

Research on the User' Behaviour Intention and Influence Mechanism of Tourism Q&A Community- Based on an Improved Mediation Model Analysis

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Abstract. Compared with comprehensive Q&A communities, vertical Q&A communities have more obvious technical, social, intellectual, marketing and scene characteristics. Based on the theory of planning behaviour and the technology acceptance model, a structural equation model of users' willingness to use is constructed by taking tourism Q&A communities as an example, which is helpful to understand the influence mechanism of users' attitude and willingness to use in vertical Q&A communities, and then improve the quality of community knowledge and improve the difficulties of community business operation. This study proves that the users' perceived usefulness, usage attitude, subjective behaviour norms and perceived behaviour control have a positive and significant impact on usage intention. At the same time, ease of use, perceived usefulness and attitude of use have indirect mediating effect on the influence path of intention to use. Finally, the research puts forward some suggestions to improve the sustainable use intention of tourism Q&A community users from the aspects of improving the quality of content, encouraging the production and dissemination of high-quality content, strengthening social attributes, improving community identity, and mining community value.

Keywords: tourism Q&A community; behavior intention; influence mechanism; structural equation model

1. INTRODUCTION

Online Q&A community is a network space with the main functions of asking questions, answering, spreading, discussing and sharing knowledge ^[1]. Compared with traditional search engines, Q&A communities also have the characteristics of encouraging users to transform their tacit knowledge into community explicit knowledge and disseminate it through text, pictures, digital, audio, video and other ways. According to the different knowledge fields involved, the Q&A community can be divided into comprehensive Q&A community and vertical Q&A community.

The comprehensive Q&A communities such as “Zhihu”, “Yahoo! Answers”, “Baidu Knows”, etc., have no limitation on the questions and sharing content raised by users. And various questions raised by users can be answered quickly and from multiple perspectives, which

promotes the convergence and dissemination of community knowledge. The comprehensive Q&A mode can solve some basic problems, but profession and social attributes are difficult to sustainable, the user relationship is relatively loose.

Vertical Q&A community is a medium and channel to obtain in-depth experience, information exchange and knowledge production through Q&A interaction, and forms a network community with certain knowledge and interest boundary to realize social interaction between users and groups with the same interest. Tourism Q&A community has obvious vertical properties, and its contents and topics focus on tourism related fields. Users can obtain relevant information in the whole process of tourism and travel, and can also consult or search questions in non-tourism cycle, so as to obtain knowledge to assist decision-making, and form the hierarchical organization form and social relations of the community. With the popularization and development of tourism knowledge Q&A community service, the obstacles to progress also gradually appeared: On the one hand, due to the vertical characteristics of tourism knowledge, the number of users and application scenarios are relatively limited. Users' willingness to continue using is not strong and have low degree of participation and sharing. These problems will lead to insufficient self-generated capacity of community content^[2]. On the other hand, insufficient frequency of platform usage, which seriously affects the expansion of business model and sustainable development of the community. Therefore, it has become a new topic for operators and researchers to deeply understand the behaviour characteristics of users, put forward the corresponding mechanism, and encourage users to continue to use the community function with a definite aim.^[3]

This study will try to combine the theory of planned behaviour and the model of technology acceptance to build a structural equation model, and explore the influence mechanism and promotion strategies of users' willingness to use in tourism vertical Q&A communities, so as to realize the sustainable development of community knowledge production, social value and economic value.

2. LITERATURE REVIEW AND HYPOTHESES

2.1 Users' willingness of Community

Based on the summary of relevant studies, this paper believes that tourism Q&A communities have the following characteristics that have an impact on users' willingness to continue using:

(1) The practicality of network technology

Tourism Q&A community is a kind of online knowledge community, which is closely related to mobile Internet technology. Users need a vertical Q&A community to solve practical problems in the process of travel, and the requirements for service practicability and advanced technology are closely related to the behavioral willingness to use community platform^[4-7].

(2) Knowledge production and dissemination

Typical interactive connection modes in major tourism Q&A communities are "professional-tourist", "tourist-tourist" and "professional-professional". Compared with a comprehensive Q&A community, issues focus on the exchange and sharing of vertically specialized knowledge of tourism, with higher information concentration and efficiency^[5-8].

(3) User engagement and social network attributes

The extensive participation of users and the establishment of social relations are the basis of the operation and development of vertical Q&A community. Tourism Q&A community users' participation in community behavior has obvious differences in the levels and dimensions of information acquisition, perceptual involvement and interpersonal interaction^[9]. And the long-term development of the communities depends on the continuous attention and social interaction of users.

