

## HOW MEMBERS' COMMITMENT TO AN ONLINE KNOWLEDGE COMMUNITY INFLUENCES THEIR USAGE BEHAVIOR

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Using organizational commitment theory, we proposed a model to characterize how community commitment affects the usage behavior of online knowledge community (OKC) members, and to depict the contextual antecedents of that commitment. We analyzed survey data from 255 users of an OKC and found that continuance, affective, and normative community commitment each had a prominent but different influence on the OKC members' usage behavior; as contextual antecedents, the usability attribute had a significant effect on continuance community commitment, and community atmosphere played an important role in both affective and normative community commitment. These findings contribute to researchers' understanding of the effect of community commitment on OKC members' usage behavior. Managers of OKCs may use the findings to target contextual antecedents of commitment to encourage usage.

*Keywords:* community commitment, online knowledge community, usage behavior, continuance commitment, affective commitment, normative commitment.

An *online knowledge community* (OKC) is a popular Internet community that specializes in knowledge sharing and seeking (Luo, Yoshita, & Wang, 2013). With many choices on offer and low switching costs, it is easy for users to join and leave an OKC (Bateman, Gray, & Butler, 2011). This makes individuals'

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access to some websites one-off transactions. Thus, in order to achieve success, an OKC should both attract its users to remain with the community over time and increase their willingness to share and contribute knowledge.

In the last decade, a great deal of research on OKCs has been undertaken to establish the reason for users' motivations, such as reputation (Hsu, 2015), altruism, and reciprocity (Cheung, Lee, & Lee, 2013; Lee, Kim, & Kim, 2011). However, very few researchers have incorporated organizational commitment into the study of OKC. In this study, we examined how OKC members' commitment affects their usage behavior, and investigated how community commitment, as an intermediate psychological process, is shaped by distal contextual antecedents.

## Research Model and Hypotheses

### Community Commitment

In the context of online communities, most previous researchers have viewed commitment as a one-dimensional construct (Kuo & Feng, 2013; Liu, Wagner, & Chen, 2014). According to organizational commitment theory, commitment is a complex and multidimensional construct (Meyer & Allen, 1991). Consistent with this theory, Bateman et al. (2011) characterized community commitment as having three components: continuance community commitment, affective community commitment, and normative community commitment.

*Continuance community commitment* has been defined as "a bond between a member and a particular community that is based on the member's belief that his or her involvement provides net benefits that are not easily available elsewhere" (Bateman et al., 2011, p. 843). In the case of an OKC, individuals join a community and browse its web pages to obtain valuable information for their own benefit. As they search for information, they incur energy and time costs. Continuance community commitment indicates the degree to which a member believes the cost:benefit ratio associated with a particular community is superior to that of other communities. Hence, members' level of continuance community commitment could affect their usage. Therefore, we formed the following hypothesis:

**Hypothesis 1:** A member's level of continuance community commitment toward an online knowledge community will have a significant, positive impact on his/her usage of that community.

*Affective community commitment* has been defined as "a bond between a member and a particular community that is based on the member's strong emotional attachment to that community" (Bateman et al., 2011, p. 843). Affective community commitment is composed of positive feelings of identification with, and involvement in, an online community. It has been empirically confirmed that individuals' sense of involvement has a positive influence on their participation

(Yoo, Suh, & Lee, 2002). Individuals with a strong emotional attachment to a community identify with, and generally like, that community. Therefore, they are interested in, and might want to browse, the website frequently to participate in the conversations within that community, consciously helping other members who are part of the group. Therefore, we formed the following hypothesis:

**Hypothesis 2:** A member's level of affective community commitment toward an online knowledge community will have a significant, positive impact on his/her usage of that community.

*Normative community commitment* has been defined as "a bond between a member and a particular community that is based on the member's sense of obligation toward that community," and the focus is on an obligation to contribute to the community (Bateman et al., 2011, p. 844). When a member has obtained benefits from a community, he or she is likely to feel obliged to repay these benefits, and to believe that it is his/her duty to support this community. Hence, we formed the following hypothesis:

**Hypothesis 3:** A member's level of normative community commitment toward an online knowledge community will have a significant, positive impact on his/her usage of this community.

