A Study of The Cognitive and Psychological Attributes of Language Comprehension During Cultural Exchange Among Athletes

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Abstract

This study reports on the cognitive and psychological attributes of language comprehension during cultural exchange among athletes (N = 20) from the United States, Great Britain, and Brazil. The research examined the linguistic significance of American English in a global marketplace, with particular attention to cross-cultural communication among those who speak U.S. English natively but must succeed in internationally competitive contexts. The main findings revealed that participants were generally more confident and less likely to be embarrassed when speaking their mother tongue as compared to their individual second language (English). In addition, it was found that athletes did not have any difficulty differentiating between languages - they were able to identify specific words in both Spanish and Portuguese despite not being fluent in these languages. The findings were interpreted to indicate that athletes retained the ability to think and talk about the world in an English-language framework despite not being fluent in a second language.

Keywords: psychological capacity, sports tourism, satisfaction; language

1. Introduction

Sports tourism refers to the traveling for watching, appreciation, and participation in various sports activities (Ai, Liu, & Lin, 2021).

This kind of tourism tends to help broaden horizons, develop critical thinking and improve language skills. For example, sports journalism, media and education are some areas in which people can improve their foreign language proficiency while they are traveling or living abroad (Zheng et al., 2021).

To declare the importance of international education, UNESCO (United Nations Educational Scientific and Cultural Organization) published the Education for Global Citizenship in 2005 to promote global citizenship through education. The document offered recommendations for UNESCO member countries on how to implement a global citizenship education program (Cui & Tan, 2017).

The Educational Attainment of Youth: A Comparative Study in Fujian Province, China, is a three-year study which was carried out to understand the differences of educational levels between the study areas and urban and rural areas throughout China. The study found that the educational level in rural areas was lowest compared to urban and other kinds of areas, where young people tended not to go to school (Adib et al., 2021; Mustafa & Trevor, 2022).

This resulted in migrants from poor families migrating to cities, seeking jobs and sometimes even leaving their education. In addition, many young people were enrolled in non-formal education system such as Internet courses (Wang & Zhao, 2021).

A new form of tourism emerged: cultural exchange for communication (Chen, 2017). The idea of cultural exchange for communication was to make tourists enjoy various kinds of cultures through communicating with people in their visit destination. In addition, they would also be able to share each other's cultures and respect each other's way of life (Jun et al., 2018).

Communication is the use of language to express thoughts, feelings and information. It is important in every aspect of our lives. The communication process has five steps: encoding, decoding, interpreting, responding and feedback (Shao, Ieiri, & Hishiyama, 2021; Silva et al., 2020). It is important for communicating effectively. If the encoding is hindered by the lack of vocabulary or insufficient knowledge about a situation, it will result in low level of understanding with miscommunication during the communication process. Thus, inadequate knowledge can lead to difficulties in communicating with other people (Liao, Jin, & Huang, 2015; Yuan & Liu, 2019).

Therefore, obtaining sufficient knowledge will help us decode language and avoid miscommunication. At the same time, language can be used to express thoughts and feelings. Therefore, when communicating with each other, it is important to reciprocate the feelings and information that we want to convey (Liberato et al., 2020).

If people's understanding cannot be communicated, they will not respond properly. Therefore, when communicating with people who have different values and

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traditions, it is also necessary to respect cultural differences so that communication can be more effective (Zhou, Lv, & Hao, 2021).

Encoding is the process of translating the idea of another person into words or symbols for others to understand. It is also one way of communicating. The process of decoding is the necessary step. If people's understanding cannot be communicated, they will not respond properly. Therefore, when communicating with people who have different values and traditions, it is also necessary to respect cultural differences so that communication can be more effective (Medeiros et al., 2020).

The ability of encoding and decoding depend on the ability to different words; interpreting the words is when an interpreter works with an interpreter to interpret what they say (Candia, Pirlone, & Spadaro, 2020). It is important to understand how one's ideas are being interpreted by others in order to respond appropriately. Thus, effective communication depends on how one interprets those who they communicate with (Hardjosoekarto & Lawang, 2021; Zhai & Chen, 2020).

When you are having a conversation with someone from another culture, it is very important to have a sense of what you are talking about. It may lead to misunderstanding, miscommunication and loss of time and energy during the communication process.

Therefore, it is also important for people to pay attention to their cultural background when traveling or living in other countries (Gu et al., 2019). The differences and similarities between cultures should be noted so that there can be effective communication when communicating with people from other cultures (Guo & Zhang, 2017).

