The Antecedents of Community Commitment in Online Communities of Practice

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ABSTRACT

Online Communities of Practice offer their members the ability to communicate about a topic of interest in a way that transcends the limitations of geography. However, many communities of practice fail due to a lack of community commitment. This research examines the types of commitments that group members make to a community and what factors influence members to make a commitment to the community. A community commitment survey was distributed to online communities of practice. The results suggest that members make continuance (need-based), affective (emotion-based) and normative (obligation-based) commitments to the online communities of practice. Usefulness and system reliability lead members to make a continuance commitment. Social interaction and identification encourage members to make an affective commitment. Positive social influence and altruism influence members to make a normative commitment. The implications of this research for practitioners are discussed.

Keywords

Online Community of Practice, Online Communities, Community Commitment, conference publications.

INTRODUCTION

Lave and Wenger (1991) defined a community of practice as "an activity system about which participants share understandings concerning what they are doing and what it means in their lives and for their community. A community of practice chooses a topic of interest and then creates a community to meet members' needs regarding that topic. In an online community of practice, the primary relationships between the members are mediated by computer technology.

Online communities of practice face the challenge of crafting an online environment that encourages a long-term commitment from the people in the community they serve. Community members were surveyed to answer the following research questions. What kinds of commitment do members make to a community of practice? What factors influence members to make commitments to their communities?

Online communities are typically volunteer efforts, with the rewards for participation existing only in the context of the online community (Bateman et al. 2011). Unfortunately, poorly designed or poorly run sites lose membership and become stagnant or perish completely. A consulting firm estimated that about half of the on-line communities set up by Fortune 1000 companies will not live up to expectations. This is due to technical issues in some cases, but primarily due to a failure to create effective collaborative processes for its members, which is related to the high turnover rate (Ransbotham and Kane 2011). Many visitors to online communities do not return after their initial visit. This is unfortunate because online communities of practice have a great potential to allow people to build a community around esoteric topics despite the boundaries of distance, culture, and organizational structure. However, some visitors do return and make a measureable commitment to participating in group activities. Successful online communities are able to encourage members to make a commitment to their community because of the services the community provides, a love for the community, or through a feeling of duty to the community (Bateman et al. 2011). The purpose of this study is to determine what kind of commitments participating members make and to determine what factors precede the commitment. Knowing these motivating factors may allow community leaders to better create effective online communities of practice. Leaders may be able to understand the motivations of their members and change some of the antecedent factors to encourage community commitment.

The type of commitment a member makes to a particular online community can influence how that person behaves in the community. Bateman, Gray and Butler (2011) proposed three types of commitment to online communities: continuance,

affective and normative commitment. Members who continue in an online community because they are afraid they would not be able to easily replace the benefits they get from the community are showing continuance commitment. Members who have a strong emotional attachment to the community are showing affective commitment. Members who are continuing in the group because they feel like they ought to are showing normative commitment. Bateman, et al. (2011) use continuance, affective and normative commitments to explain participation behavior within online communities.

This paper will briefly review the literature on online communities of practice, describe the proposed model and the methodology used to create, distribute and analyze the survey, and finally suggest some conclusions about the results and limitations of the study and suggest areas for future research.

LITERATURE REVIEW

Although much research has been done on communities of practice, online communities, and community commitment, this study attempts to synthesize the existing literature on these topics in the context of online communities of practice. This study proposes a community commitment model for online communities of practice and seeks to uncover the antecedent factors that drive members to make continuance, affective and normative commitments to an online community of practice.

Many researchers have examined the factors leading to success of online communities. Lu, Phang, and Yu (2011) found that enjoyment and a sense of belonging drove member participation in virtual communities. Phang, Kankanhalli and Saberwal (2009) showed that knowledge contribution in online communities was affected by perceived usability and perceived sociability. Perceived usability was driven by ease of use, system reliability, and knowledge tracking fulfillment. Perceived sociability was related to social interactivity and the perception of the moderator. Chang and Chuang (2011) showed how altruism, identification, reciprocity, and shared language positively influenced knowledge sharing in online communities. Reputation, social interactions and trust had positive effects on the quality of shared knowledge. They suggested that participant involvement moderated the relationship of altruism and the quantity of knowledge shared. Ma and Agarwal (2007) examined how virtual presence, persistent labeling, self-presentation and deep profiling all affected perceived identity verification which influenced satisfaction and knowledge contribution within online communities.

