An Application of a Model of Online Travel Community Behavior: Beliefs, Attitudes and Behaviors in C-Trip, a Chinese Online Travel Community

Statia Elliot PhD
School of Hospitality and Tourism Management, University of Guelph

Chris Choi
School of Hospitality and Tourism Management, University of Guelph

Guoxin Li PhD
School of Management, Harbin Institute of Technology

An Application of a Model of Online Travel Community Behavior: Beliefs, Attitudes and Behaviors in C-Trip, a Chinese Online Travel Community

Statia Elliot, Ph.D.
School of Hospitality and Tourism Management
University of Guelph
Guelph, Ontario CDA

Chris Choi, Ph.D.
School of Hospitality and Tourism Management
University of Guelph
Guelph, Ontario CDA

Guoxin Li, Ph.D.
School of Management
Harbin Institute of Technology
Harbin, China

ABSTRACT

Online communities have become a popular and influential venue for tourism information sharing, yet little is known about membership behavior. The purpose of this study is to test a new model of online travel community beliefs, attitudes and behaviors. The model integrates measures proven in traditional consumer behavior theory such as satisfaction, trust and brand attitude, with behavioral measures unique to the online domain, such as stickiness. The results of an online survey of 145 members of C-Trip, a Chinese online community, indicate that the quality of the community significantly influences member satisfaction and trust. However, trust does not influence site stickiness or intention to transact. It is member satisfaction that significantly influences site stickiness, and in turn stickiness influences intention to transact. The relationship from online community quality, to member satisfaction, to stickiness, to transaction suggests a service blueprint for site operators to follow.

INTRODUCTION

Tourism is an information-rich industry, and more and more travelers rely heavily on the Internet as their single most important source of travel information to make their trip decision (Fodness & Murray, 1998). The advent of online communities (OCs) provides a good platform for both tourism service providers and travelers to exchange travel information (Kim, Lee, & Hiemstra, 2004). Although the importance of travel OCs has been recognized, few studies have examined the behavior of these communities, and the understanding of members' needs remains fragmented (Wang, Yu, & Fesenmaier, 2002). While several definitions of an OC exist within this relatively new field (Komito, 1998; Turban *et al*., 2006;), the most common is by Rheingold (1994), who defines an OC as a "social aggregation that emerge[s] from the Net… who may or may not meet one another face to face, and who exchange words and ideas through the mediation of computer bulletin boards and networks" (pp. 57-58).

This study tests a proposed model of online travel community beliefs, attitudes and behaviors, and explores the relationships between these important elements of consumer

behavior. The objectives are three-fold: (i) to empirically test a travel OC model that integrates measures of beliefs, attitudes and behaviors; (ii) to better understand the nature of these relationships specifically on intentions to transact as a measure of revenue-generation; and, (iii) to better understand the role of travel OCs in tourism marketing.

RESEARCH METHODS

To understand the nature and influence of relationships within travel OCs, key behavioral factors have been modeled based on an extensive review of tourism, technology, and marketing-related literature, and general theories of consumer behavior. The model incorporates three key elements: (i) the beliefs of community members, measured in terms of their assessment of OC quality; (ii) the attitudes of community members, measured in terms of their satisfaction, trust and brand attitude; and, (iii) the behavior of community members, measured in terms of site stickiness, and members' intentions to transact. The model is presented as Figure 1.