In addition, the importance of communication in sports is also important. Sports provide opportunities to cultivate team spirit and develop the sense of social responsibility (Anoyrkati, Kenanidis, & Alexandris, 2021). Therefore, when communicating with other people in sports, there are three important aspects: respect for others (regardless of age or gender), cooperation, and fairness (Huaming, Wenjun, & Yuxia, 2019). Likewise, successful communication requires cooperation between athletes and coaches to make decisions about sport policy and the implementation of rules for fair competition (Liu & Yang, 2021; Yang, 2021).

When the community is in danger, an emergency has happened and people are unable to communicate with each other effectively. Therefore, it is necessary to prepare for an emergency communication. In addition, it should also be known that during an emergency situation, people tend to panic and lose control with sometimes even ignoring the advice of professionals (Zhang, 2019). They might have misunderstood words in a language they do not understand or had not heard well (Miyake et al., 2018; Zhi, 2017).

Therefore, it is necessary for people to pay attention to their safety and knowledge when traveling or living in other countries (Feng, Limiao, & Ning, 2017; Huang, 2020). Because of globalization, people have been exposed to various kinds of cultures and languages through media.

2. Psychological Capacity Analysis and Language Comprehension of Athletes

Language is more than a communications tool. It has the ability to shape and influence one's thoughts, experiences, understanding of the world, and even social relationships. Language comprehension is a heightened awareness of how words may affect one's thoughts by influencing opinions and perspectives on aspects of day-to-day life; however, it can also provide insight into the relationship between language comprehensions during cultural exchange among athletes.

In order to refine an understanding of how language comprehension impacts athletes' experience during cultural exchange, this study will examine the cognitive attributes and psychological attributes that language provides in relation to athletes who are actively engaged in an athletic endeavor.

Automaticity is defined as the tendency to complete an act without reflection, and it has been used as a primary term in defining language comprehension. Language comprehension can be viewed on a continuum of automaticity, beginning with Intentional responses, which are the conscious and deliberate use of language (i.e., speaking and writing) to communicate meaningfully. On this continuum, highly automatic behaviors are characterized by their lack of awareness and consideration, such as driving while distracted or talking while multitasking. The next level down is heard completion, which is the same type of response described earlier but occurs without awareness or reflection; similar to hearing a song one has heard before that immediately inspires a response without any thought or consideration by the listener. In the next and final level, heard comprehension, speakers use language to foster thought patterns. This requires more effort, which is reflected through slower response times when compared to those responses made in high-automaticity environments (i.e., driving while distracted or talking on the phone while multitasking).

Categorization is a component of language comprehension that involves identifying and dividing up words into distinct parts of speech or lexical categories in order to

understand word meaning. There are many different ways that language can be categorized; for this study, though, there will be a focus on phonological categorization. Phonological categorization is the process of identifying units of sound that make up words and assigning them to different classes or phonemes. This type of categorization involves a cognitive understanding of phonemes, but also an understanding of how they are represented as sounds as well as their association with language.

Language comprehension encompasses not only how we understand language, but how we acquire it. For example, many definitions and explanations of language comprehension do not include the role physical context plays in acquiring language; however, there is still a considerable amount known about this concept as well as its impact on linguistic development and long-term memory. Physical context is defined as the physical space in which language comprehension takes place and its effect on speech processing. In short, the physical conditions in which we attempt to process and understand language can affect our interpretation of it. For example, we tend to perceive sentences when they are presented in an echoic context rather than a reading or visual context. This phenomenon is called the contextual cueing effect and has a considerable amount of influence on phonological acquisition.

Cultural exchange involves an active process of learning about a foreign culture by interacting with native speakers of that culture. The ultimate purpose of cultural exchange is to create a better understanding between cultures by comparing similarities, differences, and similarities within the various cultures. The greater the ability to create a better understanding between cultures, the more likely it is that people will learn and use new things within any culture. It is therefore important to explore how cultural exchange impacts language comprehension during sports competition in order to achieve a better understanding of the relationship between language and cross-cultural harmony.

This paper takes a multidisciplinary approach towards exploring language comprehension by considering a person's experience while actively engaged in athletic pursuit of excellence. This approach was made possible through combining a variety of scientific factors that have featured in previous research on culture, communication, and athletes.

2.1 FCE

The development of sports tourism depends on a series of intercorrelated factors. Figure 1 shows the relationship between the factors affecting sports tourism development. It can be observed that tourist experience satisfaction is the leading impactor of sports tourism development. The stronger the psychological capacity, the more satisfied the tourists are with their experience. This paper firstly analyzes the psychological capacity of tourist experience in sports tourism (PCTEST).

