consumption chain. Companies need to focus on user experiences and encourage sharing. Positive consumer experiences help to promote repeat purchases by existing customers, while effective sharing is equally beneficial in attracting new customers.

Based on the SICAS model, the marketing of museum digital branding and user consumption-oriented cultural heritage product development model in the Internet era can be better analyzed (Liang & Ding, 2022). Combining museum branding communication strategies with the SICAS model helps brands optimize their social media strategies, enhance user engagement, promote word-of-mouth marketing, and improve customer experience to increase sales and brand loyalty. Chinese research has introduced the SICAS model in studies of cultural and creative design in museums, and it has been a good guide to the Internet marketing of museum products (Li & Lin, 2022), museums need to increase audience consumption and brand awareness through Internet communication and marketing.

4.2.3 Brand Culture Pyramid Model

The Brand Culture Pyramid Model is a model developed by Chinese scholar Zhang, Ma and Li in 2009 based on the theory of branding. The theoretical basis of

the model is extended from Aaker's book 'Managing Brand Equity' branding theory mentioned several times above, in which Aaker defines the key elements of branding, which are mainly related to the aspects of brand loyalty, brand recognition, brand association, sensory quality, and other brand assets.

Zhang et al. proposed the brand pyramid theory model by combining Aaker's theory and the theories of other brand-related scholars (Figure 28). To summarise brand culture into four dimensions: enterprise culture, products and services, brand personality and philosophy, and brand attribution. Brand culture is based on enterprise culture, with products and services as the carrier, through the concept, personality, reputation, and other brand spirit shaping, and ultimately make the user of the brand produce a sense of belonging (Zhang et al., 2009). Later Zhang et al. further developed a brand culture measurement tool through the brand culture pyramid to measure the four dimensions of a brand's culture (Ding & Zhang, 2010).

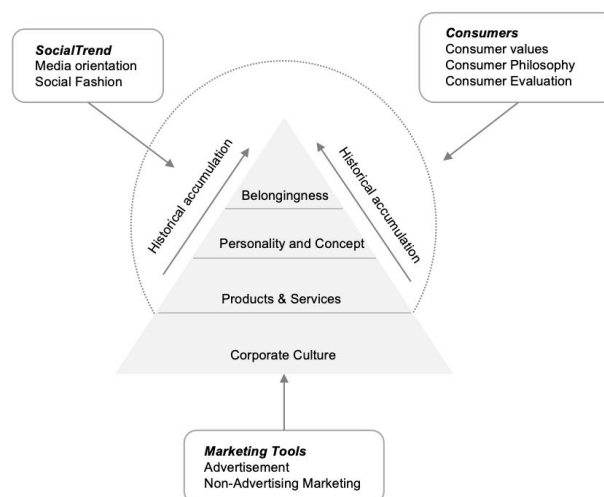


Figure 28, Brand Culture Pyramid Model

Source: (Zhang et al., 2009).

Through Aaker's brand model theory and the brand culture pyramid model of

the characteristics and direction of the brand culture involved, combined with the museum branding, this paper reflects on the branding of the most influential factors as the museum branding competition needs to be considered in the aspect of the brand, where the brand's reputation, product and service, brand recognition, brand quality, brand association, brand publicity and brand value were taken into account and examined as the main direction of museum branding.

4.2.4 Theoretical models of sociocultural values

As an important driver of consumer behavior, sociocultural values profoundly influence people's lifestyles, consumption choices, and brand preferences. In the process of museum branding, the role of sociocultural value is particularly significant, because museums are not only the guardians of cultural heritage but also the disseminators of cultural values. To measure the influencing factors of sociocultural values, the Schwartz Values Survey (SVS) has been widely used in the research field. The scale is based on extensive cross-cultural research that identifies the types of values that are prevalent across cultures and societies and through which consumer behavior patterns are explained. The aim is to quantify individual value preferences and to reveal commonalities and differences in these preferences across cultures. The scale defines ten basic values dimensions including universality, charity, power, achievement, hedonism, stimulus-seeking, self-direction, tradition, conformity, and security (Schwartz, 1992). These dimensions reflect an individual's ranking of important goals in life and cover a wide range of values from individualism to

collectivism. These types of values guide decision-making and behavior at the individual level and constitute a value system shared by the group at the socio-cultural level. Since the scale was proposed, it has been validated in several countries and regions, demonstrating its broad cross-cultural applicability. In academic research, the scale has been widely used in psychology, sociology, marketing, and other fields to help researchers gain a deeper understanding of value differences in different cultures and their impact on consumer behavior.

For example, consumers in different social environments perceive purchases differently, which is directly influenced by the values that society and consumers have always embraced, and the concerns of the products that consumers buy are also affected to varying degrees (Pan , 2009). This is an important factor that museum branding needs to consider when developing and marketing cultural products, which is why there are cultural heritage products with different aesthetic styles from different regions. At the same time, the consumption of cultural heritage products for phase museums is also influenced by the aesthetics of nostalgic factors triggered by cultural values (Guo & Sun, 2016), which also provides a theoretical basis for the design and dissemination of such products.

Therefore, the application of Schwartz's values scale in museum branding can provide theoretical support for the development of branding strategies. Museums can use the scale to analyze and understand the values of the target audience, and then make more precise decisions in brand positioning, exhibition planning, educational program design, and so on so that they can better analyze the audience. Ensure that

the brand message is compatible with the values of the target audience and improve the communication effect of the brand message.

4.3 Theoretical Modelling of Museum Cultural Heritage Design and Branding

4.3.1 Research modelling of museum branding of cultural heritage

From the analysis of the above model, combined with the current situation of design and branding of cultural heritage in museums, the relationship between design, consumption, and museum branding can be considered from both internal and external perspectives, and based on the model of the Three Levels of Culture Theory, sociocultural values, branding theories and the SICAS model a research framework can be drawn up in terms of correlations on the influencing factors of cultural heritage branding in museums (Figure, 29). In this framework, museums and consumers are situated in social and cultural environments, influenced by experience and socialization, and have a profound impact on the development and engagement of museums. Consumers are first and foremost influenced by external factors when confronted with products of museums and their cultural heritage, which are the visualization of the product, the environment and space in which it is situated, the interactions, and the activities associated with it (Vannicola, 2018). These tangible products and interactions influence the internal, which is the intangible part of the audience through perception, such as the conscious experience, and the behavioral level, which further influences the brand customers to react to the brand and share the communication. On the other hand, museum branding builds brand loyalty through

services, products, and marketing, and influences audience perception of the brand through communication. These factors are interrelated and interact with each other.

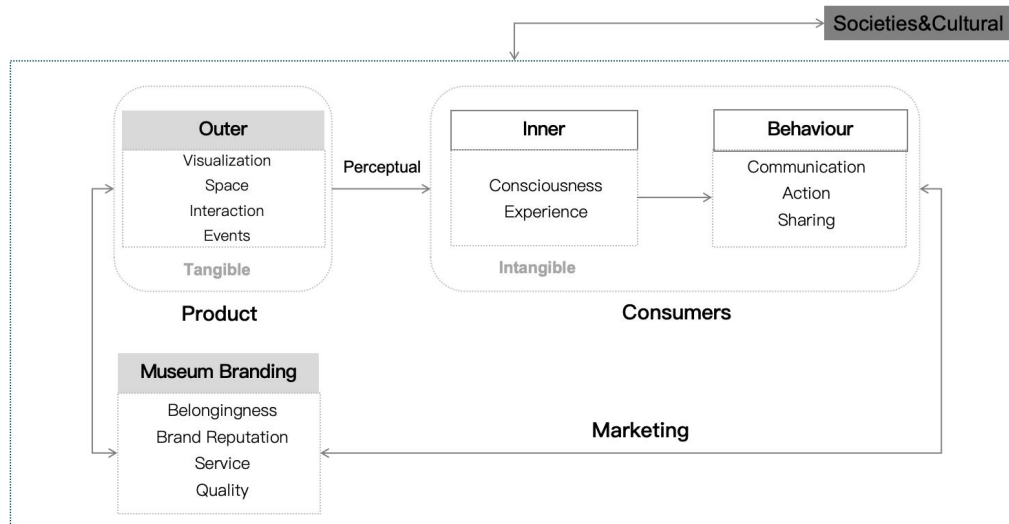


Figure 29, Relationship between Museum Cultural Brands, Products and Consumers

Source: Made by the author

After researching the theory and assumptions related to the correlation model and museum branding and cultural heritage design, the social environment of the museum, the product design of cultural heritage, the influence of the museum branding, and the communication effect will have a mutual correlation between the cognitive-emotional and purchasing behaviors of the audience. Therefore, in the model construction, the social and environmental effect, design effect, brand effect, and communication effect are taken as independent variables, and the cognitive-emotional and purchasing behavior are taken as dependent variables, to construct the basic model of the purchasing factors influenced by the cultural heritage design and communication of the museum branding (as shown in Figure,30). The variables interact with each other and are verified by the model of structural equations

in the later study.

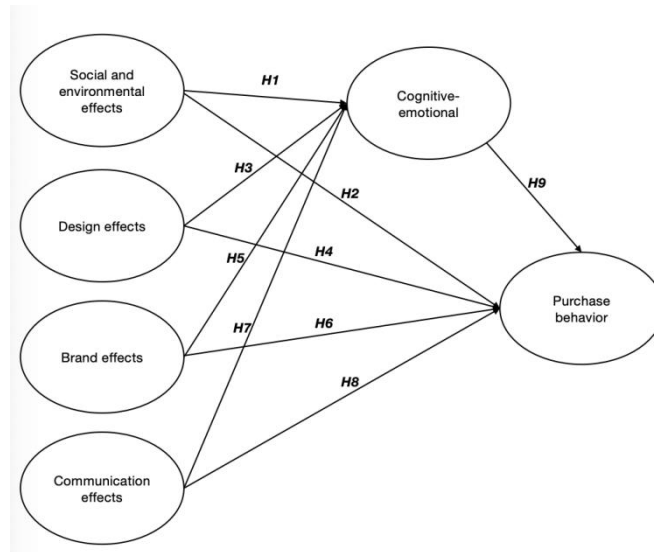


Figure 30, Basic model of the purchasing factors influenced by the cultural heritage design and communication of the museum branding

Source: Made by the author

4.3.2 Design of questionnaire research on museum branding for cultural heritage

Based on the models and research above, a self-administered questionnaire was developed for this study, which used the models and scales analyzed above that were validated through the relevant literature (see Appendix for all items of the survey). The questionnaire's item section was divided into two sections of content: the basic information and questionnaire research section, and the scale questions. The basic information part of the questionnaire contains five basic information questions, such as the age, gender, occupation, nationality, and other information of the test subjects; and five non-scale research questions including single and multiple choice questions, such as the number of times of visiting museums, the number of times and ways of purchasing museum products, and so on. The aim is to examine the basic

level of the respondents' concern for museums and products. The second part, starting from the hypothesis, has four independent variables and two dependent variables totaling six dimensions, and develops a total of 31 question items based on the model and concerning previous scale research. The specific question sets were: in the sociocultural section, the scale of Schwartz et al. (2001) was used as a reference, which drew on the 10 general types of values motivation across the four dimensions in the study; In the branding section, the model of branding research of Aaker (1991) and Zhang et al. (2009) was used as a reference; and in the perception section, the scale of Leong and Clark's (2003) three levels of cultural theory and design factors as a reference; and finally, in terms of behavior and digital, the SICAS model was used as a reference. The relevant aspects of these scales and models were also collated and sorted, and adjusted for additions and deletions based on the understanding and practicality of each variable. Finally, the language was adapted to fit the context of museum cultural heritage communication design and branding (Table, 5) , and the questionnaire used a 5-point Likert scale to evaluate the comments on each question item (1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree). A preliminary set of questionnaires was eventually developed. After evaluation by relevant experts and scholars, the structure of the questionnaire was adjusted, and the number of questions was reduced to 28, of which 5 questions were set for each independent variable according to the direction of the investigation, and 4 questions were set for each dependent variable.

Questionnaire Scale Items and References				
Scale classification	Question No.	Questions	Keywords	Reference sources
Independent Variables				
Social and environmental effect (SE)	SE1	I care about museum merchandise as a way of contributing to my efforts to spread museums and culture	Ubiquity	Schwartz (2001)
	SE2	I will buy museum brand merchandise because it gives me a sense of fulfillment when I buy it.	Rights	
	SE3	I'll be looking at museum merchandise because it's popular or because everyone is buying it.	Compliance	
	SE4	I used to see a lot of advertisements and promotions related to museum branding	Dissemination	Zhang et al. (2009)
	SE5	I think I will be more likely to buy the museum brand products in a museum environment	Space	Leong& Clark (2003)
Design effect (DE)	DE1	I prefer to buy museum products that are more about beauty than functionality.	Shape	Leong& Clark (2003)
	DE2	I would prefer museum products with traditional cultural styling.	Aesthetic	
	DE3	I would be more likely to buy a museum products because it gives me a different feeling than other types of products	Perception	
	DE4	I would be more likely to buy museum products that are interactive or watch digital interactive exhibitions of museums.	Interaction	
	DE5	I think it better for museum products to have as much functionality as possible	Functionality	
Branding effect (BE)	BE1	I prefer to buy museum branding because of its reputation in the community.	Brand Reputation	Aaker (1991) &Zhang et al.(2009)
	BE2	I am more likely to buy products with some museum brand identity.	Brand Identity	
	BE3	I prefer the product of some museums brand because I think the quality of	Brand Quality	

Communication effect (CE)		their product is good.		
	BE4	Co-branding of museums with other brands would be more appealing to me.	Brand association	
	BE5	I want to buy museum branding products because I see the value and significance of the brand.	Brand Value	
	CE1	Compared to offline visits, I am more attracted to museum culture promotion on the internet and in the media.	Digital Perception	
	CE2	I prefer interactive and entertaining cultural and creative experiences such as games and digital interactions to ordinary cultural heritage products.	Interaction	
Communication effect (CE)	CE3	When I see a favourite museum's promotion or related products on the internet or in the media, it will motivate me to visit or purchase them offline.	Action	SICAS Modle (2011)
	CE4	I will share my favourite museum products or activities with my friends.	Sharing	
	CE5	I will follow the information and advertisements of the museum branding I like on the internet regularly.	Communicat e	
Dependent variable				
Cognitive Emotion (CEM)	CEM1	I prefer a complete, immersive museum visit and purchase experience.	Experiencin g	
	CEM2	I feel more emotionally connected to museum products than to general merchandise.	Emotion	Leong& Clark (2003)
	CEM3	I usually buy museum merchandise as a souvenir of my visit and as a memory for the future.	Memory	
	CEM4	I prefer the novelty and cute design of museum products to ordinary replicas.	Stimulation	Schwartz (1994)
Purchasing Behaviour (PBH)	PBH1	I will buy museum products as part of my museum experience.	Impulse to buy	
	PBH2	I prefer to buy museum products with artistic and aesthetic value	Product Design	
	PBH3	My impression of a museum branding determines whether or not I buy the museum's products.	Brand Loyalty	Aaker (1991)

PBH4	The publicity of online media has a strong influence on my visit to museums and my purchase of museum products.	Disseminati on impact
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Table, 5 Questionnaire Scale Items and References

The scale adopts a 4 (independent variables: social and environmental effects, design effects, branding effects, communication effects) * 2 (dependent variables: cognitive and affective, purchasing behaviors) question set. Using SPSS and AMOS statistical software, the structural equation model that examines the cognition and purchase intention related to museum branding and cultural heritage with independent variables and dependent variables will be used as the basis to mainly measure the role of users' influence on museum cultural heritage products and brands, and the study examines the interrelationships among the variables and verifies the research hypotheses and results analysis.