Organizational commitment is a well-developed field of study within organizational behavior. It describes the psychological bonds between members and their organizations. It has been used to describe the behavior of volunteers at non-profit organizations. Since online communities of practice are primarily volunteer efforts, commitment theories are appropriate to describe behavior in this context (Bateman et al. 2011). Meyer and Allen (1991) described community commitment as having three components: continuance, affective and normative commitment. Researchers have accepted these three kinds of commitment as strong indicators of behavior in an organizational context (Meyer and Herscovitch 2001; Meyer, Stanley, and Herscovitch 2002). Wasko and Faraj (2005) studied online communities of practice and suggested that social capital as well as the individual factors of reputation and enjoying helping increased knowledge contribution behaviors. They tied commitment to knowledge contribution behaviors in online communities of practice and suggested that members who committed to an online community felt a responsibility to assist other members. Bateman, et al. (2011) suggested that continuance commitments lead to reading "threads", affective commitments lead to making posts and moderating the discussion, and normative commitments lead to moderating behaviors. The application of community commitment research to the domain is a relatively recent development (Bateman et al. 2011; Wasko and Faraj 2005). The Bateman, et al. (2011) research is significant, but it does not uncover the precursors to community commitment.

PROPOSED RESEARCH MODEL

Ongoing knowledge contribution is an essential contributor to the health of an online community of practice. Commitment describes the bonds that form between a group member and the organization. Wasko and Faraj (2005) suggested that group members with a commitment to an organization "consider it a duty to assist other members and contribute knowledge" in an attempt to repay the help they have received. Bateman et al. (2011) posited that community commitment theory describes how different types of commitment will lead to different types of behavior.

The following factors motivate members to participate in online communities: ease of use of the community (Lu et al. 2011; Phang et al. 2009), usefulness of the knowledge in the community (Chang and Chuang 2011; Ma and Agarwal 2007), reliability of the community (Phang et al. 2009), positive social influence from other members of the community (Bock et al. 2005; Posey et al. 2010), community members who enjoying helping (Chang and Chuang 2011), and the member's perceived social capital. Social capital is the worth of a person's social network in a community and is comprised of the quality of social interaction in community, the community's shared language, the perception of reciprocity, trust, and the member's identification with the community (Chang and Chuang 2011).
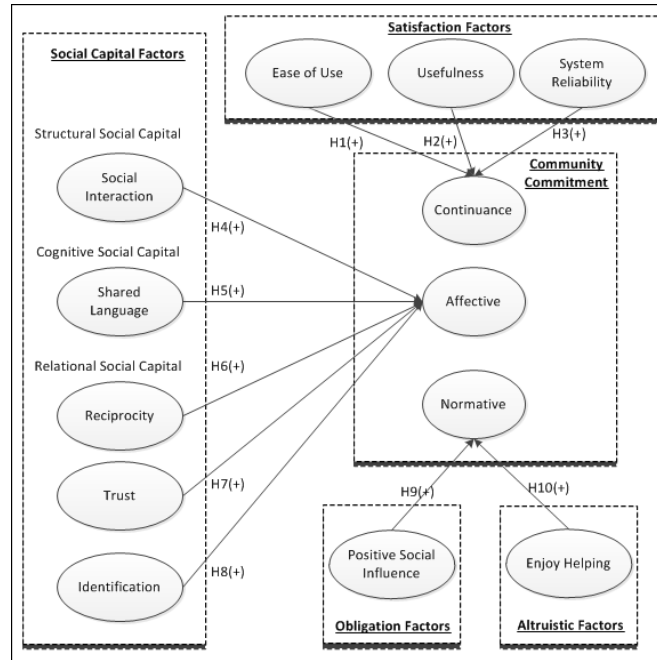
Figure 1: Development model: A Community Commitment Model of Online Communities of Practice

The proposed research model, which can be seen in Figure 1, shows how satisfaction factors, social capital factors, obligation factors and altruistic factors influence the type of commitments that members make to the group. Satisfaction factors are made up of the ease of use, usability, and system reliability of a community of practice. Since satisfaction is necessary to feel a community meets a need which cannot be met elsewhere, satisfaction factors should impact the continuance commitment. Social capital factors are made up of social interaction, shared language, reciprocity, trust and identification. Since people make emotional commitments primarily due to their relationships with group members, social capital factors should encourage members to make an affective commitment to the community of practice. Obligation factors are comprised of positive social influence and altruistic factors embodied by members who enjoying helping. A sense of obligation or duty comes either from external pressures or internal mores, so normative commitments are led by obligation and altruistic factors.

Community Commitment

Bateman, et al. (2011) defined community commitment as the psychological ties between the member and the organization and used it to predict members' reading, posting and moderating habits. Meyer and Allen's (1991) research on community commitment in organizations divided commitment into three basic types: continuance commitment, affective commitment, and normative commitment.

