



Knowledge Sharing and Community Promotion in Online Health Communities: Examining the Relationship Between Social Support, Community Commitment, and Trust Transfer

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Abstract. Online health communities (OHCs) have now become a valuable platform for people to seek health-related information. Knowledge sharing and community promotion in the OHCs are critical to sustain their continuous use and improve their engagement. This study aims to investigate factors influencing knowledge sharing and community promotion in the OHC in the perspectives of social support, commitment-trust, and trust transfer theory. A questionnaire survey is employed as a collection data technique. The study results reveal that informational support influences trust transfer, trust towards community and members of the community. In addition, emotional support has a positive impact on community commitment and trust in community members but not in the community itself. Further, community commitment is positively related to both knowledge sharing and community promotion. While trust towards the community is only positively related to community promotion, trust towards members of the community does not have a positive influence on both knowledge sharing and community promotion. This study contributes to the understanding of the relationships among social support, community commitment, and trust transfer towards knowledge sharing and community promotion in the OHC. The findings of the study provide a research model that could be implemented in other contexts that share similar technology landscape.

Keywords: Online health community · Knowledge sharing · Community promotion · Social support · Community commitment · Trust transfer

1 Introduction

People increasingly make use of online platforms to look for health-related information. The proliferation of online platforms such as social media has led to an increasing number of OHCs. The OHC is a virtual space for people who search for health information and exchange their experiences regarding medical treatment [1]. The OHC is also called as the online health-related online forum [2] under which people can exchange their knowledge, ask for and provide assistance, discuss and find solutions to health problems, and share stories to others who have similar health issues.

Social support can be considered as an essential factor in the OHC. Social support, in this regard, relates to the members of the OHC that provide information and exchange knowledge on health-related topics to give the community the support and encouragement [1]. However, they do not expect reciprocation, e.g. monetary gifts or enjoyment in sharing information [3, 4]. Their active participation and motivation in giving relevant guidance and facilitating ongoing discussions through knowledge sharing will keep the OHC sustained [5].

Although some previous studies have examined the influence of motivation on individuals in conducting knowledge sharing in the OHCs [6] and in various online communities [7–9], there are still limited numbers of studies that measure the motivation of knowledge sharing and community promotion at the same time. While the relationship between the trust transfer theory [10] and the commitment-trust theory [11] has also not widely explored, trust is believed to be an important factor in the successfulness of the OHC. Therefore, an understanding of these factors: social support, community commitment, and trust transfer need to be extended to examine their relationships.

2 Theoretical Background and Hypotheses Development

The proposed research model shown in Fig. 1. It shows the role of *social support* (i.e., informational support and emotional support), and its impact on the formation of 1) *trust*, both to the members and the community itself, and 2) *community commitment*.

The proposed research model also illustrates the process of trust transfer from the OHC's members and their impact on the formation of community commitments. Furthermore, the proposed research model also outlines hypotheses regarding the role of trust and commitment in the process of sharing knowledge and promoting the OHC.

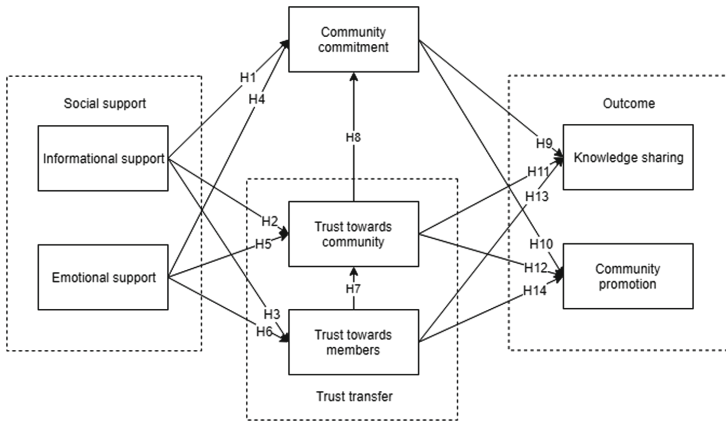


Fig. 1. The proposed research model.

2.1 Social Support

The rapid increase in internet usage over the past decade has changed the way people communicate and interact. They tend to connect with their communities online. Moreover, social networking sites are increasingly popular between them as a means to interact online one and another. In this respect, offline social support gradually changes to the social supportive communication in an online context [12]. Online social support usually refers to information exchange and emotional interaction in virtual space. Therefore, information and emotional support are the two main approaches to providing online support. In this study, information and emotional support are believed to offer relational benefits to the parties involved and help them to facilitate the development and maintenance of relationships in the OHC.

