

Sports Performance Tourism and National Fitness: An Empirical Study based on Field Research

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Abstract

In order to understand the relationship between sports tourism and national fitness, field survey, questionnaire survey and Delphi method were used as the main research methods in this study. 574 WanSui-shan tourists were investigated by tourist tourism viewing, tourist tourism experience and physical exercise habits questionnaire. SPSS22.0 and AMOS24.0 were used to construct the path model and test it. The RESULTS showed that tourism VIEWING, as a direct effect, promoted the formation of physical exercise habits, while tourism experience, as a mediating effect between tourism viewing and physical exercise habits, promoted the formation of physical exercise habits.

Keywords

Sports Tourism; National Fitness; Tourism and Appreciation; Tourism Experience; Physical Exercise Habits.

1. Introduction

In recent years, national fitness has become a hot topic in academic research and has produced a series of rich research results. Researchers have conducted detailed analysis and exploration of the basic concepts, practical challenges, optimization strategies, and practical paths of national fitness from different perspectives, which has important theoretical and practical significance. Among numerous research achievements, the use of semiotics principles from the perspective of sports tourism is considered a novel and feasible research method. In semiotics, the world is a world of symbols, and symbols are not only the representation of objects by humans, but also the interpretation of symbol representation by interpreters (Z Chen,2022). Obviously, symbolic activities are based on the behavior of the human subject, and are closely related to the activities of the human subject. As a manifestation of traditional Chinese culture, ethnic sports have important theoretical exploration value and practical guidance significance for promoting the development of national fitness. As a subsystem of ethnic sports, "Tie Hua" can form a non physical contact language symbol communication system through the performer's performance symbols and the audience's viewing symbols, achieving psychological dialogue between the performer and the audience (J H Zhang,2015). In the process of psychological dialogue, the performer and the audience gradually reached a consensus on sports values, promoting the reproduction of sports exercise behavior.

2. Wansui Mountain: Field Investigation of Iron Flower in the Song Dynasty of Kungfu City

Wansui Mountain-the Song Dynasty of Kungfu City is located in the middle section of Dongjing Avenue in Kaifeng City, Henan Province. It was built on the basis of the original National Forest Park. It is a large-scale tourist area with Song culture, city wall culture, and Seven Dynasties culture as the landscape core, the Song Dynasty of Kungfu culture as the tourism feature, forest

nature as the style, and leisure functions, with multiple themes and landscapes. Since February 2019, during the important festival of Wansui Mountain and the Song Dynasty of Kungfu City, there has been a performance of striking iron flowers, which has also attracted countless tourists to come and watch. Wansui Mountain·the Song Dynasty of Kungfu City Iron Flower Performance is an upgraded version of the iron flower called Fire Dragon Steel Flower, developed by Wang Jun, the founder of the Wang family in Kaifeng, based on the Wang family's iron flower. Fire Dragon Steel Flower combines design, performance, and passion, presenting the spectacle of "people dancing in the dragon, dragons flying in the fire", and is known as the "Chinese Dragon Dance". Through multiple performances with Wansui Mountain·the Song Dynasty of Kungfu City, the author gradually established contact with the performers.

