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RESEARCH ARTICLE

Social Sports Environment Affecting Sports Consumption Motivation Towards Sports Consumption Behavior Among Urban Residents - evidence from Shanxi province

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ARTICLE INFO	ABSTRACT
  *Corresponding Author:	Sports consumption behavior is significantly influenced by the social sports environment. The process of individuals' sports consumption decision - making is inevitably affected by key factors such as the social sports environment and personal sports consumption motivation, as well as changes in the overall social sports atmosphere. This study investigated how the social sports environment and sports consumption motivation impact sports consumption behavior, with sports consumption motivation playing a mediating role. A quantitative research design was adopted, and data were collected through a questionnaire survey from 543 urban residents in Shanxi, China. The results of structural equation modeling using SPSS and AMOS show that the social sports environment, including social sports culture, social sports interaction, and social sports resources, as well as personal sports consumption motivation, have a significant impact on sports consumption behavior. Specifically, sports consumption motivation plays a partial mediating role in the mechanism through which the social sports environment affects sports consumption behavior.Our findings provide evidence for theories of sports consumption behavior and the social sports environment - driven consumption model. The results and conclusions of this study can offer insights for the Chinese government on how to create a sports consumption environment in policy - making and for understanding individuals' psychological sports consumption motivation.

INTRODUCTION

On August 3, 2024 the State Council of the People's Republic of China issued Several Opinions on Accelerating the Development of the Sports Industry and Promoting Sports Consumption, in this document has put forward the guidance of vigorously developing the sports industry based on livelihood foundation and economic development profile [1].Sports consumption behavior is closely related to the national livelihood, and it is not only a necessary condition for the promotion of comprehensive human development, but also an important symbol of a thriving nation and a rich and strong country [2].

The Chinese government has actively rolled out a series of policy - based incentives and potent economic stimuli aimed at bolstering residents' sports - consumption behavior [3]. These initiatives include issuing consumption vouchers for sports products, ensuring the upkeep of basic sports infrastructure, and intensively publicizing major sports events [1].

In the burgeoning field of research focused on the impact of the social sports environmenton promoting sports consumption behavior, scholars have made substantial contributions. For instance,

some have probed into the role of self - efficacy in spurring students' engagement in sports activities, adopting the vantage point of the school environment within the educational framework [4,5]. Others, through the lens of the business environment, have dissected the relationship between fans' brand loyalty and the enhancement of their sports - consumption awareness. Additionally, scholars have investigated the influence of sports events on fans' sports - consumption behavior via channels such as on - site event attendance and sports broadcasting [6,7]. By conducting classified surveys of specific demographics, some researchers have delved into the sports - consumption psychology and consumption patterns of particular groups, including college students, housewives, and the elderly.Notwithstanding the extensive body of empirical research and theoretical frameworks that have been established to explore the alterations in consumption behavior instigated by environmental factors, with the rapid advancement of socialization and urbanization in China, the dimensions of social - environmental factors have undergone a more intricate and nuanced stratification [8]. Moreover, from a broader, more macroscopic perspective, analyzing the sports - consumption paths and behaviors of urban residents, who constitute the largest - scale audience, has assumed increasing significance [9].

Meanwhile, as the research progresses, it has been found that the sports consumption behavior of urban residents does not occur overnight. The dimension of the social sports environmentrepresents the real environment in which residents live and survive. The consumption characteristics of individual behaviors are the result of changes in psychological characteristics induced by the social environment, which subsequently lead to habitual behaviors shaped by changes in psychological tendencies [10]. The sports consumption motivation plays a direct guiding role in consumption behavior, and its significance is self-evident.Sports consumption motivation is an individual's subjective belief in participating in sports consumption behaviors and serves as the initial driving mechanism. Different sports consumption motivations prompt residents to make diverse decisions regarding the content and form of sports consumption [11]. When residents satisfy a certain motivation through sports consumption, new demands and motivations may emerge, further propelling them to continue their sports consumption activities [12]. For instance, after a period of fitness exercises, if residents' physical fitness improves, they may develop a higher pursuit of health, thereby increasing their consumption on high-end fitness equipment or professional fitness guidance.Moreover, sports consumption motivation can also change in response to variations in the social sports environmentand adjustments in personal psychological states. If new sports consumption trends emerge in the social environment, or if residents' psychological states change, such as an increased need for relaxation due to greater work pressure, the sports consumption motivation will be adjusted accordingly, which in turn affects subsequent sports consumption behaviors.In conclusion, sports consumption motivation occupies a core position in the formation and development of urban residents' sports consumption behaviors [13]. In-depth research on sports consumption motivation is of vital importance for understanding residents' sports consumption behaviors and promoting the healthy development of the sports consumption market.

Based on the above research, we will further explore the relationships among the social environment, sports consumption motivation, and sports consumption behavior, as well as the mediating effect of sports consumption motivation.

RQ1. What is the relationship between the social sports environmentand sports consumption motivation in terms of sports consumption behavior?
RQ2. How do the social sports environment and sports consumption motivation influence sports consumption behavior?

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Social Sports Environment and Social Ecosystem

In recent years, the social sports environment and the sports ecological environment system, which encompasses three key dimensions - social sports culture, social sports interaction, and social sports resources, have received extensive attention from numerous scholars [14] and have become hot

topics in the fields of sports economy and consumer behavior research. .The concept of the sports ecosystem has been gradually developed and refined by numerous scholars on the basis of the interdisciplinary integration of sports science, ecology, and systems science. Through literature review, this study summarizes the social sports environment as :an organic whole formed by the interaction of social sports culture, social sports interaction, and social sports resources related to sports activities in the natural environment [15，16,17].

At present, research on the social sports environment and the sports ecosystem mainly focuses on the following aspects: 1. The internal mechanism of the sports environment and the methodology for regulating the sports environment, as well as the impact mechanism of the sports ecosystem and the path analysis of sustainable green development [18]. 2. The structural composition of the social sports environment, innovative approaches to the social environment management mechanism, and individual behavioral manifestations in adapting to the sports environment [19]. 3. Individual behavioral tendencies in the sports environment and the changes in an individual's inner thoughts and behaviors influenced by the sports environment [20].

Whether it is the exploration of the social sports environment or the research on the sports ecosystem, the ultimate result of their development is the service-oriented concept centered on "people" and the dynamic research on continuous innovation [21]. For example, the social culture in the social sports environment is widely spread through digital media, which in turn affects individuals' participation in sports or their influence on sports consumption [22]; at the social interaction level of the social environment, taking individuals' inner pursuits or direct responses of conformity, or healthy interpersonal relationships as the orientation, analyzing individuals' selective sports behaviors in the social environment [23]; in the social sports environment, the imbalance of sports social resources is affected by the government's macro-control and the self-development of the market economy, thus leading to the disharmony between individual sports consumption demand and the supply side [24]. The construction and management mechanism of the entire sports ecosystem revolves around these three dimensions of the social sports environment.