Continuance Community Commitment

Continuance community commitment is the awareness that the member will lose something that may be difficult to replace if they leave the community. Bateman, et al. (2011) suggested employees with a continuance commitment to an employer will only seek to preserve the relationship to the employer in ways that seek the individual's benefit. Therefore, a continuance commitment would drive members to read more "threads" or posts within the online community, because it gives the member the information they need. Members who are most concerned about the value they receive from the community engage in behaviors that they feel are most likely to give them the result they want.

Affective Community Commitment

Affective community commitment is the member's emotional attachment to the organization. Bateman, et al. (2011) described employees with an affective commitment to an employer as engaging in activities that further the goals of the organization as a whole. They suggested that an affective commitment made members reply to more posts, an activity which was essential for the health of the community. They also discovered that members with an affective commitment engaged in more behaviors that moderated the group and ensured group norms were enforced. Members with a strong emotional attachment to the community were more likely to respond to other members to form relationships with them.

Normative Community Commitment

A normative commitment is feeling obligated to participate in the group. Bateman, et al. (2011) said that an employee with a normative commitment to an employer contributed to the goals of the overall organization, but did so out of a feeling of obligation. They suggested that a normative commitment compelled members to engage in more moderating behaviors. Normative commitments are less effective at promoting the welfare of the online community than affective commitments.

Satisfaction Factors

Satisfaction factors describe how pleased the member is with the community of practice. These factors include ease of use, usefulness and system reliability. Satisfaction factors most directly influence members with a continuance commitment because those members only participate in the community to the extent that it benefits them. If they are dissatisfied with the community, then they will perceive less benefit and they will not participate in the community.

Ease of Use

Ease of use can be equated with the term "usability". Lu, Phang and Yu (2011) suggested that information service quality affected ongoing participation in a community by changing how the users perceived that the community was useful, enjoyable and a place they belonged. The perception that a community was easy to use drove users to form a stronger continuance commitment to the community. Phang, et al. (2009) explained that if information need fulfillment is the benefit of using a community of practice, a lack of ease of use can be considered the cost. Since a continuance commitment is defined as what the member feels they get from the community and the ease with which the community can be replaced, the members' perception of the ease with which knowledge can be gained from the community can impact their continuance commitment to the community.

Hypothesis H1: A member who feels the community of practice is easy to use develops a stronger continuance commitment to the community.

Usefulness

The usefulness of an online community of practice includes the quality, quantity and utility of shared knowledge. Ma and Agarwal (2007) defined information need fulfillment as the extent to which the community meets the information seeking goals of its members. They tied information need fulfillment to member satisfaction and knowledge contribution. Information need fulfillment can affect a member's continuance commitment because a chief reason the member joins an online community of practice is so they can receive knowledge from the group. The member's perception of how well the online community of practice fulfills that need determines how easily the member will think the group can be replaced. As a member's perception of the usefulness of the community's knowledge increases, they are more likely to see the community as irreplaceable which results in a higher level of continuance commitment.

Hypothesis H2: A member who feels the community of practice is useful develops a stronger continuance commitment to the community.

System Reliability

Phang et al. (2009) defined system reliability as the perception that a system is "stable, robust, and available to facilitate a task whenever it is needed." They argue that system reliability is especially important when people are seeking knowledge because the knowledge seeker typically has some decision to make or problem to solve. If a member cannot rely on the technology of the online community of practice to deliver the needed knowledge, this decreases the group member's continuance attachment to the group. Since they are unable to procure the knowledge they need and must seek it from some other source, it would cause the member to see the group as less valuable to them and encourage them to seek replacements.

Hypothesis H3: A member who feels the community of practice is reliable develops a stronger continuance commitment to the community.

Social Capital Factors

Chang and Chuang (2011) defined social capital as the value of the member's social network within the community. The following dimensions comprised social capital: the structural dimension, the cognitive dimension, and the relational dimension. Chang and Chuang (2011) tied social capital to the quantity and quality of knowledge sharing within the community. Wasko and Faraj (2005) also tied structural, cognitive and relational social capital factors to increased knowledge contribution behaviors. Since social capital factors most directly describe the social and personal relationship

between the members and the organization, a member's affective commitments should be positively influenced by their social capital in the context of the group.

Structural Dimension: Social Interaction

The structural dimension of social capital describes the extent of the interpersonal linkages between group members and departments within a community. Chang and Chuang (2011) described the structural dimension of social capital as intense social interactions and relationships between members. They argued that personal relationships lead to increased knowledge sharing. An affective commitment describes a member's emotional attachment to the community, and social interaction influences a member's emotional commitment. Having close relationships with other group members should build an emotional attachment to the group and drive the member to behave in ways that benefit the group as a whole. Intensely positive personal interactions may give group members a reason to visit and participate in the community of practice even if they do not expect to always gain knowledge from the group.