In March 2022, Wansui Mountain· the Song Dynasty of Kungfu City held a nearly 2-month continuous performance, during which the author had multiple communications with the performers, staff, and tourists. I had multiple rounds of conversations with the performers on how to make iron filings; I had multiple rounds of conversations with the staff regarding the order of the performance; I had a conversation with most tourists about why the question came. During conversations with the performers, it was learned that before the iron flower performance, the prepared pig iron needs to be melted into molten iron in a furnace. The temperature of the molten iron must be as high as 1600°C-1700°C, and only when a golden flower bursts out of the molten iron can it be seen. During the performance, the melted iron juice is first injected into a pre prepared "flower stick" (a fresh willow stick with a fist thickness and a foot long, with a circular groove measuring 3 centimeters in diameter at the top of the stick to hold the iron juice). The flower beater holds a "flower stick" containing iron juice in one hand and a "flower stick" without iron juice in the other hand and quickly runs to the "flower shed". With the lower stick, the iron juice in the stick rushes towards the flower shed, The flower beaters stick after stick, one person after another. The iron juice bursts out when it meets the willow branches on the roof of the shed, and then ignites the firecrackers, fireworks, etc. on the shed, making it colorful and earth shattering. During conversations with staff, it was learned that the iron flower performance starts at 20:15 every day and lasts for 45 minutes. In the first 15 minutes, there is a ritual interaction between tourists and performers dancing together, establishing symbolic communication between the body and mind of tourists and performers. After 20:30, it will be the official performance of Tie Hua. The performers are physically strong, with graceful movements and thin clothing. During the performance, the performer showcases the beauty of muscle lines, highlighting the symbolic communication between the performer's body shape and the audience's appreciative behavior, and providing the audience with motivation for fitness awareness and behavior. Through conversations with tourists, it was learned that 30% of them came to watch the iron making performance, with a higher number of local and surrounding tourists, and fewer cross provincial tourists(M Q Weng,2018). Most tourists express that during the process of watching the iron flower performance, the display of the performer's muscles will drive them to participate in sports and fitness(J Z Hu,2018). After watching the iron flower performance, they will recommend and give positive feedback to friends, family, and others.

Through multiple rounds of communication with performers, staff, and tourists, the author couldn't help but think: What is the spatial adsorption mechanism of iron flower performances? What is the connection between iron flower performances and tourist fitness behavior? In view of this, this study is based on the practical foundation of field investigations and conducts empirical research using quantitative research tools such as structural equation modeling.

3. Theoretical Basis and Research Hypotheses

3.1. Theoretical Basis

The SOR (Stimulus Organism Response) model was originally proposed by Mehrabian and Russell (MEHRABIAN A,1974). in 1974 and was initially applied to environmental psychology. They believed that the external environment would stimulate individual psychology and cause changes in emotional and cognitive states, leading to certain behavioral outcomes. The "S" in the SOR model refers to the factors that trigger individual behavior in the environment. In terms of ethnic sports performances, it is mainly manifested as the highlighting of the external beauty of the form and body of the iron flower performers during the performance process, which triggers the satisfaction of tourist appreciation behavior and realizes the symbolic interaction between sports performances and tourist appreciation. Therefore, tourist viewing behavior is regarded as an "S" variable of the occurrence of sports exercise habits, that is, the antecedent variable. The "O" in the SOR model refers to individual psychological activities such as cognitive and emotional experiences, which have been studied as changes in cognitive experiences. Experience is an individual's subjective response to activities, environments, or events in a non daily environment, which may be immediate or lasting for a certain period of time. Sports tourism embodied experience, as a phased product of socio-economic development, can achieve psychological symbolic interaction between tourist viewing behavior and on-site experience. The research perspective on sports tourism experience focuses on project types, participation motivation, physical experience, healthy behavior, tourism space, and other aspects, forming the authenticity theory of tourism experience and the distant nature of tourism experience, Heart theory, tourism experience pattern theory, and tourism gaze theory, among others. The sports tourism experience in this study refers to the cognitive experience generated by tourists during the process of watching the ethnic sports performances of Tie Hua in tourist attractions. Therefore, it is used as the "O" variable in the SOR model, which is the mediator variable. The "R" in the SOR model refers to the behavioral performance generated on the basis of environmental stimuli and internalization processes in the body. Physical exercise is essentially a practical activity that uses sports as the basic means, exercises the body and mind as the means of realization, and promotes health as the fundamental goal. It emphasizes the embodied logic of cognitive generation and reflects the symbolic interaction based on the body(M Q Weng,2018). The cultivation of physical exercise habits is actually a process of standardizing and formalizing self-management of physical exercise, and is a key link in the quality engineering of national fitness. Studies have shown that watching sports performances and experiencing sports tourism can promote the development of exercise habits(J Z Hu,2018). Therefore, taking exercise habits as the "R" in the SOR model, i.e. the outcome variable.