Information support is a type of support that offers individuals with advise, guidance, or information that is useful to help them solving their problems, generating new ideas, or making good decisions [13]. Relational benefits are often seen as the need to build cooperative relationships. In this respect, if there are several members who can benefit from the suggestions and opinions of others in the OHC, they will tend to recognize the value of the community and focus on the desire to maintain a long-term relationship with that community. Thus, the study proposed the following hypothesis:

H1: Information support is positively related to community commitment.

It is easy to understand if someone gets consistently instrumental help, such as valuable advice and direct assistance from members of the OHC. They will be more likely to have trust in those who share the information. Such instrumental assistance will form a sense of trust towards members who contributed to the OHC [13]. In this respect, the members’ trust in the OHC will contribute positively to the availability of good information to other community members. Thus, the study proposed the following hypotheses:

H2: Information support is positively related to trust in the community.

H3: Information support is positively related to trust towards members.

Emotional support refers to providing empathy, attention, caring, love, understanding, or encouragement to something [13]. If there is a member who gets an attention and warmth from people who have similar experience in dealing with pains and difficulties, they tend to be comfortable with the OHC they follow. It can be explained that emotional reactions clearly meet members' self-esteem needs, affiliation, and social care that allow members of the OHC to identify themselves as part of the community and have emotional attachment. Thus, the study proposed the following hypotheses:

H4: Emotional support is positively related to community commitment.

In contrast to information support, emotional support more emphasis on the emotional aspects of social support and can help to overcome problems indirectly [12]. Emotional support helps a member in an OHC to open and seek help from other members in the community. In particular, some members have shown caring attitudes towards other members and consciously know that these attitudes are the basis for developing a sense of trust. Therefore, through emotional exchange and connections with other members in a community, people will develop their trust in other members. Thus, the study proposed the following hypotheses:

H5: Emotional support is positively related to trust in the community.

H6: Emotional support is positively related to trust towards members.

2.2 Trust Transfers

Based on the theory of trust transfer, it is believed that trust in members can be developed through an interpersonal trust for two reasons. First, trust between members will make users believe that the provision and transfer of information in the community tend to be governed by the established principles. This helps members to ensure that the community will continue to improve service quality and offer effective management to build a trusted communication environment [14]. Second, previous research shows that there is a planned level of interpersonal trust for the development of institutional trust [13]. Members of an OHC that builds strong mutual trust will consider the community followed as the right place to communicate. For that, a good communication becomes important in dealing with a community. This gives direction to the following hypothesis:

H7: Trust in members is positively related to trust in the community.

Trust in the community refers to one's perception so that the focus becomes a place that can be relied upon and predicted in social interaction. According to the theory of trust commitment, trust is believed to have a positive impact on a relationship [11]. Recent studies have shown that trust is the main determinant in committing to a virtual community [15]. If members develop trust in the OHC, uncertainty and communicative-related risks will be reduced. Relationships marked by the trust will be

highly valued and members will have the desire to continue and strengthen relationships with the community. Thus, the study proposed the following hypotheses:

H8: Trust in society is positively related to community commitment.

2.3 Community Commitments

A committed relationship reflects a desire to maintain a long-term relationship with other individuals [13]. It is believed that the higher the commitment to an OHC, the more individuals will contribute to and participate in that community. Previous research has shown a positive relationship between commitment and user retention. In the context of the OHC, the online platform provides a shared space for users to communicate with each other and users can share their consumption experiences with or receive useful product recommendations from other online users. In this case, if a person is committed to having an ongoing relationship with the OHC, then he/she must make maximum efforts to maintain and participate in discussion activities undertaken to help the community grow and develop. Thus, the study proposed the following hypotheses:

H9: Community commitment is positively related to knowledge sharing intentions.

H10: Community commitment is positively related to community promotion intentions.

2.4 Impact of Trusts and Commitments on Knowledge Sharing and Community Promotion

Trust is often recognized as an important element in building a successful relationship [13]. In particular, the relationship between the trust of the admin responsible for an OHC and the intentions of users as followers or part of that community is intensively examined in recent research. With more and more information on the internet, users will tend to seek advice from the OHC and individuals they can trust. In return, users will be more likely to share their own information with trusted parties because of privacy concerns. Therefore, in this section, we will discuss the effects of one's trust in the context of the OHC, with insights from both trusts in members and trust in the OHC.