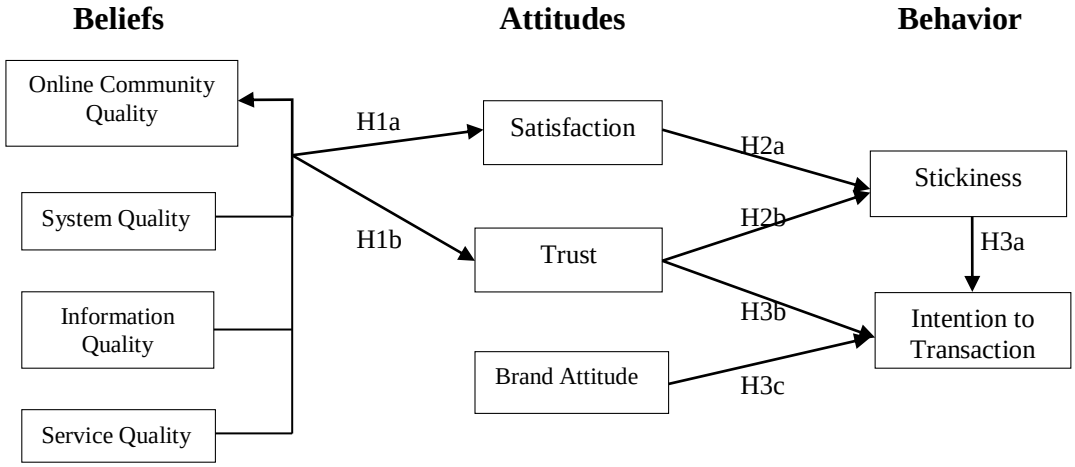

Figure 1. A Model of Online Travel Community Member Behavior.

1. Beliefs. Member's beliefs about the quality of an OC can influence individual member attitudes, and thus, can influence the overall sustainability of a community. It has been acknowledged that social online interaction supported by technology is crucial to the success of OCs, including content management and website functionality (Preece, 2000; Wang *et al*., 2002; Garrety *et al*. 2004; Lin, 2007). DeLone and McLean (2003) enhanced their original Information Systems Success Model by adding service quality. Kuo (2003) noted that website usability and service quality are key factors that predict members' intentions to use OCs. Based on DeLone and McLean's (2003) classification of online quality components, Lin (2007) examined the impact of information quality, system quality and service quality, on the sustainability of OCs.

2. Attitudes. While satisfaction has been extensively researched in the e-commerce context, the exploration of members' satisfaction within the context of OCs, and the effect of satisfaction on future participation, is at a relatively nascent stage (Valck, Langerak, Verhoef & Verlegh, 2007). Valck *et al*. (2007) viewed satisfaction as an important indicator of a member's overall community evaluation, and conceptualized different levels of member interactions with their OC.

Formation and expansion of an OC depends on the willingness of members to share information and services. Researchers have found that trust is a core component facilitating the anonymous interaction in OCs and e-commerce, and therefore trust building in OCs has been a common research topic (Hoffman, Novak & Peralta, 1999; Urban, Sultan & Qualls, 2000; Tan & Thoen, 2001; Luo, 2002; McKnight, Choudhury & Kacmar, 2002; Ye & Emurian, 2005). Researchers have also noted relationships among brand knowledge, online search action and the intention to transact online (Chen & He, 2003). The importance of brand knowledge to consumer decision making is well documented (Alba & Chattopadhyay, 1985). Brand knowledge can directly impact consumers' intentions to adopt, or not adopt, a service (Chen & He, 2003).

3. Behavior. The existence of an OC is dependent upon the community popularity and members' stickiness, defined as the ability of a company to keep a customer, and for customers to return (Paul, 1999). A website has stickiness when a user always visits the same website, spends more than the average time browsing it, and digs deeper into it (Brock, 1997). In the virtual world, a sense of community was found to be associated with member's purchasing behavior (Kim *et al*., 2004). Shang, Chen and Liao (2006) created an OC of computer users to test a model of involvement, trust and attitude towards the brand within the community, and examined the effects of consumers' lurking and posting behaviors in online consumer communities on specific brand loyalty. They found that a participant's stickiness in the community affected not only his/her brand attitude, but their future intentions to transact online.