Let V = (Su et al., 2018) be the n indices of tourist experience psychological capacity in sports tourism, where n depends on the specific EIS; $U=\{u_1,u_2,\ldots,u_m\}$ be the m evaluation levels, i.e., the overall evaluation of all evaluators, where m falls between 3 and 5; $X=(x_1,x_2,\ldots,x_n)$ be the fuzzy weight vector reflecting the importance of each index, where x_i is the weight of index i ($0<<x_i$, $\Sigma x_i=1$).

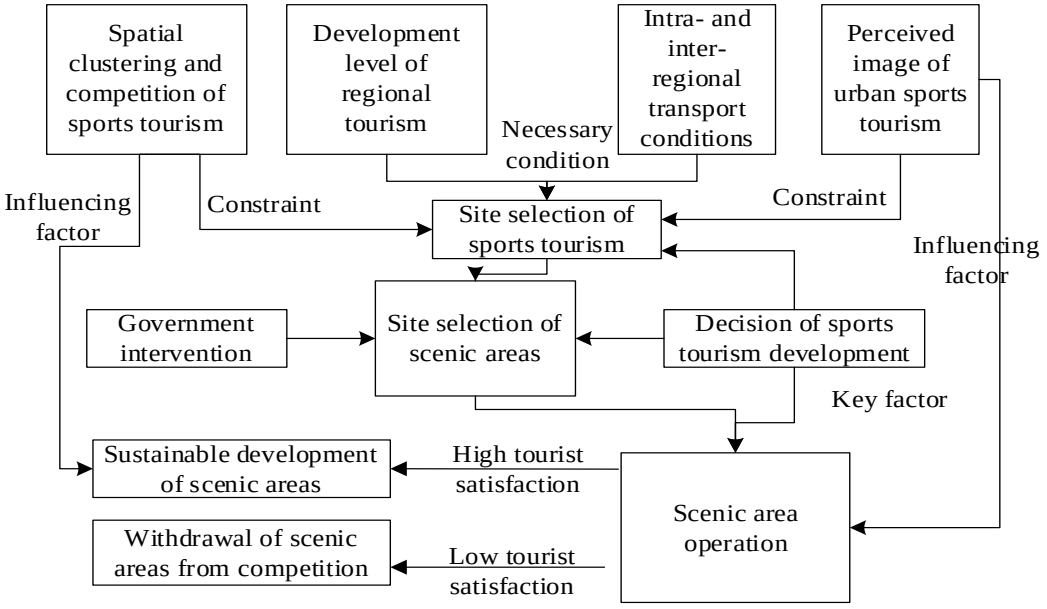


Figure 1. Relationship between factors affecting sports tourism development

After setting up the hierarchical fuzzy subsets, it is important to determine the membership of PCTEST to the fuzzy subsets on each evaluation level, from the perspective of a single index. Let s_{ij} be the membership u_i of PCTEST to the fuzzy subsets from the perspective of index v_i. Then, the following fuzzy relationship matrix can be obtained:

$$S = \begin{pmatrix} s_{11} & s_{12} & \cdots & s_{1m} \\ s_{21} & s_{22} & \cdots & s_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ s_{n1} & s_{n2} & \cdots & s_{nm} \end{pmatrix} \quad (1)$$

In terms of index v_i, the performance of PCTEST can be described by a fuzzy vector s_i, i.e., a single-index evaluation matrix. This matrix represents the fuzzy relationship between a set of evaluation indices V and the set of evaluation levels U, revealing the reasonable relationship between PCTEST and its influencing factors. The matrix $s_i=(s_{i1},s_{i2},...,s_{im})$, satisfies $\Sigma s_{ij}=1$.

Let y_j be the overall membership of element u_j in a fuzzy subset; * be the operator. Then, the vector Y of the FCE results on PCTEST can be obtained by synthetizing X and S with fuzzy synthesis operators:

$$Y = X * S = (x_1, x_2, \ldots, x_n) * \begin{pmatrix} s_{11} & s_{12} & \cdots & s_{1m} \\ s_{21} & s_{22} & \cdots & s_{2m} \\ s_{31} & s_{32} & \cdots & s_{3m} \\ \vdots & \vdots & \ddots & \vdots \\ s_{n1} & s_{n2} & \cdots & s_{nm} \end{pmatrix} = (y_1, y_2, \ldots, y_m) \quad (2)$$

The four common fuzzy synthesis operators are:

(1)$N(\wedge,\vee)$,$y_j=\vee^n_{i=1}(x_i\wedge s_{ij})=max_{1\le i\le n}\{min(x_i,s_{ij})\}$,$j=1,2,...,m$

(2)$N(\cdot,\vee)$,$y_j=\vee^n_{i=1}(x_i,s_{ij})=max_{1\le i\le n}\{min(x_i,s_{ij})\}$,$j=1,2,...,m$

