

Article

# Exploring the Role of Emotion in the Relationship between Museum Image and Tourists' Behavioral Intention: The Case of Three Museums in Xi'an

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**Abstract:** As a crucial part of cultural tourism, museums can represent the cultural image of a destination. From the perspective of emotion, this study adopted structural equation modeling to examine the correlation between emotion, museum image, and behavioral intention of tourists. Additionally, the mediating effects of cognitive motivation (overall stratification) and emotional motivation (positive and negative emotion) on the paradigm of “museum image–behavioral intention” were compared and analyzed. This research was undertaken at three museums in Xi'an, China, with 893 valid questionnaires collected. The results showed that the image of the museum has a significant impact on tourists' emotions and a significant positive impact on overall satisfaction and behavioral intention. Moreover, tourists' emotions significantly influence the overall satisfaction and behavioral intention; they play different mediating effects between museum image and behavioral intention. Finally, managerial and theoretical implications were discussed.

**Keywords:** museum image; tourist emotion; satisfaction; behavioral intention; multiple mediating effect; China

## 1. Introduction

It has been widely recognized that destination tourism development is largely determined by the willingness of tourists to revisit and their recommendations [1]. Museums are considered as a suitable place where tourists gain various experiences (e.g., emotional, physical, intellectual, and spiritual) [2]. Research on museum tourism was first developed in the 1990s, linking sightseeing with museum images, which contributed to the growth of the tourism industry and the long-term development of museums [3–5]. Cultural tourism attractions include museums, art galleries and exhibitions [2,6,7]. However, museum studies indicating cultural values of destination images in cities have been neglected.

Destination image generally refers to cognitive and emotional process based on people's perception of a destination [8,9]. With the growth of tourism research, the concept of destination image is gradually changing from static to dynamic, with measurement of the image being made at different stages (before, during, and after the visit) [10–13]. A focus on the destination image is essential because it affects not only the decision-making behavior of tourists, but also the satisfaction level of the tourist experience [14,15]. In order to measure the destination image specifically, willingness to recommend and revisit are widely used in evaluation exercises using questionnaires and interviews [16–19]. From the perspective of the destination, a good image affects the decision-making behavior of tourists, leading to a positive experience, thus improving their satisfaction and loyalty [11].

In previous theoretical studies, tourist behavior is assessed via their perception, comparison, and selection of tourism destination images [20]. The interaction mechanism between tourism destination image and tourists' behavioral intention is mainly focused on the mediating role of satisfaction [21–23]. However, this perspective neglects the influence of emotion on the formation of a tourism destination image and behavioral intention. Museums are unique cultural resources and ideal places to study customers' emotions, as displays and styles of exhibit in museums may lead to different emotions (such as delight or boredom) [24], and thus influence tourists' willingness to revisit and recommend destinations to potential visitors. As a capital of thirteen dynasties, Xi'an has numerous historical relics and cultural tourism resources. These pull factors attract thousands of tourists both national and international, facilitating the investigation of this study.

In this study, we aim to (1) Explore the attributes of destination image in museums; (2) Study the influence of the museum image on the bipolar emotions of tourists; (3) Analyze the emotional mechanism generated from tourists' behavioral intention; (4) Compare emotional strength of the mediating effects between image of museum attractions and tourists' behavioral intention. The analysis and comparison of cognitive motivation (satisfaction) and emotional motivation (positive and negative emotions) can help reveal their mediating effect on "destination image-behavioral intention". To some extent, it can also enrich and perfect the study of the destination image pertinent to the impact on tourists' behavioral intention, broadening the understanding of the social psychology of tourism.

## 2. Theoretical Framework and Hypothesis

### 2.1. Museums and Destination Image

The importance of culture in tourism activities has been recognized for decades [15,25–27]. In particular, museums, galleries, and other tourist attractions of cultural value helped regeneration of certain characteristics of destinations in some cities [5]. Museums can not only promote regional economic growth, but also serve as a unique attraction for tourist destinations [28]. In addition to some functions of museums in the past (e.g., exhibition, education, research), new functions of museums based on tourists' characteristics have been expanded today [2,26]. Hence, from the past to the present, museums have witnessed a change in people's perception of a region, helping local residents and foreign tourists to identify with and understand the local culture [4,28–30]. Thus, museums can show and represent the destination image of a region, in part from the cultural level. While people are traveling, an affective image develops simultaneously in the image formation of the destination [31,32]. Recent research has found that negative emotions and stereotypes will remain unchanged in the travel experience, which negatively affects destination image [33]. By using life satisfaction, eudemonia, and affect as the explanatory variables to measure tourists' happiness, Chen concluded that positive emotions change more than negative affect towards the destination image [34].

Vaughan focused on local residents by investigating their understanding of the nature of museum image and discussed the relationship between experience and image [35]. To further understand the image formation process of museums, Gil and Ritchie analyzed and compared the two largest target markets of museums, tourists and local residents respectively, on the basis of previous studies. They found that there were no significant differences between residents and tourists in the different dimensions of images, but there were important differences in explaining the segments of image formation [28]. Through studying museum marketing, Wallace has produced solutions to enhance and consolidate the image, loyalty, and support of tourists for museums [36].

### 2.2. Emotion Studies of Museums

The latest studies show that the method of using intuition and cognition to define the concept of image has been gradually replaced by the consumer's interpretation of destination logic and emotion [13]. In earlier times, because of the importance of the affective component in visiting museums, museums were considered as an ideal place to conduct research about customer emotion [37].

In museums, visitors can participate in a variety of activities, which can be physical, emotional, or psychological; formal or informal [38]. When choosing sites with warfare relics as tourist destinations, the primary intention of tourists is to undergo an emotional experience, rather than for the sole purpose of education or entertainment [39]. Liu pointed out that museums need to carry out pertinent research on tourists to provide better exhibitions and suitable services and apply the knowledge gained in practice [40]. According to Liu's research, exploring tourists' opinions and emotions, and studying tourists' reactions are conducive to optimizing research on the tourist market. Besides, psychological and emotional changes of tourists will bring different responses, even if applied to the same scenic spot [41]. Today, museums have been transformed: from providing visitors with tangible collections and facilities to adding intangible experiences, emotions and memories [13].