From the perspective of guiding the sports consumption motivation and sports consumption behavior of urban residents, the diversified supply of sports products and services influenced by the combination of social sports culture, interaction, and resources can meet the needs of different consumers and guide them to conduct diversified sports consumption [25, 26]. The social networks and public opinion orientation in the dimension of social sports interaction play an important guiding role in the sports consumption behavior of residents [27]. When people around them actively participate in sports activities and make related consumption, it will have a demonstration effect on individuals, prompting them to follow suit and participate in sports consumption [28]. The development level of the sports industry, which relies on the integration of social sports resources and innovation driven by social sports culture, and the market supply structure within the sports ecological environment system will also directly affect the sports consumption behavior of residents [29]. From a comprehensive perspective, the social sports environment and the sports ecological environment system, along with their three dimensions of social sports culture, social sports interaction, and social sports resources, not only affect sports consumption motivation but also guide sports consumption behavior

In light of this, we propose the following hypotheses H1 and H2.

H1. There is a direct relationship between social sports environmentand sports consumption behavior.

H2. There is a direct relationship between social sports environmentand sports consumption motivation.

2.2 Stimulus - Organism - Response (SOR) theory and Sports Consumption Motivation

In recent years, the Stimulus-Organism-Response (SOR) theory and its connection with sports consumption motivation have attracted the attention of many scholars [30, 31], and has become an

important research direction in the field of sports consumer behavior research. Mehrabian and Russell initially proposed the SOR theory, which assumes that external stimuli will affect the internal state of the organism, thereby triggering specific responses. In the context of sports consumption, this framework provides important insights into the mechanisms behind consumer behavior [32].

From the perspective of the relationship between the SOR theory and sports consumption motivation, external stimuli in the sports field play a crucial role. For example, the widespread dissemination of sports-themed media coverage, such as the large-scale broadcasting of major sports events, is a powerful stimulus factor [33]. Such external input can trigger internal changes in the organism, specifically manifested as the formation and enhancement of sports consumption motivation. A person exposed to exciting sports events may develop the motivation to participate in sports activities himself/herself and further enhance their desire to consume sports-related products or services. Similarly, the introduction of new sports-related technologies, such as wearable watches or electronic accessories for sports trajectories, can also serve as a stimulus factor to stimulate consumers' curiosity and prompt them to generate motivation for fitness-related consumption [34].

Regarding the stimulating effect of sports consumption motivation on sports consumption behavior, motivation acts as a direct catalyst. When consumers have a strong sports consumption motivation, such as the pursuit of self-improvement through fitness or the search for social connections in a sports community, this motivation will directly prompt them to take action [35]. For example, a person with the motivation to enhance physical fitness may decide to purchase a gym membership, fitness equipment, or sign up for sports training courses. This motivation-driven behavior is evident in all aspects of sports consumption. If a consumer is motivated by the desire to keep up with the latest sports fashion trends, they are likely to purchase branded sports clothing and accessories [36].

From a comprehensive perspective, the SOR theory provides a basic framework for the formation of sports consumption motivation and the further stimulation of sports consumption behavior. External stimuli interact with the internal state of consumers, manifested as sports consumption motivation, and sports consumption motivation, in turn, drives specific consumption behaviors. Drawing on existing research, this relationship encompasses a wide range of phenomena, including the expansion of the sports consumption market, the diversification of sports product development, and the improvement of consumers' overall sports-related experiences. By referring to the available literature, we have found support for hypotheses H3 and H4.

H3: Sports motivation has a direct effect on sports consumption behavior. H4: Sports motivation plays a mediating role between the social sports environmentand sports consumption behavior.

The conceptual framework in Fig. 1 illustrates the above hypotheses.

3. DATA AND METHOD

3.1. Constructs measurement

According to the hypotheses proposed above, a survey instrument was devised to operationalize the 25 items under constructs (as shown in Appendix 1). Social sports environment (SE), sports consumption motivation (SCM), and sports consumption behavior (sports consumption behavior) are the three constructs in this study [37]. All the items measuring the above-mentioned constructs were adapted from previous literature. SE is a two-order construct with dimensions, and both of these dimensions have their respective items. After running the Exploratory Factor Analysis in SPSS 28, we extracted factors for SE and converted them into second-order constructs. A 5-point Likert scale was applied to measure all the constructs, where '1' represents 'strongly disagree' and '5' represents 'strongly agree'.

ES is a second-order construct and measures firms' external support from the government. It is measured through three first-order constructs, namely, Social Sports Culture (SC) and Social Sports Interaction (SI) and Social Sports Resources (SR). SC has three items, aiming to measure the sports

values created by the cultural atmosphere of the social sports environment; SI has five items, which is used to concretely measure the social sports environment brought about by social interactions among people in the sports environment; SR has five items, which is designed to measure residents' satisfaction with sports resources and whether the social sports service resources provided by the government meet the social environmental needs of residents' physical exercise.

The initial item pool developed by this research survey was reviewed and given suggestions by two senior professors of sociology and two psychological experts. The expert panel mainly conducted item analysis and inspection in terms of the expression of questions for urban residents, the difficulty of understanding questions, whether the coverage involved is reasonable, and other possible errors such as grammatical errors or logical confusion in the expression.After adjusting the questionnaire items according to the previous steps, these tools were ready for the pilot test. The tool was pilot-tested through online questionnaires on the Questionnaire Star platform. Since the researcher's working city, "Shanxi," is facing a deteriorating overall sports consumption environment and population outflow, in the pilot survey stage, this study selected residents in Shanxi Province to collect data for the pilot test. From August to December 2024, the questionnaires were collected through field research, WeChat, and email, and a total of 54 questionnaires were distributed, with 46 valid questionnaires recovered. Among these valid responses, the Cronbach's alpha value of all 23 items was greater than 0.7, indicating that this questionnaire can serve as a reliable tool for measuring the conceptual model.
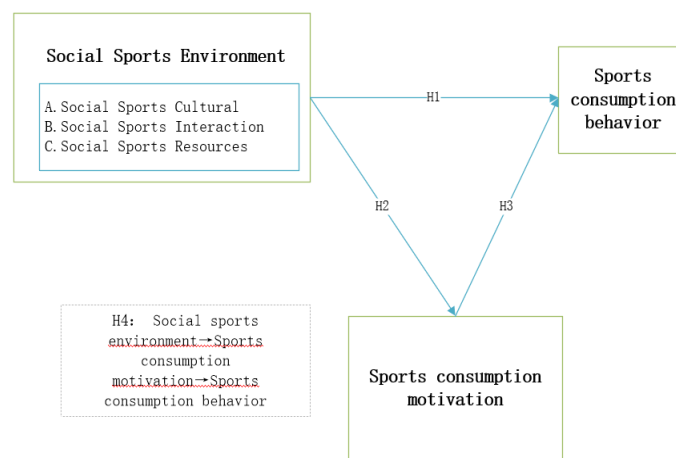