(4) Net-flow and marketing value of e-commerce

Heavy users of the communities have more similar attributes; therefore, the community platform can contact, understand, close to and influence users. Q&A the communities with Net-flow introduction have the value of market developing and products advertising. The most competitive e-tourism platforms such as "Ctrip.com", "fliggy.com", "Qiongyou.com", "Mafengwo" all have functions and services related to Q&A community.

(5) The quality of knowledge content dilemma

Although tourism Q&A community has the vertical attribute of professional knowledge and the mechanism of content recommendation, but the community contents are open and user self-generated. There is still a large potential for improvement in the practicability and professionalism of content community. The persistence and expansion of content dilemma may affect users' expectations of the value of community knowledge, the quality of community content and user appeal.

(6) Limitations of usage scenarios

The frequency and duration of the tourism vertical Q&A community are limited. And usually, the users use it more frequently when they have the intention to travel or in the process of traveling. Due to the limitations of usage scenarios, most tourism Q&A communities are faced with the spectator dilemma of non-registered users only "search-browse", rather than "question-answer-share", and the network connection among users is weakened, which affects the development of user value and content value of the community. How to break the usage scenarios limitation is an important approach to strengthen the user activity, enhance the capacity of knowledge production and dissemination.

2.2 Conceptual model and hypotheses

The Theory of Planned Behavior (TPB) is an extension of the theory of rational behavior and modern attribute attitude model^[11]. The TPB theory believes that human behavior is the result of rational choice and is governed by behavioral will, which is influenced by attitude, subjective norms and perceived behavioral control^[12].

Based on the theory of rational behavior, the Technology Acceptance Model (TAM) focuses more on the users' willingness to accept and use information systems. TAM considers that the acceptability of an information system is determined by the behavioral intention, which is jointly affected by the attitude of the intended use and perceived usefulness. Furthermore, the attitude of use is determined by the perceived usefulness and ease of use; and the latter is determined by the combined influence of perceived ease of use and external variables^[13].

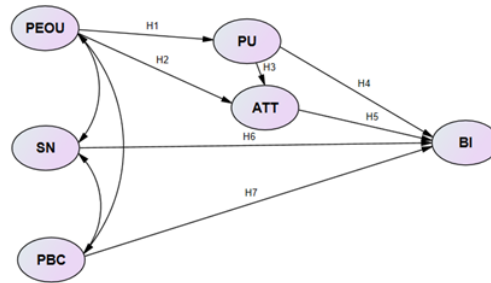


Figure 1. The Conceptual Model. Note: PEOU= Ease of use, SN= Subjective norms , PBC= Perceptual behavioural control, PU= Perceived usefulness, ATT=Attitude, BI=Behavior intention

The user's intention to participate in the interactions of tourism Q&A community is a comprehensive result influenced by the ease-of-use information technology, the subjective norms, perceptual behavioural control, perceived usefulness, attitude and behaviour intention. In tourism Q&A community, the user's attitude and behaviour intention is very important to promote the development of Q&A community, and it is also the basis of knowledge production, sharing, communication and dissemination. Based on the model of TPB and TAM, the following hypotheses are proposed to explain the influence mechanism of users' intention to continue using in the tourism Q&A community (Figure 1):

H1: Ease of use (PEOU) has a positive impact on perceived usefulness (PU) of the tourism Q&A community.

H2: Ease of use (PEOU) has a positive impact on the attitude (ATT) of tourism Q&A community.

H3: Perceived usefulness (PU) has a positive influence on the attitude (ATT) of tourism Q&A community.

H4: Perceived usefulness (PU) has a positive impact on behaviour intention (BI) of tourism Q&A community.

H5: Attitude (ATT) has a positive impact on behaviour intention (BI) of tourism Q&A community.

H6: Subjective norms (SN) have a positive impact on behaviour intention (BI) of tourism Q&A community.

H7: Perceived behavioural control (PBC) has a positive influence on behaviour intention (BI) of tourism Q&A community.