Hypothesis H4: Users who interact with other members of the group more frequently increase their affective commitment to the community.

Cognitive Dimension: Shared Language

Chang and Chuang (2011) defined the cognitive dimension of social capital as the language shared between the members of the community. Members of an online community of practice often develop new terms, abbreviations and shared assumptions through frequent interactions. A shared language is tied to quantity and quality of knowledge sharing. A shared language between members enhances communication and builds a sense of community, which should build a member's affective commitment to the community through a stronger emotional attachment.

Hypothesis H5: As a member develops a shared language with their community, their affective commitment to the community will increase.

Relational Dimension

The relational dimension describes the relationship between a group member and the organization itself. Chang and Chuang (2011) used the relational dimension of social capital to describe the trust the member has with other members, the expectation that positive actions will be repaid in kind, and a shared identity with the group.

Relational Dimension: Reciprocity

Some individuals share knowledge because they expect other members will reciprocate. They expect to gain from other individuals sharing knowledge. Reciprocity describes how the individual believes other members of the community will act in sharing knowledge. Individuals that believe other members will reciprocate their efforts to share knowledge will be more likely to share knowledge. Chang and Chuang (2011) associated reciprocity with quantity and quality of knowledge sharing. Members are more likely to make an emotional investment in a community, if they feel that their efforts to contribute knowledge to the community will be repaid in kind. This should lead members with high perceptions of reciprocity to make a stronger affective commitment to the online community.

Hypothesis H6: Members who believe other members will respond positively to their own positive actions will have higher affective commitments to the community

Relational Dimension: Trust

Chang and Chuang (2011) defined trust as the belief that other community members will act in ways that are consistent with the community's rules and norms. Online community members were more likely to share knowledge when they believed they could rely on the other members of the community to provide honest, accurate information and not misuse information they were given. Trust significantly predicted knowledge contributing behaviors and knowledge collecting behaviors (Chang and Chuang 2011). It is difficult to have a great love for an online community if one does not trust the other members of the community.

Hypothesis H7: Members who trust members of their community increase their affective commitments to the community.

Relational Dimension: Identification

Chang and Chuang (2011) defined identification as the member's recognizing that they belong to a unique online community. They tied the member's identification with the group to knowledge sharing quantity and quality. Group members identify with online communities that have members they perceive as similar to themselves. Over time, belonging to a community of practice becomes part of the group member's personal identity. Identifying with the group influences a member's affective commitment because users who feel they have found a group of kindred spirits and a place to belong will make a stronger emotional investment in the group.

Hypothesis H8: Users who can identify with the group and choose how their identity is displayed to the other members of their community increase their affective commitments to the community.

Obligation Factors (Positive Social Influence)

Obligation factors, such as positive social influence, encourage members to make a normative or obligatory commitment to the online community of practice. Bock, Zmud, Kim and Lee (2005) defined social influence as peer pressure to act in a particular way. If group members feel their peers want them to participate in the community of practice, they are more likely to do so out of a feeling of obligation. Normative commitments are defined by an obligation to follow group norms or rules imposed by others. Group members are more likely to form normative or obligation-based commitments, if they perceive positive social pressures from their peers or superiors encouraging them to follow the norms of the community and contribute knowledge.

Hypothesis H9: A member who receives positive social influence increases their normative commitment to the community.

Altruistic Factors (Enjoy Helping)

Some members post answers to questions because they are altruistic and get a good feeling from helping others. Chang and Chuang (2011) showed that altruism was a significant contributor to the quality and quantity of knowledge sharing in online communities. They suggested that members who enjoy helping other members gained self-satisfaction when they fulfilled their altruistic tendencies by giving aid to other group members. Members who enjoy helping other members are more likely to form a normative commitment to the community because they feel that helping others is the "right thing to do" or a "duty". Even though they enjoy helping, they see it as an obligation. Members who enjoy helping other people will be influenced to make a normative commitment to the online community of practice.

Hypothesis H10: A member who enjoys helping members of the community increases their normative commitments to the community.

Control Factors

In order to highlight the posited relationships in their model, Bateman, et al. (2011) control for the following variables: age, sex and tenure. They describe age as the member's age in years. Tenure describes the amount of time they have been in the group as well as the amount of time they spend on the website. Statistically controlling for these variables should make it easier to see if the proposed relationships are significant.

METHODOLOGY

Once the basic research model was constructed, a survey was created to test its validity. Whenever possible, survey questions from existing research were adapted to test the constructs of the model. The pre-pilot stage involved "vetting" the proposed survey with information systems professors at a midwestern university and other experts in the fields of information systems and academic research. They reviewed the survey questions for validity and relevance and to insure that no crucial constructs were omitted.