(3)$N(\wedge,\oplus)$,$y_j=min\{1,\Sigma^n_{i=1}min(x_i,s_{ij})\}$,$j=1,2,...,m$

(4)$N(\cdot,\oplus)$,$y_j=min\{1,\Sigma^n_{i=1}(x_i,s_{ij})\}$,$j=1,2,...,m$

Table 1

Features of fuzzy synthesis operators

Feature		Significance of weight reflection	Utilization of S information	Type	Synthetic degree
Operator	$N(\wedge,\vee)$	Significant	Relatively full utilization	Highlighting principal components	Weak
	$N(\cdot,\vee)$	Insignificant	Full utilization	Weighted average	Weak
	$N(\wedge,\oplus)$	Significant	Relatively full utilization	Weighted average	Strong
	$N(\cdot,\oplus)$	Significant	Poor utilization	Highlighting principal components	Strong

Table 1 displays the features of fuzzy synthesis operators. The FCE on the vector $Y=(y_1,y_2,y_m)$ of the FCE results can be carried out by two principles: maximum membership and weighted average. Following the maximum membership principle, if $\exists y_s=max_{1\le j\le m}\{y_j\}$ in Y, then PCTEST belongs to level s. Following the weighted average principle, the evaluation levels must be continuous: I, II, III, …, n. Based on the elements of the vector Y, the weights on each level are summed up. Let l be the uncertainty coefficient. Then, the relative position of PCTEST can be obtained as:

$$X = \frac{\Sigma^m_{j=1} y^l_j \cdot j}{\Sigma^m_{j=1} y^l_j} \quad (3)$$

2.2 EIS construction

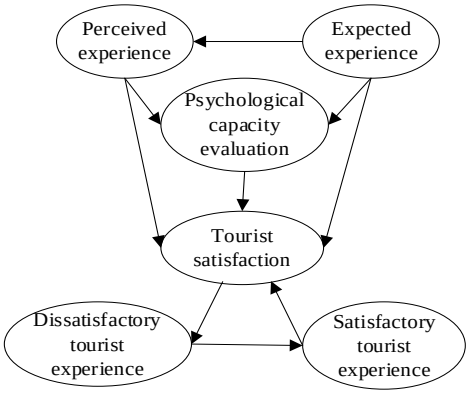


Figure 2. Evaluation model for tourist experience satisfaction

Figure 2 illustrates the evaluation model for tourist experience satisfaction. The model involves six structural variables: perceived experience, expected experience, psychological capacity evaluation, tourist satisfaction, dissatisfactory tourist experience, and satisfactory tourist experience. Among them, tourist satisfaction is the most important output variable. Perceived experience, expected experience, and psychological capacity evaluation influence the tourist experience satisfaction of sports tourism. Dissatisfactory tourist experience, and satisfactory tourist experience are the results of psychological capacity evaluation.

Normally, one structural variable contains one or more observational variables. Based on the above six structural variables, the measuring indices of psychological capacity were selected to evaluate the tourist experience satisfaction of sports tourism, forming a well-established EIS.

The set of primary indices is denoted as $STS=\{STS_1, STS_2, STS_3, STS_4, STS_5, STS_6, STS_7, STS_8, STS_9, STS_{10}, STS_{11}\}$, where STS is the set of evaluation indices for PCTEST, STS_1 is accessibility, STS_2 is the safety of the scenic area, STS_3 is the convenience of the experience, STS_4 is the greenness of the scenic area, STS_5 is the service level, STS_6 is the comfort of facilities, STS_7 is the beauty of the landscape, STS_8 is the reasonability of scenic spot layout, STS_9 is the demonstration of tourism culture, STS_{10} is the vibrance of sports activities, and STS_{11} is the diversity of souvenirs.

The set of secondary indices is denoted as STS_1={STS_{11}, STS_{12}, STS_{13}}, where STS_{11} is the number of travel routes, STS_{12} is the ability of a travel routes linking up scenic spots, and STS_{13} is the length of a route. Each secondary index can be further divided into a number of tertiary indices:

STS_2={STS_{21}, STS_{22}, STS_{23}, STS_{24}}, where STS_{21} is the security situation of the scenic area, STS_{22} is the anti-slip situation of steps and the ground, STS_{23} is the availability of mountaineering armrests, and STS_{24} is the effectiveness of night lighting.

STS_3={STS_{31}, STS_{32}, STS_{33}, STS_{34}}, where STS_{31} is the traffic situation of the scenic area, STS_{32} is the order situation of the scenic area, STS_{33} is the availability of rest facilities, and STS_{34} is the availability of toilets.

