

## Research Article

### Community Cognition Investigation and Research on Tourists Disaster of Mountain Tourism-taking Taibai Mountain as a Case Study

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**Abstract:** The aim of the study focus on the community cognition to disasters of tourism taking the disasters frequently happens in Taibai Mountains as the case. The research covers people's cognition in tourist destination, which is closely related to the development and the economy in tourism. The age, education, occupation, income and the degree of relation to the tourism are also the important factors. The cognition of the community is the disasters influence, the disasters avoidance, the disasters knowledge and the disasters research. It is found that the elderly, higher education and income groups in community have more requirements to tourism development; community young people, local people and engaged in tourism business or management groups are not satisfied with the community benefits which gets through the development of tourism at present; more elderly, civil servants and workers staff in community know about the influence of the tourism disasters to social, economic and cultural in scenic spots; the young people, local and engaged in tourism business and management groups of community know more about prevention work of tourism disaster; higher education and youth groups in community have more knowledge of tourism disaster; more community civil servants are skeptical to the study of tourism disaster. Analyzing the results from the tourist areas, this research can offer advice to local governments and the administrations of the tourism, esp. develop the community avoidance ability in order that the system of the avoidance administration could be established.

**Keywords:** Community cognition, taibai mountain, tourism development, tourism disaster

## INTRODUCTION

Tourism safety research began in the 1970s is starting of tourism disaster research, the researchers explored the negative impact of crime, war and terrorism on tourism (Shareef, 2003). After the 1990s, with the natural disaster losses increased, tourism disaster research focused on the impact of natural disasters, climate change and infectious diseases on tourism (Mazzocchi and Montini, 2001; Dwyer, 2005), it also focused on tourists risk research about a particular destination and specific tourism activities, including the type and temporal distribution of security incidents and investigate analysis of visitors to risk perception and decision-making. Among them, the research on tourists' perception mainly analyzed of perception differences caused by terrorism, crime, AIDS, health, psychological characteristics, sex and nationality and other objective and subjective factors (Lepp and Gibson, 2003). Various tourist organizations are also involved in tourism disaster and risk exploration. In 1995, the International Conference on Security and risk was held in Ostersund, Sweden, it meant the start of international tourism disaster management study. In 1997, the World Tourism Organization (WTO) thought that tourism risks

included institutional environment risk, tourism and related sectors risk, individual tourist risk and natural environmental risks (Lawton, 1997) in the book of "safety and security of tourists-the destination of practical measures". In 2003, "Natural Disaster Reduction Manual of tourism industry" was published and "Tourism Crisis Management Guide" was published. In addition, in 2004, Sustainable Development Tourism Center of APEC released "Tourism Risk Management Guide", which provided advisory opinions for the tourism development in the region. In 2005, tourism forum was held by APEC in Busan, South Korea to discuss in detail the risk management of tourism and natural disasters.

After years of travel practice, foreign researchers put forward targeted recommendations or programs for all aspects of tourism disaster management. For example, Peterson and Hronek (1992) proposed program of risk management for park, recreation and leisure services. O' Gorman given response options for avalanche risk in national parks of Canada's backcountry (O'gorman, 2003). Marie and Stephen (2003) studied managing risk in adventure tourism operations in New Zealand. Prideaux (2003) considered that traditional tourism trends forecasting had its disadvantages, current tourism did not yet use new

developed techniques to deal with new disasters and crises, some current risk management of, future tourism disaster prediction should combine classification, identification, assessment and management (Marie and Stephen, 2003; Prideaux 2003). Lepp and Gibson (2003) thought that developers of tourism market should target toward visitors with higher risk tolerance. Daye (2005) emphasized that reducing the perceived risk is an important means to decrease business risk.