In summary, this study uses the SOR model to establish a relationship between tourist tourism viewing, tourist tourism experience, and sports exercise habits variables, and constructs a research model for the promotion mechanism of ethnic sports performance and national fitness.

3.2. Tourist Viewing and Sports Exercise Habits

Tourism viewing refers to the process in which tourists appreciate and experience the beautiful forms and meanings displayed in the external world through their visual and auditory senses, aiming to obtain a pleasant feeling from it. Sports tourism emphasizes the viewing behavior in tourism, emphasizes the understanding of ethnic sports activities during the viewing process, appreciates the artistic charm of ethnic sports, and obtains spiritual cultivation from it. Its significance lies in bringing visual enjoyment to people while promoting sports participation through watching sports performances, sports competitions, and ceremonial activities. It is divided into sports performance tourism, sports competition tourism, and sports competition

tourism There are three types of ceremonial tourism for viewing. The direct purpose of ethnic sports performance tourism is to attract tourists to appreciate their tourism behavior through visual symbols, and to meet the psychological, emotional, and spiritual needs of tourists through their aesthetic pursuit, belonging recognition, celebrity worship, entertainment, victory and defeat stimulation, and knowledge seeking motivation, and to change their behavior. Studies have confirmed that watching sports matches can ultimately affect physical exercise behavior by enhancing one's social capital. The process of iron flower performance covers three basic characteristics of sports performance tourism, sports competition tourism, and ritual tourism(J Xie,2017). It can serve as an external environmental stimulus to achieve semiotic interaction with tourist viewing behavior, thereby triggering changes in exercise behavior(Y J Bian,2019).

Therefore, this study proposes hypothesis H1: Tourist sightseeing has a significant positive impact on physical exercise habits.

3.3. Tourist Appreciation and Tourist Experience

With China's entry into postmodern society, cultural reproduction has risen to a decisive position in the overall social practice, to the extent that people can say that contemporary society is driven by cultural practice and its continuous reproduction as the basic operating force of the entire society. Cultural experience is the most important aspect of tourism and the main motivation for tourism behavior (J Z Hu,2018). It is the internalization of tourists during the viewing process. As an embodied emotional activity, viewing behavior can restore the physical experience of tourists to the real tourism context and give this experience meaning (Y M Fan,2019).

Therefore, this study proposes hypothesis H2: tourist tourism viewing has a significant positive impact on tourism experience.

3.4. Tourist Experience and Sports Exercise Habits

The embodied theory breaks through the limitations of the traditional theoretical framework of physical and mental duality, emphasizes the inseparability of human mind, body, and context, and reveals the formation mechanism of tourist experience and behavior. Sports exercise behavior, as a prerequisite for sports exercise habits, can gradually establish sports exercise habits through the accumulation of sports exercise behavior. Xie Yanjun believes that sports tourism is a tangible experience of physical and mental integration, which also opens up the physical and mental experience of sports tourists' sense of motion and ontology, promoting the formation of sports exercise habits.

Therefore, this study proposes hypothesis H3: tourist travel experience has a significant positive impact on physical exercise habits.

3.5. The Mediating Role of Tourist Travel Experience

The SOR model suggests that the external environment can stimulate individual psychology and cause changes in emotional and cognitive states, resulting in certain behavioral outcomes. Tourism viewing, as a psychological response to external environmental stimuli of ethnic sports performances, can change tourists' physical exercise behavior and form physical exercise habits through the intermediary of tourism experience.

Therefore, this study proposes hypothesis H4: There is a mediating effect between tourist tourism experience and tourism viewing and physical exercise habits.