In tourism activities, the destination image is an important stimulus for the emotions of tourists. Tourists will conduct cognitive evaluation according to the experience brought by the destination image. Generally speaking, a good image will stimulate tourists to have positive emotional perceptions [42]. Scholars have included the theory of emotion in the study of tourism, focusing on exploring the influence of the museum's environmental atmosphere on tourists' emotional responses (Figure 1) [28,41,43]. As discussed above, we propose the following hypotheses:

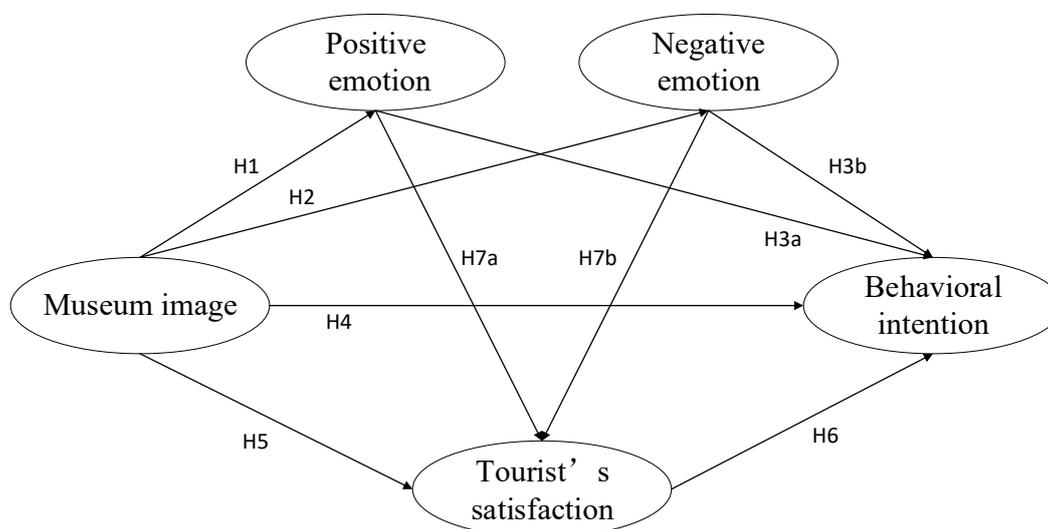


Figure 1. The conceptual model.

**Hypotheses 1 (H1):** *Museum image has a positive effect on tourists' positive emotions.*

**Hypotheses 2 (H2):** *Museum image has a negative effect on tourists' negative emotions.*

### 2.3. Behavioral Intention

To formulate appropriate marketing strategies, the first step is to clarify the relationship between different types of tourists [44]. In particular, it is important to understand the behavior and preferences of visitors. In order to improve the quality of museum experience, many researchers have studied tourists' behaviors, attitudes, cognition, and expectations from the perspective of the demand side: tourists [4,29]. Adding behavior and psychology to different time points in experience studies is a complementary way to understand the tourist sphere. Many studies have analyzed the relationship between consumer behavior and experienced value, which outlines the perception value [45,46]. The kinds of museum exhibits, to a large extent, can determine the experience and behavior of visitors [38]. Specifically, an individual's attitude towards a behavior will be affected by the objective beliefs and subjective emotions of this behavior [47].

Barbieri and Mahoney discussed the relationship between the live performing arts and tourist behaviors and concluded that cultural omnivorous behaviors are related to cultural tourism [44]. The behavior after actual experience will be restricted by factors such as lack of free time, forgetting and being influenced by others. Therefore, Antón, Camarero, and Garrido studied co-creation experience by collecting tourists' first intention before tourism activities and they proved that recommendation and revisit behavior of tourists can be driven by active experience [38]. Previous studies have confirmed that positive tourist experience will increase people's willingness to visit again, thus increasing their positive WOM (word-of-mouth) recommendations (Figure 1) [1,48].

**Hypotheses 3a (H3a):** *Positive emotion has a positive effect on behavioral intention of tourists.*

**Hypotheses 3b (H3b):** *Negative emotion has a negative effect on behavioral intention of tourists.*

**Hypotheses 4 (H4):** *Museum image has a positive effect on tourists' behavioral intentions.*

#### 2.4. Tourist Satisfaction and Loyalty

Satisfaction and loyalty often accompany the travel experience. In the context of utilitarianism, emotions have a positive or negative impact on the visitor's satisfaction and loyalty [49]. Low emotions lead to a negative effect on satisfaction. In fact, loyalty can also be understood as a behavior exhibited by tourists after experiencing a certain service [50]. As an important field of tourist behavior research, the relationship between satisfaction and loyalty has been widely tested [51,52]. Satisfied customers are not only likely to come to the tourist destination repeatedly in the future, but also deliver favorable comments about the destination in their social circle [53].

Kuo et al proved that positive emotions have a stronger effect on satisfaction than negative emotions, which do not inspire tourists to recommend a destination [54]. Gieling and Ong used a social identity theory structure to verify whether identity and tourists' emotions are connected and found that the emotion and satisfaction of visitors varied considerably for a warfare museum [7]. Enrique, Mattila, and Andreu examined museums and theme parks and found that emotions explained consumer reactions to hedonic services [55]. To be more concrete, positive emotions (e.g., happiness, pleasure) are positively correlated with both satisfaction and loyalty. Jin et al and Tsai have verified that satisfaction, perceived image, tourist participation, and experience are antecedent variables of behavioral intention, and in tourism activities, these variables are highly correlated with behavioral intention [11,47,56]. There are few studies on visitor satisfaction and behavioral intention in museums. Most of the existing studies have confirmed that satisfaction in the museum context has a direct and positive impact on behavioral intention [38,53,56]. In particular Nowacki investigated the satisfaction of visitors to museums and zoos in Poland through an emotion semantic scale, and also obtained a positive relationship between satisfaction and behavioral intention [57] (Figure 1). Consequently, we propose the following hypotheses:

