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Knowledge sharing and social media: Altruism, perceived online attachment motivation, and perceived online relationship commitment

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motivation, and perceived online relationship commitment

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Abstract:

Social media, such as Facebook and Twitter, have become extremely popular. Facebook, for example, has more than a billion registered users and thousands of millions of units of information are shared every day, including short phrases, articles, photos, and audio and video clips. However, only a tiny proportion of these sharing units trigger any type of knowledge exchange that is ultimately beneficial to the users. This study draws on the theory of belonging and the intrinsic motivation of altruism to explore the factors contributing to knowledge sharing behavior. Using a survey of 299 high school students applying for university after the release of the public examination results, we find that perceived online attachment motivation (β=0.31, p<0.001) and perceived online relationship commitment (β=0.49, p<0.001) have positive, direct, and significant effects on online knowledge sharing (R^2 0.568). Moreover, when introduced into the model, altruism has a direct and significant effect on online knowledge sharing (β=0.46, p<0.001) and the total variance explained by the extended model increases to 64.9 percent. The implications of the findings are discussed.

Keywords: knowledge sharing, perceived online attachment motivation, perceived online relationship commitment, altruism, social media

1. Introduction

Online social media have become increasingly popular in the last few years. The rapidly increasing use of social media for sharing information has also triggered a great deal of academic interest (Osatuyi, 2013). For example, there were 757 million daily active users of Facebook on average in December 2013, with 2.7 billion 'likes' made daily on and off the Facebook site and 300 million photos uploaded (Tam, 2012; Facebook, 2014). In addition to having a very large user base, Facebook encourages frequent interaction among users through such things as the exchange of 'likes,' comments, photos, tags, polling, events, inbox messages, and online chatting. These figures pose an interesting question: What motivates individuals to share information and interact with other users to such a significant extent in the social media environment? In particular, does this social interaction go a step further and contribute to knowledge sharing and hence knowledge creation? While some previous empirical studies have measured knowledge sharing in terms of participation and interaction (Kapur & Kinzer, 2007; Mazzolini & Maddison, 2007), others have suggested that knowledge sharing is complicated and cannot be attained through social media due to the extent of social interaction (Liao, 2006; Wang & Noe, 2010; Ma & Yuen, 2011; Ghadirian, Ayub, Silong, Bakar, & Zadeh, 2014). The motivation for the present study was prompted by the idea that it would be good if the interaction among users in the social media environment led to knowledge sharing behavior, as this would be an important step in the process of knowledge creation.

Few studies have examined the motivations for online knowledge sharing behavior (Ghadirian et al., 2014). This study aims to fill this gap in the research by

exploring the motivational factors that affect knowledge sharing among individuals, with a specific focus on how interpersonal relationships influence such sharing in the social media environment. An existing online knowledge sharing framework is extended to investigate the motivational factors relating to knowledge sharing and to further identify whether altruism is a key determinant of such behavior. An alternative explanation of knowledge sharing in the social media environment is discussed, with particular reference to the theory of the need for belonging among online users.

2. Theoretical foundations and hypothesis development

2.1 Online knowledge sharing behavior

Vygotsky's (1978) sociocultural theory of learning holds that people learn through social interaction and the sharing of ideas and experiences. According to later studies of Vygotsky's work on social construction as a mechanism for learning (Palincsar & Brown, 1984; Forman & Kraker, 1985; Bivens, 1990), social processes promote cognitive change through the process of social interaction. Hence, knowledge sharing plays an important role in converting social knowledge into individual knowledge, and public knowledge into private knowledge. From an organizational perspective, Nonaka (1994) describes tacit knowledge as knowledge that is sticky and leaky (Brown & Duguid, 1998) and difficult to describe, explain or transfer. Successful modes of knowledge creation depend on the dynamic conversion of tacit-explicit knowledge into individual knowledge through socialization, internalization, externalization, and combination (Brown & Duguid,

1998). The conversion of public tacit knowledge to individual tacit knowledge can take place only through processes of socialization and, hence, knowledge sharing. Chou (2005) describes the objective of knowledge sharing as "to combine … individual knowledge and social knowledge to form potential team knowledge" (p. 271). According to Chou (2005), four mechanisms are needed to establish potential team knowledge: absorptive capacity (an individual's ability to utilize the available knowledge); access to communities of practice, which foster the ability to transform potential team knowledge into usable knowledge; transactive memory, which represents a shared system of encoding, storing, and retrieving the knowledge that is available to the group; and synergistic knowledge (the knowledge created within the team that actualizes the potential knowledge initially held by the individual team members). Many existing empirical studies measure knowledge sharing in terms of participation and interaction (Mazzolini & Maddison, 2007; Kapur & Kinzer, 2007), while others measure knowledge sharing intentions (Bock, Zmud, Kim, & Lee 2005). However, a recent review of the knowledge sharing literature found that few studies have measured the seeking and sharing dimensions of actual knowledge sharing behavior (Liao, 2006; Ma & Yuen, 2011; Ghadirian et al., 2014). In another review study on knowledge sharing, Wang and Noe (2010) suggest a framework for organizing the predictive variables of knowledge sharing, which where applicable include some or all of the five areas of organizational context, interpersonal and team characteristics, cultural characteristics, individual characteristics, and motivational factors. Alternatively, Ko et al. (2005) argue that although many scholars have conceptualized knowledge sharing or knowledge transfer, relatively few have attempted to measure it directly. Based on the study of Argote and Ingram