4. Research Design

4.1. Variable Selection and Scale Development

On the basis of existing literature, following the principles of pertinence, comprehensiveness, and objectivity, an initial questionnaire was formed. And invite 8 sports experts and 8 tourism management experts to conduct a Delphi method expert survey. In the first round, 16 questionnaires were distributed and 16 were collected; In the second round, 16 questionnaires were distributed based on the opinions of the experts in the first round, and 16 were collected. The positive coefficients of the experts in both surveys were 100%, and the authoritative coefficients were 0.838 (tourist sightseeing), 0.860 (tourist travel experience), and 0.852 (sports exercise habits), respectively. Kendall test was used to evaluate the expert coordination coefficient.

Table 1. Expert Coordination Coefficient Table

Index	Round one			Round two		
	Kendall's W	X ²	P	Kendall's W	X ²	P
The first grade index	0.238	12.129	0.027	0.268	15.637	0.003
The second grade index	0.323	137.693	0.000	0.357	146.382	0.000

From the Kendall harmony coefficient, it can be seen that the coordination coefficients of the second round of expert surveys on both the primary and secondary indicators are greater than 0.25, and the P-values are both less than 0.005, indicating that the coordination level of the experts meets the research needs. Based on comprehensive expert opinions, determine the required research tools.

Table 2. research tool

Latent Variable	Observed variable	Serial Number
Tourist sightseeing	Personal attitude	X ₁ -X ₃
	Subjective norms	X ₄ -X ₆
	Perceived behavioral control	X ₇ -X ₉
	Behavioral intention	X ₁₀ -X ₁₃
Tourist Experience	Performance satisfaction	M ₁ -M ₄
	Cultural satisfaction	M ₅ -M ₇
	Site satisfaction	M ₈ -M ₁₀
Physical exercise habits	Regularity	Y ₁ -Y ₄
	Stability	Y ₅ -Y ₇

4.2. Data Sources

Using convenience sampling method, a total of 700 questionnaires were randomly distributed to tourists who watched the iron flower performance at Wansui Mountain in March 2022. After removing invalid questionnaires with missed, multiple, and obvious random filling, 574 valid questionnaires were collected, with an effective rate of 82%. Among them, there are 283 males, accounting for 49.30%, and 291 females, accounting for 50.70%; The age distribution is mainly between 18 and 45 years old, accounting for 76.13%; The forms of tourism are mostly family oriented and companion oriented.

4.3. Reliability and Validity Testing

The reliability and validity of the research variables were tested using SPSS 22.0 and AMOS 24.0, and the reliability and validity indicators were good, which meets the research needs.

Table 3. Reliability and Validity Index Table

Latent Variable	Observed variable	Factor loading	Cronbach's α	KMO	CR	AVE
Tourist sightseeing	Personal attitude	>0.735	0.937	0.876	0.937	0.516
	Subjective norms	>0.762	0.916	0.869	0.869	0.604
	Perceived behavioral control	>0.831	0.935	0.907	0.913	0.598
	Behavioral intention	>0.827	0.957	0.885	0.877	0.562
Tourist Experience	Performance satisfaction	>0.863	0.904	0.879	0.869	0.526
	Cultural satisfaction	>0.878	0.899	0.892	0.904	0.594
	Site satisfaction	>0.796	0.894	0.914	0.907	0.518
Physical exercise habits	Regularity	>0.859	0.907	0.938	0.925	0.537
	Stability	>0.872	0.920	0.927	0.896	0.529

4.4. Common Method Deviations

This study controlled for common method bias through measures such as anonymous measurement and reverse scoring of some questions. The Harman univariate test was used to conduct a common method bias test on the collected data. A total of 6 factor eigenvalues were greater than 1, with a maximum factor variance explanatory rate of 25.682% (less than 40%) and a total explained variance of 72.387% (more than 70%). Therefore, there is no possibility of significant common method bias.

5. Results and Analysis

5.1. Direct Effect Testing

The impact of tourist sightseeing on tourist experience, physical exercise habits, and the impact of tourist experience on physical exercise habits shows that tourist sightseeing has a significant positive impact on physical exercise habits($\beta= 0.25, P<0.001$); The positive impact of tourist sightseeing on tourist experience is significant($\beta= 0.53, P<0.001$); The tourism experience of tourists has a significant positive impact on their physical exercise habits($\beta= 0.56, P<0.001$). Assuming H1, H2, and H3 hold.