**Hypotheses 5 (H5):** *Museum's image has a positive effect on tourist satisfaction.*

**Hypotheses 6 (H6):** *Tourists' satisfaction has a positive effect on behavioral intention.*

**Hypotheses 7a (H7a):** *Positive emotion has a positive effect on satisfaction of tourists.*

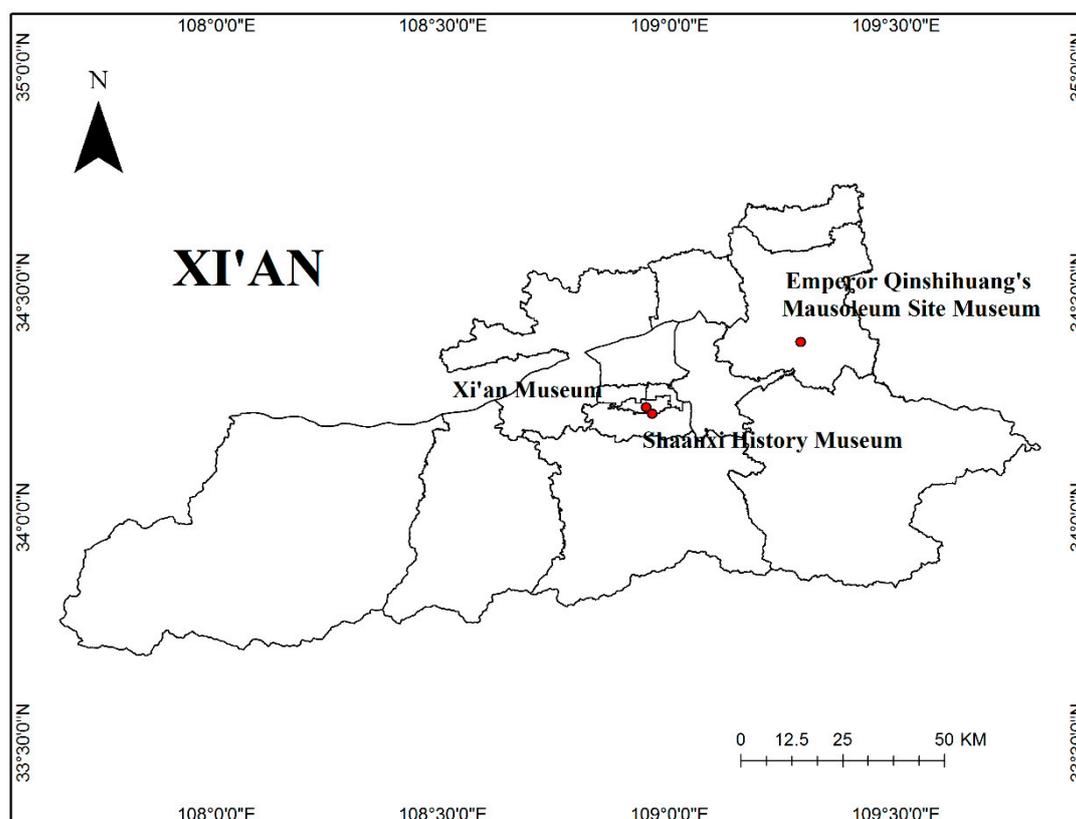
**Hypotheses 7b (H7b):** *Negative emotion has a negative effect on satisfaction of tourists.*

### 3. Materials and Methods

#### 3.1. Study Area

This study was conducted at three museums (Emperor Qinshihuang's Mausoleum Site Museum, Shaanxi History Museum and Xi'an Museum) in Xi'an city, Shaanxi province, China. Emperor Qinshihuang's Mausoleum Site Museum is situated in the northeast of Xi'an and has a huge number

of annual visitors (6.85 million visitors in 2017, including 0.22 million under 18-year-olds). Besides, it has been listed in The World Heritage List by United Nations Educational, Scientific and Cultural Organization (UNESCO) since 1987. Shaanxi History Museum is located in the center of Xi'an and is a non-profit organization, which displays Shaanxi history, culture and Chinese ancient civilization. In order to enhance the quality experience of tourists and ease of management, this museum limits the number of tourists, with 6000 visitors for each day. Xi'an museum is the latest site among three museums and was established in 2007. It contains 110,000 pieces of cultural relics, within a 16.4 ha area. Among the three museums, Emperor Qinshihuang's Mausoleum Site Museum relates to the status as a heritage site, Shaanxi History Museum is a comprehensive site and Xi'an museum is a historic garden site. These three museums represent key tourism destinations in Xi'an, basically covering the integral cultural image (Figure 2).



**Figure 2.** Location of the three study museums.

### 3.2. Data Collection

The scale of the museum image comprises eight attributes, which are based on the museum, historical relics and cultural heritage studies. All attributes were measured by using a seven-point Likert scale from 1–7, according to the level of respondents' agreement with the museum image. A positive and negative affect schedule (PANAS) has been widely recognized as validated in many studies, and emotions were measured with eight items from the study by Ortuño-Sierra et al. [58–61]. The measurement of behavioral intention was based on the revisitation of and recommendation from the study by Lee, Graefe and Burns [62]. For satisfaction and loyalty, we adopted the scale from the study by Forgas-Coll et al [63].

To ensure the content validity of the scale, a pre-test was conducted at Shaanxi History Museum and Xi'an Museum on 16 July 2017. In addition two museum managers and two experts in tourism management were consulted, which further improved the validity of the questionnaire. A slight modification was made to the original version of the questionnaire. The research work was carried

out from 22 July 2017 to 6 August 2017 and the questionnaire was distributed at different periods of the day. The investigators comprised 15 undergraduate and graduate students majoring in tourism management. Visitor service centers, internal and external rest areas, bus stations, and other probable areas where tourists gather were the main distribution places of the questionnaires. During the whole research period, 1020 questionnaires were distributed to the museum visitors, and 893 valid questionnaires were finally obtained after removing incomplete and invalid questionnaires.

In the data analysis, SPSS 22.0 software was used to analyze the dimensions of the museum image, whilst using AMOS 21.0 software to build structural equation modeling (SEM) to identify relationships among variables.

## 4. Results

### 4.1. Demographic Profile

Of the 893 respondents, the numbers of males and females were almost same (50.06% and 49.94% respectively). Respondents aged 18–45 comprised 91.26% and those who had obtained a Bachelor's degree 54.42%. As for respondents' monthly income, 75.81% indicated their income was below 6000 Yuan (US\$883.8). When the occupation of respondents was asked, 44.01% were students and 16.35% were employed by enterprises or institutions. Most respondents were from other provinces (72.23%) and 74.58% reported that they were first-time visitors to the museums. In terms of the frequency of visiting museums, 39.98% of respondents visited museums once or twice per year and 29.68% of them had paid no visits to museums in the past year. The main purposes of the respondents' visit to the museum were to broaden their knowledge, or for relaxation and for entertainment, accounting for 60.81%, 47.03%, and 41.55% respectively. Table 1 summarizes the detailed demographic characteristics of the sample.