Domestic related research mainly focused on tourism disaster systems, tourism disaster management, emergency management, disaster relief and recovery and so on. 1990s, such studies mainly focused on tourist hotels, tourist traffic and travel insurance (Ma, 1991). After 1997, domestic tourism disaster research started to focus on all kinds of disasters and their impact on tourism due to the impact of the Asian financial crisis and the great flood of the Changjiang River. In 2003, more researchers focus on the study of tourism disasters due to the impact of SARS on domestic tourism. For example, Yuan and Qin (2003) studied risk management of tourism disaster in southwest of China. Xi jianchao *et al* take ten adventure tourism lines as a case study to study the risk assessment model of tourism destination (Xi *et al.*, 2007). Zhao and Wang (2006) put forward the risk system of tourism security. After the Wenchuan earthquake hit southwest tourism industry, researchers have proposed the establishment of tourism risk management system and tourism plan, it should include tourism disaster management. Based on the summary of the Wenchuan earthquake disaster tourism, China National Tourism Administration issued the "China Tourism mechanism of response to major natural disasters" in 2012. Domestic researchers explored the tourism disaster mechanisms, manifestations and the specific impact through qualitative analysis. Zhang (2003) studied the causes and mechanism in tour security accidents from the view of security.

Tourism disasters are disaster incidents caused by natural and social factors, which have a significant impact on the tourism industry. Because of breadth relevance and highly vulnerable of tourism, it makes tourism to be the most vulnerable industries affected by all kinds of disasters. With the further development of domestic tourism, the frequency of travel disasters is increasing, the impact of tourism disasters is expanding. Therefore, in-depth research and scientific management of tourism disaster has become an important step for destination building. Throughout the study on tourism disasters at home and abroad, it mainly focused on disaster study itself, but the study on community cognition are rare. Although tourism disaster management and prevention mainly rely on government and scenic destination, but the people involved in tourism community is also very important. Building a disaster management and prevention system of comprehensive tourist destination must attach great

importance to attitude of the resident in tourism destination community, in order to gain the support and participation of community members to make implemented of tourism disaster science management and prevention. Therefore, it is necessary to examine tourism disaster management and prevention from the attitudes of community cognitive towards tourism disaster. Taibai Mountain is located in Baoji City, Shaanxi Province, which bases on Taibai Mountain National Forest, is the main destination of Shaanxi West Tourist and is an important Mountain Tourism in Qinling zone. Survey on the site indicated travel disasters frequently occurred in the area in recent years due to the special geological structure and the current imperfect development and construction. Especially September 2012, the Taibai mountain scenic suffered rare torrential rains, causing park closure to restore and rebuild nearly a year. Taibai Mountain scenic is a typical tourist disaster-prone mountain scenic, the attitudes of people's community cognitive related to effective prevention of disaster. The purpose of this study is to analyze disaster awareness of mountain tourism scenic community, in order to provide a reference for the relevant scenic tourism management and disasters prevention based on in-depth research and questionnaire.

## STUDY DESIGN

**Questionnaire design and collection:** According to domestic and foreign literature, questionnaire was designed. The questionnaire consists of three parts: the first part is people demographic characteristics of the community; the second part is cognitive investigation of people on the Taibai Mountains scenic development, it is constituted by the 10 impact indicators; the third part is cognitive of people on the Taibai Mountains tourism disaster, it is constituted by the 18 impact indicators. The questionnaire based on Likert scale asked respondents to adopt with 1 (very opposed) to 5 (strongly agree) to indicate their reply to the representation. The survey was conducted June 8, 2013 to 9<sup>th</sup>. The subjects are the residents of East Manwan Village and West Manwan Village in Taibai mountain scenic and other people working and living here (not including tourists). East Manwan Village and West Manwan Village locate in Tangyu town north of Taibai mountain scenic and layout east and west side of Tangyu river. Entering Taibai Mountain scenic must pass through it. Due to the village near Taibai Mountains scenic and Tangyu Springs, economic development of residents rely mainly on tourism revenue. To further development of tourism in recent two years, the government conducted a comprehensive planning and construction for two villages, so that the village become a typical tourist community. Survey was conducted in two villages, questionnaires was random. 500 questionnaires were distributed and 390 valid