Table 1. Reliability and validity assessment of items

	Items	P	SFL	CR	AVE
PU [12- 14]	I believe tourism Q&A community will help me to complete the travel better		.752	.947	.643
	I believe tourism Q&A community will help me to acquire travel knowledge and information efficiently	***	.841		

	I believe the tourism Q&A community will help me to have a better travel experience	***	.864		
	I believe the tourism Q&A community will help me get practical travel information	***	.736		
PE OU [[] 12- 14]	I believe the tourism Q&A community provides content of clear and easy to understand		.735	.871	.630
	I don't think it takes too much effort or time to use a tourism Q&A community	***	.748		
	I believe the operation of tourism Q&A community is more convenient	***	.888		
	I consider the tourism Q&A community can be used well on all kinds of electronic devices	***	.794		
PB C [5,13]	I can use the tourism Q&A community to obtain travel information very well		.804	.832	.623
	I have enough knowledge and ability to use the tourism Q&A community to get information	***	.839		
	I have enough control to decide whether to use the tourism Q&A community to get information	***	.721		
AT T [5,11- 14]	I believe using a tourism Q&A community makes me willing to get more travel information		.800	.863	.678
	I consider it's a great experience to use the tourism Q&A community to get travel information	***	.854		
	I consider it is the right choice to get travel information through tourism Q&A community	***	.816		
SN [5,14]	The people around me who are important to me would believe I should use the Tourism Q&A community		.895	.898	.747
	My friends and family think I should use the Tourism Q&A community	***	.910		
	The people around me who are important to me believe it is a good choice to use the tourism Q&A community when traveling	***	.782		
BI [5,11- 14]	I expect that I will use the tourism Q&A community to get travel information when I travel		.809	.879	.646
	I'm sure there are plans to continue using the tourism Q&A community to acquire travel knowledge	***	.859		
	If I need to acquire tourism information and knowledge, it is my first choice to achieve it through the tourism Q&A community	***	.841		
	I will like, communicate and share travel experience and knowledge through the tourism Q&A community	***	.697		

Note: CR means composite reliability, SLF=the standardized factor loading, AVE=average variance extracted, CR=composite reliability.

Table 2. Demographic characteristics.

Gender		Annual travel frequency		Frequency of Q&A community use	
Male	48.47%	Less than 1 time	8.84%	Rarely use	1.70%
Female	51.53%	1-2 times	55.78%	Little-use	19.85%
		3-5 times	31.63%	Medium use	30.27%
		6-10 times	2.72%	Often use	39.29%
		More than 10 times	1.02%	Very often use	9.52%

3. METHODOLOGY

3.1 Data Collection and Sample Profile

The latent variable measurement scales involved in this study were all modified and designed on the basis of relevant references to adapt to the theme and background of this study. After determining the design draft of the questionnaire, 15 users familiar with the online travel community were tested to modify the terms and the expressions. Finally, through literature review and field interviews, 25 scale items were selected to explain the 6 latent variables. For all measurement items, the 7-point Likert scale was used, and the threshold range ranged from strongly inconsistent (1 point) to strongly consistent (7 points). Information of latent variables and questionnaire questions was shown in Table 1.

Data for the study were collected using the online survey platform Sojump from March 2021 to April 2021. The Sojump platform is the most common and professional survey platform in China (Lien, Cao, and Zhou, 2017). Questionnaires were distributed by eight trained teachers and students from Shenzhen University, Sun Yat-sen University and Guangdong University of Finance and Economics. After being informed of the purpose of this survey, the interviewees were first asked whether they had ever contacted and used the 5 Tourism Q&A Community. Only who answered positively were asked to participate in the survey, and all the interviewees received small cash rewards or equivalent gifts. The collection range of the questionnaires were widely distributed, including Beijing, Shanghai, Nanjing, Xiamen, Tianjin, Guangzhou, Shenzhen and Chengdu. 631 questionnaires were sent out to eligible respondents, and 588 were effectively received with an effective recovery rate of 93.18%. Most of the survey samples are well educated, which is in line with the characteristics of the main user groups of the tourism Q&A community^[5,6]. Among the respondents, 285 are male, accounting for 48.47%, and 303 are female, accounting for 51.53%. More than 55.7% of the respondents travel once or twice a year, more than 31.6% travel 3-5 times a year, and more than 79.08% of the respondents said they would use or often use the tourism Q&A community in their travel cycle.

3.2 Validation of measurement model

This research has many latent variables and corresponding assumptions in the model, so simple regression analysis or principal-component analysis cannot deal with these variables at the same time. The structural equation model can meet these requirements^[18]. IBM SPSS Amos 24.0 was used to test the model.