The revised survey was uploaded to the SurveyMonkey website and sent to a pilot group of members of communities of practice. The pilot group included students pursuing advanced degrees in information systems at a midwestern university and selected faculty and staff associated with a small southwestern university. The students and experts, who have formally studied communities of practice, were used to fine-tune the survey by making sure the wording was clear. Only minor changes were needed after the initial pilot group.

The community of practice survey was then distributed to several communities of practice on LinkedIn. A quick search of the LinkedIn group directory reveals over nine hundred communities of practice. Many of these groups are closed groups and it was not possible to get access. Finally, the survey was sent to a large number of Online Communities of Practice. The

majority of the communities were groups on LinkedIn that identified themselves as communities of practice. However, as can be seen in Table 2, a number of other sites were involved as well. The literature review for the paper was gathered into an electronic book and made available on the Smashwords website. Respondents to the survey were given access to the electronic book with the research for no charge. Online Communities of Practice which hosted the surveys were promised they would eventually receive the results of the research. The postings to the online communities of practice directed the members to the SurveyMonkey website, where the results were collected. Results were collected over a three month period. Over six hundred responses were collected, of which 438 were judged to be complete. Table 1 lists the questions from the survey and the mean and standard deviation of the responses. Table 2 lists the profile of the data sample.

RESULTS AND DISCUSSION

The data analysis method known as Partial Least Squares (PLS) was used to evaluate the survey responses in light of the proposed model. Although much research has been done on online communities of practice, it is still appropriate in this case to use PLS as a theory development tool. This study used SmartPLS software (Ringle et al. 2005) to conduct the PLS analysis.

The survey questions were drawn or adapted from existing research whenever possible, which should build the content validity of the survey. The survey was also reviewed by experts in the fields of information systems and academic research. Construct validity measures how constructs are measured and operationalized. In PLS, part of construct validity is factorial validity. Factorial validity shows how the latent constructs are valid by establishing that the variables used to measure that construct correlate with each other more strongly than they do other constructs. Convergent and discriminant validity describe the measurement model's goodness of fit (Gefen and Straub 2005).

The item loadings and T-Statistics show convergent validity or how the "outer model" loaded. The "outer model" describes how well the survey questions fit the constructs they were designed to measure. SmartPLS used a "Bootstrapping" procedure with 1,756 samples to estimate the t-values and item loadings. After the first bootstrapping run, a handful of questions with low scores were removed and the test was run again. All the t-scores for the remaining items have a score larger than 1.96 which makes them significant at $\alpha = 0.05$ significance level. The item loadings also exceed .7, except for one of the continuance commitment questions, which had a 0.6625. Thirty-nine of the fifty remaining items had loadings greater than .85 (Chin 1998a).

Table 3 examines the validity of the structural model by listing the Cronbach's α, the composite reliability and average variance extracted (AVE) scores. Cronbach's α measures the internal consistency of the model and values should exceed .7. Assuming that the parameter estimates are accurate, the composite score measures reliability and should exceed .8. As can be seen in Table 3, all the constructs meet these requirements, except for Language, which has a composite reliability of .79 and a Cronbach's α of .49. Average Variance Extracted (AVE) conservatively measures reliability and should exceed .5 to show that the model accounts for at least fifty percent of the variance in the model (Straub et al. 2004). As can be seen in Table Two the AVE scores exceed .5 in all cases. Table 3 analyzes the average variance extracted (AVE) of the items to show the discriminant validity of the model. The measurement items should correlate with the appropriate construct more strongly than they do any other constructs. This is measured by taking the square root of the AVE for each latent construct and comparing it with the correlation between that construct and any of the other latent constructs (Chin 1998b). As can be seen in Table 3, the bolded square roots of the AVE exceed the correlations of other constructs in all cases. Taken in sum, these scores show that the model has reasonable validity.