The model was tested through the implementation of an online survey of C-Trip OC members. C-Trip is a large travel website in China. The survey instrument was a structured questionnaire comprising seven-item measurement scales for all latent variables. The English-based questionnaire was translated into Chinese, then back-translated into English to test for equivalency, and pre-tested with a small sample of Chinese students before field implementation. The online questionnaire was posted to the homepage of the C-Trip OC. A total of 163 questionnaires were collected, and reduced to 145 through an empirical process of data cleaning. As shown in Table 1, the demographic characteristics of the sample indicate that the majority of the respondents were married (58.5%), with males representing 57.3% of the sample. The average age was 31.8 years, and respondents were highly educated (78.0%), relatively high income, and heavy Net users.

FINDINGS

Factor analysis proved all model constructs to be reliable (Table 2). Loadings for all variables were in an acceptable range, being above 0.80 for 22 of the 30 items measured, with only one item scoring below 0.6 (*useful information quality*). Thus, all measures were retained in the model. Cronbach Alpha measures ranged from 0.834 to 0.940, indicating strong reliability of the constructs. Quality had the lowest percentage of variance explained at 73% (combining System, Service and Information Quality variances), while the four constructs of Satisfaction, Brand Attitude, Stickiness and Intention to Transact each explained over 80% of the variance.

Table 3 presents the results of the regression analyses, used to assess the seven hypothesized relationships between model variables. First, the effects of System Quality, Service Quality and Information Quality on member Satisfaction were measured. Results of the regression indicate that all three quality measures are significant ($p < 0.001$), with System Quality ($\beta = 0.478$) having the greatest influence on Satisfaction. The proportion of variance in Satisfaction that is explained by OC Quality factors is over half (Adjusted $R^2 = 0.537$), reflecting a strong association. Interestingly, the model association between Quality and Trust is even

greater, with 57 percent of the variance in Satisfaction explained by Trust (Adjusted $R^2 = 0.568$). Of the three measures of quality, in this regression it is Service Quality ($\beta = 0.576$) that has the greatest influence on Trust. The effect of Service Quality (measured by *appeal*, *promptness*, *organization* and *sincerity*) on Trust is understandable given that the Trust construct is measured by the items *trustworthy*, *believable* and *does the job right*. The effects of System Quality and Information Quality on Trust are also statistically significant.

Table 1. Demographic Characteristics of the Online Community Sample.

	Frequency	Percent (%)
Gender (*N*=143)		
Male	82	57.3
Female	61	42.7
Age (*N*=139)	18 -58*	31.75(7.55)**
Marital Status(*N*=142)		
Yes	83	58.5
No	59	41.5
Nationality(*N*=143)		
Chinese	141	98.6
Others	2	1.4
Education (*N*=145)		
High School Diploma	7	4.8
College graduate	25	17.2
Some University	82	56.6
University graduate	31	21.4
Income(*N*=142)		
below 1000 yuan	12	8.5
1001-2000 yuan	10	7.1
2001-3000yuan	16	11.3
3001-4000yuan	12	8.5
4001-5000yuan	21	14.9
over 5000yuan	70	49.6
Internet Usage frequency (*N*=145)		
Never	0	0
1-5 hours per week	11	7.6%
6-10 hours per week	18	12.4%
11-20 hours per week	24	16.6%
21-30 hours per week	17	11.7%
31-40 hours	26	17.9%
over 40 hours per week	56	38.6%
Number of OC Memberships (*N*=145)		
1-3	75	51.7%
4-6	42	29.0%
7-9	9	6.2%
Over 10	22	15.2%

*Range; ** Mean (Std. Dev.)