Table 1: Factor analysis result of community residents' cognitive for tourism development and tourism disaster of Taibai Mountain scenic

	Cognitive factor	Factor load	Variance ratio	Eigen value	Variance contribution	A coefficient
Tourism development	Common factor (1): Tourism development			3.202	32.020	0.823
	Achieved good results in the past	0.774	0.696			
	Science plan and management in place	0.753	0.682			
	A good prospect for tourism development	0.744	0.624			
	An important tourism destination in Shanxi	0.736	0.511			
	Achieved good results in the past	0.696	0.508			
	Common factor (2): Community interests			3.860	38.602	0.842
	Bring economic development of the community	0.764	0.610			
	Develop the vision of community residents	0.744	0.614			
	Improve social environment of the community	0.712	0.648			
	Bring benefits to local residents	0.673	0.572			
	Individual obtain benefit from tourism development	0.638	0.507			
	Cumulative contribution rate				70.622	
KMO statistic				0.858		
Tourism disasters	Common factor (1): Disasters impact			5.485	30.471	0.812
	Tourism disasters damage the image of the scenic	0.834	0.707			
	Tourism disasters destroy tourism resources	0.796	0.655			
	Tourism disasters make the number of tourist decrease	0.781	0.632			
	Tourism disasters cause a great threat to the safety of tourists	0.749	0.601			
	Tourism disasters impact tourism development	0.667	0.538			
	Tourism disasters impact individual's life.	0.629	0.503			
	Common factor (2): Disasters prevention			2.841	15.782	0.798
	Government provides guidance for disaster management	0.814	0.694			
	Education of disaster prevention and reduction was in place	0.809	0.670			
	Media coverage of disasters was timely and objective	0.787	0.673			
	The scenic has a better ability to cope with tourism disaster	0.756	0.607			
	Government issued the tourism disaster information	0.716	0.552			
	Individual can participate in disaster relief	0.684	0.512			
	Common factor (3): Disasters knowledge			1.838	10.213	0.841
	Know the hazards of tourism disasters	0.838	0.759			
	Know the types and characteristics of tourism disasters	0.833	0.761			
	Know the occurrence of tourism disasters	0.775	0.706			
	Know the cause of tourism disasters	0.711	0.615			
	Common factor (4): Disasters research			1.201	6.673	0.822
A need for a special tourism disaster research	0.821	0.730				
Reduce loss by scientific management and research	0.761	0.680				
Cumulative contribution rate				63.138		
KMO statistic				0.856		

questionnaires were obtained, the effective rate was 78%.

**Samples:** Taking into consideration of gender, 58.3% was male, 41.7% was female. From the age, the younger (less 30 years) accounted for 38.3%, middle-aged (30-60 years old) accounted for 54.2%, the older (over 60 years) accounted for 7.5%. From the education, the primary and lower was 12.8%, accounting for 68.4% of middle and high school was 68.4%, college and above accounted for 18.8%. From occupational structure, farmers accounted for 29.3%, self-employed accounted for 33.3%, civil servants accounted for 3.8%, students accounted for 16.2% and migrant workers accounted for 17.4%. From the income per person in house, 5000 and below accounted for 34.5% 5000 to 10000 accounted for 38.3%, 10, 000 to

15, 000 accounted for 13.9% and more than fifteen thousand accounted for 13.3%. 55.9% of those subjects are locals of Tangyu town, 44.1% of the subjects are non-locals. 36.2% of those subjects are engaged in the tourism operation or management, 63.8% are not.

**Analysis method:** SPSS11.0 software was used for statistical analysis of the questionnaire. Firstly, two aspects and 28 variables was analyzed use of factor analysis method, only common factor that eigenvalues (Eigenvalues) was greater than 1 was left. The study found that the KMO statistics of two aspects were 0.858 and 0.856, respectively, which indicated statistical data was suitable for factor analysis. The A coefficient of this study was greater than 0.7, indicating the questionnaire of a good homogeneous and stable reliability (Table 1).