Figure 2 shows the overall validity of the hypotheses by listing the Path Coefficients and significance (R-square). The R-square value measures the degree to which the independent variables control the change in the dependent variables. As shown in Figure 2, the R-square values range from .42 to .66, showing an overall strong effect. Path coefficients are similar to standardized coefficients used in regression analysis. To be significant, the paths should have a t-score of more than 1.96 which represents a p-value <.05. Hypotheses which are not significant are shown with a dotted line in Figure 2. Many of the hypotheses were supported significantly by the survey. Surprisingly, language, reciprocity, and trust had no significant impact on affective commitments to the community. It was expected that ease of use would influence a member's continuance commitment to a community, but this was not shown in a significant way.
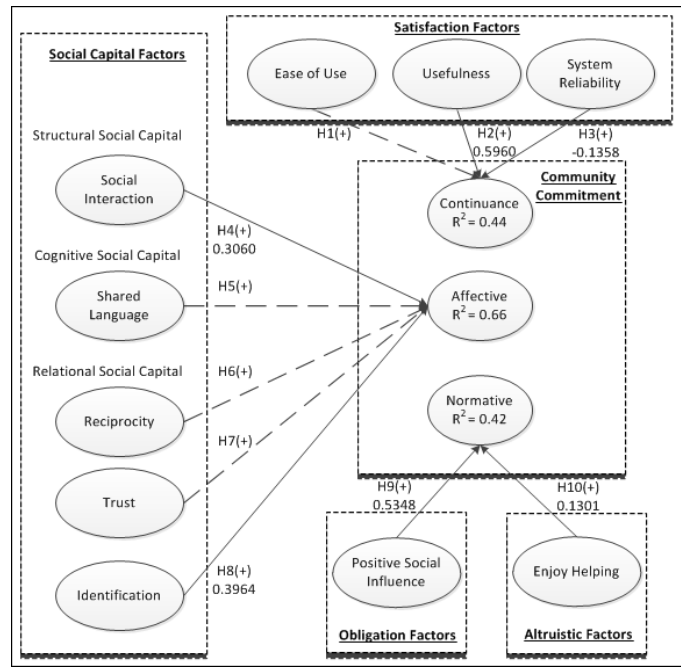
Figure 2: Tested model: A Community Commitment Model of Online Communities of Practice

The control variables were unpredictable in which of the dependent variables they significantly affected. Age and sex did not have a significant impact on community commitments. Tenure did not have a significant impact on normative commitments, but did have a significant impact on continuance and affective commitments.

When looking at the results of the statistical analysis overall, the initial model shows some promise. The survey results did indicate some relationships between the dependent variables. Members who enjoy helping and perceive positive social influence seem to make a more normative commitment to the community. Usefulness and system reliability led to an increased continuance commitment, but ease of use did not. Social capital had a mixed influence on members making an affective commitment to the community. While social interaction and identification had a significant impact on a member's affective commitment, shared language, reciprocity and trust did not.

CONCLUSIONS

This research shows how community commitments are formed in online communities of practice. Continuance, or need-based, commitments are influenced by the satisfaction factors of usefulness and reliability. Affective, or emotionally-based, commitments are impacted by the social capital factors of social interaction, and identification. Normative, or obligation-based, commitments are driven by obligation factors such as positive social influence and altruism factors such as enjoying helping. This study is subject to a number of limitations, but has implications for practice and also encourages additional research.

This study is subject to the following limitations. This study only measured the commitment members make to the community and not the resulting behaviors. Since a large number of groups on LinkedIn were contacted and each contained an even larger number of members, the response rate to the survey was very low. Subjects participated in the survey voluntarily and there is a possibility of non-response bias. Unfortunately, group members who do not participate in surveys are quite difficult to study. Also, the survey was sent most often to online communities of practice with more than one hundred users. There is a possibility that the dynamics of smaller communities differ from those of larger communities.

It should be noted that the constructs of Ease of Use (Lu et al. 2011; Phang et al. 2009), Shared Language, Reciprocity, and Trust (Chang and Chuang 2011) have been consistently shown to have a significant impact on the operation of online communities. The results in this study only show that they did not have a significant impact on the formation of community commitments. Satisfaction factors were only measured against how they affected continuance commitments and social capital factors were only measured against how they impacted affective commitments. It is possible that some of these factors may affect multiple commitment types. There is a large body of research concerning online communities and it is possible that one

of the many constructs left out of the model may describe factors which lead up to a group member making a particular type of commitment.

This research gives the following implications for practicing community leaders. Community leaders who want to improve the continuance commitment of their members should make sure the system provides useful knowledge on a system that is reliable. Community leaders can do this by encouraging frequent quality knowledge contribution (Chang and Chuang 2011) and carefully selecting the technical platform for the online community. Community leaders seeking to build an affective commitment should concentrate on increasing interaction between members and encouraging members to incorporate group membership into their sense of self. Community leaders might do this by communicating frequently with group members and initiating online or offline group events (Chang and Chuang 2011). Community leaders who want to encourage a normative commitment should seek out group members who enjoy helping others, and build policies that give members the ability exert positive social influence on each other. Community leaders may also choose to make the online community of practice easier to use, build the shared language within the community, encourage member to reciprocate and build trust, but these actions may not have a direct impact on the community commitment of the members.