For the setting of measurement items, the relevant indexes were set according to the theory as:

1, Independent variables

(1) Social and environmental effects were adopted from Schwartz value motivation and Zhang et al.'s(2009) pyramid model of branding culture as well as the spatial part of the three-level theory model of culture, combined with the social, cultural and environmental effects of the museum branding. It was examined in terms of universality, rights, compliance, publicity and space. The questions for the social and environmental effects (SE) were set as SE1 - I care about museum merchandise as a way of contributing to my efforts to spread museums and culture; SE2 - I will buy

museum brand merchandise because it gives me a sense of fulfillment when I buy it; SE3 - I'll be looking at museum merchandise because it's popular or because everyone is buying it; SE4 - I used to see a lot of advertisements and promotions related to museum branding; SE5 -I think I will be more likely to buy the museum brand products in a museum environment.

(2) The design effect mainly adopts Leong & Clark's (2003) cultural three-level theoretical model and adjusts it with the relevant theoretical and practical basis of museum product design, examining five aspects, namely, appearance, aesthetics, perception, interaction and functionality, and the questions of the design effect (DE) are set as follows: DE1-I prefer to buy museum products that are more about beauty than functionality; DE2 - I would prefer museum products with traditional cultural styling; DE3 - I would be more likely to buy a museum products because it gives me a different feeling than other types of products; DE4 - I would be more likely to buy museum products that are interactive or watch digital interactive exhibitions of museums; and DE5 - I think it better for museum products to have as much functionality as possible.

(3) The brand effect mainly adopts the brand research model of Aaker (1991) and Zhang et al.(2009) as the basis, through the theoretical research on museums, and sets up the relevant question items of brand effect (BE) from the directions of brand reputation, brand identity, brand quality, brand association and brand value: BE1-I prefer to buy museum branding because of its reputation in the community; BE2-I am more likely to buy products with some museum brand identity; BE3-I prefer the

product of some museums brand because I think the quality of their product is good.

BE4-Co-branding of museums with other brands would be more appealing to me;

BE5-I want to buy museum branding products because I see the value and significance of the brand.

(4) The communication effect is mainly developed based on the SICAS model, with reference to the five characteristics of the SICAS model and combined with the digital communication characteristics of museums, with the main directions of digital perception, interaction, communication, action and sharing. Therefore, the title of communication effect (CE) is: CE1-Compared to offline visits, I am more attracted to museum culture promotion on the internet and in the media; CE2-I prefer interactive and entertaining cultural and creative experiences such as games and digital interactions to ordinary cultural heritage products; CE3-When I see a favourite museum's promotion or related products on the internet or in the media, it will motivate me to visit or purchase them offline; CE4 - I will share my favourite museum products or activities with my friends; CE5 - I will follow the information and advertisements of the museum branding I like on the internet regularly.

2. Dependent variable. The relevant question components of the dependent variable are mainly divided into the cognitive-emotional part and the purchasing behavior part, consisting of two indicators and eight questions. For the cognitive-emotional part from the main functions of the museum products on the audience's cognitive-emotional factors or by Leong & Clark (2003) of the cultural three-level theory and Schwartz values of the stimulus elements of the study, the main

key points in the examination of the experience, emotion, memory, stimulation of several aspects of cognitive-emotional (CEM) questions are set as follows: CEM1 - I prefer a complete, immersive museum visit and purchase experience; CEM2 - I feel more emotionally connected to museum products than to general merchandise; CEM3 - I usually buy museum merchandise as a souvenir of my visit and as a memory for the future; CEM4 - I prefer the novelty and cute design of museum products to ordinary replica. In the Purchasing Behaviour section, in an analysis of Gilmore & Pine (1998) and previous literature on museum purchasing behaviors set in terms of impulse to buy the product, design of the product, brand loyalty and communication impact, the question items for purchasing behaviors (PBH) were PBH1- I will buy museum products as part of my museum experience; PBH2- I prefer to buy museum products with artistic and aesthetic value; PBH3-My impression of a museum branding determines whether or not I buy the museum's products; and PBH4-The publicity of online media has a strong influence on my visit to museums and my purchase of museum products. The items of the dependent variable also asked the subjects to judge the ratings of each item using a 5-point Likert scale (1 = Strongly Agree,, 5 = Strongly Disagree).

The initial questions of the questionnaire were set in Chinese and translated into English. In the research, since the sample of the research was mainly in Chinese-using areas, the questionnaire was mostly in Chinese for easy understanding. The research was distributed through Internet questionnaires and through China's online questionnaire platform, Wenjuanxing(<https://www.wjx.cn/>), and covered as

many people as possible. Finally, in order to ensure the accuracy of the research and not be affected by expectation bias, the relevant confidentiality principles were stated in the explanatory letter of the survey, which ensured the anonymity of the participants and the confidentiality of the researchers, as well as the principle of voluntary and uncompensated participation of the interviewees.

Chapter 5: Analytical Study of Museum Cultural Heritage Communication Products and Branded Consumption

5.1 Descriptive Statistical Analysis of the Questionnaire Survey

The questionnaire for this study was distributed in 2024 and was released through the Chinese online questionnaire platform ‘Wenjuanxing’ and filled out freely. A total of 330 questionnaires were collected. After excluding incomplete or invalid responses regarding the scope of the study, 302 valid questionnaires were selected, with a validity rate of 84.8%. The main population of the survey was tourists and consumers in China who had made museum visits and purchases. The respondents were first asked to fill in the first part of the questionnaire, that is, the research part of the questionnaire, which mainly includes the basic information and the research related to the consumption of museum products. In the basic research part (as shown in Table.), the age of most of the respondents is concentrated in 25-40 years old, accounting for 36.1%; 24.2% of the respondents in the age group of 10-25 years old, and 26.2% of the respondents in the age group of 40-55 years old, and the respondents of these three age groups accounted for 86.5% of the whole. The gender share of the

survey respondents was relatively even, but the proportion of women was larger, accounting for 54.6%, while men accounted for 45.4%. Among the careers of the survey respondents, the proportion of freelancers and corporate employees is higher, accounting for 67.9% of the overall career ratio. In terms of the number of times they visited museums in the past year, two times accounted for the highest percentage, accounting for 41.1%, one time was the second highest, accounting for 23.5%, and three times and more than three times accounted for 16.9% and 18.5% respectively. It can be seen that research participants visit museums relatively more frequently and have a certain sense of identification with museums. Among them, the number of offline visits to the museum to buy museum products 1-2 times accounted for 67.2%, 3 times and more than 3 times accounted for 20.2% and 12.6%, so for most of the offline visits, the last museum cultural heritage products purchase rate is relatively high, the majority of the surveyed tourists are inclined to carry out a one-time or multiple purchases of cultural heritage products as a souvenir of the visit to continue the visit to the museum. Consumers who purchased museum products online purchased more than 2-5 times, accounting for 42.5%, which is related to China's relatively convenient shopping platform and logistics system. For offline visits that are inaccessible, a part of tourists will still look at the museum branding and product design to purchase online.

Descriptive statistical analysis of results 1:

		Frequency	Percentage
Age	10-25	73	24.2
	25-40	109	36.1
	40-55	79	26.2
	55-70	35	11.6
	70+	6	2.0
Genders	Male	137	45.4
	Female	165	54.6
Career	Civil Servants	17	5.6
	Teachers	22	7.3
	Freelancers	102	33.8
	Corporate	103	34.1
	Students	22	7.3
	Designer	21	7.0
	Researchers	3	1.0
	Others	12	4.0
	1	71	23.5
	2	124	41.1
How many times have you visited museums in the last year?	3	51	16.9
	More than 3 times	56	18.5
How many times have you purchased cultural heritage products offline at the museum?	1	101	33.4
	2	102	33.8
	3	61	20.2
	More than 3 times	38	12.6
How many times have you purchased cultural heritage products offline at the museum?	1times	124	41.1
	2-5times	129	42.7
	More than 5 times	49	16.2

Table, 6 Descriptive statistical analysis of results 1

The multi-choice questions in the research part of the questionnaire were also set to examine the channels and focus of consumers' purchasing of museum products. These questions were set to investigate the proportion of the respondents who participated in the consumption of cultural heritage products through multiple channels and the main direction of their focus on cultural heritage products. Among

them, the largest proportion of museums' cultural products purchasing ways are museums' official online shopping malls and online third-party shopping platforms, accounting for 59.3% and 52%, respectively, but there is a crossover between the two because some of China's museums online official shopping malls are often official flagship shops stationed on third-party platforms. And through the results of the museum's offline shops accounted for 40.1% of the purchase rate, the offline third-party souvenir shops accounted for 30.1% of the purchase rate, the proportion of offline purchases is not as much as online, the purchase method is not as convenient and free as online but also has a certain degree of attraction to the consumers, a portion of the consumers will choose to buy offline, and at the same time for the official shops or third-party shops does not have a great deal of difference. The difference between official stores and third-party stores is not big. Due to the regional and limited nature of the exhibition, the proportion of consumers who purchased at the exhibition was not large, accounting for 14.9% (Table,7).

Results of the analysis of pathways to purchase museum cultural heritage products:

Options	Frequency	Percentage
Museum offline shops	121	40.1
Museum official online shop	179	59.3
Online third-party shopping platforms (e.g. Taobao, Jingdong, Amazon, etc.)	157	52.0
Offline third-party souvenir shops	91	30.1
Exhibitions	45	14.9
Others	4	1.3

Table, 7 Results of the analysis of pathways to purchase museum cultural heritage

products

Regarding the focus of museum visits, most visitors focus on the cultural and

educational aspects of museums, accounting for 57.3%. Therefore, cultural dissemination is still the main concern of museums, and the display of museum exhibits is also the focus of visitors, which is also the main aspect of the function of museums, and can also be used as the main direction of cultural heritage design. In addition, the attention to the public facilities of the museum reaches 42.4%, and the audience prefers to get a good experience in the museum, and the environment and public facilities of the museum become the key aspects of visitors' attention. Meanwhile, the museum shop also occupies a certain proportion of attention here, with 38.4% as part of the visitors' experience in the museum, which is also considered as a key aspect. Finally, there is a decrease in interest in digital displays, services, and experiences, but there is a relatively small segment of the population that is interested in the integrity of the museum experience and wants to have a complete experience at the museum.

An analysis of the results of the focused aspect of the museum visit:

Options	Frequency	Percentage
Exhibits	124	41.1
Cultural and Educational	173	57.3
Public Facilities	128	42.4
Museum Shop	116	38.4
Digital Interactive Display	84	27.8
Services	42	13.9
Experiential Activities	27	8.9

Table, 8 Analysis of the results of the focused aspect of the museum visit

In order to understand the basic situation of the scale, after analyzing the samples mentioned above, and then combining the dimensions of the scale in the

second part of the scale, the dimensions in the scale were analyzed using descriptive statistics to get an overall grasp of the overall feelings of the survey respondents, as well as the maximum, minimum, and average values under the dimension, and the results of the analyses are shown in the table below (Table, 9) :

	Minimum value	Maximum value	Mean value	Standard deviation
	Statistics	Statistics	Statistics	Statistics
Social and environmental effect	1.20	5.00	3.1755	1.04035
Design effect	1.20	5.00	2.9728	1.00175
Branding effect	1.00	5.00	3.0391	1.03773
Communication effect	1.00	4.80	3.0066	1.06766
Cognitive Emotion	1.25	5.00	3.0877	.98397
Purchasing Behaviour	1.00	5.00	3.0538	1.06467

Table, 9 Analysis of the dimensions of the scale

After the basic analysis of the first part of the above questionnaire, it is possible to have some basic information about the consumers of the museum and their basic attitudes towards the museum and its products and to have a basic picture of the researched people in order to better analyze the next part of the scale.

5.2 Statistical Analysis of Questionnaire Data

In the analysis of the second part of the questionnaire, the scale part, the reliability and validity of the scale were first analyzed based on the measurement and statistical methods. Descriptive statistics, reliability analysis, validity analysis, independent samples t-test, one-way ANOVA, correlation analysis, validation factor analysis, and structural equation analysis were performed on the questionnaire using statistical software such as SPSS and AMOS. To ensure the validity of the questionnaire and the accuracy of the results.

(1) Reliability analysis

Reliability refers to the consistency and stability of the results obtained by an assessment tool at different points in time or in different contexts, and it is a key indicator of the replicability of a study. A measurement instrument can only be considered reliable and valid if it exhibits high reliability. Reliability reflects the likelihood of obtaining consistent results when the same instrument is used repeatedly to measure the same trait or the consistency between questions within the measurement instrument. In short, higher reliability means lower measurement error and the more the results truly reflect the trait being measured, independent of random error. Thus, reliability can be interpreted as the stability of the measurement results, indicating the extent to which the results are resistant to the effects of random variation.

In the reliability analysis of the scale data, the study used the L.J. Cronbach Alpha (α) reliability analysis method, and the use of SPSS statistical software to calculate the collected data. Cronbach's Alpha coefficient generally reaches 0.7 or more, which can be a response to the questionnaire's reliability is higher, and can be further analyzed in depth.

From the table below, it can be seen that the Cronbach's Alpha coefficient of the questionnaire in this research is $0.929 > 0.7$. The Cronbach's Alpha coefficient for the social and environmental effect is $0.899 > 0.7$, the Cronbach's Alpha coefficient for the design effect is $0.881 > 0.7$, the Cronbach's Alpha coefficient for the brand effect is $0.890 > 0.7$, and the Cronbach's Alpha coefficient of the communication effect is 0.901

> 0.7, Cronbach Alpha coefficient of cognitive-emotional is 0.857 > 0.7, and Cronbach Alpha coefficient of purchasing behavior is 0.874 > 0.7. At the same time, the CITC is greater than 0.4, and the Cronbach coefficients of the deleted are all smaller than those of the dimensions, which indicates that the questionnaire has a high degree of overall reliability.

	Designation	CITC	Deleted alpha coefficients for items	Cronbach's alpha coefficient (dimension)	Cronbach alpha coefficient
Social and environmental effect (SE)	SE1	0.749	0.876	0.899	
	SE2	0.747	0.877		
	SE3	0.770	0.872		
	SE4	0.744	0.878		
	SE5	0.736	0.879		
Design effect (DE)	DE1	0.722	0.853	0.881	
	DE2	0.757	0.845		
	DE3	0.714	0.855		
	DE4	0.704	0.857		
	DE5	0.674	0.864		
Branding effect (BE)	BE1	0.713	0.870	0.890	0.929
	BE2	0.722	0.868		
	BE3	0.757	0.860		
	BE4	0.722	0.868		
	BE5	0.746	0.863		
Communication effect (CE)	CE1	0.741	0.881	0.901	
	CE2	0.772	0.874		
	CE3	0.749	0.879		
	CE4	0.766	0.876		
	CE5	0.734	0.883		
Cognitive Emotion	CEM1	0.724	0.809	0.857	
	CEM2	0.701	0.819		

	Designation	CITC	Deleted alpha coefficients for items	Cronbach's αcoefficient (dimension)	Cronbach αcoefficient
(CEM) Purchasing Behaviour (PBH)	CEM3	0.707	0.816	0.874	
	CEM4	0.674	0.829		
	PBH1	0.753	0.830		
	PBH2	0.715	0.845		
	PBH3	0.733	0.837		
	PBH4	0.719	0.843		

Table, 10 Cronbach's alpha coefficient for each dimension of the scale

(2) Validity analysis

Validity is a measure of the accuracy of a measurement tool that ensures that differences in measurement results truly reflect changes in the qualities of the subject being measured and are not caused by fixed or random errors in the measurement. A measurement tool that has high validity means that it accurately captures the essential characteristics of the object being measured. Therefore, ensuring its high validity is a crucial consideration when designing and selecting a measurement. In short, the level of validity is directly related to the credibility and usefulness of the measurement results (Cai, 2010).