The reliability of the measurement model was first evaluated. The results are presented in Table 2. All loading indicators (.0.7) and the AVE values (.0.5) were acceptable. The composite reliability (CR) values of all measures exceeded the recommended threshold level (0.832~0.947) (Nunnally and Bernstein, 1994). As Table 3 indicates, the square root of AVE of each construct exceeded the coefficients between it and other constructs ^[18]. Overall, these results show that the measurement items in this study possessed adequate reliability and validity.

Table 3. Correlations statistics of construct measures

Variables	ATT	BI	PBC	SN	PEOU	PU
ATT	.823					
BI	.798	.804				
PBC	.691	.625	.789			
SN	.628	.627	.470	.864		
PEOU	.718	.562	.574	.553	.794	
PU	.626	.573	.537	.378	.487	.802

Note: Bold figures on the diagonal are the square root of the AVE for the constructs.

4. STRUCTURAL EQUATION MODEL ANALYSIS

4.1 Analysis of model fitting degree

The fitting degree of the model is tested by Chi-square/DF (3.433), GFI (0.906), AGFI (0.879), RMSEA (0.0604), SRMR (0.0701), TLI (0.936). CFI (0.945), only AGFI is slightly lower than the ideal value of 0.9, and the structural equation model has a good fit ^[19].

4.2 Path Analysis and Discussion

The results of path analysis and hypothesis testing are shown in Table 3. The hypotheses H1-H7 in the conceptual model are both verified and supported. The influence relationship among the latent variables in the model can be expressed by the model path coefficient. The path analysis results of structural equation model show that the P values corresponding to the H1-H7 path are all "***" or less than 0.05, and the SMC values of the model's multivariate correlation square are all greater than 0.196. All the hypotheses are significant and valid (Table 4).

Table 4. Results of structural model analysis.

Hypothesis	S.E.	t Value	P	Path Coefficient β	Results
H1	.039	10.553	***	.521	support
H2	.060	11.382	***	.594	support
H3	.061	7.492	***	.316	support
H4	.057	8.240	***	.496	support
H5	.032	5.818	***	.243	support
H6	.061	2.606	.009	.117	support
H7	.045	3.109	.002	.143	support

Table 5. Confidence interval test of mediating effect

	Point estimates	SE	Z value	Bootstrap 95% confidence interval					
				Bias-corrected			Percentile CI		
				Lower	Upper	P	Lower	Upper	P
<i>a</i>	.410	.045	9.111	.331	.508	.001	.330	.506	.001
<i>c</i>	.460	.072	6.389	.321	.599	.001	.317	.596	.001
<i>a*c</i>	.189	.029	6.517	.140	.255	.000	.133	.249	.001
<i>b</i>	.160	.066	2.424	.028	.291	.012	.027	.289	.014
<i>a*b</i>	.065	.027	2.407	.014	.121	.010	.011	.118	.014
<i>d</i>	.682	.078	8.744	.538	.846	.001	.539	.848	.001
<i>f</i>	.466	.070	6.657	.331	.608	.001	.329	.605	.001
<i>d*f</i>	.318	.056	5.679	.219	.442	.001	.217	.438	.001
<i>a*c*f</i>	.088	.020	4.400	.056	.134	.001	.053	.131	.001

4.3 Mediating effect analysis

We tested the mediating effects following Baron and Kenny’s (1986) procedures. This research adopts the confidence interval method (Bootstrap Distribution of Effects) do intermediary variable tests. Set Bootstrap sampling 2000 times with a confidence interval of 95%. The mediating effect test results confirmed that the indirect pathways of $a * c$, $d * f$ and $a * c * f$ were significant, and the indirect mediating effect existed (CI value did not include 0, $z > 1.96$) (Table 5) [20]. Since the direct effect affecting the path also is significant, it is a partial mediating effect. The path $a * c * f$ is the remote mediating effect. It can be considered users feel the direct impact of “Ease of use” to “Behaviour intention” is limited, and still need use the “Perceived Usefulness” and “Attitude” as partial intermediary effect transfer effects (Figure 2).

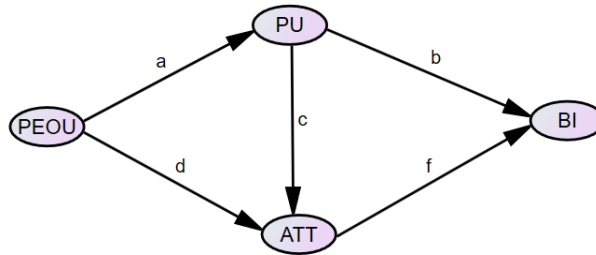


Figure 2. Model mediating effect path

5. CONCLUSION AND LIMITATIONS

5.1 Conclusion and Suggestions

The results show that both the TPB and TAM of theory have an impact on users' willingness to use the tourism Q&A community, and the following main conclusions are drawn:

First, users' attitude has the greatest positive impact on users' behaviour intention to use the Q&A community. At the same time, attitude as a mediator of ease of use to perceived usefulness has an impact on behaviour intention.