Table 4. Direct Effect Test Table

Assuming	Relationship	Coefficient	P
H ₁	Tourist Tourism Viewing - Sports Exercise Habits	0.25	<0.001
H ₂	Tourist Tourism Viewing - Tourist Tourism Experience	0.53	<0.001
H ₃	Tourist Experience - Sports Exercise Habits	0.56	<0.001

5.2. Mediation Effect Test

Table 5. Bootstrap test for mediating effects

Effect	Effect value	Effect proportion	BootSE	Bootstrap95%CI	
				Lower limit	Upper limit
Total effect	0.55	100%	0.028	0.246	0.390
Direct effect	0.25	45.45%	0.031	0.153	0.284
Mesomeric effect	0.30	54.55%	0.023	0.138	0.242

The Bootstrap test on the mediating effect shows that the 95% CI interval of Bootstrap does not include 0, indicating a significant mediating effect of tourist travel experience between tourist

viewing and physical exercise habits, with a mediating proportion of 54.55%. Hypothesis H4 is valid.

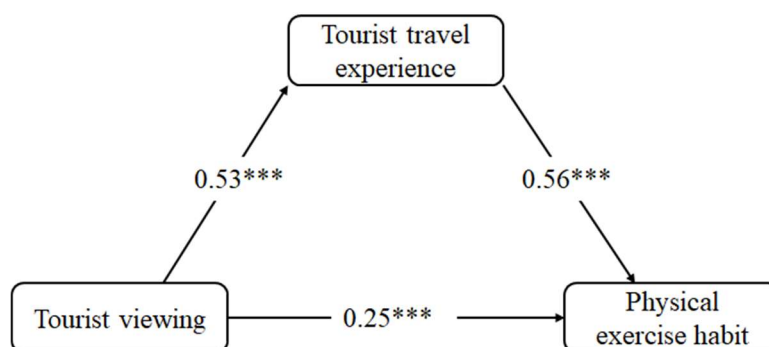


Figure 1. Mechanism diagram of the impact of tourist sightseeing on physical exercise habits

6. Discussion

6.1. The Direct Effect of Tourist Sightseeing on Physical Exercise Habits

Through structural equation modeling validation, it can be concluded that tourist tourism has a significant positive impact on physical exercise habits, which is consistent with (Gu Danan,2007) research findings. Tourist tourism viewing is essentially a process of symbolic cultural reproduction, but because its reproduction process is in line with human behavioral activities, it can serve as a driving symbol to promote the improvement of people's physical exercise behavior. The emergence of physical exercise habits is established through the accumulation of physical exercise behavior. Maslow's philosophy holds that after completing a certain level of needs, people will pursue the needs of the next level. With China's entry into postmodern society, the main contradiction among people is the growing need for a better life and the imbalance and insufficient development, which also promotes the need for self realization through physical exercise. Sports tourism viewing, as an imported product with the dual concept of "sports+tourism", has formed a social activity with sports symbols as the main body, tourism symbols as the attraction, and tourist satisfaction as the goal after decades of development (VAN RHEENEN,2017; Z Chen,20201). It can serve as a pulling force factor to promote the formation of sports exercise habits.

6.2. The Mediating Effect of Tourist Travel Experience

The Bootstrap results of the mediating effect show that the path of "tourist tourism viewing tourist tourism experience sports exercise habits" is significant. The SOR model takes stimulus as the antecedent variable, the organism as the mediator variable, and response as the outcome variable, mainly examining the impact of external environmental factors on individual behavior, which is also consistent with this logic in this study. The tourist tourism experience, as a post viewing experience for tourists, is the physical and psychological stress response triggered by the interaction of embodied experience and emotional color after the viewing behavior, which promotes the formation of sports exercise habits.

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