STS_4={STS_{41}, STS_{42}, STS_{43}}, where STS_{41} is the hygiene situation of the scenic area, STS_{42} is the water quality of the scenic area, and STS_{43} is the noise pollution.

STS_5={STS_{51}, STS_{52}, STS_{53}}, where STS_{51} is the level of guide service, STS_{52} is the level of catering service, and STS_{53} is the overall service level.

STS_6={STS_{61}, STS_{62}}, where STS_{61} is the appropriateness of step height, and STS_{62} is the comfort of rest facilities.

STS_7={STS_{71}, STS_{72}, STS_{73}}, where STS_{71} is the appreciativeness of the landscape, STS_{72} is the richness of the landscape, and STS_{73} is the uniqueness of the landscape.

STS_8={STS_{81}, STS_{82}}, where STS_{81} is the evenness of route distribution, and STS_{82} is the reasonability of scenic spot distribution.

STS_9={STS_{91}, STS_{92}}, where STS_{91} is the cultural profundity of the scenic area, and STS_{92} is the cultural history of the scenic spot.

STS_{10}={STS_{101}, STS_{102}}, where STS_{101} is the participation ability of tourism activities, and STS_{102} is the tourism atmosphere.

STS_{11}={STS_{111}, STS_{112}}, where STS_{111} is the type of souvenirs, and STS_{112} is the price of souvenirs.

3. Evaluation and Measurement

3.1 Modeling and index weighting

This paper measures and evaluates tourist experience satisfaction of sports tourism through the GRA. The highest score of each index obtained in the preceding section are grouped into a reference series for the highest satisfaction. Then, the scores of each psychological capacity index rated by sports tourists are compiled into a comparative series, and the calculation is performed based on the GRA.

Due to the varied importance of different indices, sports tourists have different feelings about the same tourism experience. This paper firstly computes the importance weight θ_i of each index, and the weight H_i of the coefficient of variation (COV). Then, the two results are comprehensively weighed to obtain the gap in tourist experience satisfaction of sports tourism. The larger the gap, the greater the distance from the highest tourist satisfaction of sports tourism. If the gap is wide, the sports tourism area and the relevant industries must make lots of urgent improvement. Figure 3 presents the structure of our measurement and evaluation model for tourist experience satisfaction of sports tourism.

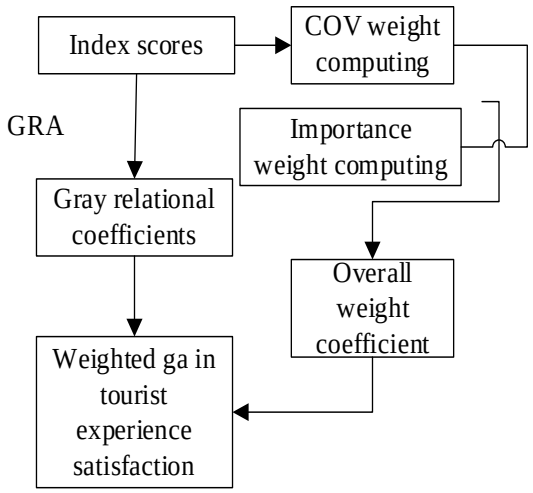


Figure 3. Model structure

This paper relies on θ_i and H_i to improve the weights of gray relational coefficients. If sports tourists perceive an index as highly important, i.e., the θ_i value is large, then the index is crucial to sports tourists. The θ_i value can be obtained by averaging and normalizing the importance scores of every index rated by all sports tourists:

$$\theta_i = \bar{\theta}_i / \sum_{i=1}^{n} \bar{\theta}_i, (i = 1,2,\ldots,n) \quad (4)$$

H_i measures the degree of satisfaction of sports tourists for each index in the EIS. It can be derived from the scores of each index. A high H_i indicates that sports tourists hold very different views on the corresponding index. Let h_i be the COV coefficient of the scores of index i. H_i can be calculated by:

$$H_i = h_i / \sum_{i=1}^{n} h_i, (i = 1,2,\ldots,n) \quad (5)$$

Let o^*_i and ξ_i be the mean and variance of index i, respectively. Then, h_i, ξ_i and o^*_i can be calculated by:

$$\begin{cases} h_i = \sqrt[2]{\xi_i}/o_i^* \\ \xi_i = \frac{1}{m-1}\sum_{j=1}^{m}\left[O_{ij} - o_i^*\right]^2, (i = 1,2,\ldots,n; j = 1,2,\ldots,m) \\ o_i^* = \frac{1}{m}\sum_{j=1}^{m} o_{ij} \end{cases} \quad (6)$$

To weigh the indices for tourist experience satisfaction of sports tourism more scientifically, the final weight ω_i can be obtained by solving the average of H_i and θ_i:

$$\omega_d = (H_d + \theta_d)/2, (i = 1,2,\ldots,n) \quad (7)$$

3.2 Gap calculation

The premise of the GRA is to establish the reference series A_0 and the comparative series A_i for tourist experience satisfaction of sports tourism. As mentioned before, the reference series $A_0=\{a_0(i),\ i=1,2,....,n\}$ comprises of the highest score of each index; the comparative series $A_j=\{a_j(i),j=1,2,....,n\}$ consist of the score of index i rated by sports tourist j.