In this paper, validity analysis was conducted using the factor analysis method. Invalidity analysis, generally speaking, the questionnaire analysis is suitable for factor analysis when the KMO value remains above 0.7. As can be seen from the table below, the value obtained from the KMO test is $0.919 > 0.7$ and the Bartlett Bartlett Sphericity Test Sig is $0.000 < 0.001$, which is significant and valid at the 0.001 level,

therefore the data is suitable for factor analysis.

KMO and Bartlett Test		
KMO Number of Sampling Suitability Measure.		0.919
Bartlett sphericity test	Approximate chi-square	4971.161
	Degree of freedom	378
	Significance	0.000

Table, 11 KMO and Bartlett Test

Through further in-depth analysis, from the table below, it can be concluded that the total variance explained by the factors extracted from the questionnaire is 71.071% because, in factor analysis, joint explanatory variables that can reach more than 60% indicate that the factors have better explanatory power (Wu, 2010). The six factors extracted were able to retain the original data information more completely. Meanwhile, the extracted variance of the unrotated first-factor loadings is 34.330%, which is lower than 40%, indicating that the questionnaire does not have serious common method bias.

Total variance interpretation									
Ingredient	Initial eigenvalue			Extract the sum of squared loads			Rotational load sum of squares		
	Total	Percent variance	Accumulated %	Total	Percent variance	Accumulated %	Total	Percent variance	Accumulated %
1	9.612	34.330	34.330	9.612	34.330	34.330	3.619	12.926	12.926
2	2.441	8.719	43.049	2.441	8.719	43.049	3.609	12.890	25.816
3	2.181	7.788	50.837	2.181	7.788	50.837	3.554	12.692	38.508
4	2.011	7.182	58.018	2.011	7.182	58.018	3.381	12.073	50.581
5	1.903	6.796	64.814	1.903	6.796	64.814	2.921	10.431	61.013
6	1.752	6.257	71.071	1.752	6.257	71.071	2.816	10.058	71.071
7	.593	2.117	73.188						
8	.546	1.949	75.137						
9	.505	1.803	76.940						
10	.497	1.776	78.716						
11	.481	1.719	80.435						
12	.464	1.656	82.091						
13	.435	1.555	83.645						
14	.401	1.434	85.079						
15	.379	1.352	86.431						
16	.375	1.339	87.770						
17	.351	1.253	89.024						
18	.342	1.221	90.245						
19	.337	1.205	91.450						
20	.332	1.184	92.634						
21	.316	1.128	93.762						
22	.298	1.065	94.828						
23	.271	.970	95.797						
24	.262	.934	96.732						
25	.245	.874	97.606						
26	.236	.844	98.450						
27	.222	.791	99.241						
28	.213	.759	100.000						

Extraction method: principal component analysis.

Table, 12 Total variance interpretation

According to the factor loadings in the table below (Table,12) , it can be seen that the questions fall into the corresponding predefined dimensions. This indicates that the structural validity of the questionnaire is good and the data obtained from the

questionnaire can be used for further analysis. Here the six factor loadings were rotated to obtain the rotated component matrix in the table below. It can be seen that the questions and variables correspond to each other, and overall the scale, with high reliability and validity, is reliable and valid, and can be better used in research and analysis.

Rotated component matrix^a						
	Ingredient					
	1	2	3	4	5	6
(SE)-SE1	.777					
SE2	.814					
SE3	.786					
SE4	.799					
SE5	.779					
(DE)-DE1				.766		
DE2				.772		
DE3				.749		
DE4				.766		
DE5				.725		
(BE)-BE1			.774			
BE2			.787			
BE3			.809			
BE4			.799			
BE5			.809			
(CE)-CE1		.802				
CE2		.800				
CE3		.779				
CE4		.838				
CE5		.754				
(CEM)-CEM1						.791
CEM2						.771
CEM3						.798
CEM4						.770
(PBH)-PBH1					.810	
PBH2					.807	
PBH3					.794	
PBH4					.784	

Extraction method: principal component analysis.

Rotation method: Kaiser normlized maximum variance method.

a. Rotation has converged after 6 iterations.

Table, 13 Rotated component matrix

(3) Demographic difference analysis

Demographic difference analysis is a research methodology that involves comparing and analyzing the statistical data of different demographic groups in order to identify and explain differences in specific characteristics or behaviors of these groups. In this paper, the demographic profiling of the age, gender, and occupation of the respondents are analyzed to understand the performance and trends of different groups subjected to social and environmental effects, design effects, communication effects, and cognitive-emotional and purchasing behaviors.

①Analysis of differences in each variable by age

To analyze the table of differences between the different ages on each variable, this research uses a one-way ANOVA method, the test statistic is the F statistic, if the F statistic corresponds to a p-value less than 0.05, it means that there is a significant difference, and vice versa, there is no significant difference.

	1. Age: (mean ± standard deviation)					F	p
	10-25 (n=73)	25-40 (n=109)	40-55 (n=79)	55-70 (n=35)	70+ (n=6)		
SE	2.98±1.00	3.40±1.01	3.20±0.97	2.94±1.21	2.43±1.05	3.237	0.013*
DE	2.72±0.87	3.28±1.01	2.99±0.96	2.65±1.10	2.17±0.67	6.040	0.000***
BE	2.75±0.98	3.40±0.97	3.05±1.02	2.58±1.09	2.60±0.95	7.191	0.000***
CE	2.79±1.07	3.39±0.95	2.91±1.00	2.62±1.19	2.13±1.05	7.152	0.000***
CEM	2.83±0.94	3.25±0.91	3.15±0.99	3.07±1.13	2.58±1.30	2.586	0.037*
PBH	2.68±0.98	3.55±1.02	2.88±0.95	2.80±1.08	2.46±0.86	10.938	0.000***

* $p < 0.05$ ** $p < 0.01$

Table, 14 Analysis of differences in variables by age

From the above table, it can be seen that: the samples of different ages show

significance ($p < 0.05$) for social and environmental effects, design effects, branding effects, communication effects, cognitive-emotional, and purchasing behaviors, which means that the samples of different ages have differences in social and environmental effects, design effects, branding effects, communication effects, cognitive-emotional, and purchasing behaviors. Specific analyses show that:

Age for social and environmental effects showed a 0.05 level of significance ($F=3.237$, $p=0.013$), as well as specific comparison of the differences can be seen, there is a more obvious difference between the group mean scores comparison results for '25-40 years old > 10-25 years old; 25-40 years old > 55-70 years old; 25-40 years old > 70+ years old '.

The design effect of age is significant at the 0.01 level ($F=6.040$, $p=0.000$), and the differences in the specific comparisons show that the group mean scores that are more significantly different are '25-40 > 10-25; 25-40 > 40-55; 25-40 > 55-70; 25-40 > 70+; 40-55 > 70+'.

The brand effect of age is significant at the 0.01 level ($F=7.191$, $p=0.000$), as well as the specific comparison of differences can be seen, there is a more significant difference in the comparison of group mean scores for the results of '25-40 years old > 10-25 years old; 25-40 years old > 40-55 years old; 25-40 years old > 55-70 years old; 40-55 years old > 55-70 years old'.

The effect of age on communication is significant at the 0.01 level ($F=7.152$, $p=0.000$), and the differences in the specific comparisons show that there is a significant difference in the mean scores of the groups with the comparison results of

‘25-40 years old > 10-25 years old; 25-40 years old > 40-55 years old; 25-40 years old > 55-70 years old; 25-40 years old > 70+ years old’.

Age shows a 0.05 level of significance ($F=2.586$, $p=0.037$) for cognitive emotion, as well as a specific comparison of the differences in the mean scores of the groups with more significant differences in the results of the comparison of the mean scores of the groups ‘25-40 years old > 10-25 years old; 40-55 years old > 10-25 years old’.

Age is significant for purchasing behavior at the 0.01 level ($F=10.938$, $p=0.001$), and the specific differences in the comparisons show that there is a significant difference in the mean scores of the groups that are ‘25-40 years old > 10-25 years old; 25-40 years old > 40-55 years old; 25-40 years old > 55-70 years old; 25-40 years old > 70+ years old’.

It can be seen that the age of each affects of the degree of influence of the young people aged 25-40 years old in the dimensions of the emergence of a stronger significance, more susceptible to the role of social and environmental effects, design effects, brand effects, communication effects, from the Earl influence cognitive-emotional and purchasing behaviors. This requires museums to develop marketing and communication programs for different groups of people, especially young people, who are the main consumers, to develop more attractive strategic programs.

②Analysis of differences in each variable by gender

In the analysis of the differences between the variables by gender, this study

used the independent samples t-test, the test statistic is the t-statistic, if the t-statistic corresponds to a p-value of less than 0.05, it means that there is a significant difference, and vice versa, there is no significant difference.

	2.Gender: (mean $\pm$ standard deviation)		<i>t</i>	<i>p</i>
	Male(<i>n</i> =137)	Female(<i>n</i> =165)		
SE	3.12 $\pm$ 0.97	3.22 $\pm$ 1.10	-0.813	0.417
DE	2.70 $\pm$ 0.91	3.20 $\pm$ 1.02	-4.479	0.000**
BE	2.81 $\pm$ 1.08	3.23 $\pm$ 0.97	-3.512	0.001**
CE	2.85 $\pm$ 1.04	3.13 $\pm$ 1.08	-2.279	0.023*
CEM	2.96 $\pm$ 0.98	3.19 $\pm$ 0.97	-2.039	0.042*
PBH	2.91 $\pm$ 1.03	3.17 $\pm$ 1.09	-2.115	0.035*

* $p < 0.05$ ** $p < 0.01$

Table, 15 Analysis of differences in variables by Gender

From the above table, it can be seen that the gender samples do not show significance ($p > 0.05$) for a total of 1 item of social and environmental effects, which means that the gender samples show consistency and no difference for all social and environmental effects. Gender samples show significance ($p < 0.05$) for design effect, branding effect, communication effect, cognitive-emotional, and purchasing behavior, which means that there are differences in design effect, branding effect, communication effect, cognitive-emotional, and purchasing behavior between gender samples. Specific analyses show that the design effect of gender is significant at the 0.01 level ($t = -4.479$, $p = 0.000$), and specific comparisons of the differences show that the average value of men (2.70) is significantly lower than the average value of women (3.20). Gender for the brand effect shows a 0.01 level of significance ($t = -3.512$, $p = 0.001$), as well as specific comparative differences, can be seen, the male average (2.81), will be significantly lower than the female average (3.23). Gender

shows a 0.05 level of significance ($t=-2.279$, $p=0.023$) for the communication effect, and the difference in specific comparisons shows that the male mean (2.85) is significantly lower than the female mean (3.13). Gender for cognitive emotion shows a 0.05 level of significance ($t=-2.039$, $p=0.042$), and the specific comparison difference can be seen, the male mean (2.96), will be significantly lower than the female mean (3.19). Gender shows a 0.05 level of significance for purchasing behavior ($t=-2.115$, $p=0.035$), and the difference in the specific comparisons shows that the mean for males (2.91) is significantly lower than the mean for females (3.17).

This shows that, excluding social and environmental influences, women are more susceptible to the effects of design, branding and communication, which influence cognitive-emotional and purchasing behaviors. The fact that women tend to be more easily guided in their consumption is related to the fact that capital shifted the focus of its promotion and consumption to women in the 19th century when urbanization and department stores began to emerge (Galluzzo, 2022). The perception and dissemination of the design of cultural heritage products in museums are similarly attractive to this group of consumers in terms of beautiful design and quality, reliable branding, and multiple channels of information, as can be seen from the museum research in Chapter 3, where many of the large museums have product categories such as jewelry, accessories, clothing, and bags aimed at the female demographic. Therefore, the perception of museum heritage by different groups is one of the key points to be considered in the museum branding strategy.

③ Analysis of differences in each variable by career

For the table analyzing the differences between the different careers on each variable, this study used one-way ANOVA with the test statistic being the F-statistic; if the F-statistic corresponds to a p-value less than 0.05, it indicates a significant difference, and vice versa, no significant difference.

3.Career: (mean ± standard deviation)										
	Civil Servants (n=17)	Teachers (n=22)	Freelancers (n=102)	Corporate (n=103)	Students (n=22)	Designer (n=21)	Researchers (n=3)	Others (n=12)	F	p
SE	2.73±1.37	2.95±1.27	3.12±0.95	3.28±0.97	3.47±1.05	3.25±1.17	2.73±1.4	3.2±1.01	1.143	0.336
DE	2.48±1.17	2.95±1.01	2.93±0.97	3.04±0.95	2.95±1.02	3.47±1.21	1.8±0.2	2.93±0.81	2.051	0.049*
BE	2.84±0.86	2.97±1.05	2.95±1.07	3.21±0.94	2.99±1.03	3.39±1.28	1.6±0	2.5±1.01	2.326	0.025*
CE	2.87±1.17	2.85±1.07	2.9±1.07	3.01±1.03	3.72±0.93	3.42±1.07	2.27±0.23	2.5±1	2.806	0.008**
CEM	2.71±0.93	3.01±0.97	3.12±0.94	3.11±1.02	3.39±0.97	3.26±1.03	2.5±0.66	2.58±1.03	1.409	0.201
PBH	2.72±1.04	3.23±1.16	3.08±1.1	3.06±1.04	3.09±0.87	3.14±1.16	2.25±0.5	2.92±1.13	0.621	0.739

* $p<0.05$ ** $p<0.01$

Table, 16 Analysis of differences in variables by Career

As can be seen from the above table: the samples of different careers do not show significance ($p>0.05$) for the social and environmental effects, cognitive emotions, and purchasing behaviors, which means that the samples of different careers show consistency and no difference for the social and environmental effects, cognitive emotions, and purchasing behaviors. Career samples show significance ($p<0.05$) for design effect, brand effect, and communication effect, which means that samples from different careers have differences for design effect, brand effect, and communication effect. Specific analyses show that: career for the design effect shows 0.05 level of significance ($F=2.051$, $p=0.049$), and a specific comparison of the

differences can be seen, there is a more obvious difference between the group mean score comparison results for 'designers>civil servants; corporate employees>civil servants; designers>freelancers; corporate employees>researchers; designers>researchers.

The branding effect of career is significant at the 0.05 level ($F=2.3265$, $p=0.025$), and the differences in the group mean scores are 'Teachers>Researchers; Freelancers>Researchers; Corporate Employees>Researchers; Students>Researchers; Designers>Researchers; Designers>Others; Corporate Employees>Other.

Career shows a 0.01 level of significance ($F=2.806$, $p=0.008$) for the communication effect, as well as specific differences in the comparison of the mean scores of the groups with more significant differences in the results of the comparison of the mean scores of the groups are 'Students>Civil servants; Students>Teachers; Students>Freelancers; Designers>Freelancers; Designers>Others; Students>Researcher; Students>Others'.

Therefore, the influence of career on museum products and branding is not a major consideration in museum strategy, although there are specific careers that are concerned with different dimensions of purchasing, which suggests that museums may have different expectations when it comes to appealing to different groups of people. In response to this, museums could consider developing relevant cultural heritage products and different communication channels for different specific groups.

(4) Regression analysis

Regression analysis was next used to examine the relationship between the

independent and dependent variables and to explore the extent to which the independent variables influence the dependent variables.

In this study, in order to investigate the influencing factors of cognitive affect, social and environmental effects, design effects, brand effects, and communication effects were used as independent variables, and cognitive affect as the dependent variable, which was analyzed using linear regression. According to the table below, it can be seen that the model R^2 is 0.264, the independent variables can explain 26.4% of the variance of the dependent variable, the model significance is less than 0.05, and the model fit is successful, which means that at least one of the independent variables can significantly influence the dependent variable. Finally, according to the model coefficients, it can be seen that the VIFs are all much less than 10 and there is no serious covariance. The social and environmental effect, design effect, brand effect, and communication effect have a significance of less than 0.05, and can significantly and positively influence cognitive emotions.