### **Attributes of an Online Knowledge Community (OKC)**

An OKC is a knowledge-incentivizing community where knowledge is the primary resource for community users. To seek or provide knowledge in an OKC requires not only high-quality infrastructure in terms of factors such as system and information quality, but also a pleasant environment, such as a prosharing and respectful community atmosphere. It has been confirmed that an organization's work environment and culture affect employees' commitment (Abdullah, 2012). Similarly, an OKC's attributes, such as environment and culture, are meaningful in determining that OKC's effectiveness. In this research, we classified the attributes of an OKC into two categories: usability and community atmosphere.

#### **Usability Attribute**

An OKC's *usability attribute* refers to the degree of facilitation of human-computer interaction (Jin, Park, & Kim, 2010). We postulated that the usability attribute has two components: system quality and information quality. *System quality* refers to how well the operating system for the OKC fulfills the responsibility of the community to the users (Lin, Fan, Wallace, & Zhang, 2007). With a high-quality system, members' information needs are facilitated more quickly. It has been found that easy system usage encourages member-to-member interaction (Jin, Park et al., 2010). A good experience with an OKC will increase members' intention to stay and generate an emotional attachment to that community.

*Information quality* is defined as the quality of the information available in the OKC (Zhang, 2010). A high level of satisfaction with pay will result in employees making the work effort desired by their organization's managers/owners (Abdullah, 2012). Similarly, the level of information quality a member perceives as being available on an OKC can influence his/her assessment of that community, thus affecting the probability that he or she will continue to participate in that OKC. Furthermore, the better the information quality of an OKC, the more likely it is that individuals will come to trust and identify with it, and a strong emotional attachment to this community will develop. It has been empirically shown that the more valuable information individuals post on an OKC, the greater will be the number of people who will join that online community (Chen & Lin, 2014), as such, high-quality system and information are necessary for members to contribute to the OKC. Hence, we formed the following hypothesis:

**Hypothesis 4:** The usability attribute of an online knowledge community will have a significant, positive impact on members' continuance community commitment.

**Hypothesis 5:** The usability attribute of an online knowledge community will have a significant, positive impact on members' affective community commitment.

**Hypothesis 6:** The usability attribute of an online knowledge community will have a significant, positive impact on members' normative community commitment.

### **Community Atmosphere**

OKCs are based on members' social interactions; thus, the community policy and incentive mechanisms that guide or mediate the activities of members characterize another attribute of OKC. We defined this attribute as *community atmosphere* (CA), which refers to the norms and attitudes that are intended to facilitate member participation in an OKC.

System and information quality are the basic conditions necessary for a healthy community atmosphere (Lin et al., 2007). If the human-computer interaction is not good or if the information is false or not useful, individuals will have negative behaviors, such as quarrels between members, thus affecting other individuals in the community.

Therefore, there are positive relationships between the usability attribute and community atmosphere. Organizational commitment researchers have shown that perceived organizational support leads to higher levels of affective commitment to the organization (Ahmed & Nawaz, 2015; Zhou & Miao, 2014). In OKCs, when the environment is respectful and prosharing, this may facilitate opinion sharing among members and promote helping others without the fear of being

criticized. This environment is conducive to members developing an affective bond to a community and feeling obliged to continue to visit it. Therefore, we formed the following hypotheses:

**Hypothesis 7:** The usability attribute of an online knowledge community will have a significant, positive impact on its community atmosphere.

**Hypothesis 8:** The community atmosphere of an online knowledge community will have a significant, positive impact on members' continuance community commitment.

**Hypothesis 9:** The community atmosphere of an online knowledge community will have a significant, positive impact on members' affective community commitment.

**Hypothesis 10:** The community atmosphere of an online knowledge community will have a significant, positive impact on members' normative community commitment.

## Method

### Instrument Development and Data Collection

We operationalized the constructs by selecting items used in previously established measures and revising them to fit the OKC context. All items were rated on a 5-point Likert-type scale anchored by 1 = *strongly disagree* and 5 = *strongly agree*.

Our focus in this study was on use of *Baidu Knows*, which is an OKC consisting of 24 metacategories and approximately 300 subcategories.

We conducted a survey with the users of this OKC, distributing hard copies of our survey to students on campus at Xidian University and also posting the survey online for 2 weeks. We received 273 responses, 97 of which were made online. After discarding those that had multiple missing values or were otherwise unusable, 255 responses were valid. Among these respondents, 63% were men, 37% women, and average age of the respondents was 22 years ( $SD = 8.2$ ). The demographic profile of the sample is shown in Table 1.