**ANALYSES AND RESULTS**

**The cognitive of community residents for tourism development and tourism disaster of Taibai Mountain:**

Just as shown in Table 1, on the cognitive indicators of tourism development, 10 variables focused on two common factors. The first common factor reflects the cognitive of community residents on the status of Taibai Mountain scenic tourism development. As west important tourist attractions in Shaanxi province, Taibai Mountain scenic has a certain scale after years of development. The cognitive of community residents on the status of Taibai Mountain scenic tourism development reflects the relationship between scenic tourism development and community residents. The second common factor indicated the community interests derived from tourism development. Whether tourism development brings interest for the community or not is related to the vital interests of community residents. Scenic tourism development degree and community benefits associated with the tourism development were closely associated with cognitive of tourist disasters.

On the cognitive of community residents on tourism disasters, 18 variables focused on four common factors. The first common factor reflects the impact of tourism disasters. Tourism disaster has become an important factor to affect tourist development. Tourism disaster would damage scenic image and destroy tourism resources, which make the number of visitors reduce, pose a great threat to safety of tourists, thus affect the scenic tourism development, while impact of the work and live of community residents. The second common factor summarizes the tourism disaster prevention. Currently, daily disaster prevention of

tourist scenic is effort result of government, scenic, community residents. Especially for major disasters, the government should bear the primary responsibility. The third common factor reflects the tourism disaster-related knowledge. Occurrence and control of travel disasters should be performance and action under certain scientific laws. The knowledge of community residents on scenic tourist disaster-related is directly related to results of disaster prevention and treatment. The fourth common factor is travel disasters research. Tourism disasters research is an important part of disaster prevention and disaster management and is necessary measures to scientifically solve tourist disaster problems.

**The cognitive difference analysis of different demographic characteristics for tourism development and tourism disaster of taibai mountain:**

- The cognitive difference analysis of different gender, age and education groups for tourism development and tourism disaster of Taibai Mountain

As can be seen from Table 2, the cognitive difference analysis of different gender groups for tourism development and tourism disaster of Taibai Mountain was not obvious on 6 common factors, which indicated the cognitive difference analysis of different gender groups is not great.

The cognitive difference analysis of different age groups for tourism development and tourism disaster of Taibai Mountain was tourism development, community

Table 2: The cognitive difference analysis of different gender, age and education groups for tourism development and tourism disaster of Taibai Mountain

Common factor	Scores				Scores			Scores				F-value	Sig.	
	Gender		F-value	Sig.	Age			F-value	Sig.	Education				
	Male	Female			Young	Middle-aged	Old			Low	Middle			High
F1	0.017	-0.025	0.155	0.694	-0.036	-0.039	0.470	3.152	0.044*	0.463	-0.077	-0.032	5.610	0.004*
F2	0.032	-0.045	0.519	0.472	-0.174	0.063	0.428	4.881	0.008*	0.052	-0.028	0.065	0.294	0.745
F3	0.061	-0.085	1.799	0.181	-0.212	0.104	0.328	5.566	0.004*	-0.104	0.024	-0.018	0.321	0.726
F4	-0.043	0.060	0.894	0.345	-0.141	0.146	-0.336	4.922	0.008*	-0.016	0.022	-0.071	0.230	0.795
F5	0.011	-0.016	0.067	0.796	0.251	-0.122	-0.393	7.890	0.001*	-0.419	0.073	0.018	4.609	0.011*
F6	0.087	-0.122	3.752	0.054	0.013	-0.005	-0.031	0.028	0.972	-0.224	0.032	0.034	1.269	0.283

\*p<0.05, where, F1 is tourism development; F2 is community interests; F3 is disasters impact; F4 is disaster prevention; F5 is disaster knowledge; F6 is disaster research

Table 3: The cognitive difference analysis of different occupations and income groups for tourism development and tourism disaster of Taibai Mountain