Secondly, due to the knowledge dissemination characteristics of the Q&A community, the subjective norms become a factor that cannot be ignored in various influences on the behaviour intention of the community users. The sustainable use intention of the tourism Q&A community is affected by the surrounding relatives, friends and important influential groups. Enhancing the social attributes and social recognition of Q&A communities has a positive effect on increasing users' willingness to continue using them.

Thirdly, tourism Q&A community has the property of information tools. "Ease of use" and "perceived usefulness" have a positive impact on "attitudes". This conclusion is consistent with relevant studies^[17]. The efforts in usability and ease of use are the direction of continuous optimization of all online communities.

Fourth, "Perceived Usefulness" cannot fully explain the user's intention to use, and it indirectly influences the user's "behaviour intention" through the "Attitude". The possible reason is that the purpose of the use Q&A community is relatively definite and the improvement of usefulness will be more reflected in the improvement of users' attitude towards the community. In the non-travel information acquisition scenario, the interesting, informative and social properties of the Q&A community can encourage users to pay more attention to the community continuously.

Fifth, "perceived behaviour control" and "subjective norms" have positive significant impact to "behaviour intention". "Behaviour intention" also influenced by the opinions and behaviours of the people around them, which conforms to the model of TAM. It also accords with the research conclusion of the influence of s Perceptual behavioural control and subjective norms on user attitude in TPB theory.

5.2 Strategies and Recommendations

1) Improve the quality of content

Tourism Q&A community should pay attention to the allocation and management of information, improve the quality of quality content and become an important and reliable source of professional tourism information. Specifically, let KOL (Key Opinion Leader) users and quality content be fully displayed and recommended. At the same time through the search engine optimization and artificial intelligence algorithm to make users more convenient access to the information they need.

2) Encourage the user generated content

First of all, tourism Q&A communities should take advantage of diversified platform to remind, encourage and guide users to timely release information through various social channels and mobile terminals, so as to form a resonance of emotion and experience. Though the "invitation to answer", "community incentives" to encourage "core users", "seed users" and "opinion leaders" to participate in community Q&A, form a high-quality community knowledge and experience, improve the value of the content of the community, and reduce the influence of scene limitations.

3) Strengthen social attributes

The cultivation of core users of Q&A community is periodic. After importing from various entrances, the cultivation of core users usually involves inquiry, wait-and-see, questioning, answering, and active content production. With the understanding and familiarity of community culture and social network, the frequency of knowledge production and sharing may become more frequent. To strengthen community social attribute and social identity, sharing and social rules should be established as soon as possible. The participation of elite and senior experts can help to establish and maintain the relationship between group and communication, enhance the user's own community value identity of belonging, attract more users into the community.

4) Explore the commercial value

At the same time, with the advantage of combination of community and e-commerce platform, the technology of data mining and semantic should be used to analysis the characteristics of tourism trends and meet the demand of information and purchase of travel services.

5.3 Research Value and Prospect

1) Research value and contribution

Tourism Q&A community has the value of information tool, social interaction and e-commerce entry. The promotion of continuous behaviour intention is of great significance to the development of tourism Q&A community. The proposal and verification of the research model provide a quantitative decision basis for improving the use intention of tourism Q&A community users. In this study, the strategy of improving use intention to in the vertical Q&A community provides a new perspective for analysing the influence mechanism of community user behaviour and management incentives, and put forward new insights for tourism Q&A community operators to promote community value.

2) Research limitations and prospects

Q&A community is the concept with multiple connotations, and different communities have diverse service functions and themes. This study focused on and e-commerce platform combined with relatively close analyses tourism Q&A community has certain representativeness. The research on the characteristics of Q&A communities in other vertical fields such as medical care and education can be an important direction for future research. In addition, this study focuses on the influence path of behaviour intention of ordinary members, and it is an important direction for future work to research on community opinion leaders and operators. Thirdly, this study explores the continuous use intention of tourism Q&A community users, and future research will concern the specific behaviour of the production and sharing of knowledge and content in the tourism Q&A community.

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