Results of linear regression analyses of cognitive-emotional factors (n=302)

	Unstandardised coefficient		Standardised coefficient	<i>t</i>	<i>p</i>	Collinearity diagnosis	
	<i>B</i>	Standard error	<i>Beta</i>			VIF	Tolerance
Constant	1.096	0.202	-	5.428	0.000**	-	-
SE	0.139	0.055	0.147	2.502	0.013*	1.385	0.722
DE	0.233	0.059	0.237	3.925	0.000**	1.472	0.680
BE	0.137	0.053	0.145	2.592	0.010*	1.255	0.797
CE	0.147	0.053	0.160	2.764	0.006**	1.347	0.742
<i>R</i> ²			0.264				
Adjust <i>R</i> ²			0.254				
<i>F</i>			<i>F</i> =26.598, <i>p</i> =0.000				
D-Wvalue			1.400				

<i>Results of linear regression analyses of cognitive-emotional factors (n=302)</i>							
	Unstandardised coefficient		Standardised coefficient	<i>t</i>	<i>p</i>	Collinearity diagnosis	
	<i>B</i>	Standard error	<i>Beta</i>			VIF	Tolerance
Dependent variable: CEM							
* <i>p</i> <0.05 ** <i>p</i> <0.01							

Table, 17 Results of linear regression analyses of cognitive-emotional factors

In the table above, social and environmental effects, design effects, brand effects, and communication effects are taken as independent variables, while cognitive emotions are taken as dependent variables for linear regression analysis. It can be seen that the regression coefficient value of social and environmental effect is 0.139 ($t=2.502$, $p=0.013<0.05$), which means that the social and environmental effect has a significant positive influence on cognitive emotion. The regression coefficient value of the design effect is 0.233 ($t=3.925$, $p=0.000<0.01$), implying that the design effect will have a significant positive influence on the cognitive effect. The regression coefficient value of brand effect is 0.137 ($t=2.592$, $p=0.010<0.05$), which means that brand effect will have a significant positive influence relationship on cognitive emotion. The regression coefficient value of the communication effect is 0.147 ($t=2.764$, $p=0.006<0.01$), which means that the communication effect will have a significant positive influence on cognitive emotion. To sum up, it can be seen that: social and environmental effect, design effect, brand effect, and communication effect all have a significant positive influence on cognitive emotion.

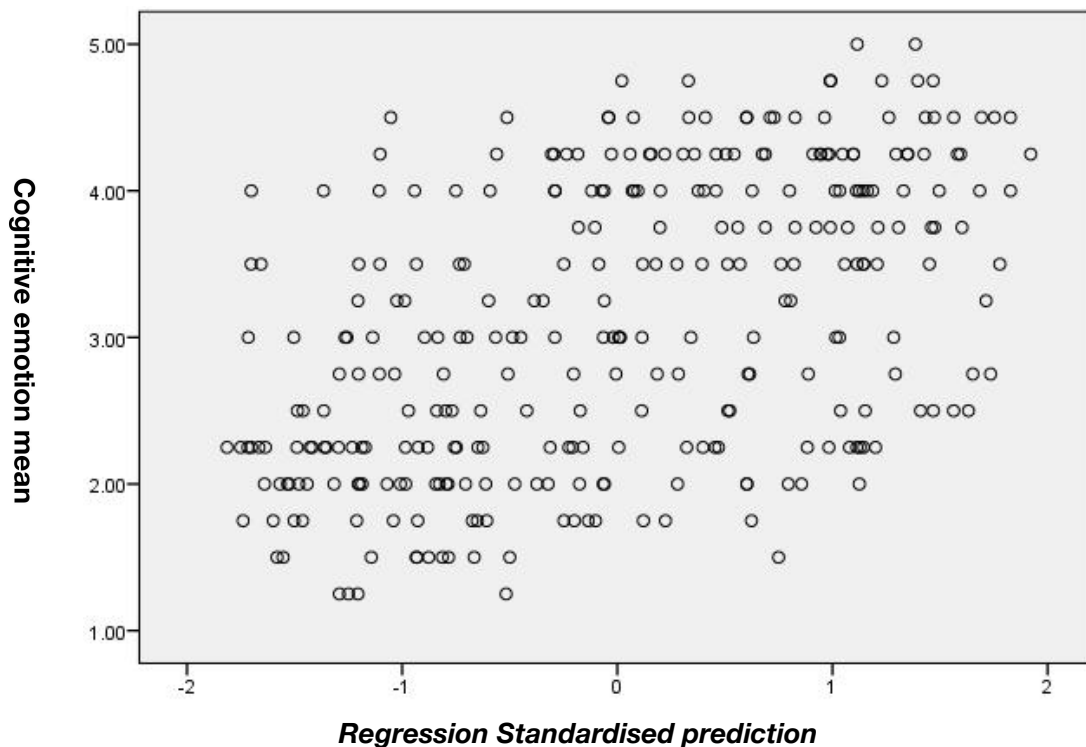


Figure 31, Scatterplot of cognitive-emotional mean

Source: Made by the author

From the scatter plot, the dependent variable is the cognitive effect. The range of values of cognitive emotion is from about 1.00 to 5.00. In this study, the scatter plot of the explanatory variables and the random error term in the regression model is plotted, and from the plot, it can be seen that the scatter plot of the residual term shows a disordered state, so it can be concluded that the regression model does not have heteroscedasticity which means that the variance of the error term in the model does not change according to the change of the independent variable, which indicates that the validity of the model and the reliability of hypothesis test are in a relatively satisfactory state.

To study the influencing factors of purchasing behaviour, social and

environmental effects, design effects, brand effects, and communication effects were used as independent variables, and purchasing behaviour was used as the dependent variable, and linear regression was used for the analysis. According to the table below, it can be seen that the model R² is 0.260, the independent variables are able to explain 26% of the variance of the dependent variable, the model significance is less than 0.05, the model fit is successful, which means that at least one of the independent variables can significantly influence the dependent variable. Finally, according to the model coefficients, it can be seen that the VIFs are all much less than 10 and there is no serious covariance. The social and environmental effect, design effect, brand effect, and communication effect are less than 0.05 in significance, and can significantly and positively influence purchasing behavior.

<i>Results of linear regression analysis of purchasing behaviour (n=302)</i>							
	Unstandardised coefficient		Standardised coefficient	<i>t</i>	<i>p</i>	Collinearity diagnosis	
	<i>B</i>	Standard error	<i>Beta</i>			VIF	Tolerance
Constant	0.895	0.219	-	4.088	0.000**	-	-
SE	0.162	0.060	0.159	2.701	0.007**	1.385	0.722
DE	0.198	0.064	0.186	3.075	0.002**	1.472	0.680
BE	0.163	0.057	0.159	2.843	0.005**	1.255	0.797
CE	0.186	0.058	0.187	3.222	0.001**	1.347	0.742
<i>R</i> ²				0.260			
Adjust <i>R</i> ²				0.250			
<i>F</i>				<i>F</i> =26.142, <i>p</i> =0.000			
D-W value				1.700			
Dependent variable: PBH							
* <i>p</i> <0.05 ** <i>p</i> <0.01							

Table, 18 Results of linear regression analyses of purchasing behaviour

From the table above, it can be seen that social and environmental effects, design effects, brand effects, and communication effects are taken as independent variables, while purchase behavior is taken as the dependent variable for linear regression analysis. The specific analysis can be seen:

The regression coefficient of social and environmental effect is 0.162 ($t=2.701$, $p=0.007<0.01$), which means that the social and environmental effect has a significant positive influence on purchasing behaviour. The regression coefficient value of the design effect is 0.198 ($t=3.075$, $p=0.002<0.01$), implying that the design effect will have a significant positive influence on purchasing behaviour. The regression coefficient value of the brand effect is 0.163 ($t=2.843$, $p=0.005<0.01$), which implies that brand effect will have a significant positive influence on purchase behaviour. The regression coefficient value of the communication effect is 0.186 ($t=3.222$, $p=0.001<0.01$), which means that the communication effect will have a significant positive influence on purchasing behaviour. To sum up, it can be seen that: social and environmental effect, design effect, brand effect, and communication effect all have a significant positive influence on purchasing behaviour.

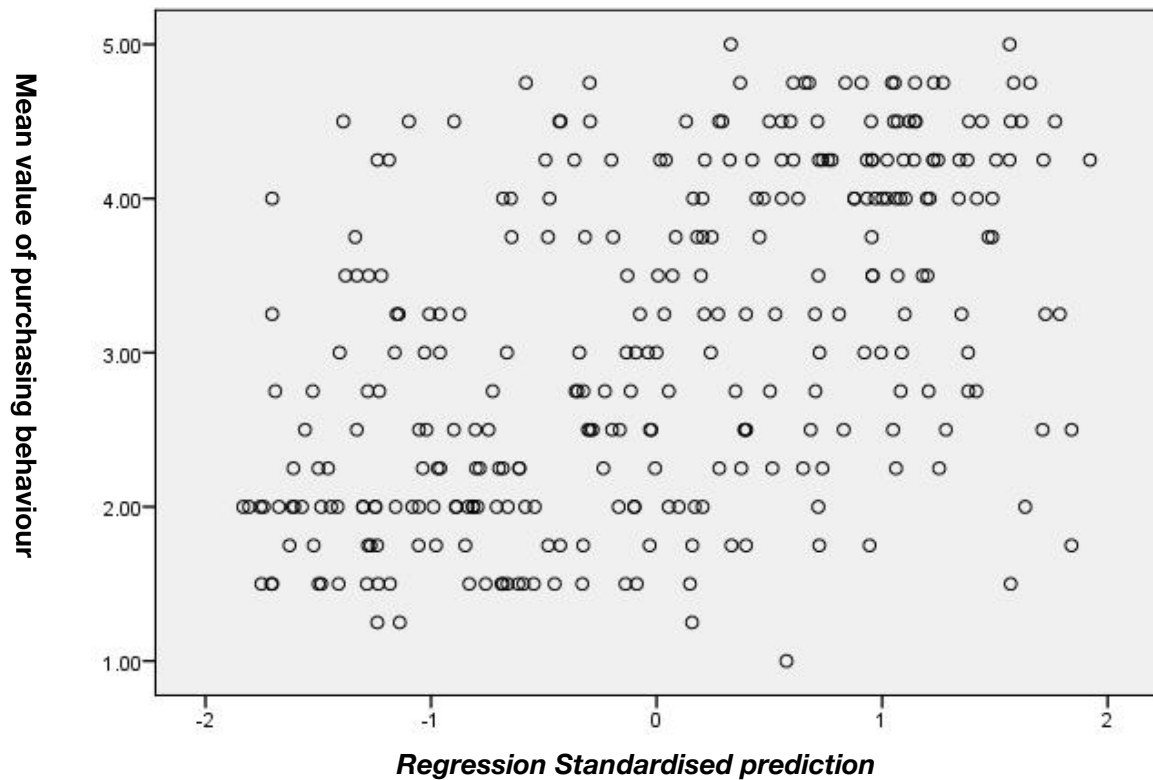


Figure 32, Scatterplot of mean purchase behaviour

Source: Made by the author

Similarly, from the scatterplot, the dependent variable is purchasing behaviour, which ranges from approximately 1.00 to 5.00. In this study, the scatterplot of the explanatory variables versus the random error term in the regression model is plotted, and as can be seen, the scatterplot of the residual term shows a disordered state, and it can be concluded that there is no heteroskedasticity in the regression model, which suggests that the validity of the model and the reliability of hypothesis testing are in a relatively satisfactory state.

(5) Correlation analysis

The correlation between social and environmental effect, design effect, branding effect, communication effect, cognitive emotion, and purchasing behaviour

is analyzed using the statistical method Pearson correlation, which assesses the strength and direction of the linear relationship between two continuous variables. The coefficient measures whether the trend of change between two variables is similar, that is whether an increase in one variable is accompanied by an increase or decrease in the other. The value of the correlation coefficient r ranges from -1 to 1. Values close to 1 indicate a strong positive correlation, values close to -1 indicate a strong negative correlation, and values close to 0 indicate no or very weak linear correlation. According to the table below, the correlation significance p -value is less than 0.01 for all variables, indicating that there is a significant positive correlation between the six influencing factors regarding museum branding cultural heritage products.

		Correlation					
		SE	DE	BE	CE	CEM	PBH
SE	Pearson Correlation	1					
DE	Pearson Correlation	0.455**	1				
BE	Pearson Correlation	0.344**	0.389**	1			
CE	Pearson Correlation	0.402**	0.436**	0.324**	1		
CEM	Pearson Correlation	0.368**	0.430**	0.339**	0.369**	1	
PBH	Pearson Correlation	0.373**	0.401**	0.346**	0.383**	0.357**	1

** . At the 0.01 level (two-tailed), the correlation is significant.

Table, 19 Results of Pearson correlation analysis

(6) Validation factor analysis

In order to test whether the relationships between observed and latent variables, which are determinants of museum branding and cultural heritage's impact

on audiences, remain consistent with the predetermined theoretical model, this research uses Confirmatory Factor Analysis (CFA) in statistics and through AMOS 24 software to evaluate the fit of the latent variable model superiority. It was also determined whether the observed variables appropriately reflected the latent structure. The analysis of the variables and questionnaire items resulted in the results shown in the figure 33.

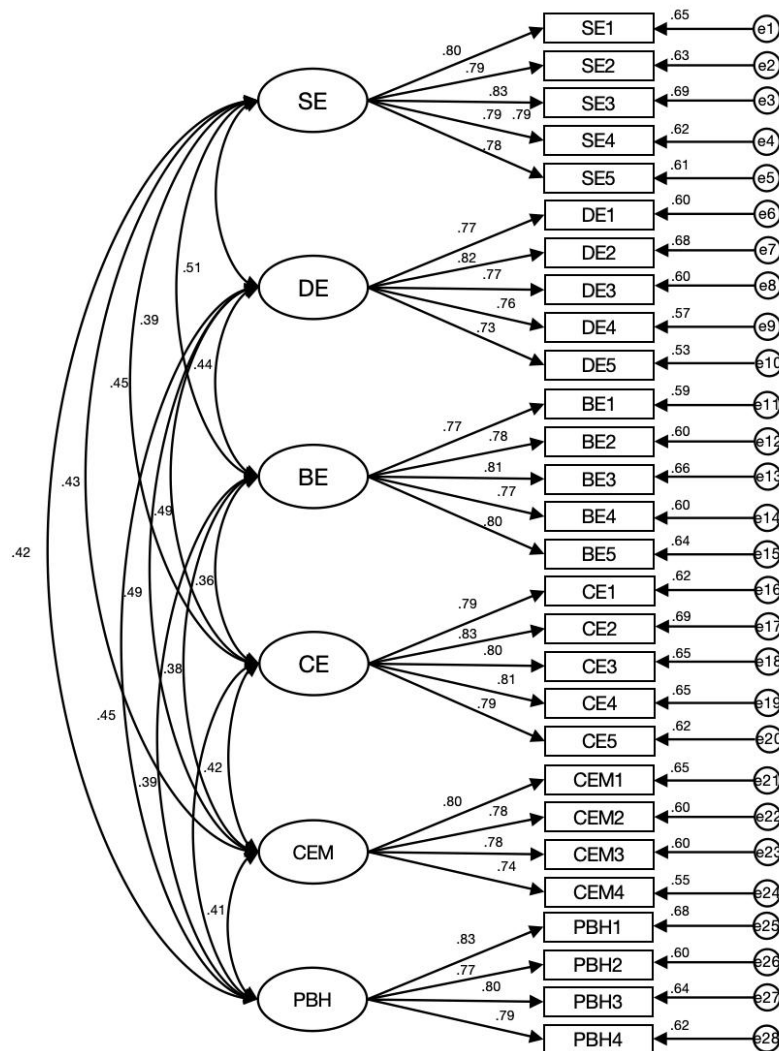


Figure 33, Validated factor analysis model fit results

Source: Made by the author

The fit of the validation factor analysis (CFA) is assessed through a series of indicators that reflect how well the model fits the actual observed data. The analysis was also carried out through the AMOS 24 software, and based on the results in the table below, it can be seen that the validation factor analysis fits in line with the desired values, indicating that the results of the analysis are more reliable.