Figure1: Conceptual Framework

3.2 Sample and data collection

This study analyzes the impact on the overall sports consumption behavior of urban residents in Shanxi Province, China. Considering the urban distribution in Shanxi Province, the characteristics of the population distribution in the province, and the fact that the objects of the survey need to have the ability to independently engage in sports consumption, a two-stage stratified sampling method is adopted to collect questionnaires [38]. That is, by sampling urban blocks in 11 major cities first, and then conducting random sampling surveys of residents in these blocks. The two-stage sampling method can not only avoid individual biases caused by the large population base of a certain city, but also prevent biases resulting from regional differences [39].

In the sample sampling for measuring individual sports consumption behavior in Shanxi Province, the study selected a confidence level of 95%; Margin of Error: 5%Determine Z-Score for 95% confidence Level (Z=1.96), the results of the calculation are shown below[40];

Initial Sample Size Calculation：

$$n=\frac{1.96^2 *0.5* （1-0.5）}{0.05^2}$$

n=384.16

Adjust for Population Size (N = 310,560,000):nadj=$\frac{384.16}{1+(\frac{384.16-1}{310560000})}$ nadj≈384

Some returned questionnaires may be incomplete or contain invalid responses. It is common to estimate that around 10-20% of the responses may be invalid or incomplete.Adjusted Sample Size=$\frac{\text{Required Sample Size}}{（1-\text{Invaild/incomplete Response Rate}）}$ ≈452，Typical response rates vary by survey mode but generally fall between 30% and 60% for mail surveys, and can be higher for online surveys and face-to-face interviews [41];Number of Questionnaires=$\frac{\text{Adjust Sample Size}}{\text{Response Rate}}$≈645.

A total of 652 questionnaires were distributed, and 475 questionnaires were recovered, resulting in a response rate of 72.8%. After verifying the data, invalid questionnaires, such as those with missing data or those where respondents uniformly selected only one option, were excluded. In total, 453 valid data sets were collected, which met the requirement of a minimum of 384 valid survey data sets. Table 1 presents the detailed demographic information. In the survey of this study, the information of respondents was anonymized. Each questionnaire was accompanied by a letter stating that the respondents' information would be anonymized and that the collected data would be used solely for research purposes.

Table 1 Demographic information

Respondent Profile (n=453)			
Attributes	**Distribution**	**Frequency**	**Valid Percent(%)**
Agder	Male	239	52.8
	Female	2 4	47.2
Age	18-28	291	64.2
	5Respondent Profile (n=453)1-61	34	7.5
	＞61	1	0.2
Educationlevel	High school secondary school and equivalent	31	6.8
	Specialized and equivalent	23	5.1
	Bachelor's degree or equivalent	327	72.2
	Master's degree student	52	11.5
	Doctoral degree	20	4.4
Employstatus	Individually	60	13.2
	Employed	203	44.8
	Unemployed	8	1.8

|			
	Students	13	2.9
	Retired	169	37.3
Incomerange	≤3000	207	45.7
	3001-5000	98	21.6
	5001-7000	84	18.5
	7001-9000	35	7.7
	≥9001	29	6.4

RESULTS

4.1. Common method variance

This study collected data on individuals' sports consumption behaviors through an online questionnaire. As respondents reported based on their own situations, the inevitable similarities in the testing environment and item characteristics led to an artificial covariation between the predictor variables and the criterion variables, which is known as Common Method Bias (CMB) [45].

To comprehensively understand the deep - seated influencing mechanisms of individuals' sports consumption behaviors, this study combined and applied two methods: Harman's single - factor test and confirmatory factor analysis (CFA) [46]. First, Harman's single - factor test was used to quickly determine from an overall perspective whether there was a single factor that could explain most of the variation and preliminarily identify the possibility of Common Method Bias (CMB) [45]. Results showed that the unrotated first factor explained only 42.65 % of the total variation, which was less than the 50 % threshold, indicating that there was no significant CMB in the study data. Then, through the goodness - of - fit of the confirmatory factor analysis model (CFA), the study more precisely evaluated the impact of Common Method Bias (CMB) on the relationships between variables and the model structure. Consequently, multi - dimensional factors influencing sports consumption behaviors were obtained. The measurement results showed that CMIN/DF = 1.435, CFI = 0.985, TLI = 0.983, and RMSEA = 0.031, indicating that there was no severe Common Method Bias(CMB) in the study data [46].

4.2. Measurement model

Before constructing the model of the interrelationships among latent constructs in the structural equation model, the study conducted modeling and analysis on the measurement model, as shown in Figure 1. To ensure the scientific nature of the sports consumption behavior evaluation model, the study used SPSS 28 and Amos 28 to evaluate and analyze the measurement model [47].
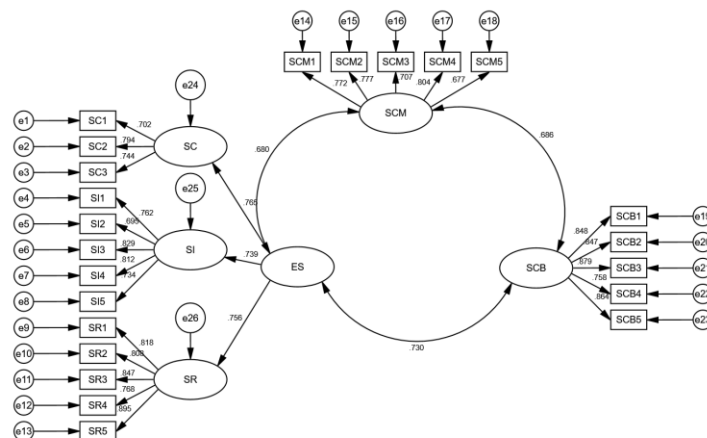
First, the main fit indices of the model were further evaluated. The test results of each index are shown in Table 2. The results indicate that all the indices are in an excellent state (CMIN/DF=1.435 , RMR=0.041, GFI=0.945, AGFI=0.932, NFI=0.952, IFI=0.985, TLI=0.983, CFI=0.985, RMSEA=0.031)

and the model has a high degree of goodness - of - fit. Therefore, construct validity has been achieved [48].