**Table 1.** Respondents' profile (N = 893).

Variables	Frequency	Variables	Frequency
<b>Gender</b>		<b>Occupation</b>	
Male	447 (50.06)	Civil servants	32 (3.58)
Female	446 (49.94)	Working in enterprises and institutions	146 (16.35)
<b>Age(years)</b>		Teachers	66 (7.39)
18–25	461 (51.62)	Service/salesman	40 (4.48)
26–35	197 (22.06)	Students	393 (44.01)
36–45	157 (17.58)	Self-employed	114 (12.77)
46–55	43 (4.82)	Others	102 (11.42)
Over 55	35 (3.92)	<b>Number of Visits to the Museum</b>	
<b>Educational background</b>		Once	666 (74.58)
Below secondary school	102 (11.42)	Twice	132 (14.78)
High school	206 (23.07)	Three times	35 (3.92)
Bachelor's degree	486 (54.42)	Over three times	60 (6.72)
At least Master's degree	99 (11.09)	<b>Number of visits to museums (per year)</b>	
<b>Monthly income (Yuan)</b>		0 time	265 (29.68)
Under 2000	324 (36.28)	1–2 times	357 (39.98)
2001–4000	144 (16.13)	3–4 times	166 (18.59)
4001–6000	209 (23.40)	Over 5 times	105 (11.75)
6001–8000	92 (10.30)	<b>Purpose of the trip (multiple)</b>	
8001–10000	69 (7.73)	Open up horizons	543 (60.81)
Over 10000	55 (6.16)	Relaxation	420 (47.03)
<b>Residence</b>		Enhance the bonds	160 (17.92)
Xi'an downtown	15.45 (138)	Learning and working	185 (20.72)
Xi'an surrounding area	60 (6.72)	Entertainment	371 (41.55)
Other parts of Shaanxi Province	50 (5.60)	For children's learning	145 (16.24)
Other provinces	645 (72.23)	Other purposes	28 (3.14)

#### 4.2. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA)

Maximum variance rotation principal components analysis (PCA), a form of factor analysis, was employed. After rotation, some items were deleted if the factor loading was less than 0.5 or more than 0.4 on multiple factors at the same time. So, by this measure, after five rounds of factor analysis, a scale eventually comprised 35 remaining items after removing 10 items: Toilet facilities are good (MF1), modern navigation display devices are easy to use (MF4), environment of the museum is clean and comfortable (MC1), museum temperature is comfortable (MC3), good museum lighting (MC4), the museum building's exterior characteristics are good (MC5), museum interior design is distinctive (MC6), interpretation service quality is good (ES8), convenient ticket booking/purchasing channel diversity (TS1), and tickets waiting time is appropriate (TS2). The EFA of these 35 items was carried out. The Kaiser-Meyer-Olkin (KMO) value was 0.954 and the Bartlett sphere test was significant (chi-square = 27,203.732,  $df = 990$ ,  $p < 0.001$ ), indicating that the sample data were normally distributed and suitable for factor analysis. In terms of the contribution rate of variance interpretation, the first 8 factors explain 73.1% of the information, which is higher than the usually accepted 60% standard, indicating that it is acceptable to extract 8 factors. At the same time, the factor load of the whole scale is between 0.587 and 0.845, both of which are higher than the standard of 0.4, suggesting that the museum image scale has good reliability.

Referring to the definition of structural model-related indicators by Hou (2004), this study mainly uses absolute fit indices, incremental fit indices, and parsimonious fit indices to verify the model fit. AMOS21.0 was used to conduct confirmatory factor analysis on 8 factors obtained from exploratory factor analysis. Specifically, the first-order measurement model is constructed by taking 35 measurement items as observation variables and 8 factors as latent variables. It can be seen from the analysis results (Table 2) that data fit well in the SEM ( $\chi^2 = 1668.239$ , goodness of fit index (GFI) = 0.898, adjusted goodness of fit index (AGFI) = 0.880, root mean square error of approximation (RMSEA) = 0.049, normed fit index (NFI) = 0.923, relative fit index (RFI), comparative fit index (CFI) = 0.946, Tucker-Lewis index (TLI) = 0.940, incremental fitting index (IFI) = 0.946, parsimoniously normed fit index (PNFI) = 0.827, parsimonious goodness of fit index (PGFI) = 0.760, parsimoniously comparative of fit index (PCFI) = 0.848). This demonstrates that the model can fit well with the data and that the validity of the scale is verified.

**Table 2.** Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) of the museum image. AVE: average variance extracted.

Factor or Items	EFA Loading	CFA Loading	Variance	Mean	Cronbach's	Average Variance Extracted (AVE)	Composite Reliability (CR)
<b>Factor 1: Explanation system</b>				5.23	0.924	0.649	0.928
The location of service center is reasonable	0.587	0.783					
Brochures are informative	0.676	0.797					
Signposts and guide maps are complete	0.718	0.821	14.163				
Interpretation boards for cultural relics are complete	0.742	0.818	(40.465%)				
Electronic touch screens operate well	0.724	0.828					
Portable interpretation equipment operates well	0.742	0.812					
Reasonable interpretation content	0.654	0.777					
<b>Factor 2: Canteen and Souvenirs</b>				4.83	0.913	0.652	0.918
The prices of souvenirs are reasonable	0.662	0.761					
Various types of souvenirs are available	0.723	0.801					
Souvenirs have good features	0.715	0.793	2.575				
Food and beverage prices are reasonable	0.801	0.851	(7.348%)				
Food and beverages have good taste	0.768	0.844					
Various types of food and beverage offered	0.705	0.791					
<b>Factor 3: Staff members</b>				5.77	0.923	0.720	0.928
The staff have rich professional knowledge	0.628	0.756					
The staff are very polite	0.806	0.875	2.119				
The staff are well dressed	0.834	0.895	(6.054%)				
The staff can help tourists quickly and effectively	0.802	0.860					
The staff have good attitude towards tourists	0.820	0.849					
<b>Factor 4: Traffic accessibility</b>				5.27	0.877	0.654	0.883
Parking is convenient for tourists	0.768	0.797					
External accessibility to the museum is good	0.808	0.877	1.670				
Internal transportation in the museum is good	0.788	0.839	(4.772%)				
The opening hours of the museum are reasonable	0.701	0.712					
<b>Factor 5: Display and Exhibitions</b>				5.69	0.866	0.626	0.870
The exhibits display in a reasonable way	0.702	0.788	1.570				
Display order is logical	0.791	0.837	(4.487%)				
The tour route is set up reasonably	0.804	0.802					
The themes of different areas are clear	0.754	0.733					
<b>Factor 6: Facilities and Circumstance</b>				4.73	0.860	0.622	0.868
Rest areas have sufficient facilities (e.g. chairs)	0.788	0.787	1.233				
Leisure facilities are well-equipped (e.g. cinemas, cafeterias and book bars)	0.787	0.836	(3.524%)				
Media facilities are attractive	0.660	0.778					
The density of visitors is suitable	0.702	0.750					

Table 2. Cont.