Common factor	Scores						Scores						F-value	Sig.
	Occupations			F-value	Sig.	Family income per person								
	Farmers	Individual	Civil servant			Students	Migrant workers	Below 5000	5000-10000	10000-15000	Over 15000			
F1	0.163	-0.166	-0.262	0.119	-0.011	1.925	0.106	0.119	0.293	-0.089	-0.359	4.404	0.005*	
F2	-0.119	-0.007	0.416	-0.117	0.234	1.969	0.099	-0.096	-0.011	0.196	0.075	1.080	0.358	
F3	-0.068	0.075	0.358	-0.417	0.282	4.507	0.001*	-0.127	0.039	-0.023	0.241	1.625	0.183	
F4	-0.146	0.203	-0.188	-0.143	0.031	2.180	0.071	-0.081	0.160	-0.195	-0.043	2.057	0.106	
F5	-0.115	0.061	0.046	0.227	-0.144	1.497	0.203	0.001	0.046	-0.105	-0.025	0.283	0.838	
F6	-0.102	0.149	-0.856	0.111	-0.033	3.587	0.007*	-0.177	0.069	0.143	0.110	2.006	0.113	

\*: p<0.05

interest, disasters impact, disaster prevention and disaster knowledge. For the factors of tourism development, community interest and disasters impact, the older groups got higher scored, which indicated that the older groups hope to develop tourism to get interests from tourism development, compared with younger and middle-aged groups. The older groups repeatedly experienced disasters and known disasters impact recognized travel disasters occurrence will have a significant impact on the scenic. For the disaster prevention and disaster knowledge, the young and middle-aged groups showed more positive perception. The younger groups generally accepted a higher level of education and closely linked with the local tourism development, learn more about prevention and knowledge for geological disasters of the Taibai Mountain scenic.

The cognitive difference analysis of different gender groups for tourism development and tourism disaster of Taibai Mountain was tourism development "and disaster knowledge (Table 2). The less educated groups recognized tourism status of Taibai Mountains, however the higher education groups questioned. Compared with less educated populations, higher education groups are informed and have more in-depth understanding of tourism development, more involved in the local tourism development and also have higher requirements for tourism development on the scenic. The higher education groups are relatively easy to obtain disaster-related knowledge. Tourism disaster management and prevention is a knowledge-based society activities, it must rely on science popularization and relevant knowledge intensive training to achieve goals.

- The cognitive difference analysis of different occupations and income groups for tourism development and tourism disaster of Taibai Mountain

The cognitive difference analysis of different occupations groups for tourism development and tourism disaster of Taibai Mountain is disasters impact and disaster research (Table 3). The cognitive of the civil servants and migrant workers on disasters impact is more obvious. One of the work of local civil servants is to response to tourism disaster. When tourism disaster occurs, it will have an overall impact on the local community and it will affect the life and work of civil servants. The work of local migrant workers is closely related tourism. When tourism disasters happen, it will also affect the life and work of such groups. In terms of disaster research, this perception of civil servants is not obvious. Theoretically speaking, to strengthen research on tourism-related disasters is the basis to solve the problem. But because it involved many factors, many tourism studies, including domestic tourism disasters, were out of touch with the tourism

development practice. Not much tourism research results were applied to tourism practices, guiding role of tourism research on tourism development is not obvious. Civil servants in this community had a better understanding of the situation. Therefore, the strengthening application of disaster tourism research is necessary.

The cognitive difference analysis of different income groups for tourism development and tourism disaster of Taibai Mountain is disasters development (Table 3). Ideal tourist community is a community that people have access to appropriate benefits in tourism development. Only the interests of community residents is closely related to tourism development, people truly concerned about tourism development, but also pay attention to tourism disaster prevention. The tourism development approval of group had a higher capita income per person is not high, which indicated that such groups may get the benefits in the local tourism development, but not satisfied with the status of tourism development. Further developing community economic development effects of tourism development to get the full benefits of tourism community is an important factor in tourist disaster management and prevention.