	CMIN/DF	NFI	IFI	TLI	CFI	RMSEA
Desirable value	≤ 3.00	≥ 0.90	≥ 0.90	≥ 0.90	≥ 0.90	≤ 0.08
Degree of fitting	1.161	0.924	0.989	0.987	0.989	0.023

Table, 20 Validation factor analysis desirable values and degree of fit

Standardized Factor Loadings in Validated Factor Analysis (CFA) are standardized estimates of the linear relationship between observed variables (indicators) and latent variables (factors). These loadings are the regression coefficients from the latent variables to the observed variables in the model, and they reflect the strength of the effect of the latent variables on the observed variables. Generally, a standardized factor loading greater than 0.6, a combined reliability CR greater than 0.7, and a mean extracted variance AVE greater than 0.5 are required in a validated factor analysis to reflect good combined reliability and structural validity between the data. According to the table below, it can be seen that the standardized factor loadings of each topic and the CR and AVE values of each dimension meet the standard, indicating that there is good combinatorial reliability and structural validity between the data.

Dimension	Question	Standardised factor loadings	CR	AVE
SE	SE1	0.804	0.899	0.640
	SE2	0.792		
	SE3	0.829		
	SE4	0.790		
	SE5	0.784		
DE	DE1	0.775	0.881	0.597
	DE2	0.825		
	DE3	0.775		
	DE4	0.758		
	DE5	0.728		
BE	BE1	0.767	0.890	0.619
	BE2	0.778		
	BE3	0.814		
	BE4	0.773		
	BE5	0.800		
CE	CE1	0.787	0.901	0.645
	CE2	0.828		
	CE3	0.803		
	CE4	0.808		
	CE5	0.788		
CEM	CEM1	0.804	0.858	0.601
	CEM2	0.778		
	CEM3	0.778		
	CEM4	0.740		
PBH	PBH1	0.827	0.874	0.635
	PBH2	0.773		
	PBH3	0.801		
	PBH4	0.785		

Table, 21 Standardised factor loading results

Average Variance Extracted (AVE) is a measure used to assess the convergent validity of each latent variable (factor). The square root of AVE can be thought of as an upper bound on the correlation coefficient between a latent variable and its observed variable, and it provides a criterion for assessing the strength of factor loadings. By comparing the square root of AVE with the factor loadings of the

observed variables, the researcher can assess the validity of the latent variable construct. If the square root of AVE is higher, this increases the confidence of the model, indicating that the observed variables collectively reflect the latent variable constructs. Based on the comparison, it can be seen that the square root of AVE for each dimension is greater than the correlation between dimensions, indicating that the intra-dimensional correlation is greater than the inter-dimensional correlation, which suggests that the data has well differentiated validity. In summary, the data have good reliability and validity and are suitable for further analysis.

	SE	DE	BE	CE	CEM	PBH
SE	0.800					
DE	0.513	0.773				
BE	0.386	0.438	0.787			
CE	0.449	0.491	0.357	0.803		
CEM	0.427	0.494	0.384	0.420	0.775	
PBH	0.424	0.454	0.390	0.433	0.413	0.797

Table, 22 Average Variance Extracted results

(7) Structural equations

Structural Equation Modelling, abbreviated as SEM, is a common method in social science research, also known as Structural Modelling with Covariance (SMC), is an important multivariate analytical tool that analyses the relationship between features and characteristics based on the covariance matrices of the characteristic variables. Structural equation modeling is a method for building, estimating, and testing causal models. Models contain both observable explicit variables and may contain latent variables that are not directly observable. The hypotheses are then tested using Structural Equation Modeling (SEM), a method that rapidly developed in the 1980s to address limitations in traditional statistical approaches. SEM has been

widely applied in social sciences, economics, finance, psychology, and management, becoming a key tool for multivariate data analysis (Baron & Kenny, 1986). Structural equation modeling can deal with multiple dependent variables, also known as endogenous variables, at the same time. The regression coefficients in traditional regression models and the path coefficients in path analysis are derived by calculating each dependent variable one by one, ignoring the effects of other dependent variables. In the structural equation, the existence or otherwise of other factors will be fully considered, which means that the structure within each factor will be adjusted and changed taking into account other concurrent variables, so that not only the relationship between the factors will change, but also the structure within the factors will change. At present, there are many processing software for structural equation model, this paper adopts AMOS24 software for analysis, according to the hypothesis: H1 social and environmental effects can positively influence cognitive emotion; H2 social and environmental effects can positively influence purchase behaviour; H3 design effects can positively influence cognitive emotion; H4 design effects can positively influence purchase behaviour; H5 brand effects can positively influence cognitive emotion; H6 brand effects can positively influence cognitive emotion; H7 Communication effect can positively influence cognitive emotion; H8 Communication effect can positively influence purchasing behaviour; H9 Cognitive emotion can positively influence purchasing behaviour. The following model and analysis can be derived:

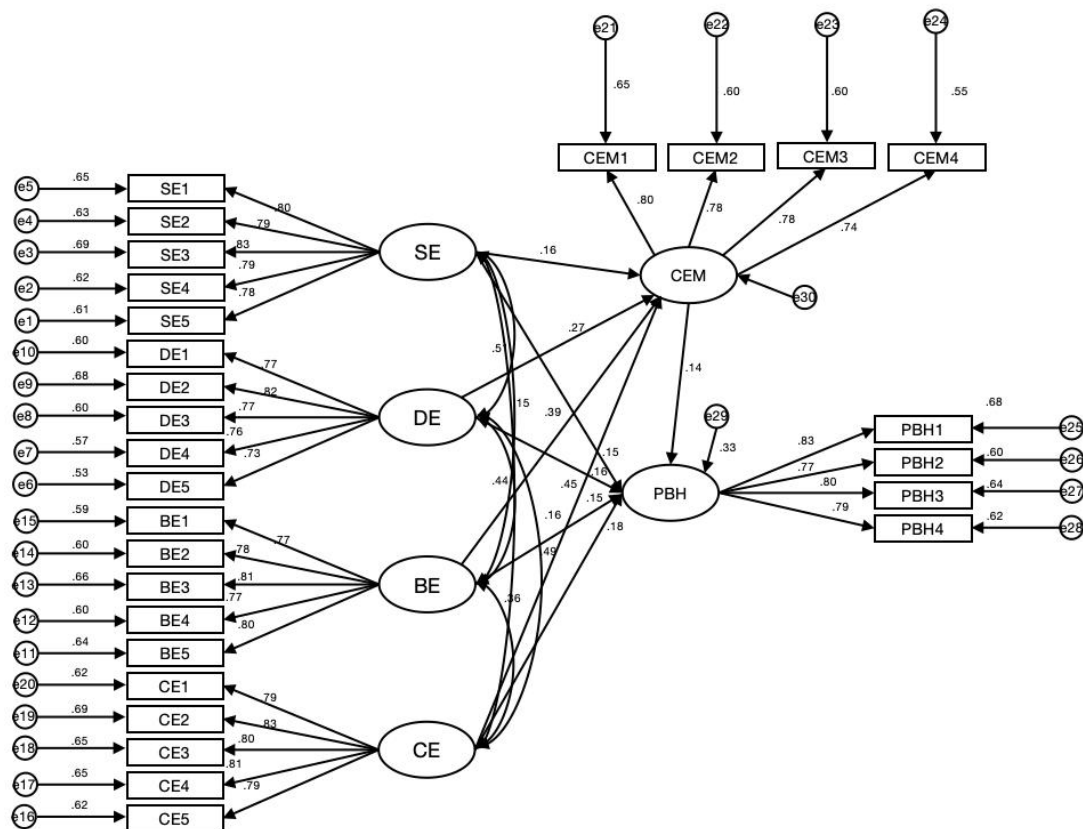


Figure 34 structural equation modelling

Source: Made by the author

The path coefficients of the model were also validated using structural equations to analyse the fit of the model, and according to the table below, it can be seen that all the fit indicators of the model reached the desired values, indicating a good fit of the model.

	CMIN/DF	NFI	IFI	TLI	CFI	RMSEA
Desirable value	≤ 3.00	≥ 0.90	≥ 0.90	≥ 0.90	≥ 0.90	≤ 0.08
Degree of fitting	1.161	0.924	0.989	0.987	0.989	0.023

Table, 23 Structural equation modelling desirable values and degree of fit

Finally, the hypotheses were tested and according to the table below it can be

seen that the significant p-value for each path is less than 0.05 and the hypotheses are all valid.

Path	se	Estimate	S.E.	C.R.	P	Hypothesis
DE→CEM	0.268	0.311	0.091	3.405	***	Establishment
BE→CEM	0.147	0.146	0.067	2.189	0.029*	Establishment
CE→CEM	0.165	0.169	0.072	2.339	0.019*	Establishment
SE→CEM	0.159	0.168	0.077	2.192	0.028*	Establishment
CEM→PBH	0.143	0.15	0.076	1.965	0.049*	Establishment
CE→PBH	0.179	0.192	0.076	2.533	0.011*	Establishment
SE→PBH	0.146	0.162	0.08	2.022	0.043*	Establishment
DE→PBH	0.156	0.191	0.096	1.981	0.048*	Establishment
BE→PBH	0.147	0.154	0.07	2.196	0.028*	Establishment

Table, 24 Hypothesis validation results

From the analysis of the above table:

The path coefficient of the design effect and cognitive emotion is significantly positive ($\beta=0.268$, $P<0.000$), from which it can be concluded that the design effect and cognitive emotion have a significant positive influence is established. The path coefficient of brand effect and cognitive emotion is significantly positive ($\beta=0.147$, $P<0.05$), from which it can be concluded that brand effect and cognitive emotion have significant positive influence is established. The path coefficient of communication effect with cognitive emotion is significantly positive ($\beta=0.165$, $P<0.05$), thus it is established that the communication effect has significant positive influence on cognitive emotion. The path coefficient of social and environmental effect with cognitive affect is significantly positive ($\beta=0.159$, $P<0.05$), so social and environmental effect with cognitive affect has a significant positive influence is established. The path coefficient of cognitive emotion and purchase behaviour is significantly positive ($\beta=0.143$, $P<0.05$), so it is proved that cognitive emotion has a

significant positive influence with purchase behaviour is established. The path coefficient of communication effect and purchasing behaviour is significantly positive ($\beta=0.179$, $P<0.05$), which proves that communication effect has a significant positive influence with purchasing behaviour is established. The path coefficient of social and environmental effect with purchasing behaviour is significantly positive ($\beta=0.146$, $P<0.05$), so that social and environmental effect has a significant positive influence with purchasing behaviour is established. The path coefficient of design effect and purchase behaviour is significantly positive ($\beta=0.156$, $P<0.05$), so the design effect has a significant positive influence with purchase behaviour is established. Finally, the path coefficient of brand effect and purchasing behaviour is significantly positive ($\beta=0.147$, $P<0.05$), so it is proved that brand effect has a significant positive influence with purchasing behaviour is established.

5.3 Results Analysis and Discussion

This study explores the branding of museums and how museums' cultural heritage products are designed, developed, and communicated in the context of museums, combining relevant methods and theoretical research in marketing, and in this way examines their impact on tourists and online consumers, so as to think about museums' development strategies and product design and marketing strategies, and explores the impact of communication media on audiences based on the context of digitization. This creates a new way of thinking about the cultural experience of museums in different countries. Due to strong policy support and a thriving market for

the creativity and dissemination of museum heritage products in China (Li, 2020), this museum's product marketing has brought part of the experience, and with the promotion of heritage culture in recent years, it has made more and more young people pay attention to and go into museums to visit, which creates a new tourism boom. However, museums continue to face a variety of dilemmas in the ongoing development of their cultural heritage products (Li, 2018; Zhang & Fan, 2019), and these situations still apply to large international museums. Other small museums face problems such as uneven development and insufficient funding for development. At the same time, the addition of digitalization has brought a disruptive and innovative drive to the museum tourism industry, the current function of museums is still adapting to social change, and the market trends of museum products reflect characteristics such as technology-driven, hedonistic, and immersive personalization (Lunardo & Ponsignon, 2020). Therefore, the findings can provide important insights into museum branding and cultural heritage design and communication, mainly in the areas of museum branding, IP creation, creative design and communication design, which are closely related to museum marketing and regional economic development.

Museums build brand engagement, brand trust, and brand loyalty through social media (Pongpaew et al., 2017), and interact with brand loyalty through user engagement (Zheng et al., 2015). Design is closely related to branding and symbolism. The current study reflects visitors' intention to design and digitally communicate cultural heritage products in museums in terms of purchase intention and perceived emotional orientation towards the museum. In the study, social and environmental

influences, design effects, branding effects, and communication effects had a positive impact on visitors' cognitive-emotional and purchasing behaviors. This means that in the museum environment, firstly, the design of the product can have a positive impact on the purchase and experience of the visitors, which provides ideas and more possibilities for the development strategy of the museum, and through good design and products, not only can it bring more tourists to the museum, but also can create loyalty for the museum branding. Secondly, design will also play a role in the creation of the spatial environment of the museum. The effect of the social environment is partly reflected in the social and cultural influence on people, the public will have certain knowledge about the museum itself after a long time of education and experience all along. At the same time, the external architecture of the museum, the internal space, and the design of the guidance, or become the spatial environment of the visitor's guidance also become the determining factor of the visitor's experience and purchase. Design helps museums create immersive spaces and influences the mood through routes, lights, sounds, and even smells. As the development of design is also influenced by the state of the economy, the characteristics of the ideological field, and the level of technological development (Li, 2021). While museums are constantly adapting to the social environment, design is also changing to better suit the cultural transmission of museums and the aesthetics of different visitors.

In addition, the study also shows that for museums, the influence of brand effect has gradually appeared and been valued. The asymmetry of market information and diverse choices create perceived risks for consumers' consumption behaviors,

making them more inclined to well-known brands in their consumption and generating brand-led consumption behaviors, where a brand represents a specific consumer group (Zhang, 2020). For consumers, recall-level perceptions influence which brands people consider and choose, which further influences their choices (Aaker, 1992). Museum branding should gradually strengthen the construction of branding in its development, and use design and brand marketing methods to increase the recognition and value of the brand, to gain more brand influence. Finally, the influence of branding cannot be separated from the participation of social media communication. In the digital age, people often obtain information through online media and social media, and the influence of social media on consumers is expanding, which is also the same for museum branding. Research has demonstrated the positive impact of communication effects on cognitive and purchasing behaviors, which means that when thinking about branding development, museums should also think about the ways and forms of communication through social media and digital technologies to promote marketing. In addition, social media can facilitate dialogue, authentic communication interactions, and visitor engagement thus enhancing the museum experience (Vassiliadis & Belenioti, 2017), and the communication effect is also key to creating visitor satisfaction and revisit intentions.

The analysis of these influences can shed some light on the development of branding in museums and the development of cultural heritage product design. Although the branding effect and communication effect have been widely discussed in marketing, when thinking about the further development strategy of museums, it is

also important to think about the influence of design factors in which the impact on consumers, which runs through the whole museum experience and is a key factor in determining the consumption and satisfaction of tourists, is a focus of attention in the development and marketing of museums. Consumer emotions are often triggered through perception and combined with aesthetics through the role of cognition to form experiences and opinions. This process then needs to be created through design, especially in today's museums through digital transformation, the emotional impact on visitors through digital technology and media is also concerned and developed in museums, through digital technology in enhancing the immersive experience of digital tourism scene is also known as the direction of the wave of museum branding of marketing, which affects the emotional state of the audience and sense of presence. For venues such as museums that use innovative formats, it is crucial to be able to make visitors feel an all-encompassing digital environment. Emotional engagement and immersion play a central role in creating engaging multidimensional experiences (Guo et al., 2021). The museum experience through emotional engagement by visitors will also be a key element in building brand loyalty in museums.