Online communities sometimes have a standard for accepting a member, in general, to ensure that it will provide mutual benefits and mutual benefits for its members [13]. As a reciprocal nature of virtual communication, the OHC can apply rules set directly to determine the participatory activities of its members. In addition, the integrity policy of the OHC will reduce concerns for users regarding opportunistic behavior, such as fraudulent advertisements or the use of personal information that is misused. The relationship between community trust and user loyalty is well established in the literature [16]. In this case, if someone has a strong perception of trust in a community, he will be more likely to seek recommendations from the community and share that experience. Thus, the study proposed the following hypotheses:

H11: Trust in society is positively related to knowledge sharing.

H12: Trust in society is positively related to community promotion.

In this study, trust in members is defined as the willingness of individuals to rely on the words, actions, and decisions of other members in the OHC. Previous studies have found that trust in members positively influences online participatory behaviour such as obtaining and providing information in the community [13]. This is because in an trusted environment, a person will tend to help each other and engage further joint discussion activities. In particular, information obtained from credible sources will be considered more useful and used as aids in making decisions [17]. In discussions, someone is more interested in sharing their own experiences when the other party has several related topics. This will make them communicate easily based on general background knowledge and help to reduce the possibility of opportunistic behaviour. Thus, the study proposed the following hypotheses:

H13: Trust in members is positively related to knowledge sharing.

H14: Trust in members is positively related to community promotion.

3 Research Methodology

The questionnaire used in this research consisted of 24 Likert-scale question items. The question items were measured on a five-point Likert scale from strongly disagree to strongly agree (scored from 1 to 5). The question items were adapted from Chen and Shen [13], Yuan, Lin and Zhuo [18], Yan, Wang, Chen and Zhang [19], Casaló, Flavián and Guinalú [20], and Chen and Hung [21]. Once the design of the research instrument was prepared, we conducted a readability test to prospective research respondents to ensure the questionnaire was feasible to be distributed from various perspectives such as definition, writing conventions, relevance to the study, and the meaning of each question and statement contained in the questionnaire. We conducted a readability test on one expert respondent and five casual respondents. The selected experts already have experience in compiling instruments in a study, while the other respondents are members of the OHC on social media. After obtaining input from the respondents on the readability test, the authors refine the research instrument and distribute the research questionnaire.

The population in this study is the Indonesian who have joined as members of the OHC on social media. The author uses a convenience sampling technique for the sampling method. Data collection is done online via Google Form. The questionnaire was distributed through various social media, namely Twitter, Line Square, Facebook, and online health communities in these social media. These social medias are chosen as they are considered to be able to reach more groups both in terms of age, occupation, and education level.

In this study, the data analysis method used is the PLS-SEM method, by the help of SmartPLS 3.0 software [22]. PLS-SEM is chosen as this method can overcome

problems in modelling that often arise, such as data that is not normally distributed and complex research models. PLS-SEM is also chosen because this study only has a few, that is 151 respondents. We follow the SEM procedures suggested by Hair, Sarstedt, Hopkins and Kuppelwieser [23].

4 Results and Discussion

4.1 Demographics of Respondents

The demographics of respondents are summarized in Table 1. Respondents in this study consist of 70.4% women and 29.6% men. Most of them in this study are women because, in fact, more women join the OHC. The majority of respondents in this study are aged 20–30 years (46.1%). This is followed by respondents who are less than 20 years old (35.5%). Most of the respondents have an undergraduate background (53.3%) and followed by those with elementary/junior high school/high school education background or equivalent (29.6%). Most of the respondents are students (67.8%), then followed by private employees (15.1%). Table 1 also informs that most of the respondents have been the members of the OHC for 4–12 months (48%) and less than 4 months (42.1%). Respondents in this study mostly spent time in the OHC for 1–4 h a day (50%), less than 1 h a day (43.4%), and more than 4 h a day (6.6%).

Table 1. The demographic information of the respondents.