This survey was part of a larger study that also examined knowledge contribution, collection and utilization behaviors in online communities of practice. Further research will determine how community commitments impact these behaviors which are essential to online community success. The survey could also be used to see if different types of online communities are similarly affected by member commitment. For instance, one could argue that community commitment would have a similar influence in a virtual community, even if it is not a community of practice, per se.

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APPENDIX

Table 1: Measurement Items Summary

Construct	Item	Mean	Standard Deviation
CONT	**Continuance Community Commitment**		
CONT1	If I stopped coming to this community, it would take me a long time to find a community that could replace it. (Bateman et al. 2011)	4.630	2.148
CONT2	I keep coming to this community because there are few alternative communities available. (Bateman et al. 2011)	4.205	1.982
CONT3	The content of this community is too valuable for me to stop visiting. (Bateman et al. 2011)	4.890	1.862
AFFT	**Affective Community Commitment**		
AFFT1	I feel like a part of the group in this online community. (Bateman et al. 2011)	5.027	1.750
AFFT2	I feel a strong connection to this online community. (Bateman et al. 2011)	4.769	1.890
AFFT3	This online community has a great deal of personal meaning for me. (Bateman et al. 2011)	4.377	2.042
AFFT4	I have a real emotional attachment to this online community. (Bateman et al. 2011)	3.865	2.163
NORM	**Normative Community Commitment**		
NORM1	I feel an obligation to continue visiting this online community. (Bateman et al. 2011)	3.947	2.051
NORM2	I would feel guilty if I stopped visiting this online community now. (Bateman et al. 2011)	3.404	2.091
NORM3	I keep coming to visit this online community because I have a sense of obligation to it. (Bateman et al. 2011)	3.333	2.083
NORM4	I visit this online community partly out of a sense of duty. (Bateman et al. 2011)	3.164	1.976
NORM5	This online community deserves my loyalty. (Bateman et al. 2011)	3.991	2.108
INTR	**Social Interaction**		
INTR1	I have frequent communication with some members in this online community. (Chang et al. 2010)	4.002	2.093
INTR2	I maintain close interactions with some members of this online community. Adapted from Chang et al. (2010)	3.854	2.117
INTR3	The members of this online community actively initiate online or offline events. Adapted from Chang et al. (2010)	4.048	2.066
INTR4	The members of this online community meet each other in informal offline meetings. (Lu et al. 2011)	3.630	2.066
LANG	**Shared Language**		
LANG1	Members share common terms or jargons, unique to this online community. Adapted from Chang and Chuang (2011).	4.824	1.756
LANG2	Members of this online community use an understandable communication pattern during discussions. Adapted from Chang and Chuang (2011).	5.422	1.372
RCPT	**Reciprocity**		
RCPT1	I know that other members in this online community will help me, so it is only fair to help other members. (Chang and Chuang 2011)	5.527	1.477
RCPT2	I believe that members in the online community would help me if I needed it. (Chang and Chuang 2011)	5.571	1.441
RCPT3	It is fair to help each other in an online community. (Chang and Chuang 2011)	5.868	1.333
TRST	**Trust**		
TRST1	Members of this online community are truthful in dealing with one another. (Chang and Chuang 2011)	5.498	1.366
TRST2	Members of this online community behave in a consistent manner. (Chang and Chuang 2011)	5.468	1.351
TRST3	Members of this online community will not take advantage of others even when the opportunity arises. (Chang and Chuang 2011)	5.183	1.539
TRST4	Members of this online community will always keep the promises they make to one another. (Chang and Chuang 2011)	4.902	1.444
IDFN	**Identification**		
IDFN1	When someone praises this online community, it feels like a personal compliment. Ma et al. (2007), adapted from Mael and Tetrick (1992).	4.370	1.989
IDFN2	If stories in the media criticized this online community, I would feel bad. Ma et al. (2007), adapted from Mael and Tetrick (1992).	4.680	1.933
IDFN3	When I talk about this online community, I usually say "we" rather than "they". Ma et al. (2007), adapted from Mael and Tetrick (1992).	4.402	2.037
EOUS	**Ease of Use**		
EOUS1	It is easy to navigate this online community. (Lu and Yu 2011).	5.397	1.504