### Data Analysis

We employed partial least squares regression for data analysis, a structural modeling technique that is suitable for the measurement model with both formatively and reflectively measured constructs (Petter, Straub, & Rai, 2007).

### Instrument Validation

Reliability was assessed by both composite reliability (CR) and Cronbach's alpha (MacKenzie, Podsakoff, & Podsakoff, 2011). Because usability attribute was specified as a formatively measured construct, testing for reliability by

Table 1. *Demographics of Respondents*

Demographics	Items	%	Demographics	Items	%
Gender	Male	63	Frequency of login	Less than once a month	2
	Female	37		Once a week	13
Age	<20	23	Several times a week	21	
	20-35	55	Once a day	41	
	>36	22	Several times a day	23	
Education level	High school		More than 3 years	74	
	certificate or below	2	Less than 3 years	26	
	Vocational/Technical school	5			
	Undergraduate degree	49	Experience with the <i>Baidu Knows</i> virtual community		
	Postgraduate or doctoral degree	44	Average age		22

Cronbach's alpha was not meaningful for this construct (MacKenzie, Podsakoff, & Jarvis, 2005). Therefore, we did not perform a reliability test for the usability attribute. Instead, we performed reliability tests for the subconstructs of the usability attribute. As shown in Table 2, the values for both Cronbach's alpha and CR were greater than .70, which indicated adequate internal consistency (Hair, Ringle, & Sarstedt, 2011).

Table 2. *Reliability and Average Variance Extracted of Constructs*

Construct	Items	Cronbach's $\alpha$	Composite reliability	AVE
SQ	3	.76	.86	.68
IQ	3	.78	.87	.70
CA	4	.83	.88	.66
CCC	5	.92	.94	.76
ACC	4	.81	.88	.64
NCC	4	.84	.90	.68
Usage	3	.75	.81	.59

*Note.* AVE = average variance extracted, SQ = system quality, IQ = information quality, CA = community atmosphere, CCC = continuance community commitment, ACC = affective community commitment, NCC = normative community commitment.

The structural validity of the measurement comprises its convergent and discriminant validity. Convergent validity can be established by examining the average variance extracted (AVE) of the constructs, as shown in Table 2. All the values were higher than the common benchmark of .50 (Fornell & Larcker, 1981). Discriminant validity is supported when the square root of AVE for each construct is greater than the correlations between that construct and other constructs (King & Thompson, 1996).

Table 3. *Discriminant Validity Among the Constructs*

	SQ	IQ	CA	CCC	ACC	NCC	Usage
SQ	.82						
IQ	.32	.83					
CA	.33	.33	.81				
CCC	.38	.37	.29	.87			
ACC	.28	.37	.42	.24	.80		
NCC	.51	.35	.39	.45	.41	.83	
Usage	.33	.33	.34	.51	.54	.43	.83

*Note.* SQ = system quality, IQ = information quality, CA = community atmosphere, CCC = continuance community commitment, ACC = affective community commitment, NCC = normative community commitment.