	Frequency	Percentage
<i>Gender</i>		
Female	106	70.4
Male	45	29.6
Total	151	100
<i>Age</i>		
Under 20	54	35.5
20–30	69	46.1
31–40	13	8.6
Over 40	15	9.9
Total	151	100
<i>Education</i>		
Secondary school	45	29.8
Undergraduate	94	62.3
Postgraduate	12	7.9
Total	151	100
<i>Social media used for OHC</i>		
Facebook	24	15.8
Instagram	34	22.4
Line square	82	54.6

(continued)

Table 1. (continued)

Others	11	7.2
Total	151	100
<i>Employment</i>		
Student	102	67.8
Entrepreneur	9	5.9
Employee	37	24.3
Not working	3	2
Total	151	100
<i>Time spent in OHC per day</i>		
Less than 1 h	66	43.4
1–4 h	75	50
More than 4 h	10	6.6
Total	151	100
<i>Duration of joining OHC</i>		
More than 4 months	64	42.1
4–12 months	72	48
13–24 months	9	5.9
More than 24 months	6	4
Total	151	100

4.2 Measurement Model Testing

In the convergent validity test, the first criterion is to look at the outer loading value of each indicator on each variable. The outer loading value must be above 0.70. The high outer loading value indicates that each related indicator has many similarities and has described the variables [23]. By looking at the loading factor value, there is one indicator that has a value of less than 0.70, namely the KS2 indicator. This indicator was removed to meet the convergent validity test. After the KS2 indicator is deleted, all the outer loading values meet the criteria as can be seen in Table 2.

Besides looking at the outer loading values, the convergent validity test is also evaluated by looking at the Average Variance Extracted (AVE) values. AVE values must be greater than 0.5. As can be seen in Table 2, these results indicate that each variable used in this study has fulfilled the minimum AVE requirement, which is >0.5 . Therefore, it can be concluded that convergent validity has been fulfilled.

In the internal consistency reliability test, the Cronbach's Alpha (CA) and Composite Reliability (CR) values must meet the requirements which are greater than 0.7. Table 2 shows that all variables contained in this study meet the criteria of CA and CR values >0.7 . Therefore, internal consistency reliability tests are met.

For discriminant validity test, we use two methods for conducting the test, namely the Fornell and Larcker criteria and cross-loading checks. The computation results show that the square root of the AVE values is already higher than the correlations

Table 2. Values of outer loading, CA, CR, and AVE.

Parameter	Outer loading (>0.7)	CA (>0.7)	CR (>0.7)	AVE (>0.5)
CC1	0.798	0.829	0.887	0.663
CC2	0.859			
CC3	0.858			
CC4	0.735			
CP1	0.827	0.884	0.920	0.742
CP2	0.871			
CP3	0.895			
CP4	0.850			
ES1	0.846	0.825	0.896	0.741
ES2	0.885			
ES3	0.852			
IS1	0.768	0.712	0.839	0.635
IS2	0.838			
IS3	0.782			
KS1	0.797	0.785	0.875	0.700
KS3	0.845			
KS4	0.866			
TTC1	0.814	0.795	0.880	0.709
TTC2	0.827			
TTC3	0.883			
TTM1	0.735	0.754	0.860	0.673
TTM2	0.873			
TTM3	0.847			

between each construct, thus they have met Fornell and Larcker criteria [23]. The cross-loadings test also shows that each indicator used in this study has a higher value of the load than the cross load with other variables. Therefore, the discriminant validity test was fulfilled.

4.3 Structural Model Testing

A hypothesis can be accepted when its p-value is smaller or at least equal to 0.05 or equal to 95% significance level and its t-statistics value must be greater than 1.96 [23]. Table 3 shows that out of 15 proposed hypotheses, there are 10 accepted. The other five hypotheses are rejected because they have p-values greater than 0.05 and t-statistics less than 1.96. The original sample row shows the path coefficient value. The value of the path coefficient can describe the degree to which each variable has a significant relationship, either positive or negative, based on the hypothesized relationship.

Table 3. Hypotheses testing results.