Purchasing behavior in museums often includes emotional elements of the visitor's experience of the museum, and the visitor's purchasing experience is often influenced by the emotions generated by the experience in the museum, by the influence of branding and marketing, or by the influence of product design, which often includes a large number of emotional elements. The value of the product and the visitor's desire to continue the experience as a souvenir is also a manifestation of the

visitor's emotional continuity. This is similar to the role of souvenirs, but with reference to the consumers who buy through the network and platforms, it is not just a continuation of the memory of the visit, for those who have not been to the museum but buy its products, the factors that influence them to buy are still the recognition of the value of the museum branding and the recognition of the product design itself, and even a large number of consumers have been affected by the influence of social media to make purchases. Overall, the impact of museum branding and cultural heritage design and communication on consumers needs to be considered across all four dimensions.

Chapter 6 Strategies and Reflections

6.1 Exploration of Museum Branding Cultural Heritage Design and Development

Model

After a series of researches on the background and current situation of museums, this thesis finally considers the development mode of branded cultural heritage products of museums and the development strategy of branded cultural heritage design of museums based on the digital background. This is based on a series of research and investigations above, a large number of cases provide reference for this study, quantitative and questionnaire research based on consumers provide direction for this study, and the role of design in museum marketing is considered while thinking about the development strategy of museum's products. This study is not only based on the perspective of museums but also provides inspiration for

designers in the development of cultural heritage. It also considers the possibilities of branding not only from a marketing perspective, but also from a design perspective, and hopes to contribute to the development of museums and the economic development of the territories in which they are located.

The development mode of branding cultural heritage design for museums can be considered from the following three aspects, firstly thinking about the driving nature of design, product design is a key element in determining consumers to make purchases, and based on the cultural context of museums, this study proposes to create products with functional and aesthetic significance through the creativity of design, and at the same time combining with the cultural value of museums, to help museums to better integrate culture with design. Secondly, it gives more values and meanings to museum branding through product design and communication, and makes suggestions for museum branding. Finally, the above aspects are combined to propose models and suggestions for the product development mode of branding cultural heritage of museums to help the development of museums.

(1) Product Design for Museum Cultural Heritage

Nowadays, museums have a tendency to develop their products in different ways, with different characteristics for different museums, such as history, nature or art museums. The products of art museums are often more aesthetically pleasing due to the collaboration with different artists or designers, but this on the other hand also filters the consumer base. For historical and natural museums with a large number of visitors of different ages and levels, their products are naturally closer to the general

public, with low prices and easy to understand. Therefore, museums nowadays continue to use a large number of printed materials, such as postcards, printed canvas bags, T-shirts, etc. However, a large number of similar products cannot attract consumers to purchase. At the same time, homogeneous products can not be in the museum branding to provide a clear brand association. Therefore, the first step for museum branding is to think about the role of design. This study provides the following three user-oriented product design ideas for museums for designers' reference:

① First of all, it needs to be clear that the basis of museum design and innovation is the user, conveying the values of culture and branding. This means that the design process starts and ends with the user's needs and experience. Digging deeper into the intrinsic needs of the user is the first thing that needs to be considered when designing for the museum's heritage, and this includes identifying visitor groups of different ages, cultural backgrounds, and interests, and considering their pain points and expectations during the visit. On this basis, the design needs to start from the museum's culture, but not by rigidly reproducing historical elements. On the contrary, through innovative elements, symbols and colors, traditional culture can be transformed into a sensory experience with a contemporary feel, which is more stimulating to the audience in terms of sensory stimulation. This transformation should not only take into account the aesthetic universality, but also the functional depth, not only to meet the basic needs of use, but also to add interest through innovative design, so that the product itself becomes a unique cultural experience,

which can stimulate the user's desire to explore and creativity.

② Incorporating interactivity and entertainment in the design can significantly enhance user engagement and emotional involvement. Interactive products can motivate visitors to participate more actively in the cultural experience of the museum and form an emotional bond. In particular, given the importance of family visitors, the design can consider how to engage family members together to enhance communication and understanding. Entertainment has always been a controversial topic for museums, but this study is more supportive of entertainment participation because in the age of consumption and the popularity of digitalization, entertainment is bound to be the most effective way of attracting tourists, and the consideration of entertainment participation in the design of museums can bring more changes and possibilities to them.

③ Finally, make full use of digital resources to enrich the form of products and enhance the user experience. In the digital era, the forms of products can be varied and are not limited to physical items. Digitally designed products can provide users with an immersive experience with unique communication and design advantages. This experience not only enhances audience engagement, but also inspires them to co-create and share experiences, thus contributing to the brand value of the museum. In addition, the digital era also needs to focus on the communication power and participation intention of the product, starting from the audience group with the most potential for communication and willingness to participate, and stimulating their participation through innovative design. This not only enhances the

market attention of museum products, but also expands the audience group, which in turn enhances the social influence and popularity of the museum.

In conclusion, the design of cultural heritage products for museums is a comprehensive innovation activity, thus, it is necessary to comprehensively consider user needs, cultural connotation, functionality, practicality, interaction and entertainment, as well as the application of digital technology and other dimensions. By accurately positioning the target audience and meticulously analyzing their interests and motives for participation, designers can create products that are both culturally rich and full of modernity, thus effectively enhancing the attractiveness and social influence of museums. In addition, museum design needs to continuously collect user feedback and optimize the design scheme, which is also the key to maintaining the vitality and competitiveness of the product.

(2) The development of museum branding

The museum branding strategy determines the development and influence of the museum, and the design can help the brand to renew its vitality. Since the development of the museum itself is subject to many constraints, the museum's financial situation, capital status, policy support, regional development and other objective factors, the museum's own organizational structure, management, product production channels, purchasing channels, product strategy and other conditions will have an impact on the museum's brand strategy. However, design is the aspect that is least affected by these objective factors and is most likely to bring out the advantages of the brand. In the study of museum branding strategy, this study proposes three

determinants of museum branding strategy to provide ideas for the development of museum branding strategy:

First of all, the construction of explicit brand symbolic elements is the foundation and characteristic of museum branding. The construction of clear brand elements is the basis of the audience's perception of the brand. According to the research above, except for museums with very vertical categories, such as the Van Gogh Museum, or large museums with very famous collections that will market their images as symbolic elements of the museum branding, or some of the museums will also create a branding system through their own brand identity system, a large number of museums do not have their own clear brand symbols, so that the brand recognition is weak, which leaves little impression on the visitors. In order to solve this problem, museum branding needs to be clearly defined, which needs to be realized through design. In the design, it should be noted that the construction of the branding elements should be associated with the culture of the museum itself, and reflect the uniqueness of the characteristics, this uniqueness must be specific to the museum, and very reflective of the museum's collection of specific cultural elements, which can become the IP image of the brand, and repeated in the later development of the product marketing, to deepen the impression of the audience. The second thing to note is that this paper is more supportive of paying more attention to the expression of cultural elements and the connotation of the museum itself in IP development, and focusing on the holistic nature of the design rather than simple symbolic elements, and at the same time avoiding the incorporation of rote or overly-pursued modernized elements,

cartoon elements, etc., which will deviate from the museum culture itself and create a sense of fragmentation, and thus weakening the branding association of the IP.

Secondly, expanding the narrative space of the brand is the key to creating brand loyalty. Brand narrative can create value beyond the use of the commodity function itself, the museum contains a large number of cultures, and these cultures can become the basis of the museum branding narrative, in the Internet era, the widespread dissemination of graphics, text, video for the narrative provides a carrier, and then add the help of the design of the exquisite cultural elements and the museum's cultural narrative is presented to the audience, the branding can be built for the emotional foundation, and to build their fan audience groups.

Finally, brand interaction and cooperation is a decisive factor in expanding brand influence. After the research on museum products above, the effect of branding cooperation on brand enhancement has been proved, both in the endless branding cooperation of Chinese museums and the effect and fan effect of branding cooperation of museums in the international arena. Museum culture provides a unique endorsement for commercial branding, while it is a great opportunity for museums to prompt awareness. In between, it should be noted that brand cooperation is not a raw printing of elements, but requires the addition of marketing and design so that the two brands can better integrate, realize the complementary strengths of the two brands, and play an innovative role in expanding the brand's audience.

To sum up, the strategy of museum branding needs to focus on the construction of symbolic elements of the brand, the expansion of the narrative space

of the brand, and the interaction and cooperation of the brand in three aspects. By deeply exploring the cultural connotation of museums, constructing unique and representative brand symbols, and utilizing multi-channel narrative strategies and cross-border cooperation, museums can not only enhance their brand value, but also establish a profound and lasting brand image in the public's mind.

(3) Branding Cultural Heritage Development Strategies for Museums

The path of branding cultural heritage development in museums passes through exhibits, collections, merchandise, marketing and sales from the museum end of the spectrum, through the construction and design of branding, the environment, the activities, the participation of services, and through the platform of the Internet, which plays a role in the perceptions and experiences of the customers(Figure 35). Therefore the development of museum branding cultural heritage requires planning for all aspects and meeting the needs of the audience from their point of view, thus bringing economic benefits and long-term development to the museum branding. This thesis here proposes two development strategies, starting from the results of the literature study and quantitative research above, considering the current situation faced by museum branding and cultural heritage design and the social and environmental factors affecting consumers' purchasing of museum products, the design effect, the branding effect, and the communication effect on audiences' cognitive-emotional and purchasing behaviors, and making suggestions for two kinds of development strategies for mature large-scale museums and underdeveloped small-scale museums. The museum branding cultural heritage development strategy is

proposed for museums' consideration.

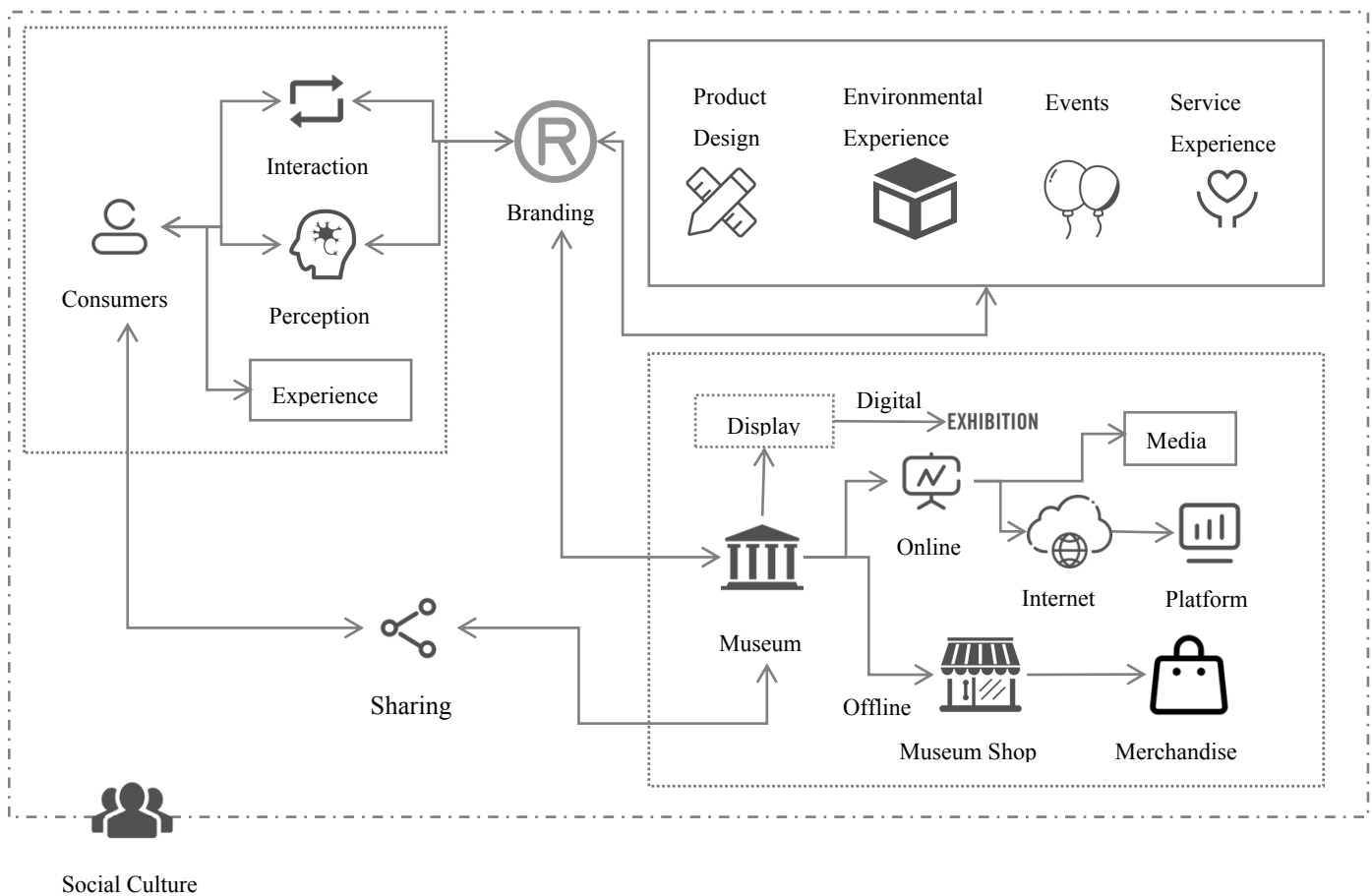


Figure 35 Museums' Branding Paths to Cultural Heritage Development

Source: Made by the author

First of all, for large museums that already have a certain degree of branding recognition, as the development of their cultural heritage products has gone through many iterations of updating, the form of the products and the way of selling them have become relatively mature. For this type of museum branding the most important thing to consider is to stand out from the crowd, which requires the construction of differentiation, the strengthening of brand recognition, the inclusion of digitalization, and the operation of fan communities(Figure 36). Each of these four aspects can be explained as follows:

① Create differentiation. The construction of differentiation is firstly realized through design, careful design considers not only cultural communication, but also aesthetic and practical functionalism, which is different from ordinary printed materials and can bring more value and significance to the purchase. Secondly, the construction of differentiation can also be constructed through brand cooperation, brand cooperation can bring excitement and freshness to the audience, while adding clever design to help better integration of the two brands, which can create a new form of the product, and help deepen the impression of the brand loyalty.

② Enhance brand recognition. Brand recognition can start from the establishment of a clear brand IP, which does not mean a large number of references to the museum collection as a symbol, but rather needs to select one or two well-known and symbolic meaning of the image to design and strengthen. At the same time, the use of communication to increase the frequency of IP in communication, and increase the creativity and narrative of the communication, so as to increase the brand association.

③ Strengthen digital participation. Increase the degree of digital products, such as App, interactive games, digital exhibitions and cooperation, etc., these products can not only better enrich the experience of tourists, link the emotions of tourists, but also increase the brand loyalty of tourists, and this is also a reflection of differentiation.

④ The establishment of fan communities. Through social media to establish a fan community, increase communication and interaction with fans by some activities

and prizes, which is conducive to increasing fan loyalty to the brand and favorable feelings.