Table2 Confirmatory Factor Model Fit

Model Fit Index	Optimal Standard Value	Statistical Value	Fit Situation
CMIN	——	321.457	——
DF	——	224	——
CMIN/DF	<3	1.435	Good
RMR	<0.08	0.041	Good
GFI	>0.9	0.945	Good
AGFI	>0.9	0.932	Good
NFI	>0.9	0.952	Good
IFI	>0.9	0.985	Good
TLI	>0.9	0.983	Good
CFI	>0.9	0.985	Good
RMSEA	<0.08	0.031	Good

And then, Cronbach's alpha and Composite Reliability (CR) were adopted to assess the reliability (as shown in Table 3). The Cronbach's alpha and CR of all the first - order and second - order constructs in this study are greater than 0.7, which indicates that each latent construct has good reliability and internal consistency.In the evaluation of convergent validity, the Average Variance Extracted (AVE) and factor loadings were used. The results show that the AVE values of each construct are greater than 0.5, and the factor loadings of all the first - order and second - order constructs are greater than 0.6. This indicates that convergent validity has been achieved [49].

Table3 Convergent validity and reliability test

Constructs		Items	Loading>0.6	CR	AVE	Alpha >0.7
ES	SC		0.765	0.797	0.568	0.909
	SI		0.739			
	SR		0.756			
	SC	SC1	0.702	0.791	0.559	0.790
		SC2	0.794			
		SC3	0.744			
	SI	SI1	0.762	0.877	0.59	0.876
		SI2	0.695			
		SI3	0.829			
		SI4	0.812			
		SI5	0.734			
	SR	SR1	0.818	0.916	0.686	0.915
		SR2	0.808			
		SR3	0.847			
		SR4	0.768			
		SR5	0.895			
SCM		SCM1	0.772	0.864	0.561	0.861
		SCM2	0.777			
		SCM3	0.707			
		SCM4	0.804			
		SCM5	0.677			

	SCB1	0.848			
	SCB2	0.847			
SCB	SCB3	0.879	0.923	0.706	0.923
	SCB4	0.758			
	SCB5	0.864			

To precisely explore the discriminant validity among variables related to sports consumption behavior, this study conducted systematic tests on both first - order and second - order influencing factors respectively. Specifically, the AVE method, proposed by Fornell and Larcker in 1981 and widely recognized as a relatively rigorous approach in the academic community, was adopted for evaluation [50]. This method clearly stipulates that the square root of the Average Variance Extracted (AVE) for each factor must be greater than the correlation coefficients of each paired variable, which serves as a crucial criterion for determining whether there is discriminant validity between factors.

The test results are clearly depicted in Tables 3 and 4. In these tables, the values at the corresponding positions of each variable signify the correlation coefficients between that variable and others. Meanwhile, it can be reasonably inferred that the values on the diagonal represent the square - roots of the Average Variance Extracted (AVE) for each variable. This inference is grounded in the fact that these values must be rigorously compared with the correlation coefficients when assessing discriminant validity [51].

From the overall data distribution, the correlation coefficients between each variable and other variables are mostly lower than the corresponding values on the diagonal. This result holds significant statistical meaning, indicating that the variables related to sports consumption behavior basically meet the requirements of discriminant validity. Furthermore, it implies that these variables can relatively independently reflect different latent constructs , and there is a good degree of discrimination between them, which strongly demonstrates the effectiveness and reliability of this study in variable measurement [52].

Table3 Discriminant validity and correlation analysis（First-order constructs）

	SC	SI	SR	SCM	SCB
SC	**0.748**				
SI	.377**	**0.767**			
SR	.395**	.423**	**0.828**		
SCM	.386**	.453**	.518**	**0.749**	
SCB	.446**	.492**	.555**	.644**	**0.835**

Table4 Discriminant validity and correlation analysis（Second-order constructs）

	ES_X	SCM_M	SCB_Y
ES_X	**0.754**		
SCM_M	.538**	**0.749**	
SCB_Y	.606**	.615**	**0.840**

4.3 Structural equation modelling results

The present study is conceptualized and theoretically grounded in investigations regarding the impacts of the social - ecological environment and the Stimulus - Organism - Response (SOR) theory on urban resident's sports consumption behavior. In this context, Structural Equation Modeling (SEM) emerges as a highly efficacious methodology for dissecting the intricate interrelationships among multiple variables within the model. Specifically, SEM serves as a powerful tool to elucidate the hypothesized associations between constructs [53].

The structural equation model, complete with standardized beta coefficients(β) and their corresponding significance levels, is visually presented in Figure 2.
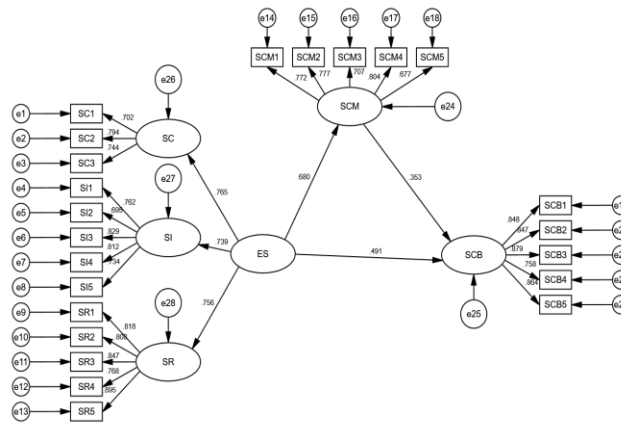
Four hypotheses were proposed and tested using Structural Equation Modeling (SEM) and the Bootstrapping method. Table 5 and 6 presenting the results of the hypotheses testing offer insights into the relationships between the constructs as hypothesized.Additionally, the Bootstrapping method was used to verify the mediating effects [54].

Hypothesis Testing Results：

H1: There is a direct relationship between the social sports environment and sports consumption behavior

As can be seen from the table, for the path "SCB <--- ES" (where ES represents the social sports environment and SCB represents sports consumption behavior), the standardized coefficient (S.T.D. (β)) is 0.491, the critical ratio (C.R.) is 6.383, and the p - value is "***" (usually indicating p < 0.001). The result is "Supported", which indicates that the social sports environment as a whole has a significant positive direct impact on sports consumption behavior, preliminarily verifying Hypothesis H1.