When the construct Stickiness is treated as a dependent variable, the proportion of variance explained by the independent variables of Trust and Satisfaction is relatively low (Adjusted $R^2 = 0.096$). In fact, the influence of Trust on Stickiness is not even significant ($t = -0.203$), rejecting the proposed hypothesis. Satisfaction, however, does have a significant influence on Stickiness, with $\beta = 0.295$. The importance of Stickiness in the model is more significant when it is treated as an independent variable in a regression on the construct Intention to Transact. Here, the measures of Stickiness, Brand Attitude and Trust explain almost half of the variance in Intention to Transact (Adjusted $R^2 = 0.464$). However, the influence of Trust and Brand Attitude are not significant, while the influence of Stickiness on Intention to Transact is

significant (β = 0.601). Table 4 summarizes the results of the analysis of hypothesized relationships.

Table 2. Factor Analysis Results.

Online Community Quality	Mean (Std. Dev.)	Factor Loadings	Eigen-value	Variance Explained (%)	α
System Quality					
Easy to use	5.62(1.23)	.819	6.53	54.4	0.888
Convenient to access	5.59(1.33)	.807			
Flexible	5.38(1.23)	.781			
Reliable	5.43(1.41)	.766			
Service Quality					
Visually appealing	4.53(1.40)	.821	1.18	9.86	0.834
Prompt service	4.92(1.30)	.820			
Well-organized	5.05(1.32)	.652			
Sincere in term of solving problems	5.42(1.31)	.624			
Information Quality					
Timely	5.12(1.29)	.850	1.03	8.57	0.866
Complete	4.99(1.16)	.787			
Accurate	5.31(1.04)	.742			
Useful	5.57(1.07)	.588			
Trust					
Trustworthy	5.77(1.22)	.950	2.35	78.39	0.854
Believable	5.75(1.14)	.951			
Does the job right	4.86(1.21)	.738			
Satisfaction					
Pleased	5.84(1.04)	.938	2.60	86.72	0.923
Satisfied	5.82(1.03)	.951			
Contented	5.63(1.08)	.904			
Brand Attitude					
Good	5.96(1.02)	.951	4.36	87.22	0.963
Pleasant	5.99(1.05)	.951			
Like	6.01(1.04)	.932			
Favorable	6.01(1.02)	.924			
Positive	5.91(1.10)	.911			
Intention to Transact					
Next time I book a trip	4.96(1.42)	.939	2.43	81.05	0.880
During the next 6 months	4.69(1.42)	.899			
If they offer what I am looking for	5.31(1.53)	.861			
Stickiness					
Spend more time	5.03(1.28)	.944	3.39	84.82	0.940
Read more postings	5.33(1.29)	.944			
Increase my visits	5.14(1.24)	.909			
Continue to visit the site	5.38(1.28)	.885			

1) All items measured by using a 7-point Liker type scale.2) Principal component analysis was employed with varimax rotation. 3) KMO Measures of Sampling Adequacy from 0.622 to 0.892. 4) Bartlett's Test of Sphericity: Chi-Squares from 237.45 to 1006.35, all $p<0.0001$.

APPLICATION OF RESULTS

The results of the study support the hypothesized relationships between a member's perception of OC quality and both their satisfaction with, and trust of, the community. System quality is particularly influential, suggesting that OC operators pay great attention to the ease of use, convenience, flexibility and reliability of their sites, calling for ongoing technological investments of time and money in order to satisfy members, and gain their trust. Member satisfaction is important as it directly influences behavior, or member stickiness. The greater the satisfaction with an OC, the more time spent, the more postings read, the more visits and continuation of visits to the site by the member. These measures of stickiness are significant influencers on intent to transact, as sticky members are more likely to book travel online. Thus, sticky websites are highly valuable to marketers, as they encourage users to become more deeply involved, spend more time browsing, and increase the likelihood of transactions. The strong relationship from OC quality, to member satisfaction, to stickiness, to transaction suggests a service blueprint for OC operators and site developers to follow.

Table 3. Regression Analysis of Model Relationships.