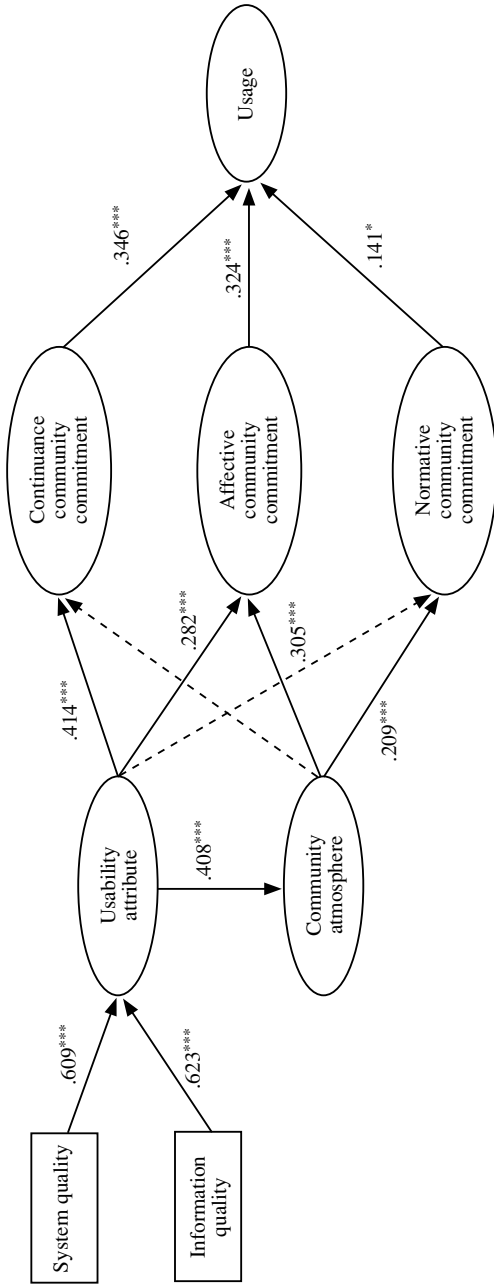


Figure 1. Results of structural model assessment.  
Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 3 shows the correlation matrix of the relationships among constructs, with the square root of AVE on the diagonal. The results show that the square root of each construct was larger than the correlation of that construct with all other constructs, thereby indicating that the measure has adequate discriminant validity.

In the formative measurement model, high levels of multicollinearity can cause indicators to be nonsignificant. The variance inflation factor (VIF) was used to assess this redundancy (Cenfetelli & Bassellier, 2009). In this research, we calculated the VIF values of system quality and information quality, which were both less than the recommended value of 3.3.

### **Structural Model Assessment**

Figure 1 shows the results of our structural model analysis. All three types of community commitment had a positive, significant impact on OKC usage, thus supporting Hypotheses 1, 2, and 3. The usability attribute significantly influenced both continuance and affective OKC commitment. Thus, Hypotheses 4 and 5 were supported. Contrary to our expectation, the usability attribute had no significant impact on OKC normative commitment; thus, Hypothesis 6 was not supported. The usability attribute had a significant, positive impact on community atmosphere, thus supporting Hypothesis 7. Community atmosphere significantly influenced both affective and OKC normative commitment, thus supporting Hypotheses 9 and 10. The analysis also revealed that community atmosphere was not significantly associated with OKC continuance commitment, which does not support Hypothesis 8.

## **Discussion**

In this research, we explored how OKC members' commitment affect their usage behavior, and also aimed to determine the distal contextual antecedents of three components of community commitment. Through data analysis, we found the following, in regard to OKC usage: First, it is inappropriate to view OKC commitment as a one-dimensional construct. Each of the three components of commitment had an effect on members' usage behavior to a different degree.

Second, in our study, the members' continuance and affective commitment to the OKC had a slightly stronger relationship with their usage than did their normative commitment. This result is consistent with that of Jin, Lee, and Cheung (2010), who reported that normative community commitment played a small role in increasing members' usage. However, this finding is inconsistent with that obtained in other previous organizational commitment studies, in which the results showed a strong effect of normative commitment (McCallum, Forret, & Wolff, 2014; Sani & Maharani, 2012). Our explanation is that, in an

organizational context, normative commitment is generated when employees believe that they receive so many benefits from the organization—such as an additional incentive payment for a difficult task, promotion, and assistance, e.g., free education for the employee's children, or free housing provided with the job—that they cannot adequately reciprocate. Those benefits have a profound and lasting effect on employees. The situation is different for OKCs, in that only high-quality systems and information can increase members' normative community commitment.

Third, by testing the relationships among the usability attribute, community atmosphere, and the components of community commitment, we have shed light on how contextual factors shape OKC users' commitment. In particular, the quality of the system and the information are important in increasing OKC members' continuance and affective commitment. When the community atmosphere is prosharing and respectful, this can generate both affective and normative community commitment among members, which will have a long-term impact on the success of the OKC. Our findings have practical implications for OKC managers, who should focus on developing ease of navigation, fast response, and great reliability to facilitate members' interaction with the technology. Because achieving users' normative community commitment is a long-term task, managers should target development of the components of commitment in stages.

A limitation in this research was that we measured the usage of the OKC not by objective web records, but by self-reported perception of usage, which could differ from actual usage. Therefore, future researchers should collect data from server logs. In addition, system and information quality, and community atmosphere were specified as reflective constructs. In future research, it will be worthwhile to specify them as formative constructs to identify different components, which will be more valuable in enabling OKC practitioners to take effective measures to improve the success of these communities.

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