Factor or Items	EFA Loading	CFA Loading	Variance	Mean	Cronbach's	Average Variance Extracted (AVE)	Composite Reliability (CR)
<b>Factor 7: Exhibits' quality</b>			1.157	5.77	0.847	0.657	0.852
Various types of exhibits	0.783	0.863	(3.305%)				
The exhibits are precious and rare	0.811	0.790					
The exhibits have educational value	0.845	0.776					
<b>Factor 8: Ticket service</b>			1.091	4.29	0.671	0.511	0.677
The ticket price is reasonable	0.795	0.705	(3.117%)				
The information on the tickets is valuable	0.784	0.725					
Absolute fit indices			$\chi^2 = 1668.239$ GFI = 0.898 AGFI = 0.880 RMSEA = 0.049				
Incremental fit indices			NFI = 0.923 RFI = 0.914 CFI = 0.946 TLI = 0.940				
Parsimonious fit indices			IFI = 0.946 PNFI = 0.827 PGFI = 0.760 PCFI = 0.848				

According to the results (Table 3), the average variance extracted (AVE) for values of each dimension of the museum image were  $>0.5$ , meeting the requisite standards [59]. In addition,  $R^2$  values of all items in the museum image scale were greater than 0.3, indicating that the data had good structural validity. At the same time, the AVE square root of each latent variable of the museum image is greater than the correlation coefficient between latent variables, which indicates that the difference validity of the model is good.

**Table 3.** The difference validity test of museum image dimension.

	F1	F2	F3	F4	F5	F6	F7	F8
F1 Explanation system	<b>0.806</b>							
F2 Canteen and souvenirs	0.733	<b>0.807</b>						
F3 Staff members	0.665	0.602	<b>0.849</b>					
F4 Traffic accessibility	0.605	0.590	0.549	<b>0.809</b>				
F5 Display and exhibition	0.574	0.473	0.441	0.437	<b>0.791</b>			
F6 Facilities and circumstances	0.694	0.645	0.466	0.563	0.508	<b>0.789</b>		
F7 Exhibits' quality	0.415	0.377	0.409	0.359	0.642	0.365	<b>0.811</b>	
F8 Ticket service	0.563	0.548	0.452	0.489	0.448	0.512	0.340	<b>0.715</b>

#### 4.3. Regression Analysis

In this study, gender, permanent residence, age, occupation, educational background, and monthly income were set as control variables for analysis. Specifically, six demographic variables, including gender, were put into the regression model. Secondly, on the basis of the first step, eight dimensions of museum image were added as independent variables, and positive, negative, overall satisfaction, and behavioral intention of tourists were taken as dependent variables for regression analysis. The results of the regression analyses are summarized in Table 4 and explained below.

(1) Museum image has a significant positive influence on tourists' positive emotions. On the premise of controlling the influence of demographic characteristics, eight-dimension variables of museum image were added;  $R^2$  of the regression model was significantly improved, indicating that there was a significant correlation between museum image and tourists' positive emotions. All eight dimensions of museum image have significant positive effects on tourists' positive emotions, ranging from strong to weak, including exhibition quality, accessibility of transportation, staff service, catering and souvenirs, interpretation system, display and exhibition, ticket service, and facilities and environment in the museum. Thus, hypothesis 1 has been verified.

(2) Museum image has a negative influence on tourists' negative emotions. It can be seen that in the attribute dimensions of museum image, staff service, traffic accessibility, exhibit quality, facilities, and environment in the museum have a significant negative effects on tourists' negative emotions. On the other hand, the attribute dimensions of display, ticket service, interpretation system, catering, and souvenirs have no significant effects on tourists' negative emotions, which indicates that the staff service, facilities, and environment are mainly negative factors for tourists. Thus, research hypothesis 2 was partially verified.

(3) Museum image has a significant positive influence on overall satisfaction and behavioral intention. It can be seen from Table 4 that all the eight dimensions of museum image have a significant positive effect on tourists' overall satisfaction. Thus, research hypothesis 5 is verified. Interpretation system, catering and souvenirs, staff service, traffic accessibility, display and exhibition, exhibit quality, and ticket service all have significant positive effects on tourists' behavioral intention. Research hypothesis 5 is therefore supported.

**Table 4.** Multiple regression analysis of museum image attributes on tourist emotion, overall satisfaction, and behavioral intention.

Variables	Positive Emotion		Negative Emotion		Overall Satisfaction		Behavioral Intention	
	Frist Step	Second Step	Frist Step	Second Step	Frist Step	Second Step	Frist Step	Second Step
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
Gender	0.029	0.036	−0.110 **	−0.086 *	0.025	0.042	0.021	0.020
Residence	0.051	−0.021	−0.096 **	−0.055	0.072	0.034	0.046	−0.021
Age	0.063	0.042	0.063	0.063	0.010	−0.001	0.026	0.019
Occupation	0.063	0.049	0.043	0.052	−0.041	−0.044	−0.018	−0.036
Educational background	−0.033	0.024	−0.046	−0.040	−0.036	0.007	−0.089 *	−0.048
Monthly income	0.037	0.008	−0.005	0.021	−0.020	−0.023	0.047	0.020
Explanation system		0.180 ***		−0.046		0.197 ***		0.184 ***
Canteen and souvenirs		0.226 ***		−0.002		0.141 ***		0.168 ***
Staff members		0.234 ***		−0.103 **		0.075 *		0.190 ***
Traffic accessibility		0.264 ***		−0.089 *		0.109 **		0.207 ***
Display and exhibition		0.137 ***		−0.062		0.132 ***		0.163 ***
Facilities and circumstance		0.112 ***		−0.080 *		0.087 *		0.030
Exhibits' quality		0.289 ***		−0.128 ***		0.134 ***		0.178 ***
Ticket service		0.121 ***		−0.044		0.142 ***		0.156 ***
F	1.505	27.823 ***	3.671 **	4.347 ***	1.177	9.077 ***	1.324	16.076 ***
R <sup>2</sup>	0.012	0.349	0.029	0.077	0.010	0.149	0.011	0.237
$\Delta R^2$	0.004	0.337	0.021	0.060	0.001	0.132	0.003	0.222