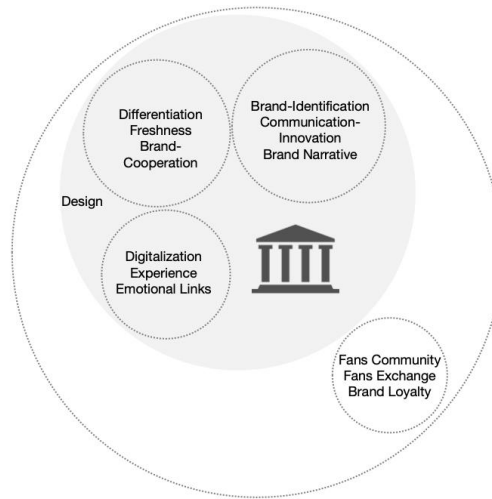


Figure 36 Schematic diagram of the cultural heritage strategy of a large museum

Source: Made by the author

These strategies are based on the museum's existing mature cultural heritage products to help the museum further development, the main idea is based on the user psychology and experience, for the museum branding products to enhance the innovation and increase the differentiation of the principle of the proposed, in this line of thinking, the attraction and differentiation is the key, the operation and maintenance of fans to establish sustainable development is the determining factor.

For small museums, that have not carried out museum branding cultural heritage development or incomplete development, this paper proposes a set of museum branding cultural heritage development strategies, which can help museums to apply and carry out cultural heritage product branding development quickly, the sub-program is divided into six steps:

Step 1: Cooperate with designers for branding construction. First of all, make an overall plan for the museum's visual identity system, and consider the colour tone, representative elements and logo of the branding, as well as the story construction of the branding in the context of the heritage and the history of the museum.

Step 2: Cooperate with designers to develop cultural heritage products for museum branding. Branded cultural heritage products can be developed in collaboration with designers. Considering the financial situation of some museums, the collaborative model is more conducive to enhancing common visibility. Designers' creations based on culture are conducive to enriching the design content, and museums can get more attractive products, while designers' works are more likely to help museums differentiate themselves and create uniqueness. And get more attention through the uniqueness of marketing design.

Step 3: Through social media, spread the brand story and create a brand image. Through social media to promote the brand story, can establish the museum official social media account, and combine with the characteristics of multi-platform, through the short video platform, graphic platforms, social platforms for dissemination, to convey the museum branding story and product interest and uniqueness, to enhance the communication and interaction, and to establish a fan base.

Step 4: Incorporate the manufacturing industry to produce the product. Designed products can be produced through local or foreign manufacturing industries, but to ensure that the products have good quality. At the same time, in order to ensure the characteristics of the souvenir, it is better to be carried out through local channels.

The localization of design and production can increase consumers' goodwill and desire to buy tourism products.

Step 5: Strengthen the publicity point and brand cooperation. After the construction of the previous steps, the museum has initially established branding and its own products, then it is necessary to further expand the fan base, which requires the strengthening of the museum branding and cooperation with other brands to expand the scope of the brand's audience and visibility.

Step 6: Territorial cooperation to enhance the museum and regional tourism economy. When the museum branding has a certain degree of visibility, it is necessary to unite the local government to promote in-depth, pulling the cultural brand of the territory to develop jointly, and enhance the regional tourism revenue and economic development together.

In conclusion, whether for large museums or small museums, through the design to enhance the differentiation and competitive advantage of the brand is the key to branding, the development of museum branding needs to cooperate with a number of channels, and the use of social media and communication to enhance the influence of the advantages of the museum and the region's economic development to provide impetus.

6.2 Exploring and Reflecting on Museum Cultural Heritage Branding

This thesis explores the idea of cultural heritage branding for museums based on design and communication in the context of digitization. Through the examination

of previous studies and fieldwork, it is clear that branding museums in the process of development is a trend that promotes development in the present era. Museums actively creating their branding, using design to create museum differentiation and strengths, thereby helping museums to increase brand awareness and further help their own income and territorial development, is another transformation of museums in nowadays' era that needs to be thought about.

Nowadays, countries all over the world have a large number of museums, and the development of museums is often closely related to the development of the region, and it is hoped that through this study museums will be better aware of the importance of branding construction, creating cultural heritage products and promoting heritage culture. In the thesis, starting from design, a lot of merchandising and marketing aspects are studied. As most of the cultural heritage products are developed and sold to gain commercialization, it does not mean that it is the right thing for museums to over-pursuing commercialization and consumerism in the development process. Today's large museums are also very focused on commercialization and consumption, but often they are also able to grasp this balance, as the primary task of the museum remains the collection of cultural heritage and the transmission of culture. This thesis advocates the enrichment of the form and function of the museum's cultural heritage products and aesthetics through design, but also through the addition of design and media to allow more people to see the value of culture, the significance of branding is to help the museum to establish a symbolic significance in the public psyche, which is the basis for the promotion of the museum's sustained development.

This study has repeatedly discussed the trend of entertainment and ‘Disneyfication’ of museum heritage products, which has been widely discussed in academia, and different scholars have different views. This thesis continues to argue that for museums, which can provide a complete tourism and cultural experience, ‘Disneyfication’ is not a bad thing, but rather an immersive experience that is more conducive to cultural heritage, and entertainment that is more conducive to attracting the public's interest. This is not only reflected in the development of museums, but may also be used in the creation of more heritage institutions in the future, such as the cultural space parks and cultural tourism parks that are starting to develop in China.

Finally, this paper also explores and reflects on branding. Considering that the strategy of branding is the direction of museum development, this paper emphasizes brand collaboration and argues that it is an important direction for museum branding communication, which has also been verified in the market. Brand cooperation also helps the brand to break the circle and attract more fan groups, so it can be an aspect of museum branding that needs to be focused on in the future development.

6.3 Research limitations

The first limitation of this study is that in the case study of museums, as part of the study is based on the study of museums’ online data, the study is mainly realized through museums’ official websites, social media platforms and other websites, where some of the museums may have insufficient data, the websites do not have the corresponding shop section or the sales are conducted through third-party

platforms or offline, and some of the cases that could not be examined may have a certain impact and limitation on the actual results of the study century, which may have some influence and limitation on the actual results of the century under investigation. Secondly, in the quantitative analysis part of this study, as the questionnaire research is mainly conducted through the Chinese research platform, the research subjects involved are mainly consumers in the Chinese environment, so there are some limitations in the examination of different cultures' perceptions of branding and cultural heritage products.

6.4 Future Research and implications

For future research, in order to improve the limitations of this study and increase the cross-cultural applicability of this study, it is necessary to further understand more forms of museum cases through additional field research and find further breakthroughs in the subfield. Meanwhile, for the research part, further research and comparisons need to be conducted on different cultures and populations, as well as field-based research and cross-cultural comparisons to further validate this strategy. The research also needs to strengthen the exploration of product quality and aesthetics, which will be further interdisciplinary in the future. Finally, further consideration needs to be given to the role of museum branding development on territorial development, and the strategy of co-development between museums and territories further examined.

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Appendice

Appendix I, Museum Cultural Heritage Design Research Form

No.	Institution name	City	Online Shop	Offline shop	Availability of merchandise	Experiential Programmes	Product Status	Clear brand identity	Product category	Website	Note
Field research											
1	Guangdong Thirteen Houses Museum	Guangzhou	◎	◎	◎	◎	No	No	No	http://www.gzthirteenhongsmuseum.com/	No products
2	Shanghai Museum of Contemporary Art	Shanghai	●	●	●	◎	self-owned/OEM/Designer product	No	Prints, clothing, reproductions, stationery, daily necessities, etc	https://www.powerstationofart.com/whats-on	There are products according to the theme of the exhibition, but not fixed.
3	Henan Museum	Zhengzhou	●	●	●	●	self-owned/OEM	No	Blind box category, experience category, food, stationery category, daily necessities, tea sets, decorations, books	https://www.chnmus.net/	Experience-based
4	National Museum of Scotland	Edinburgh	●	●	●	●	external/OEM	Tang Palace banquet, archaeological blind box	Daily necessities, toys, household items, stationery, jewelry, prints,	https://www.nms.ac.uk/	There are fixed exhibitions, as well as special exhibitions and brand cooperation exhibition

										decorations, books		derivatives, and focus on tour experience projects.
5	Scottish Art Gallery	Edinburgh	●	●	●	●	self-owned/O EM	Lewis Chessmen	Daily necessities, toys, household items, stationery, clothing, printed matter, decorations, books	https://www.nationalgalleries.org/	The main products depend on the theme of the exhibition.	
6	British Museum	London	●	●	●	●	self-owned/O EM/external	No	Reproductions, jewelry, clothing, books, prints, household items, children's items, decorations, stationery, interactive products, toys, etc	https://www.britishmuseum.org/	The main products depend on the theme of the exhibition. There are fixed products for sale, derivatives of special exhibitions according to the theme, and experiential projects, and the product development is relatively complete and systematic.	
7	The Victoria and Albert Museum	London	●	●	●	●	self-owned/O EM/external	Logo、Anderson Cat, Rosetta Stone	Jewelry, clothing, books, printed matter, household goods, children's goods, stationery	https://www.vam.ac.uk/collections?type=featured	Main products depend on the theme of the exhibition	

8	The Natural History Museum	London	●	●	●	●	self-owned/ OEM/external	No	Toys, books, games, clothing, home, stationery	https://www.nhm.ac.uk/	Most of the products are plush toys, etc., and most of the products are OEM or collaboration. There are fixed night patrols as the main promotional point, and they are indicated as the brand identity and have cooperation with other brands, and there are corresponding cultural and creative products according to the theme of the exhibition.
9	Rijksmuseum	Amsterdam	●	●	●	●	self-owned/ OEM/external	Dinosaurs, animals	Books, prints, clothing, furniture, replicas, toys, stationery games, children	https://www.rijksmuseum.nl/nl	Very clear IP-oriented products, and brand co-operation is well done, with high product recognition.
10	Van Gogh Museum	Amsterdam	●	●	●	●	self-owned/ OEM	Logo, Night Watch, Miffy	Books, prints, jewelry, tableware, household, toys, gifts	https://www.vangoghmuseum.nl/	No products of their own, only some small toys are sold near the cashier.
11	Nuremberg Toy Museum	Nuremberg	◎	◎	◎	◎	external	Van Gogh, Sunflower	Small toys	https://museums.nuernberg.de/toy-museum/	

12	Louvre	Paris	•	•	•	•	self-owned/OM/external	No	Reproductions, jewelry, clothing, books, prints, household items, children's items, decorations, interactive products, stationery, games, toys, etc	https://www.louvre.fr/en	There are fixed products for sale as well as derivatives according to the theme of the special exhibition, product development is relatively complete, focusing on brand cooperation.
13	Centre Pompidou	Paris	•	•	•	•	self-owned/Designer product/external	The Mona Lisa, logo	Books, prints, Design products, home, fashion, clothing, stationery, reproductions, children	https://www.centrepompidou.fr/en/	There are some representative works, but most of them are exhibition peripherals, books, and artists' products.
14	The Palace Museum	Beijing	•	•	•	•	self-owned/OM	《New York City》 Piet Mondrian	Gifts, clothing, makeup, home, stationery, toys, decorations	https://www.dpm.org.cn/Home.html	Very comprehensive cultural heritage development system, covering a wide range of cultural and creative products, film and television, experiential tours, IP creation, brand cooperation, digital tours and exhibitions.

15	National Gallery of Modern Art	Rome	◎	●	●	●	OEM/external	Palace Museum pattern, Palace Museum cat, etc	Books, prints	https://lagallerianazionale.com/museum/seo	Only a few books and simple prints are sold in the shop at the exit of the museum.
16	MAXXI Museum of Contemporary Art	Rome	◎	●	●	●	OEM/external	No	Books, prints	https://www.maxxi.art/en/	Only a few books and simple prints are sold in the shop at the exit of the museum.
17	Xinxiang Museum	Xinxiang	◎	●	◎	◎	OEM/external	No	Reproductions, gifts, decorations	https://www.xxsbwg.com/	Only simple reproductions, gifts, and other items are sold.
18	Luoyang Tomb Museum	Luoyang	◎	●	●	●	OEM/external	No	Reproductions, gifts, decorations	https://www.gumuseum.com/	Focus on experience-based programmes, interactive tours
19	Shaanxi History Museum	Xi'an	●	●	●	●	self-owned/OEM	No	Gifts, clothing, makeup, home, stationery, toys, decorations, food	https://www.sxhnm.com/	Some cultural and creative development, but not strong IP, mostly homogenised OEMs.
20	Shanghai Museum	Shanghai	●	●	●	●	OEM/external/self-owned	Ladies of Tang Dynasty	Replicas, gifts, clothing, home furnishings, stationery, books	https://www.shanghai-museum.net/museum/frontend/pg/index	There are cultural products but they are mostly OEM, not strong IP, poor quality of offline physical sale of cultural creations, mostly gifts.

Network research

1	Vatican Museums	Vatican St Petersburg	•	•	•	•	self-owned/O EM	No	Sculptures, books, prints, gifts, reproductions, household items, decorations	https://www.museivaticani.va/content/museivaticani/en.html#inavstore	Some cultural heritage products are mostly replicas of exhibitions.
2	Metropolitan Museum of Art †	New York	•	•	•	•	self-owned/O EM/external	Network	Reproductions, jewelry, clothing, books, prints, household items, children's items, decorations, stationery, interactive products, toys, gifts, etc	https://www.metmuseum.org/	There are fixed products for sale as well as derivatives according to the theme of the special exhibition, and there are also experiential projects. Product development is relatively complete and systematic, and it is the earliest museum to carry out commercialisation.
3	Tate Modern	London	•	•	•	•	self-owned/Designer product/external	Caius Julius Caesar	Books, prints, Design products, home, fashion, clothing, stationery, reproductions, children	https://www.tate.org.uk/visit/tate-modern	The products depend on the theme of the exhibition, and there are brand cooperation products.
4	Musée d'Orsay	Paris	•	•	•	•	self-owned/O EM/external	logo	Stationery, clothing, decorations, books, jewelry, reproductions, printed matter	https://www.musee-orsay.fr/fr	According to the collection, there will be part of the cultural heritage products

5	National Gallery of Art	Washington	●	●	●	●	self-owned/OM/external	No	Books, home, stationery, jewelry, clothing, stationery	https://www.nga.gov/	According to the collection, there will be part of the cultural heritage products
6	Museo Nacional del Prado	Madrid	●	●	●	●	self-owned/OM	No	Books, home, stationery, jewelry, clothing, stationery, printed matter, games, children's, collectibles	https://www.museodelprado.es/	According to the theme and the food, there will be corresponding cultural heritage products, and there are brand co-operation corresponding products.
7	State Hermitage Museum	St. Petersburg	◎	◎	◎	◎	◎	No	No	https://thehermitagemuseum.org/?gad_source=1&gclid=CjwKCAjwqf20BhBwEiwAt7dtdZnErYFUuqAX9Y_rsRtdX5y_L8Lh2EiJMd7g59g_qtqU7QjvLpz8VBoCr8AQAvD_BwE	The main focus is on visiting the buildings and collections
8	National Gallery	London	●	●	●	●	self-owned/OM	No	Books, home, stationery, jewelry, clothing, stationery, printed matter, games, children's,	https://www.nationalgallery.org.uk/	Cultural heritage products according to themes and products

collectibles

9	State Russian Museum	St. Petersburg	◎	◎	◎	◎	No	No	No	No data	No data
10	Museum of Modern Art (MoMA)	New York	●	●	●	●	OEM/Designer product/external/self-owned	No	Designer peripheral, home, clothing, daily necessities, printed matter, kitchenware, books, games, children, science and technology products, office supplies, music, gifts, food, toys, jewelry, etc	http://www.moma.org/	There are many cultural heritage products covering a wide range of areas, but they are basically peripheral Design derivatives developed based on the exhibits, and focus on commercial sales, with various forms of sales such as external flash mobs and brand cooperation.
11	M+	Hong Kong	●	●	●	●	OEM/Designer product/external/self-owned	No	Designer peripheral, home, clothing, daily necessities, printed matter, kitchenware	https://www.mplus.org.hk/en/	Have their own shops and cultural creations, Designer peripherals, their VI as IP incubation.
12	Galleria degli Uffizi	Florence	◎	●	●	●	OEM/self-owned	No	Printed matter, reproduction	https://www.uffizi.it/	Only a few books and simple prints are sold in the shop at the exit of the museum.