- The cognitive difference analysis of local or non-local groups, groups engaged or not engaged in tourism operators or management for tourism development and tourism disaster of Taibai Mountain

The cognitive difference analysis of local or non-local groups for tourism development and tourism disaster of Taibai Mountain was mainly in the community interest and disaster prevention (Table 4). Compared with outsiders, more locals thought that the local tourism development is able to bring more benefits to the community. The locals in Tangyu town adjacent to Taibai Mountains scenic long-term lived in tourism community, they learn about the history and current situation of tourism and have higher requirements on whether or not local tourism development can bring benefits to the community. In terms of disaster prevention, the locals believed that the government and the scenic made the efforts to prevent tourist disasters, meanwhile they can actively respond to disasters prevention. As local people lived in tourist disaster-prone Taibai Mountain scenic, they are familiar with natural environment and disasters features on the scenic and have a better understanding of prevention measures of the government and the scenic, so many people can participate in disaster prevention and control.

The cognitive difference analysis of groups engaged or not engaged in tourism operators or management for tourism development and tourism disaster of Taibai Mountain was mainly in the

Table 4: The cognitive difference analysis of local or non-local groups, groups engaged or not engaged in tourism operators or management

Common factor	Scores				Scores			
	Local or non-local		F-value	Sig.	Engaged or not engaged in tourism operators or management		F-value	Sig.
	Yes	No			Yes	No		
F1	0.021	-0.026	0.195	0.659	-0.072	0.040	1.019	0.313
F2	-0.106	0.135	5.065	0.025*	-0.144	0.082	4.131	0.043*
F3	0.017	-0.021	0.128	0.721	-0.028	0.016	0.156	0.693
F4	0.164	-0.208	12.174	0.001*	0.220	-0.125	9.775	0.002*
F5	-0.056	0.071	1.404	0.237	0.078	-0.044	1.196	0.275
F6	0.044	-0.056	0.876	0.350	-0.061	0.034	0.742	0.390

\*: p<0.05

community interest and disaster prevention (Table 4). During the process of community economic development and tourism development of Taibai mountain scenic, operators or managers engaged in tourism are true practitioners of tourism development, they are direct stakeholders in the tourism development of scenic. They have higher requirements for community interests under background of tourism development, so they have more expectations on the increase community interests. In terms of disaster prevention, groups engaged in tourist operation or management have a better understanding of characteristics, prevention and treatment, as well as the effort of government, media, scenic, tourist communities on tourism disaster occurred in Taibai Mountain scenic, due to the direct participation of the scenic tourism development. However, groups not engaged in tourist operation or management did not know much about the specific measures of disaster prevention.

### CONCLUSION

Tourism disaster is an important factor affecting the sustainable development of tourism, tourism disaster management and prevention is an important part of destination development. Tourism disaster management and prevention should pay attention to cognition of destination community people. The community cognition of people on tourism disaster was related to destination tourism development and benefits people obtain degree through tourism development. Different age, education, occupation, income groups, as well as relationship with the tourism community become a major factor affected community cognition on tourism. Community cognition of residents on tourism disaster is mainly reflected in disasters impact, disaster prevention and disaster knowledge and disaster research. The study found that the elderly in community, highly educated and higher-income groups had higher requirements for the development level of tourism on the scenic. The younger, locals and groups engaged in the operation or management of tourist were dissatisfied with the benefits currently obtained through tourism development; the elderly, civil servants and

workers and other groups known more about the impact of travel disasters on social, economic and culture; the younger, locals and groups engaged in the operation or management of tourist had a better understand of tourism disaster prevention; the young and people with higher education acquired more knowledge on tourism disaster; civil servants questioned the research on tourism disaster. By analyzing community cognition of people on tourism disaster, it can provide reference in tourism disaster science management and prevention for the tourist destination government and scenic, it can help to play the role of disaster prevention especially through training tourism disaster of destination community and expanding the knowledge of tourism disasters, to build the perfect destination tourism disaster management and prevention system.

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