Let T_{max} and T_{min} be the maximum and minimum differences between two levels, respectively; T_{ij} be the absolute difference between elements of A_0 and A_i. Then, T_{ij} must be solved before computing T_{max} and T_{min}. In fact, the maximum and minimum of T_{ij} are T_{max} and T_{min}, respectively. Let SQ_{ij} be the score of index i rated by sports tourist j. Then, T_{ij} can be calculated by:

$$T_{ij} = \left|a_0 - SQ_{ij}\right|, (i = 1,2,\dots,n; j = 1,2,\dots,m) \quad (8)$$

T_{max} and T_{min} can be respectively calculated by:

$$T_{max} = \max_i \max_j T_{ij} \quad (9)$$

$$T_{min} = \min_i \min_j T_{ij} \quad (10)$$

The grey relational coefficient σ_{ij} reflects the correlation degree between each comparative sample a_{ij} and the optimal sample $a_0(i)$. Let $\varphi\in[0,1]$ be the resolution ratio. Then, σ_{ij} can be calculated by:

$$\sigma_{ij} = \frac{T_{min}+\phi T_{max}}{T_{ij}+\phi T_{max}}, (i = 1,2,\dots,n; j = 1,2,\dots,m) \quad (11)$$

The grey relational coefficient σ_{ij} is reversely proportional to T_{ij}. The weighted gap in tourist experience satisfaction of sports tourism $SGV(i)$ can be deduced from the previously obtained ω_i and σ_{ij}. Then, the weighted gap SGV_{ij} in experience satisfaction of sports tourist j for index i, and the weighted gap $SGV(i)$ in experience satisfaction for index i in the whole EIS can be respectively calculated by:

$$SGV(i) = \sum_{j=1}^{m} SGV_{ij}, (j = 1,2,\dots,m) \quad (12)$$

$$SGV_{ij} = \omega_i \times \{1 - \sigma_{ij}\}, (i = 1,2,\dots,n; j = 1,2,\dots,m) \quad (13)$$

4. Experiments and Results Analysis

The tourists of a sports tourism project of ascending Mount Tai were invited to rate the psychological capacity indices. Then, the indices were ranked by the importance (Figure 4). It can be seen that the importance proportions of the primary indices were: STS_1(9.74%), STS_2(12.34%), STS_3(12.27%), STS_4(8.54%), STS_5(14.21%), STS_6(7.41%), STS_7(9.01%), STS_8(7.84%), STS_9(6.54%), STS_{10}(5.61%), and STS_{11}(4.84%). The seven most important indices were: STS_5, STS_2, STS_3, STS_1, STS_7, STS_4, and STS_8.

Table 2 lists the scores of the sports tourism project of ascending Mount Tai rated by different tourists. The psychological capacity was evaluated from four dimensions: lodging, catering, service, and entertainment. It can be seen that tourists 1, 3, 7, and 8 had a relatively high psychological capacity, while tourist 5 had the lowest satisfaction. Most tourists did not vary significantly in terms of psychological capacity. The tourist scores above provide a preliminary impression of tourist psychological capacity of the sports tourism project. However, further analysis is needed to identify the aspects with high or low psychological capacity.

Figure 5 presents the psychological capacity curves of tourists in different age groups. The adolescent tourists (<18) and young and middle-aged tourists (18-50) differed slightly in psychological capacity. Among all age groups, the adolescent tourists exhibited the largest psychological capacity for the sports tourism project of ascending Mount Tai. The old tourists (>50) had the smallest psychological capacity, and were the most sensitive ones to the increment of tourist number.