Note. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

In order to better check tourists' emotions with overall satisfaction and behavioral intention, sex, residence, age, occupation, education, and income are set as control variables; tourists' positive emotions and negative emotions are set as independent variables. Then overall satisfaction and behavioral intention variables are added into the regression model for analysis. The results are shown in Table 5. Tourists' emotions significantly affect their overall satisfaction and behavioral intention. After controlling the demographic characteristics variables and adding the positive and negative emotion variables of tourists, the  $R^2$  of both models significantly increased, indicating that there is a significant correlation between tourists' emotion and tourists' overall satisfaction and behavioral intention. Among them, the tourists' overall satisfaction and positive emotions significantly positively influence behavioral intention, and tourists' negative emotions significantly negatively impact overall satisfaction and behavioral intention. This indicates that H7a and H7b, and H3a and H3b are supported. There is a significant positive relationship between tourists' overall satisfaction and their behavioral intention. Hypothesis 6 is thus verified.

**Table 5.** Multiple regression analysis of tourist emotions on overall satisfaction and behavioral intention.

Variables	Overall Satisfaction		Behavioral Intention	
	First Step	Second Step	First Step	Second Step
	$\beta$	B	B	$\beta$
Gender	0.025	−0.005	0.021	−0.025
Residence	0.072	0.037	0.046	−0.007
Age	0.010	0.000	0.026	0.012
Occupation	−0.041	−0.055	−0.018	−0.038
Educational background	−0.036	−0.033	−0.089*	−0.085**
Monthly income	−0.020	−0.033	0.047	0.027
Positive emotion		0.347 ***		0.513 ***
Negative emotion		−0.181 ***		−0.284 ***
F	1.177	20.557 ***	1.324	61.602 ***
$R^2$	0.010	0.183	0.011	0.402
$\Delta R^2$	0.001	0.175	0.003	0.396

Note. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

#### 4.4. Mediating Effect

The specific steps of the mediating effect model are as follows: the first step is to take the eight dimensions of museum image as independent variables and behavioral intention as a dependent variable for regression analysis. The second step is to take the eight dimensions of museum image as independent variables, and take tourists' positive emotions, tourists' negative emotions, and overall satisfaction as dependent variables for regression analysis. The third step is to take the eight dimensions of museum image, tourists' positive emotions, tourists' negative emotions, and tourists' overall satisfaction as independent variables and conduct regression analysis with behavioral intention as the dependent variable.

The results show that tourists' positive emotions have a partial mediating effect on the relationship between behavioral intention and explanation systems, staff service and behavioral intention, traffic accessibility and behavioral intention, ticketing services, and behavioral intention (Table 6). Tourists' positive emotions have a mediating effect between exhibits' quality and behavioral intention, catering and souvenirs and behavioral intention. The negative emotions of tourists have a partial mediating effect on the relationship between staff service and behavioral intention, and negative feelings have a completely mediating effect between the exhibits' quality and behavioral intention. The overall satisfaction of tourists has a partial mediating role effect on the relationship between the interpretation system and behavioral intention, staff service and behavioral intention, traffic accessibility and behavioral intention, and ticket service and behavioral intention. The overall satisfaction has a

completely mediating effect between catering/souvenirs and behavioral intention, and exhibit quality and behavioral intention.

**Table 6.** Mediation analysis results.

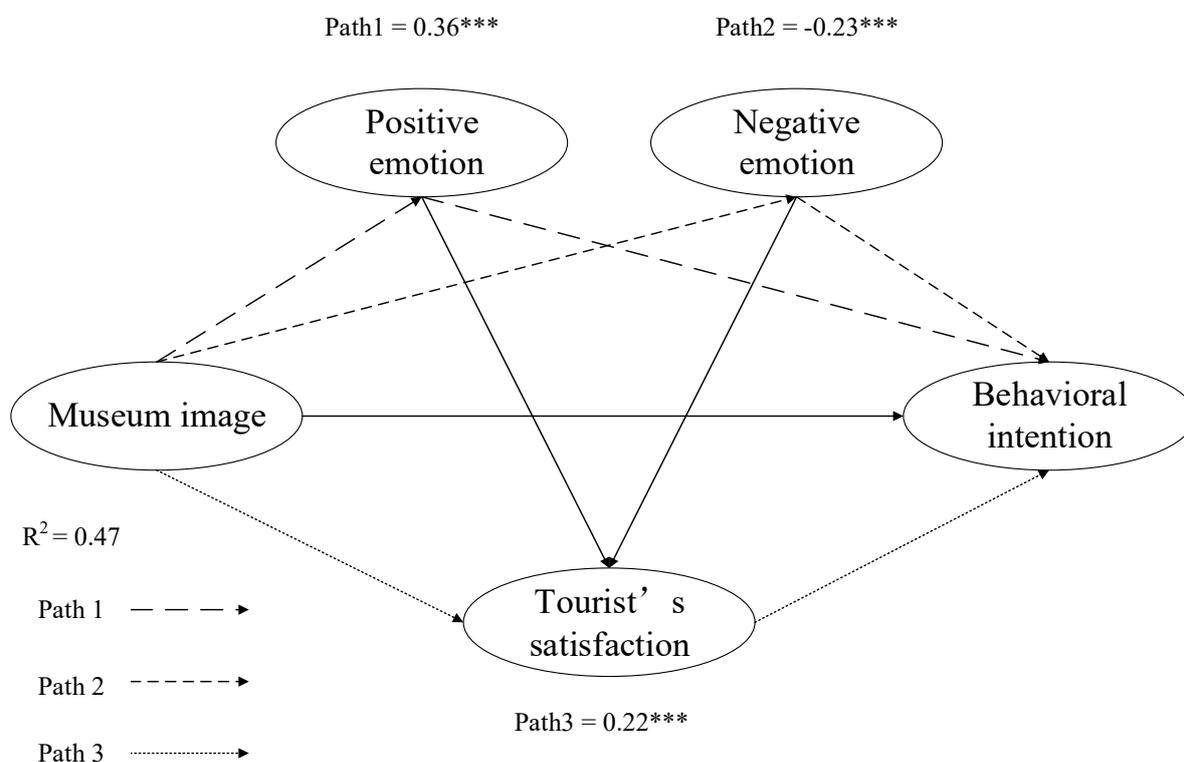
Variables	First Regression	Second Regression		Third Regression
	Behavioral Intention	Positive Emotion	Negative Emotion	Overall Satisfaction
Gender	0.020	0.036	−0.086 *	0.042
Residence	−0.021	−0.021	−0.055	0.034
Age	0.019	0.042	0.063	−0.001
Occupation	−0.036	0.049	0.052	−0.044
Educational background	−0.048	0.024	−0.040	0.007
Monthly income	0.020	0.008	0.021	−0.023
Explanation system	0.184 ***	0.180 ***	−0.046	0.197 ***
Canteen and souvenirs	0.168 ***	0.226 ***	−0.002	0.141 ***
Staff members	0.190 ***	0.234 ***	−0.103 **	0.075 *
Traffic accessibility	0.207 ***	0.264 ***	−0.089 *	0.109 **
Display and exhibition	0.163 ***	0.137 ***	−0.062	0.132 ***
Facilities/circumstance	0.030	0.112 ***	−0.080 *	0.087 *
Exhibits' quality	0.178 ***	0.289 ***	−0.128 ***	0.134 ***
Ticket service	0.156 ***	0.121 ***	−0.044	0.142 ***
Positive emotion				0.358 ***
Negative emotion				−0.233 ***
Overall satisfaction				0.216 ***
F	16.076 ***	27.823 ***	4.347 ***	9.070 ***
R <sup>2</sup>	0.237	0.349	0.077	0.149
ΔR <sup>2</sup>	0.222	0.337	0.060	0.132