Independent Variables	Satisfaction (DV)[a]	
	β	*T*
System Quality	.478	7.85***
Service Quality	.421	6.92***
Information Quality	.365	5.99***
R^2 = 0.548, Adj. R^2 = 0.537, *F*=49.36, ***p < 0.001, *N*=125		
Independent Variables	Trust (DV)	
	β	*T*
System Quality	.408	6.87***
Service Quality	.576	9.69***
Information Quality	.295	4.96***
R^2 = 0.578, Adj. R^2 = 0.568, *F*=54.82, ***p < 0.001, *N*=123		
Independent Variables	Stickiness (DV)	
	β	*T*
Trust	-.024	-.203
Satisfaction	.349	2.940**
R^2 = 0.111, Adj. R^2 = 0.096, *F*=7.83, **p < 0.01, *N*=128		
Independent Variables	Intention to Transact (DV)	
	β	*T*
Stickiness	.601	8.18***
Brand Attitude	.087	.878
Trust	.111	1.174

R^2 = 0.477, Adj. R^2 = 0.464, *F*=35.63, ***p < 0.001, *N*=120; [a] - DV = Dependent variable

DISCUSSION

This study contributes to the growing body of literature on online travel communities, specifically addressing gaps in the academic research to date by integrating measures of beliefs, attitudes and behaviors in one model. For practitioners, the identification of factors such as system quality, that strongly influence online community member satisfaction, can help to focus

technological resources in key areas. For academics, the results provide additional insights to behavioral factors in an OC environment, helping to sort out relationships between traditional measures, and relatively new measures. For example, the behavioral measure of stickiness is unique to this domain, and appears to work well as an outcome in OC modeling. Trust, on the other hand, is a traditional measure in behavioral models, yet its role in the OC environment remains unclear. In addition, this study included the attitude measures (satisfaction, trust, and brand attitudes) and behavioral measures (stickiness, and intention to transaction), partially confirming that some relationships between attitude measures and behavioral measures can be used to estimate the potential profitability of online community membership. Also, marketers can develop marketing strategies directly targeting OC members, such as OC member special discounts, more discounts for active community members, early adapter programs (new travel package testing) and so on. Future studies are called for, and more sophisticated modeling, to expand the measurement of OC member behavior, and to conduct experiments across industries, communities and cultures.

Table 4. Results of Hypothesis Analysis.

	Hypothesis	Support
H1a	OC quality positively effects member satisfaction	Yes
H1b	OC quality positively effects member trust	Yes
H2a	OC satisfaction positively effects member stickiness	Yes
H2b	OC trust positively effects member stickiness	No
H3a	OC stickiness positively effects intent to transact	Yes
H3b	OC trust positively effects intent to transact	No
H3c	OC brand attitude positively effects intent to transact	No

REFERENCES

Alba, J.W., & Chattopadhyay, A. (1985). Effects of context and part-category cues on recall of competing brands. *Journal of Marketing Research*, *22*(3): 340-350.

Brock, S.J. (1997). Selling alliances: Issues and insights. *Industrial Marketing Management, 26*: 146 – 161.

Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet – The state of eTourism research. *Tourism Management*, *29*: 609-623.

Casalo, L., Flavian, C., & Guinaliu, M. (2007). The impact of participation in virtual brand communities on consumer trust and loyalty: The case of free software. *Online Information Review, 31*(6): 775-792.

Chen Y H., Wu, J. J., & Chung, Y.S. (2008). Cultural impact on trust: A comparison of virtual communities in China, Hong Kong, and Taiwan. *Journal of Global Information Technology Management,* 11(1): 28-47.

Chen, R., & He, F. (2003). Using brand knowledge to understand consumers' intention to adopt an online retailer. *International Journal of Services Technology and Management*, *4*(4-6): 464.

Dellaert, B. C. (2000). Exploring consumers' willingness to contribute to the Internet web sites. In O. Lee (Ed.). *Internet marketing research: Theory and practice*. Hersey, PA: Idea Group Publishing.

DeLone, W.H., & McLean, E.R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems,* 19(4): 9-30.