Sub - factor situation:

For the path "SCB <--- SC" (where SC is the social sports culture), the standardized coefficient is 0.144, C.R. = 2.405, and p = 0.016 < 0.05, suggesting that the social sports culture has a significant positive direct impact on sports consumption behavior.

For the path "SCB <--- SI" (where SI is the social sports interaction), the standardized coefficient is 0.125, C.R. = 2.315, and p = 0.021 < 0.05, indicating that the social sports interaction has a significant positive direct impact on sports consumption behavior.

For the path "SCB <--- SR" (where SR is the social sports resources), the standardized coefficient is 0.172, C.R. = 3.295, and the p - value is "***", showing that the social sports resources have a significant positive direct impact on sports consumption behavior.

In conclusion, both the social sports environment as a whole and its sub - factors, namely social sports culture, social sports interaction, and social sports resources, have significant positive direct impacts on sports consumption behavior. Therefore, Hypothesis H1 is supported.

H2: There is a direct relationship between the social sports environment and

sports consumption motivation

For the path "SCM <--- ES" (where SCM represents sports consumption motivation), the standardized coefficient is 0.68, the critical ratio (C.R.) is 9.035, and the p - value is "***". The result is "Supported", indicating that the social sports environment as a whole has a significant positive direct impact on sports consumption motivation, which preliminarily supports Hypothesis H2.

Sub - factor situation

For the path "SCM <--- SC", the standardized coefficient is 0.254, the C.R. value is 3.61, and the p - value is "***". This suggests that social sports culture has a significant positive direct impact on sports consumption motivation.

For the path "SCM <--- SI", the standardized coefficient is 0.177, the C.R. value is 2.739, and p = 0.006 < 0.01. It shows that social sports interaction has a significant positive direct impact on sports consumption motivation.

For the path "SCM <--- SR", the standardized coefficient is 0.287, the C.R. value is 4.672, and the p - value is "***". This indicates that social sports resources have a significant positive direct impact on sports consumption motivation.

In summary, both the social sports environment as a whole and its sub - factors have significant positive direct impacts on sports consumption motivation. Therefore, Hypothesis H2 is valid.

H3: Sports consumption motivation has a direct effect on sports consumption behavior

For the path "SCB <--- SCM", the standardized coefficient is 0.353, the critical ratio (C.R.) is 5.469, and the p - value is "***". The result is "Supported", which clearly indicates that sports consumption motivation has a significant positive direct impact on sports consumption behavior. Thus, Hypothesis H3 is supported.

H4: Sports consumption motivation plays a mediating role between the social sports environment and sports consumption behavior

The total effect value of "ES_SCB (Total)" is 0.73. The lower and upper bounds of the 95% confidence intervals for the Bias - Corrected and Percentile methods are 0.584 - 0.872 and 0.586 - 0.873 respectively, neither of which includes 0. Moreover, the result is "Supported", indicating that the total effect of the social sports environment on sports consumption behavior is significant.

The indirect effect value of "ES_SCM_SCB (Indirect)" is 0.24. Although it is not clearly shown whether the lower and upper bounds of the 95% confidence intervals for the Bias - Corrected and Percentile methods are significant (it is necessary to combine the criteria of non - inclusion of 0 for significance judgment in the actual research), from the perspective of the research design intention, this part represents the indirect influence of sports consumption motivation between the social sports environment and sports consumption behavior.

The direct effect value of "ES_SCB (Direct)" is 0.491. The lower and upper bounds of the 95% confidence intervals for the Bias - Corrected and Percentile methods are 0.241 - 0.824 and 0.243 - 0.827 respectively, neither of which includes 0, indicating that the direct effect of the social sports environment on sports consumption behavior is significant.

Considering the total effect, indirect effect, and direct effect comprehensively, sports consumption motivation plays a mediating role between the social sports environment and sports consumption behavior. Therefore, Hypothesis H4 is supported.

5. DISCUSSION

5.1. Findings

Combining the test results of Hypotheses H1, H2, H3, and H4, the social sports culture, social sports interaction, and social sports resources within the social sports environment can all directly and positively influence sports consumption motivation and sports consumption behavior. Moreover, sports consumption motivation plays a mediating role between the social sports environment and sports consumption behavior [55]. This research finding is significance for understanding the driving mechanism of urban residents' sports consumption behavior and helps to address issues such as insufficient motivation and investment in urban residents' sports consumption [56].

Social sports culture (SC) can further enhance urban residents' awareness and passion for sports by creating a strong sports - culture atmosphere and organizing a rich variety of sports activities, thereby strengthening this positive influence [57]. Social sports interaction (SI) is conducive to enhancing mutual trust among people and establishing pleasant interpersonal relationships, which in turn has a positive impact on both sports consumption motivation and sports consumption behavior [58]. Social sports resources (SR), through the government's macro - regulatory measures, can meet residents' daily sports exercise needs and diverse sports consumption demands, exerting a positive guiding influence [59].

Sports consumption essentially involves the transformation of social sports resources into personal physical and mental well - being and social satisfaction, a process that is also accompanied by the dissemination of social sports culture. People are both the shapers and beneficiaries of the social sports environment. The improvement of the social sports environment plays a decisive role in enhancing individuals' sports consumption awareness and habits. A favorable social sports environment often brings physical and mental pleasure and social satisfaction to urban residents, laying a solid foundation for sports consumption motivation and providing strong confidence for sports consumption behavior [60].

Table 5 Analysis of path coefficients and hypotheses verification

Hypothesis	Path			S.T.D. (β)	S.E.	C.R.	P	Results
H1	SCB	<---	ES	0.491	0.118	6.383	***	Supported
	SCB	<---	SC	0.144	0.07	2.405	0.016	
	SCB	<---	SI	0.125	0.056	2.315	0.021	
	SCB	<---	SR	0.172	0.048	3.295	***	
H2	SCM	<---	ES	0.68	0.092	9.035	***	Supported
	SCM	<---	SC	0.254	0.066	3.61	***	
	SCM	<---	SI	0.177	0.054	2.739	0.006	
	SCM	<---	SR	0.287	0.045	4.672	***	
H3	SCB	<---	SCM	0.353	0.081	5.469	***	Supported

Note: $***P < 0.001$ $**p < 0.01$ $*p < 0.05$

Table 6 Mediating effect and hypothesis verification

Hypothesis	Path	S.T.D. (β)	Bias-Corrected 95%CI		Percentile 95%CI		Results
			Lower	Upper	Lower	Upper	
H4	ES_SCB (Total)	0.73	0.584	0.872	0.586	0.873	Supported
	ES_SCM_SCB(Indirect)	0.24	0.057	0.435	0.017	0.41	
	ES_SCB(Direct)	0.491	0.241	0.824	0.243	0.827	

5.2. Contributions and implications

Based on the theory of the social sports environment ecosystem and the SOR (Stimulus - Organism - Response) theory, this study explored the influence of the internal organization of the social sports environment on sports consumption behavior. Moreover, it further subdivided the main influencing dimensions of the social sports environment into social sports culture (SC), social sports interaction (SI), and social sports resources (SR), thus expanding the scope of thinking about the sports ecological environment.