Note. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

In order to better understand the mediating effect of tourists' emotions and overall satisfaction on the relationship between museum image and behavioral intention, this study chose to measure the relative size of the mediating effect by the ratio of mediating effect to total effect (Table 7). It can be seen from the table that tourists' emotions and overall satisfaction have a significant mediating effect on the relationship between museum image and behavioral intention. Among them, different emotional states of tourists play different mediating effects in different influencing paths. The overall satisfaction of tourists has the strongest mediating effect on the explanation system and behavioral intention on the return visit, and the weakest mediating effect on the service and behavioral intention of staff. In general, the intensity of the mediating effect of tourists' positive emotions on the museum image and behavioral intention of tourist destinations is higher than the overall satisfaction of tourists and negative emotions of tourists, and the mediating effect of tourists' negative emotions is the weakest (Figure 3).

**Table 7.** The analysis of mediating effects on tourist emotion and overall satisfaction.

Mediating Path	Mediating Effect	Whole Effect	Mediating/Whole Effect
ES→PE→BI	0.064	0.184	0.350
SM→PE→BI	0.084	0.190	0.441
TA→PE→BI	0.095	0.207	0.457
DE→PE→BI	0.049	0.163	0.301
TS→PE→BI	0.043	0.156	0.278
CS→PE→BI	0.081	0.168	0.482
EQ→PE→BI	0.103	0.178	0.581
SM→NE→BI	0.024	0.190	0.126
TA→NE→BI	0.021	0.207	0.100
EQ→NE→BI	0.030	0.178	0.168
ES→OS→BI	0.043	0.184	0.231
SM→OS→BI	0.016	0.190	0.085
TA→OS→BI	0.024	0.207	0.114
DE→OS→BI	0.029	0.163	0.175
TS→OS→BI	0.031	0.156	0.197
CS→OS→BI	0.030	0.168	0.181
EQ→OS→BI	0.029	0.178	0.163



**Figure 3.** The mediating effect model.

### 5. Discussion

This study analyzes the influence of emotion on tourists' behavior and provides a theoretical path for improving tourist satisfaction and loyalty. Moreover, it also provides some implications for enhancing museum image in other countries. The results show that tourists' emotion is the consequence of the effect of museum image, which affects their satisfaction and loyalty. Therefore, this study combines the research conclusions of emotion and museum image, satisfaction and behavioral intention to provide some managerial implications for museum tourism, as discussed below.

The results show that museum image is the leading factor in determining tourists' emotions and has a direct and significantly positive effect on positive emotion (Table 4). A good museum image

can attract more tourists, enhance the trust and support of visitors, and thus generate satisfaction and loyalty to the museum. Specifically, attention should be paid to the improvement of ticketing services. According to the data of this study, the average value of the ticket service dimension of museum image is only 4.29 (Table 2), which is the lowest among the eight dimensions. This indicates that tourists have low recognition of the ticket service. Take the Emperor Qinshihuang's Mausoleum Site Museum for example, the ticket price is 150 Yuan, about twice that of the Palace Museum, which contrasts to the free admission to many museums in some Western countries [2,50]. To some extent, high ticket prices and ticket policies (non-changeable or non-refundable) restrict the development of museum tourism and affect the establishment of the good image of the museum [13]. Meanwhile, as a world heritage, the Emperor Qinshihuang's Mausoleum Site Museum receives far more visitors than other museums annually, which means considerable maintenance and staff costs. Although the ticketing service dimension has the lowest score, local government still give priority to the revenue from ticket.

Besides, a comfortable environment and atmosphere should be created. The study found that the average value of facilities and environment in the museum was only 4.73 (Table 2), slightly higher than that of the ticket service, indicating that tourists have a low evaluation of facilities and environment of the museum. Upgrading and updating various service facilities can create a good visiting environment [54]. Lighting and color are two important factors that influence the design effect of museum displays [7,64–66]. Light not only improves the brightness of a room, but also combines the colors of the exhibits. This is conducive to creating a more suitable visiting environment for display objects and stimulates the optic nerves of tourists, so that they can be positively affected by the environment and atmosphere of the museum while appreciating the display objects. Color is a kind of language that can bring vigor and affect people's mood [54]. The Shaanxi History Museum is mainly brick grey, perhaps making people feel depressed. Museum administrators should match the colors with the theme of the display to create an immersive effect for visitors. For example, red and other warm colors should be used to stimulate the excitement of tourists. Through color collocation, lighting adjustment, and music, a suitable environment can be created in the museum for tourists. The soothing music and bright and warm colors can give tourists auditory and visual enjoyment thus improving their pleasant feelings.