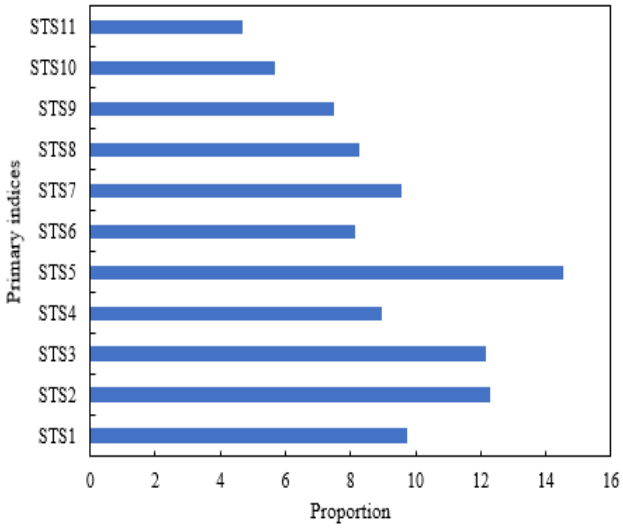


Figure 4. Importance proportions of primary indices for tourist psychological capacity

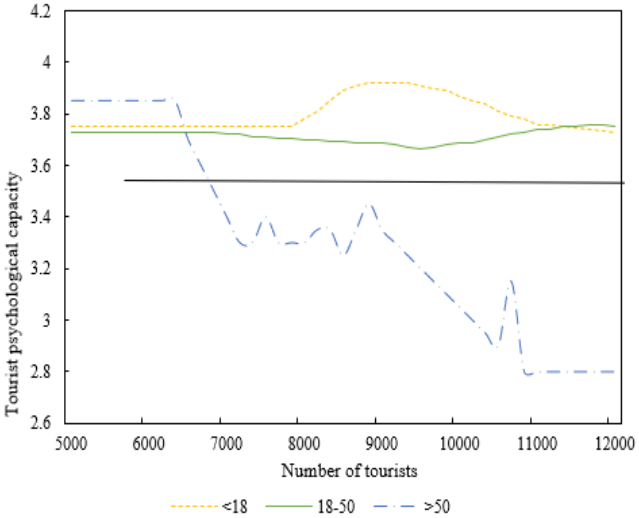


Figure 5. Psychological capacity curves of tourists in different age groups

Table 2

Scores of the sports tourism project

Tourist number	1	2	3	4	5	6	7	8	9	10	Mean score
Psychological capacity score	4.5	4.1	4.8	4.3	4.1	4.3	4.5	4.7	4.3	4.2	4.62
Lodging	4.7	4.9	4.8	4.6	4.8	4.5	4.8	4.6	4.9	4.3	4.58
Catering	4.6	4.5	4.8	4.5	4.7	4.4	4.5	4.7	4.5	4.8	4.36
Service	4.8	4.7	4.6	4.8	4.5	4.6	4.7	4.5	4.3	4.6	4.64
Entertainment	4.5	4.8	4.6	4.4	4.7	4.7	4.5	4.2	4.5	4.3	4.38

Table 3 compares the psychological capacity between male and female tourists. It can be learned that male and female tourists had a significant difference in psychological capacity: female tourists had a smaller psychological capacity, were more sensitive to the increment of tourist number, and exhibited a greater elasticity, than male tourists.

This paper carries out a questionnaire survey on the experience satisfaction of tourists for the sports tourism project of ascending Mount Tai on National Day Golden Weeks from 2016 to 2020. Table 4 shows the relationship between tourist experience satisfaction and tourist number in different periods of each golden week.

Table 3

Comparison of psychological capacity between male and female tourists

Survey data from Labor Day Golden Week	Tourist number	9625	3784	4518	5016	5261	4958	10958
	Male	4.01	3.89	3.85	3.81	3.92	3.82	4.15
	Female	3.75	3.92	3.84	3.72	3.95	3.68	3.77
Survey data from National Day Golden Week	Tourist number	16285	13629	14748	13625	15247	11284	19628
	Male	4.02	4.06	4.01	4.05	4.03	4.08	4.02
	Female	3.85	3.62	3.75	3.82	3.64	3.95	3.77

Table 4

Relationship between tourist experience satisfaction and tourist number

Project		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Mean
National Day Golden Week, 2016	Tourist number	31258	310269	28958	22163	18625	13263	5586	21485
	Satisfaction	3.62	3.74	3.85	3.62	3.72	3.85	3.92	3.75
National Day Golden Week, 2017	Tourist number	35268	36017	37158	34625	28462	22162	15485	30124
	Satisfaction	3.62	3.48	3.62	3.75	3.16	3.85	3.62	3.49
National Day Golden Week, 2018	Tourist number	5628	6528	6049	6385	5748	11625	15293	8152
	Satisfaction	3.01	/	/	/	/	3.11	3.05	3.95
National Day Golden Week, 2019	Tourist number	9685	3615	4581	5104	5326	4781	10326	6529
	Satisfaction	3.58	3.96	3.75	3.81	3.58	3.95	3.86	3.92
National Day Golden Week, 2020	Tourist number	16595	12625	13720	14162	14803	11048	18495	15062
	Satisfaction	3.15	3.86	3.92	3.84	3.68	3.97	3.15	3.88