In addition, this research revealed the mediating role of sports consumption motivation between the social sports environment and sports consumption behavior. This is a feedback mechanism where the external ecological environment affects the inner activities of urban residents, which in turn influences their sports consumption habits [61]. It bears a strong resemblance to the stimulus part in the SOR theory. Figure 2 further validates such a theoretical construction. This study provides empirical evidence for the enrichment of research on sports consumption behavior and the social sports environment [62].

Figure2: Structural equation model results
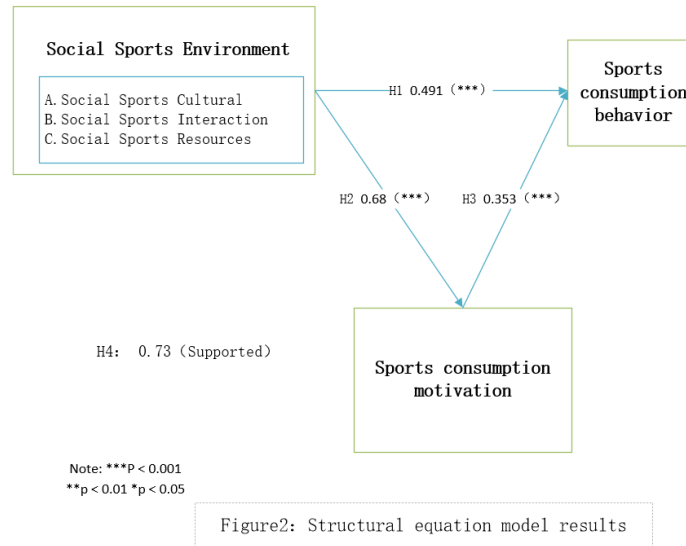
5.3. Limitations and suggestions for future research

Although this study has made further distinctions regarding social factors, the cross - sectional research method only provides information at a specific moment and lacks a dynamic observational perspective. Meanwhile, during the research process, it was found that the research on social sports culture and urban residents' sports consumption behavior should adopt a follow - up perspective to analyze multiple dimensions of the social sports environment. More influencing factors should be included in the scope of discussion [63]. For example, factors such as sports marketing, brand effect, and digital media all need to be further explored in future research.

6. CONCLUSION

This study constructs a research framework regarding the relationships among the social sports environment, sports consumption motivation, and sports consumption behavior, and elucidates the mechanisms of action of the aforementioned variables. The research hypotheses are formulated based on the theoretical and empirical support from previous literature. The findings of this study can be summarized to achieve the research objectives and address the research questions.

The analysis results of Hypotheses H1 and H2 indicate a significant positive correlation between the social sports environment and sports consumption behavior. This result supports the view that a favorable social sports environment, encompassing rich social sports culture, active social sports interactions, and abundant social sports resources, can effectively stimulate urban residents' interest and enthusiasm for sports, thereby enhancing their willingness and motivation to engage in sports consumption.

The analysis results of Hypotheses H3 and H4 reveal a significant positive direct association between sports consumption motivation and sports consumption behavior. Residents develop strong sports consumption motivation by pursuing health, entertainment, and social interaction through sports activities. An individual's sports consumption motivation is translated into sports awareness, consumption concepts, and fitness goals, which help reduce the psychological barriers to sports consumption and cultivate the habit of sports consumption behavior

The results and conclusions in this study can provide solutions to the problems of insufficient motivation and low investment in sports consumption. They can provide a new reference point for sports enterprises to develop marketing strategies, for sports organizations to improve service levels, and for the government to formulate new policies related to sports development, such as promoting the construction of sports facilities and organizing sports events, and improve the overall sports - consumption environment in society.

REFERENCES :

State Council of the People's Republic of China. (2024). Several Opinions on Accelerating the Development of the Sports Industry and Promoting Sports Consumption. [000014349/2024-00063].www.gov.cn/zhengce/zhengceku/202408/content_6966275.htm)

Xie, T., Zhang, Y., & Song, X. (2024). Research on the spatiotemporal evolution and influencing factors of common prosperity in China.Environment, Development and Sustainability,26(1), 1851-1877.

Öqvist, A., & Malmström, M. (2018). What motivates students? A study on the effects of teacher leadership and students' self-efficacy.International Journal of leadership in Education,21(2), 155-175.

Zhao, M., Maat, S. M., Azman, N., & Zheng, E. (2024). The Relationship Between Faculty Support, Academic Self-efficacy, Academic Emotions, and Online Learning Performance Among University Students in China.*SAGE Open*, *14*(4), 21582440241304928.

Köse, H., Argan, M., & Hedlund, D. P. (2021). The influence of perceived fan orientation on satisfaction, loyalty and sport consumption behaviors.International Journal of Sports Marketing and Sponsorship,22(4), 699-720.

Koronios, K., Dimitropoulos, P., Kriemadis, A., & Papadopoulos, A. (2021). Understanding sport media spectators' preferences: the relationships among motivators, constraints and actual media consumption behaviour.European Journal of International Management,15(2-3), 174-196.

Schell, C. J., Dyson, K., Fuentes, T. L., Des Roches, S., Harris, N. C., Miller, D. S., & Lambert, M. R. (2020). The ecological and evolutionary consequences of systemic racism in urban environments.Science,369(6510), eaay4497.

Decrop, A., & Derbaix, C. (2010). Pride in contemporary sport consumption: a marketing perspective.Journal of the Academy of Marketing Science, 38, 586-603.

White, K., Habib, R., & Hardisty, D. J. (2019). How to SHIFT consumer behaviors to be more sustainable: A literature review and guiding framework.Journal of marketing,83(3), 22-49.

Gagnier, K. M., Holochwost, S. J., Ceren, M., & Fisher, K. R. (2024, March). Filling a gap: initial evidence for reliable and valid measures of students' self-concept, self-efficacy, and interest in science with elementary students traditionally underrepresented in STEM. In Frontiers in Education (Vol. 8, p. 1242876). Frontiers Media SA

Nwankwo, S., Hamelin, N., & Khaled, M. (2014). Consumer values, motivation and purchase intention for luxury goods.Journal of retailing and consumer services,21(5), 735-744.