13	National Art Center Tokyo	Tokyo	●	●	●	●	OEM/self-owned/external	logo	Stationery, books, clothing, printed matter	https://www.nact.jp/	Mainly sold in offline shops, with some online cultural products, mainly related to traditional Japanese images.
14	Art Gallery of New South Wales	Sydney	●	●	●	●	OEM/self-owned/external	No	Books, printed matter, household, clothing, children	https://www.artgallery.nsw.gov.au/	Printed products mainly for the exhibition collection
15	Tokyo Metropolitan Art Museum	Tokyo	◎	●	●	●	OEM/external	No	Stationery, prints, gifts	https://www.tobikan.jp/	Some printed materials based on the theme of the exhibition
16	National Gallery Singapore	Singapore	◎	●	●	●	OEM/external	No	Prints, reproductions, gifts	https://www.nationalgallery.sg/	Only a few books and simple prints are sold at the shop at the exit of the museum.
17	Humboldt Forum	Berlin	●	●	●	●	OEM/self-owned/external	No	Books, home, stationery, jewelry, clothing, stationery, printed matter	https://www.humboldtforum.org/en/	Cultural heritage products related to the museum's own brand and products related to the exhibition.
18	Kunsthistorisches Museum	Vienna	●	●	●	●	self-owned/OEM/Design/external	No	Books, jewelry, clothing, replicas, stationery, toys, games	https://www.khm.at/en/	Products and jewellery mainly based on the theme of the exhibition

19	Guggenheim Museum Bilbao	Bilbao	•	•	•	•	self-owned/O EM	logo	Clothing, books, printed matter	https://www.guggenheim.org/	Graphic derivatives of the museum's architecture
20	Hong Kong Palace Museum	Hong Kong	©	•	•	•	self-owned/O EM/external	Sisi	Prints, reproductions, gifts	https://www.hkpm.org.hk/sc/home_e	Museums sell cultural products for export, developed in collaboration with external retailers.
21	Hong Kong Museum of Art	Hong Kong	•	•	•	•	self-owned/O EM/external	Museum architecture	Prints	https://hk.art.museum/sc/web/main/home.html	A small number of printed products and some offline cultural products, mostly OEM or external products.
22	Museum of New Zealand Te Papa Tongarewa	Wellington	•	•	•	•	self-owned/O EM	No	Print, home, books, clothing, gifts, children	https://www.tepapa.govt.nz/	Cultural products made with elements extracted from unique cultural patterns, environmental design, sustainable design
23	National Portrait Gallery	Washington	•	•	•	•	self-owned/O EM/external	Art gallery graphics	Jewelry, clothing, printed matter, children, toys, gifts	https://npg.si.edu/home/national-portrait-gallery	Selling cultural products related to the exhibits, mainly apparel
24	Museo Egizio	Turin	•	•	•	•	self-owned/O EM	MĀNAWATI A A MATARIKI, MAHI TOI	Books, prints, gifts, clothing games	https://www.museoegizio.it/	Cultural products made from Egyptian artefacts and tusks.

25	Museu Picasso	Barcelona	●	●	●	●	self-owned/O EM	No	Prints, books, clothing	https://museupicassobcn.cat/en/	Cultural products made of Picasso and fossils.
26	Moscow Kremlin Museums	Moscow	◎	●	●	●	external/OE M	Mummy, Egyptian elements	Books, toys, prints, jewelry	https://www.kreml.ru/zh-CN/museums-moscow-kremlin/	Mostly Russian souvenirs and some prints.
27	Museo Nacional Thyssen-Bornemisza Madrid	Madrid	●	●	●	●	external/OE M	Picasso	Prints, books, clothing, jewelry, home, stationery	https://www.museothyssen.org/cn	Some cultural products related to the exhibits, products of local designers and handicrafts.
28	National Gallery of Ireland	Dublin	●	●	●	●	self-owned/O EM	No	Prints, stationery, books, children, gifts	https://www.nationalgallery.ie/	Cultural products based on Irish art and collections.
29	Museum of Fine Arts	Houston	●	●	●	●	self-owned/O EM/external/ Design	No	Gifts, reproductions, prints, home furnishing, books, clothing, children, stationery, technology products	https://www.mfa-h.org/	Designer products or prints related to the content of the exhibition.
30	Musée d'Art Moderne de Paris	Paris	●	●	●	●	self-owned/O EM/external/ Design	logo	Stationery, printed matter, books, home furnishing	https://www.mam.paris.fr/	Designer products or prints related to the content of the exhibition.
31	National Museum of Modern Art	Tokyo	◎	●	●	●	OEM/external/ Design	No	Books, prints, crafts	https://www.momak.go.jp/English/	Prints and some external artefacts

32	Art Gallery of Ontario	Toronto	●	●	●	●	self-owned/D esigner product/exter nal	No	Books, prints, Design products, home, fashion, clothing, stationery, reproductions, children	https://ago.ca/	Designer products or prints related to the content of the exhibition.
33	Museum of Fine Arts	Budapest	●	●	●	●	self-owned/D esigner product/exter nal	No	Books, home, stationery, clothing, jewelry, children	https://www.mfab.hu/	Designer products or prints related to the content of the exhibition.
34	MMCA Gwacheon	Gwacheon	◎	●	●	●	self-owned/O EM/external	No	Prints, handicrafts	https://www.mmca.go.kr/eng/visitingInfo/gwacheonInfo.do	Museums exporting cultural products, products developed in cooperation with external retailers.
35	Hong Kong Heritage Museum	Hong Kong	◎	●	●	●	self-owned/O EM/external	No	Prints, handicrafts	https://hk.heritage.museum/en/web/hm/aboutus/themuseum.html	Museums exporting cultural products developed in cooperation with external retailers.
36	Louisiana Museum of Modern Art	Humblebaek	●	●	●	●	self-owned/O EM/external/ Design	No	Books, prints, Design products, home, fashion, clothing, stationery, replicas, children's, kitchenware	https://louisiana.dk/en/	Design works based on Danish and Scandinavian design.

37	Cleveland Museum of Art	Cleveland	•	•	•	•	self-owned/O EM/external	No	Clothing, prints, books, games, toys, stationery, jewelry	https://www.clevelandart.org/	Reproductions and artefacts related to the content of the exhibition
38	National Museum of China	Beijing	•	•	•	•	self-owned/O EM/external	logo	Gifts, clothing, makeup, home, stationery, toys, decorations, books, collectibles	https://www.chnmuseum.cn/	Design-based cultural products and the elements of cultural relics on display are the main elements of development, and the cultural products cover a wide range of categories and ways of playing.
39	Taipei National Palace Museum	Taipei	•	•	•	•	self-owned/O EM/external	No	Jewelry, wine, clothing, watch, home, print, automotive accessories	https://www.sothbys.com/zh-hant/museums/national-palace-museum	A wide range of cultural products, most of which are brand cooperation Design products.
40	Nanjing Museum	Nanjing	•	•	•	•	self-owned/O EM/external	No	Prints, household, tea sets, gifts, stationery, clothing, toys, collectibles	https://www.njmmuseum.com/zh	Using Design cultural products and exhibited cultural relic elements as the main development elements.
41	Qin Shi Huang Mausoleum Museum	Xi 'an	•	•	•	•	self-owned/O EM/external	No	Replicas, furniture, toys	https://www.bmy.com.cn/cul_creativity.html	Replicas of cultural products with Terracotta Warriors as Design elements

42	Hunan Provincial Museum	Changsha	•	•	•	•	self-owned/O EM/external	No	Blind boxes, replicas, clothing, collectibles, tea sets	https://www.hnmuseum.com/	Cultural and creative products developed with the exhibited cultural relic elements as the main development elements, with symbolic IP development but not much.
43	Sanxingdui Museum	Guanghan	•	•	•	•	self-owned/O EM/external	Terra-cotta Warriors	Blind box category, creative category, clothing category, printed matter, home category, stationery category, decorations, gifts, toys category	https://www.sxd.cn/	The IP image is clearer, and most of the products are derived from IP, mostly toys and blind boxes, and are more entertaining.
44	Dunhuang Museum	Dunhuang	•	•	•	•	self-owned/O EM/external	Ma Wang makes young civet cats	Sports, clothing, home, life, stationery, digital products	http://www.dhbwg.org.cn/	IP elements are more recognizable and focus on brand cooperation.
45	Gansu Provincial Museum	Lanzhou	•	•	•	•	self-owned/O EM/external	Sanxingdui bronze figurines	Toys, home, clothing, blind box, creative category	http://www.gansumuseum.com/	IP development is more creative, mainly plush toys and quirky images, and more entertaining.

46	Suzhou Museum	Suzhou	●	●	●	●	self-owned/O EM/external	Dunhuang terra-cotta women and elements	Gifts, jewelry, clothing, printed matter, Food, stationery, Home	https://www.szmuseum.com/	There are many types of cultural products developed with Suzhou elements.
47	Jingdezhen Museum of Chinese Ceramics	Jingdezhen	●	●	●	●	self-owned/O EM/external	The horse treads on the swallow	Tea sets, prints	http://www.zgtcbwg.com/	A small number of printed and IP-based products, and ceramic products.

No: ○, Yes ●

Appendix II, Research Questionnaire



University of Camerino - School of Architecture and Design 36th PhD-2024

Researcher: Wang Jiamin

Supervisor: Carlo Vannicola, Zhang Qian

Museum Branding and Digitisation Research

Questionnaire Survey

Dear Sir/Madam,

Thank you very much for taking your valuable time to participate in this questionnaire research, please read the following instructions carefully:

This questionnaire is for the research in the direction of cultural heritage design and branding of museums. Before answering the questionnaire, please make sure that you have visited museums in your previous experience and consumed the corresponding cultural heritage products in them before filling out the following questionnaire.

This questionnaire is only intended as a study in the direction of cultural heritage design and digitisation of museum branding. The following survey is intended for research purposes only, in which case all personal data is information related to this objective, which is completely anonymous and confidential, so please feel free to fill it out.

Your opinion is crucial for this research and we need your full co-operation, thank you very much!

Part I: Basic information

Please select and fill in according to your actual situation.

1. Age:

☐ 10-25 ☐ 25-40 ☐ 40-55 ☐ 55-70 ☐ 70+

2.Genders:

☐ Male ☐ Female

3.Career:

☐ Civil Servants ☐ Teachers ☐ Freelancers ☐ Corporate ☐ Students

☐ Designer ☐ Researchers ☐ Others_____

4. Nationality: _____

5. City of residence: _____

6.How many times have you visited museums in the last year?

☐ 1 ☐ 2 ☐ 3 ☐ More than 3 times

7. How many times have you purchased cultural heritage products offline at the museum?

☐ 1 ☐ 2 ☐ 3 ☐ More than 3 times

8. How many times have you purchased cultural heritage products offline at the museum?

☐ 1times ☐ 2-5times ☐ More than 5 times

8. What are the ways for you to purchase museum cultural products?

(Multiple choice)

☐ Museum offline shops ☐ Museum official online shop ☐ Online third-party shopping platforms (e.g. Taobao, Jingdong, Amazon, etc.) ☐ Offline third-party souvenir shops ☐ Exhibitions ☐ Others:: _____

9. What aspects of museum visits are you focusing on more than anything else? (Multiple choice)

☐ Exhibits ☐ Cultural and Educational ☐ Public Facilities ☐ Museum Shop ☐ Digital Interactive Display ☐ Services ☐ Experiential Activities

Part II, Scale Research Section

The research was conducted on a five-point Likert scale (1=Strongly Agree, 5=Strongly

Disagree), please select the appropriate option based on your understanding of the question and your level of agreement.

Social and Environmental Effects Scale

	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Social and environmental effect	1.I care about museum merchandise as a way of contributing to my efforts to spread museums and culture					
	2.I will buy museum brand merchandise because it gives me a sense of fulfillment when I buy it.					
	3.I'll be looking at museum merchandise because it's popular or because everyone is buying it.					
	4.I used to see a lot of advertisements and promotions related to museum branding					
	5.I think I will be more likely to buy the museum brand products in a museum environment					

Design Effects Scale

	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Design effect	1.I prefer to buy museum products that are more about beauty than functionality.					

	2. I would prefer museum products with traditional cultural styling.					
	3.I would be more likely to buy a museum products because it gives me a different feeling than other types of products					
	4.I would be more likely to buy museum products that are interactive or watch digital interactive exhibitions of museums.					
	5.I think it better for museum products to have as much functionality as possible					

Branding Effect Scale

	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Branding effect	1.I prefer to buy museum branding because of its reputation in the community.					
	2.I am more likely to buy products with some museum brand identity.					
	3.I prefer the product of some museums brand because I think the quality of their product is good.					
	4.Co-branding of museums with other brands would be more appealing to me.					

	5.I want to buy museum branding products because I see the value and significance of the brand.					
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Communication Effects Scale

	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Communication effect	1.Compared to offline visits, I am more attracted to museum culture promotion on the internet and in the media.					
	2. I prefer interactive and entertaining cultural and creative experiences such as games and digital interactions to ordinary cultural heritage products.					
	3.When I see a favourite museum's promotion or related products on the internet or in the media, it will motivate me to visit or purchase them offline.					
	4.I will share my favourite museum products or activities with my friends.					
	5 , I will follow the information and advertisements of the museum branding I like on the internet regularly.					

Cognitive Emotion Scale

	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Cognitive Emotion	1.I prefer a complete, immersive museum visit and purchase experience.					
	2.I feel more emotionally connected to museum products than to general merchandise.					
	3.I usually buy museum merchandise as a souvenir of my visit and as a memory for the future.					
	4.I prefer the novelty and cute design of museum products to ordinary replicas.					

Purchasing Behaviour Scale

	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Purchasing Behaviour	1. I will buy museum products as part of my museum experience.					
	2. I prefer to buy museum products with artistic and aesthetic value					
	3. My impression of a museum branding determines whether or					

	not I buy the museum's products.					
	4. The publicity of online media has a strong influence on my visit to museums and my purchase of museum products.					

Participation and achievements

Publications:

Wang, J. (2024). A Literature Review on Museum Merchandising and Branding based on Cultural Heritage Creative Design. *Highlights in Art and Design*, 5(2), 1-6.
<https://doi.org/10.54097/ho1xzm6c8>

Wang Jiamin & Li zhennan. (2024). 浅谈设计驱动的河洛地区文化消费创新型开发策略. *中国集体经济* (24), 129-132.
doi:10.20187/j.cnki.cn/11-3946/f.2024.24.009.

Participate in the project:

2022 Henan Provincial Key R&D and Promotion Special Soft Science Research Project 'Research on the Overall Protection of He Luo Culture' (Project No. 222400410204);

Participation in activities:

5/12/2021:The Seventh China Virtual Reality Industry-University-Research Conference
21/12/2021:Digital Conversation Innovation Symposium for art and cultural heritage
25/02/2022Workshop on Open Science, held by Elena Giglia

23-24/04/2022:The 8th China Virtual Reality Industry-Academia-Research Conference (CVRVT2022) "XR+Smart City Technology" Forum

28/05/2022:2022The International Conference on Metaverse and Innovation Design

05/07/2022: The boundary of vision-visual design and international education forum in the age of intelligent media

18/05/2022: MADE IN-LAND Final Conference

14/10/2022-04/11/2022: Design da leggere

24/09/2022: The 9th Chinese Exposition of Museum

Courses:

03-07/2022 (4 FCU) : Scientific Research Methodology for Advanced Design

03-07/2022 (4 FCU) : Architects and Architectural Photography PhD seminar

03-06/2023 (3 FCU): Visual arts in contemporary Architecture, Design and Landscape

03-06/2023 (7 FCU): Scientific research methodology

2021/2022/2023 Training Courses:

21/02/2022 Open Science, the time is now