Moreover, the types of cultural and creative products should be enriched. Gil and Ritchie also highlight the importance of museum stores to image improvement [28]. However, the average value of catering and souvenirs is only 4.83 (Table 2), slightly higher than that of facilities, environment, and ticket service. During the field investigation, it was found that tourists generally believed that the prices of food and beverages, as well as souvenirs, were too high, and the varieties were too limited to meet their needs. In contrast, the Palace Museum, by means of online and offline sales collection, has set up a "cultural and creative flagship store of the Palace Museum" on the Internet with rich and diverse product categories. Compared with the other two museums, the collections of the Shaanxi History Museum are able to display thousands of years of history, attracting numerous tourists from abroad. Therefore, cultural and creative products, symbols of local history and culture, should be more abundant and diversified, especially for foreign visitors.

The cultivation of the positive emotions of tourists should be strengthened. The conclusion of this study shows that tourists' positive emotions, satisfaction and behavioral intention have significant positive effects (Table 5), indicating that tourists' positive emotions can generate positive behavioral tendencies. Therefore, it should be a key point of museum management to stimulate and induce positive emotions within tourists. More specifically, the quality management of exhibits should be improved. Research analysis shows that the exhibition quality is significantly correlated with positive and negative emotions of tourists, and the correlation is the highest among all dimensions (0.289,  $-0.128$ ,  $p < 0.01$ ). This shows that the quality of exhibits is the most important factor for inducing both positive emotions and negative emotions in tourists, while Su and Teng believe that the long queue caused by low convenience quality is the main reason for tourists' complaints [13]. The museum should conduct regular market research, obtain information on market demand and exhibit resources,

and hold some themed exhibitions to meet the needs of tourists. At the same time, the manager should analyze and evaluate the quality of the exhibits regularly, collect tourist evaluations on the quality level of the exhibits through questionnaires and make continuous improvements.

Besides, visitor flow should be guided scientifically, and create a comfortable visiting environment for contemplation use [13]. The results of data analysis show that accessibility of traffic is the next biggest factor that affects tourists' positive and negative emotions (0.264,  $-0.089$ ,  $p < 0.01$ ), so it is necessary to ensure smooth internal and external traffic to the museum. Free admission to the Shaanxi History Museum has sharply increased visitor flow, which has caused the exhibition hall to be crowded (especially during holidays). Even the adoption of a limit of 6000 tickets per day has not alleviated this embarrassing situation and has seriously affected the emotion and experience of tourists. In order to solve this problem, advanced information technology can be adopted, e.g., using the camera and network system to monitor the scenic area in real time, releasing visitor flow information, and controlling and guiding flow scientifically [13]. Strengthening infrastructure construction will ensure proper distribution of infrastructure. There is a lack of rest facilities in the Shaanxi History Museum and tourists can only sit on the steps and in the halls, which increases the sense of crowding. Measures such as the addition of a ticket barrier have been adopted to shorten the psychological waiting time of tourists. Waiting in line in scenic spots is an important factor influencing tourists' perceptions of crowding. Therefore, museum managers can ease the crowds by setting up scattered ticket inspection outlets and widening the entrance [67]. In addition, additional services can be added to the waiting area, such as providing free tea and distributing brochures, so as to ease the anxiety of queuing and weaken the perception of crowding for tourists.

The results show that staff service is the third major factor that induces positive emotions and affects negative emotions in tourists (0.234,  $-0.103$ ,  $p < 0.01$ ), and the service level of staff must be improved. Museums are places that provide a service to the public and a variety of tourism services will greatly affect the satisfaction of tourists, which is consistent with previous researches [34,68]. The quality and skills of front-line service personnel directly influence the emotion of tourists and their perception and overall satisfaction [13,69]. By carrying out field research, we found that the service staff of the Shaanxi History Museum were "in line with the rules" and could not meet tourists' consumption demands in a timely and effective way. In addition, the lack of enthusiasm for work and the poor image quality directly led to negative emotions in tourists ( $-0.103$ ,  $p < 0.05$ ). For this reason, museum managers should first strengthen the corporate culture education, enhance the sense of identity and belonging of employees, and encourage them to work and serve more positively to arouse the positive emotions of tourists. Secondly, the training of staff with service skills should be highlighted. Through regular and irregular special training, the professional quality and skills of staff can be improved, the individualized needs of tourists can be quickly identified, and the correct and effective response can be satisfied in timely fashion. Finally, emphasis needs to be placed on oral expression and body training to ensure that staff can provide better service to tourists in a wholehearted manner. In addition, understanding tourists' motivations for visiting can also help managers to improve service quality and find the right remedy [54].

## 6. Conclusions

The research shows that the eight dimensions of museum image have a significant positive impact on tourists' positive emotion. Among them, the quality of exhibits has the strongest influence on positive emotions, while the facilities and environment in the museum have the weakest influence on positive emotions. This corresponds with Prayag and Hosany's argument that a favorable image promotes positive emotional perception [42]. In terms of tourists' negative emotion, staff service, traffic accessibility, exhibit quality, facilities, and environment in the museum show significant negative effects with negative emotion, and the remaining dimensions are not significantly associated with negative emotion. In fact, staff service and other significant variables are dimensions closely related to tourists, which will directly affect tourists' perception of museums and thus affect their emotions.

The effect of the way to display and interpret systems on tourists' emotion depends on the educational level of the tourists. Generally, those who obtained a higher educational degree tend to pay more attention to the form of display and are inclined to read the corresponding commentary carefully. Therefore, these two dimensions have little effect on tourists' negative emotions.

In terms of museum image and overall satisfaction, the interpretation system has the strongest positive effect on satisfaction, which is consistent with previous research conclusions [54]. Meanwhile, the higher the positive impression visitors have of the museum, the more likely they are to choose the attraction and conduct tourism activities.

The study also found that different emotions have different mediating effects on museum image and behavioral intention. In particular, the two dimensions of catering, and souvenir and exhibit quality are more likely to affect tourists' emotional perception and thus influence their behaviors. As a whole, the mediating effect of tourists' positive emotions is higher than that of tourists' negative emotions to overall satisfaction. In the relationship between museum image and behavioral intention, the mediating effect of tourists' positive emotions is the strongest and the mean value is 0.413, followed by overall satisfaction (0.164), and the negative emotions are the weakest (0.131). The types and levels of the three museums are quite different, and future studies may consider dividing the sample into groups for regression according to the museums they visited. In addition, it is essential for future research to examine the emotional path of foreign tourists to the museum image from a cross-cultural perspective.

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