Construct	Item	Mean	Standard Deviation
EOUS2	It is easy to find the information I need in this online community. (Lu and Yu 2011).	5.082	1.515
EOUS3	It is easy to learn how to use the various features in this online community. Adapted from Phang et al. (2009)	5.304	1.439
USFL	**Usefulness**		
USFL1	I find the knowledge shared in this online community to be reliable. (Chang & Chuang 2010)	5.562	1.334
USFL2	I find the knowledge shared in this online community to be understandable. (Chang & Chuang 2010)	5.760	1.187
USFL3	New content is posted frequently in this online community. (Chang & Chuang 2010)	5.416	1.505
USFL4	Members can obtain abundant content and knowledge from this online community. (Chang & Chuang 2010)	5.336	1.545
USFL5	The knowledge shared in this online community is relevant to my problems/the tasks in personal/work life. (Ma and Agarwal 2007)	5.368	1.522
USFL6	The knowledge shared in this online community can help me make informed decisions in my work/personal life. (Ma and Agarwal 2007)	5.189	1.539
RELB	**System Reliability**		
RELB1	This online community is always available for my use. (Phang et al 2009)	6.210	1.207
RELB2	The technology platform of this online community is robust enough for my use. (Phang et al 2009)	5.861	1.353
RELB3	I do not experience system crashes while using this online community. (Self-Developed)	6.025	1.380
POSI	**Positive Social Influence**		
POSI1	People I know personally think I should participate in this community. Adapted from Bock et al. (2005).	3.703	2.078
POSI2	Other members of this online community think I should participate in this community. Adapted from Bock et al. (2005).	3.888	2.139
POSI3	Generally speaking, I respect and put in practice suggestions from my peers. Adapted from Bock et al. (2005).	4.790	1.809
ENHP	**Enjoy Helping**		
ENHP1	I enjoy helping others in this online community. (Chang and Chuang 2011)	5.336	1.565
ENHP2	It feels good to help others solve their problems in this online community. (Chang and Chuang 2011)	5.409	1.589
ENHP3	I like to support other members in solving their problems/issues in this online community (Chang and Chuang 2011)	5.363	1.586
	Control Factors		
AGE1	Please select a category that includes your age	4.037	1.212
SEX1	Please select your sex.	1.445	0.498
TEN1	On average, how many hours in a given week do you spend in this online community?	2.288	0.999
TEN2	Approximately, how many times in a month do you access this online community?	4.155	2.073

Table 2: Respondent Profile

	Item	Frequency	Percentage
Sex	Female	243	55%
	Male	195	45%
	Total	438	100%
Age	20 or younger	1	0%
	21-29	39	9%
	30-39	126	29%
	40-49	103	24%
	50-59	125	29%
	60-69	34	8%
	70 or older	10	2%
	Total	438	100%
Residence	Outside US	172	39%
	Africa	7	2%
	Asia	50	11%
	Australia	9	2%
	Europe	60	14%
	North America (Outside USA)	25	6%
	South America	21	5%
	USA (United States of America)	266	61%
	Total	438	100%
Online Community Platform			
	Educause Discussion Group	16	4%
	Google +	43	10%
	Facebook	113	26%
	LinkedIn	75	17%
	ListServ email group	70	16%
	Not Sure	75	17%
	Other Platform (see below)	46	11%
	Total	438	100%

Table 3: Correlation of Latent Variables and Square Root of Average Variance Extracted (AVE)

	Cronbach's	Composite	AVE	CONT	AFFT	NORM	INTR	LANG	RCPT	TRST	IDFN	EOUS	USFL	RELB	POSI	ENHP

	Alpha	Reliability													
CONT	0.80	0.88	0.71	**0.84**											
AFFT	0.95	0.96	0.87	0.57	**0.93**										
NORM	0.93	0.95	0.79	0.36	0.59	**0.89**									
INTR	0.89	0.93	0.76	0.39	0.70	0.52	**0.87**								
LANG	0.49	0.79	0.65	0.37	0.42	0.27	0.36	**0.81**							
RCPT	0.90	0.94	0.83	0.44	0.52	0.41	0.42	0.50	**0.91**						
TRST	0.93	0.95	0.83	0.37	0.48	0.37	0.34	0.54	0.61	**0.91**					
IDFN	0.86	0.91	0.78	0.48	0.73	0.61	0.62	0.40	0.59	0.54	**0.88**				
EOUS	0.89	0.93	0.81	0.40	0.46	0.23	0.30	0.41	0.46	0.46	0.39	**0.90**			
USFL	0.92	0.93	0.70	0.63	0.55	0.27	0.34	0.56	0.59	0.58	0.49	0.58	**0.84**		
RELB	0.85	0.91	0.77	0.30	0.31	0.11	0.13	0.46	0.53	0.48	0.23	0.54	0.61	**0.88**	
POSI	0.83	0.90	0.75	0.39	0.53	0.63	0.51	0.38	0.45	0.38	0.54	0.32	0.39	0.20	**0.86**
ENHP	0.97	0.98	0.95	0.51	0.59	0.46	0.49	0.43	0.66	0.51	0.62	0.36	0.56	0.38	0.57	**0.97**