Karahanna, E., Xu, S. X., & Zhang, N. (2015). Psychological ownership motivation and use of social media.Journal of Marketing Theory and Practice,23(2), 185-207.

Gong, H., Fan, H., & Wang, Y. (2023). The Consumption of Leisure Sports and the Emerging Urban Middle-Class in Contemporary China.Asian Journal of Sport History & Culture,2(3), 260-295.

Chelladurai, P., & Kim, A. C. H. (2022).Human resource management in sport and recreation. Human Kinetics.

Zhang, L. (2021, February). Research on the evaluation of sports events based on the concept of green environmental protection. In IOP Conference Series: Earth and Environmental Science(Vol. 651, No. 4, p. 042028). IOP Publishing.

Seifert, L., & Davids, K. (2017). Ecological dynamics: a theoretical framework for understanding sport performance, physical education and physical activity. In First complex systems digital campus world e-conference 2015 (pp. 29-40). Springer International Publishing.

Immonen, T., Brymer, E., Davids, K., & Jaakkola, T. (2022). An ecological dynamics approach to understanding human-environment interactions in the adventure sport context—implications for research and practice.International Journal of Environmental Research and Public Health,19(6), 3691.

Trendafilova, S., Babiak, K., & Heinze, K. (2013). Corporate social responsibility and environmental sustainability: Why professional sport is greening the playing field. Sport management review,16(3), 298-313.

Chelladurai, P. (2014).Managing organizations for sport and physical activity: A systems perspective. Routledge.

Weinberg, R. S., & Gould, D. (2023).Foundations of sport and exercise psychology. Human kinetics.

Cockayne, D. (2021). Whose side are we on? Balancing economic interests with social concerns through a service-thinking approach.European Sport Management Quarterly,21(1), 1-19.

Kim, H. S., & Kim, M. (2020). Viewing sports online together? Psychological consequences on social live streaming service usage.Sport Management Review,23(5), 869-882.

Ryan, R. M., Deci, E. L., Vansteenkiste, M., & Soenens, B. (2021). Building a science of motivated persons: Self-determination theory's empirical approach to human experience and the regulation of behavior.Motivation Science,7(2), 97.

Hu, T., Wang, X., He, Q., & Bei, J. (2024). Coupling development of sports industry and tourism industry based on internet of things.Plos one,19(4), e0299080.

Xu, Q. (2023). The Trend Upgrade and Response Strategies of Sports Consumption in the New Era.Frontiers in Sport Research,5(11).

Wang, J., & Lv, B. (2019). Big data analysis and research on consumption demand of sports fitness leisure activities.Cluster Computing,22, 3573-3582.

Wäsche, H. (2015). Interorganizational cooperation in sport tourism: A social network analysis.Sport management review,18(4), 542-554.

Buser, M., Woratschek, H., Dickson, G., & Schönberner, J. (2022). Toward a sport ecosystem logic.Journal of Sport Management,36(6), 534-547.

Corthouts, J., Winand, M., & Scheerder, J. (2023). A three-dimensional model of innovation within Flemish non-profit sports organisations. European Sport Management Quarterly,23(3), 853-876.

Zhang, Y., Hou, Y., Cao, L., Xiong, Y., & Huang, Q. (2023). Analyzing the Influence of Internet Usage Behavior on Spectator Sports Consumption Among College Students: An Empirical SEM Study Based on the SOR Model.Journal of Internet Technology,24(6), 1379-1389.

Liu, Z., Guo, R., Liu, J., Dong, F., Shi, Y., & Cai, Q. (2022). Research and prospect analysis of sports consumption willingness based on public health emergencies.Frontiers in Psychology,12, 792686.

Bakker, I., Van Der Voordt, T., Vink, P., & De Boon, J. (2014). Pleasure, arousal, dominance: Mehrabian and Russell revisited.Current Psychology, 33, 405-421.

Rowe, D. (2008). Culture, sport and the night-time economy.International Journal of Cultural Policy,14(4), 399-415.

Powell, D., Stuart, S., & Godfrey, A. (2021). Sports related concussion: an emerging era in digital sports technology.NPJ digital medicine,4(1), 164.

Amornpan, S. (2024).The Effect of Advertising on Consumers Self-Improvement Motivation: When and How Advertising Motivates Consumers(Doctoral dissertation, The University of Texas Rio Grande Valley).

Liang, S. Z., Hsu, M. H., & Chou, T. H. (2022). Effects of celebrity–product/consumer congruence on consumer confidence, desire, and motivation in purchase intention.Sustainability,14(14), 8786.

Walker, M., & Kent, A. (2009). Do fans care? Assessing the influence of corporate social responsibility on consumer attitudes in the sport industry.Journal of sport management,23(6), 743-769.

Valliant, R. (1987). Generalized variance functions in stratified two-stage sampling.Journal of the American Statistical Association,82(398), 499-508.

Aubry, P., Quaintenne, G., Dupuy, J., Francesiaz, C., Guillemain, M., & Caizergues, A. (2023). On using stratified two-stage sampling for large-scale multispecies surveys.Ecological Informatics,77, 102229.

Turner, A. N., Parmar, N., Jovanovski, A., & Hearne, G. (2021). Assessing group-based changes in high-performance sport. Part 2: Effect sizes and embracing uncertainty through confidence intervals.Strength & Conditioning Journal,43(4), 68-77.

Dillman, D. A. (1991). The design and administration of mail surveys.Annual review of sociology,17(1), 225-249.

McCullough, B. P., & Trail, G. T. (2023). Assessing key performance indicators of corporate social responsibility initiatives in sport.European Sport Management Quarterly,23(1), 82-103.

Shang, Y., & Yang, S. Y. (2021). The effect of social support on athlete burnout in weightlifters: The mediation effect of mental toughness and sports motivation.Frontiers in psychology,12, 649677.

Oktadinata, A., Prabowo, B., Daya, W., Diana, F., Nugraha, U., Melinda, M., & Ockta, Y. (2024). Motivation And Physical Activity: Correlation Study on Extracurricular Sports of High School Students.Journal of Education, Teaching and Learning,9(1), 35-39.

Kock, F., Berbekova, A., & Assaf, A. G. (2021). Understanding and managing the threat of common method bias: Detection, prevention and control.Tourism Management,86, 104330.

Howard, M. C., & Henderson, J. (2023). A review of exploratory factor analysis in tourism and hospitality research: Identifying current practices and avenues for improvement.Journal of Business Research,154, 113328.

Tian, F., Zhou, J., & Liu, F. (2025). Construction of the national fitness public service satisfaction model in China based on American Customer Satisfaction Index.PloS one,20(1), e0317551.