DeLone, W.H., & McLean, E.R. (2004). Measuring e-commerce success: Applying the DeLone and McLean Information systems success model. *International Journal of Electronic Commerce*, *9*(1): 31-47.

Fodness, D., & Murray, B. (1998). A typology of tourist information search behavior. *Journal of Travel Researc*h, *37*(2); 108-120.

Hagel, J. III., & Armstrong, A. G. (1997). Net gain: Expanding markets through virtual communities. Boston, MA: Harvard Business School Press.

Hoffman, D.L., Novak, T.P., & Peralta, M. (1999). Building consumer trust online. *Communications of the ACM, 42*: 80 – 85.

Kim, G.W., Ma, X., & Kim, D.J. (2005). Determinants of Chinese hotel customers' e-satisfaction and purchase intentions. *Tourism Management*, *27* (5): 890-900.

Kim, W.G., Lee, C., & Hiemstra, S.J. (2004). Effects of an online virtual community on customer loyalty and travel product purchases. *Tourism Management*, *25*(3): 343-355.

Komito, L. (1998). The net as a foraging society: Flexible communities. *The Information Society, 14*(2): 97-106.

Kuo, Y.F. (2003). A study on service quality of virtual community web sites. *Total Quality Management, 14*(4): 461-73.

Lee, G.G., & Lin, H.F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail and Distribution Management, 33*(2): 161-76.

Lin, H. F. (2007). The role of online and offline features in sustaining virtual communities: an empirical study. *Internet Research, 17*(2): 119-138.

Luo, X. (2002), Trust production and privacy concerns on the internet a framework based on relationship marketing and social exchange theory. *Industrial Marketing Management, 31*: 111 – 118.

McKnight, D.H., Choudhury, V., & Kacmar, C. (2002). The impact of initial consumer trust on intentions to transact with a web site: A trust building model. *Journal of Strategy Information Systems, 11*: 297 – 323.

Paul, B.S. (1999). Yahoo: Gettin' sticky with it. *Wired News*. 22 March, 1999.

Preece, J. (2000). *Online communities: Designing usability, supporting sociability*. New York, NY: Wiley.

Rheingold, H. (1994). The virtual community: Homesteading on the electronic frontier. New York: HaperPerennial.

Shang, R. A., Chen, Y. C., & Liao, H. J. (2006). The value of participation in virtual consumer communities on brand loyalty. *Internet Research*, *16*(4): 398-418.

Tan, Y.H., & Thoen, W. (2001). Toward a generic model of trust for electronic commerce. *International Journal of Electronic Commerce, 5*: 61 – 74.

Turban, E., King, D., Viehland, D., & Lee, J. (2006). *Electronic commerce: A managerial perspective*. New York: Pearson Education Inc.

Urban, G.L., Sultan, F., & Qualls, W. J. (2000). Placing trust at the center of your Internet strategy. *Sloan Management Review, 42*: 39 – 48.

Valck, K. D., Langerak, F., Verhoef, P. C., & Verlegh, P. W. J. (2007). Satisfaction with virtual communities of interest: Effect on members' visit frequency. British *Journal of Management, 18:* 241-256.

Wang, Y., Q. Yu, & D. R. Fesenmaier (2002). Defining the virtual tourist community: Implications for tourism marketing. *Tourism Management, 23* (4): 407-417.

Wang, Y., & Fesenmaier, D.R. (2004). Modeling participation in an online travel community. *Journal of Travel Research*, *42*(3): 261.

Ye, D.W., & Emurian, H.H. (2005). An overview of online trust: Concepts, elements, and implications. *Computers in Human Behavior, 21*: 105 – 125.

Contact Information:

Dr. Statia Elliot
School of Hospitality and Tourism Management
University of Guelph
#205 Macdonald Stewart Hall
Guelph, Ontario CDA N1G 2W1
Tel. 519-824-4120 ext.53970
Email: statia@uoguelph.ca