Hypothesis		Original sample (O)	T Statistics (O/STDEV)	P-Value	Accepted/Rejected
H1	IS → CC	0.009	0.106	0.916	Rejected
H2	IS → TTC	0.361	4.507	0.00001	Accepted
H3	IS → TTM	0.369	3.978	0.0001	Accepted
H4	ES → CC	0.307	3.132	0.002	Accepted
H5	ES → TTC	0.097	1.277	0.202	Rejected
H6	ES → TTM	0.255	3.073	0.002	Accepted
H7	TTM → TTC	0.334	4.456	0.00001	Accepted
H8	TTC → CC	0.488	6.217	0.000000001	Accepted
H9	CC → KS	0.499	5.691	0.00000001	Accepted
H10	CC → CP	0.310	3.085	0.02	Accepted
H11	TTC → KS	0.090	0.876	0.381	Rejected
H12	TTC → CP	0.329	3.071	0.02	Accepted
H13	TTM → KS	0.073	0.703	0.482	Rejected
H14	TTM → CP	0.092	1.223	0.221	Rejected

The R-square value is used to see all the effects of the combined exogenous variables on endogenous variables. The R^2 values used as a standard in this study are 0.75, 0.50, and 0.25 respectively which describe whether the model in this study is classified as strong, moderate, and weak. Q^2 is one of the criteria in testing structural models because the model used in research must be able to adequately predict each indicator of its endogenous latent variables [23]. Q^2 values obtained through blind-folding techniques with omission distance or D values between 5 and 10. Q^2 values successively 0.02, 0.15 and 0.35 indicate that exogenous variables have small, medium, and large predictive relevance to an endogenous variable. This study uses a blind-folding technique with an omission distance of 7. Table 4 shows the values of R^2 and Q^2 on endogenous variables in this study.

Table 4. R-square and Q-square values.

Variable	R-square	Q-square
CC	0.475	0.289
CP	0.408	0.275
KS	0.369	0.226
TTC	0.442	0.288
TTM	0.304	0.188

4.4 Discussion and Implications

This research has identified factors that allow members of OHC to share their health-related knowledge and promote others to join that particular community. In previous studies, examining the motivation that influences individuals in knowledge sharing on various online communities have been carried out [7–9]. But only few of them did investigate the motivation of knowledge sharing and community promotion simultaneously.

The results of this research show that community commitment can directly influence its members to share their knowledge. These results are consistent with the results of previous studies in which committed relationships reflect a desire to maintain a long-term relationship with other individuals [13]. The higher the commitment to an OHC, the more individuals will contribute and participate in the community to share their experiences.

Information support is a type of support that offers individuals with advice, guidance, or information that is useful to help them solve problems, generate new ideas, or make good decisions [13]. The results of this study confirm that information support itself is not enough to build the commitment of community members to the communities they participate in. However, this research can show that information support is positively related to trust towards community and members. This is consistent with previous research that that particular factor is more likely to have confidence in benevolence and integrity, and subsequently form a sense of trust towards information providers [13].

In contrast to the information support, emotional support places more emphasis on the emotional aspects of social support and can help to overcome problems indirectly [12]. The influence of emotional supports the community commitment. If there is a member who gets the attention and warmth of people who experience the same pain and difficulties, they tend to feel comfortable to live in the community they follow, in this case, the OHC. This is caused by emotional reactions such as care and attention given by other members which cause them to be emotionally attached.

Trust in members directly influences trust in the community. This is consistent with the trust transfer theory, it is believed that trust in members can be developed through trust between members will make users believe that the provision and transfer of information in the community tend to be governed by established principles [14]. However, this study does not show that trust in members influences knowledge sharing and community commitment. This is different from the results of previous studies which state that information obtained from credible sources will be considered more useful and used as aids in making decisions [17].

Subsequent results from this study indicate that trust in members can influence trust in the community, and subsequently increase the intention to OHC promotion to others. These results indicate conformity with the results of the study which states that trust is the main determinant in commitment to a virtual community [15].

5 Conclusions

This study aims to look at the impact of information and emotional support on trust towards members and community, as well as community commitment. The conclusions obtained from this study are as follows, first, we showed that the information support provided by members of the OHC affects trust in community members and the community itself. Furthermore, emotional support from community members influences community commitment and trust in community members. Second, the results of this study also indicate the existence of trust transfers in OHC, where trust in members influences trust in the community and subsequently affects community commitment. Third, the results of this study also show the important role of community commitment as the only variable that directly affects knowledge sharing. Moreover, community promotion is influenced by community commitment and community trust.

Notwithstanding these, in this study the number of collected samples is relatively small, that is only 151 respondents. This might influence the generality of the findings of this study. Therefore, a larger sample size is sought for a further research to strengthen the findings of this study. In addition, the paper also informs that exploring to what extent the role of the human aspect for example by integrating the health belief model (HBM) or protection motivation theory (PMT) that influence the motivation of the use of technology will be our future research direction.

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