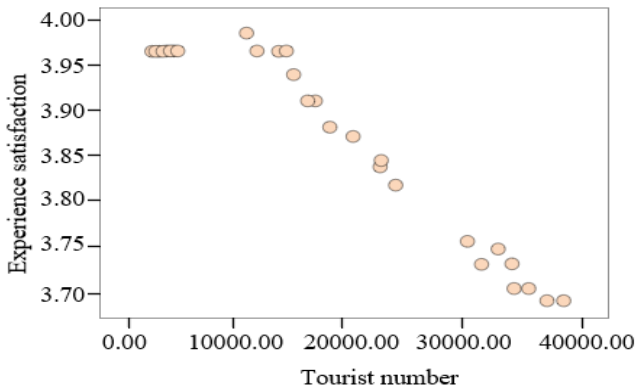
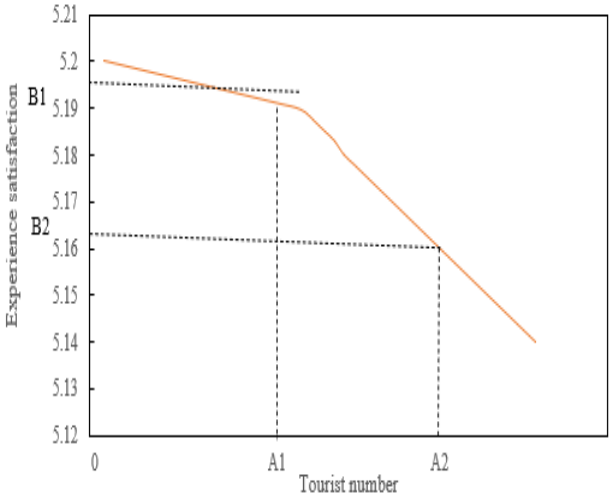


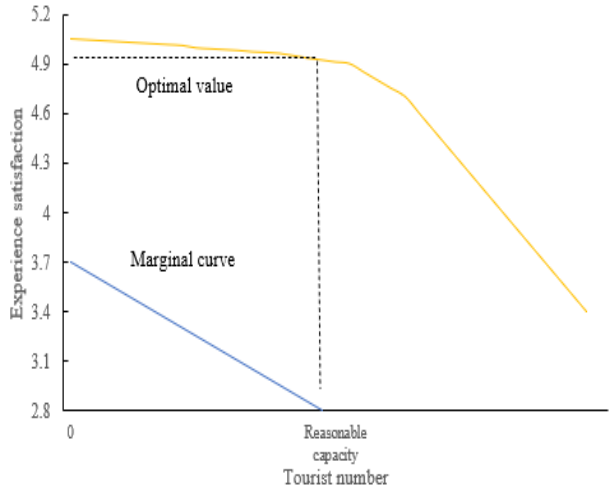
Figure 6. Relationship between tourist experience satisfaction and tourist number

Based on the data in Table 4, the relationship between tourist experience satisfaction and tourist number is plotted as Figure 6.

Then, it is necessary to explore the linear or nonlinear relationship between several independent variables and one dependent variable. Thus, multiple regression analyses were carried out based on the relationship between tourist experience satisfaction and tourist number. The resulting mean satisfaction with tourist experience in each golden week was averaged, and fitted into the quadratic curves that ideally depict the relationship between tourist experience satisfaction, marginal satisfaction, and tourist number (Figure 7).



(a)



(b)

Figure 7. Relationship between tourist experience satisfaction, marginal satisfaction, and tourist number

5. Conclusions

Based on psychological capacity analysis, this paper examines the tourist experience satisfaction of sports tourism. After completing the psychological capacity analysis on tourist experience in sports tourism, the authors gave the steps of the FCE, chose the reasonable indices for psychological capacity, and established a sound EIS. Next, the GRA was performed to measure and evaluate tourist experience satisfaction of sports tourism, and measured the gap in tourist experience satisfaction of sports tourism. After that, the psychological capacity of tourists facing a sports tourism project was preliminarily analyzed through the statistical analysis of the importance of each psychological capacity index rated by the tourists, as well as the scores of the project. In addition, the psychological capacity of tourists was examined by age group and gender, and multiple regression analyses were carried out to explore the relationship between tourist experience satisfaction and tourist number. In this way, the authors obtained the quadratic curves that ideally depict the relationship between tourist experience satisfaction, marginal satisfaction, and tourist number.

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