Yang, Q., Hayat, N., Al Mamun, A., Makhbul, Z. K. M., & Zainol, N. R. (2022). Sustainable customer retention through social media marketing activities using hybrid SEM-neural network approach. Plos one, 17(3), e0264899.

Rahman, M. A., Dhira, T. A., Sarker, A. R., & Mehareen, J. (2022). Validity and reliability of the Patient Health Questionnaire scale (PHQ-9) among university students of Bangladesh.PloS one,17(6), e0269634.

Fauzi, M. A. (2022). Partial Least Square Structural Equation Modelling (PLS-SEM) in Knowledge Management Studies: Knowledge Sharing in Virtual Communities.Knowledge Management & E-Learning,14(1), 103-124.

Shafait, Z., Khan, M. A., Sahibzada, U. F., Dacko-Pikiewicz, Z., & Popp, J. (2021). An assessment of students' emotional intelligence, learning outcomes, and academic efficacy: A correlational study in higher education.Plos one,16(8), e0255428.

Lu, Y., Zhang, M. M., Yang, M. M., & Wang, Y. (2023). Sustainable human resource management practices, employee resilience, and employee outcomes: Toward common good values. Human Resource Management, 62(3), 331-353.

Shwedeh, F., Adelaja, A. A., Ogbolu, G., Kitana, A., Taamneh, A., Aburayya, A., & Salloum, S. A. (2023). Entrepreneurial innovation among international students in the UAE: Differential role of entrepreneurial education using SEM analysis. International Journal of Innovative Research and Scientific Studies, 6(2), 266-280.

Chen, C., Zhang, Y., Bai, Y., & Li, W. (2021). The impact of green credit on economic growth—The mediating effect of environment on labor supply. PLoS One, 16(9), e0257612.

Yu, G., & Song, Y. (2022). What affects sports participation and life satisfaction among urban residents? The role of self-efficacy and motivation. Frontiers in psychology,13, 884953.

Zhang, S., Zhang, X., & Liu, Y. (2023). A study of the influence of sports venues on the intra-city population layout based on multi-source data—Taking Xi'an city and Zhengzhou city as examples. Plos one, 18(5), e0285600.

Kaplanidou, K. (2021). Sport events and community development: Resident considerations and community goals. International Journal of Sports Marketing and Sponsorship, 22(1), 53-66.

Boemmel, A. (2024). United by Sports? The Role of a Sports-based CSR Initiative in Promoting Social Integration.

Kim, M. J., & Mao, L. L. (2021). Sport consumers motivation for live attendance and mediated sports consumption: A qualitative analysis.Sport in Society,24(4), 515-533.

Parvatiyar, A., & Sheth, J. N. (2023). Confronting the deep problem of consumption: why individual responsibility for mindful consumption matters. Journal of Consumer Affairs, 57(2), 785-820.

Shi, Y., Zhai, G., Xu, L., Zhou, S., Lu, Y., Liu, H., & Huang, W. (2021). Assessment methods of urban system resilience: From the perspective of complex adaptive system theory. Cities, 112, 103141.

Jeong, S. H., & Chung, J. Y. (2022). Integrated technology acceptance model (TAM) of sports team smartphone application (STSA) in the stimulus organism response (SOR) framework.Journal of Physical Education and Sport,22(9), 2152-2161.

Nifakos, S., Chandramouli, K., Nikolaou, C. K., Papachristou, P., Koch, S., Panaousis, E., & Bonacina, S. (2021). Influence of human factors on cyber security within healthcare organisations: A systematic review. Sensors,21(15), 5119.

Appendix 1. Measurement items

Constructs		Items	Item contents	Sources
SE	SC	SC1	I can receive relevant information about sports	McCullough, B. P., & Trail, G. T. (2023)
		SC2	The education I received from a young age has made me feel the importance of sports activities	McCullough, B. P., & Trail, G. T. (2023)
		SC3	The publicity advocating participation in sports activities by the government can be seen everywhere.	McCullough, B. P., & Trail, G. T. (2023)
	SI	SI1	Participating in sports activities has provided assistance to my interpersonal communication.	McCullough, B. P., & Trail, G. T. (2023)
		SI2	Encouraged by my surrounding friends, I joined the sports groups they were in and experienced different types of sports events.	McCullough, B. P., & Trail, G. T. (2023)
		SI3	I will discuss my favorite sports stars or sports events with my friends and share my own views.	
		SI4	I have posted videos and photos of my participation in sports exercises on social media (Wechat, Tiktok, etc.）	McCullough, B. P., & Trail, G. T. (2023)
		SI5	Encouraged by my surrounding friends, I have experienced different types of sports events.	McCullough, B. P., & Trail, G. T. (2023)
				McCullough, B. P., & Trail, G. T. (2023)
	SR	SR1	There are abundant sports facilities near where I live.	Shang, Y., & Yang, S. Y （2021）
		SR2	There are sports instructors in my community for communication and learning.	Shang, Y., & Yang, S. Y （2021）
		SR3	There are professional sports training centers (such as yoga studios, badminton halls, etc.) among the surrounding merchants.	Shang, Y., & Yang, S. Y （2021）
		SR4	I can easily find the sports venues where I want to participate in exercises.	Shang, Y., & Yang, S. Y （2021）
		SR5	I can obtain the sports learning guidance I want through various media.	Shang, Y., & Yang, S. Y （2021）
				Shang, Y., & Yang, S. Y （2021）
SCM		SCM1	Physical exercise has promoted my physical health.	Oktadinata, A, etal (2024)
		SCM2	Participating in physical exercise has made me more willing to engage in sports consumption.	Oktadinata, A, eta l(2024)
		SCM3	Sports activities have relieved the pressure I have at work or in study.	
		SCM4		Oktadinata, A, etal (2024)

	SCM5	In a certain sports activity, my characteristics and personality can be demonstrated.	Oktadinata, A, etal (2024)
		The improvement of my sports skills has made me more willing to invest time and energy.	Oktadinata, A, etal (2024)
SCB	SCB1	I often participate in physical exercises and have a stable time management.	Oktadinata, A, etal (2024)
	SCB2	I am willing to spend time and money on the sports events that I am interested in.	Oktadinata, A, etal (2024)
	SCB3		Oktadinata, A, etal (2024)
	SCB4	I have made payment for sports equipment, sports clothing, sports competitions,etc.	Oktadinata, A, etal (2024)
	SCB5	I am satisfied with the products and services of the sports brands I have used.	Oktadinata, A, etal (2024)
		The consumption of a certain sports event/brand is within my plan.	