(2000), Ko et al. (2005) define knowledge sharing as the communication of knowledge from a source in such a way that it is learned and applied by the recipient. Building on the work of Ko et al. (2005), Ma and Yuen (2011) develop and empirically validate an online knowledge sharing scale using different samples in different online environments.

2.2 Perceived online attachment motivation and perceived online relationship commitment

Ma and Yuen (2011) define perceived online attachment motivation (POAM) as "the degree to which an individual believes that he or she can improve his or her social interaction and the sense of communion with others on an online learning platform" and perceived online relationship commitment (PORC) as "the degree to which an individual believes that he or she can persist in a relationship with others on an online learning platform" (p. 213). Moreover, the theory of the need to belong (Baumeister & Leary, 1995) suggests that social interaction is an innate human motivation whereby people are naturally driven toward establishing and sustaining a sense of belonging. The need to belong also provides the theoretical grounds to explain the motivation for social interaction through the mechanisms of affiliation (to form social bonds) and relationship commitment (to maintain those bonds). Other traditional theory also supported the importance of the need to belong. For example, Ryan & Deci (2000) developed the self-determination theory to include three factors, competence, autonomy and relatedness to explain intrinsic human motivation, social development and well-being. Relatedness is defined as the need

to feel belongingness and connectedness with others where behaviors are prompted, modeled, or valued by significant others to whom they feel (or want to feel) attached or related (p.73). In line with this, a recent study found that intrinsic motivations moderate the effects of knowledge sharing (Jadin, Gnambs, & Batinic, 2013).

The concept of perceived online attachment motivation has both theoretical and empirical support. People in almost every society belong to small primary groups that engage in face-to-face and personal interaction (Mann, 1980). The anthropologist Coon (1946) suggests that the formation of natural groups is an innate human characteristic. Studies have found that group cohesion is developed as long as social bonds exist while others have found that within-group favoritism occurs even when group members are randomly assigned (Billig & Tajfel, 1973). Reis and Patrick (1996) suggest that people feel safe among others, which is why they actively seek support from social networks. Hill (1987, 1997) suggests that the motivation for social contact is the central influence on human behavior, even though people are drawn to others for different reasons. Accordingly, if an individual online user expects to have strong social interactions on a social media platform, then he or she will be more willing to develop relationships with other members in that community. To develop relationships, the online user will be willing to interact more with other members of the social media platform, using devices such as small talk, certain forms of address, communicative norms, and self-disclosure. Pro-social behavior in sharing one's knowledge is a good way to develop relationships. This leads to the following hypothesis.

H1a: There is a significant relationship between the perceived online attachment motivation (POAM) of individual online users of social media platforms and their knowledge sharing behavior (OKSB).

H1b: There is a significant relationship between the perceived online attachment motivation (POAM) of individual online users of social media platforms and their perceived online relationship commitment (PORC).

The concept of perceived online relationship commitment describes another behavioral motivation. Weiss (1973) suggests that feelings of loneliness may be due to insufficient social contact or a lack of meaningful, intimate relatedness (Shaver & Buhrmester, 1983). Thus, the need to belong is manifest in the need for regular social contact with those to whom one feels connected. Research suggests that the stress response to the end of a social relationship is an almost universal human trait that transcends different cultures and generations (Hazan & Shaver, 1994). Empirical studies have found that group members resist the notion that the group will dissolve, even though they understand early on that the group will eventually cease to exist (Lieberman, Yalom, & Miles, 1973). Moreover, people are often reluctant to end bad or even destructive relationships because they fear the negative affect of ending the relationship (Strube, 1988). Rusbult, Martz, and Agnew (1998) propose that commitment is the key to understanding why some relationships persist and others do not. Relationship commitment has been found to be an important determinant of friendship and close relationships and to be necessary in organizational settings (Rusbult, Drigotas, & Verette, 1994; Meyer, Allen, & Sulsky, 1999). These empirical studies suggest that the greater an individual's need to maintain a relationship, the

more the individual will be committed to the relationship. As a result, individuals tend to spend more time and effort in maintaining consistent and continual interaction with their relationship partners. Hence, we hypothesize that,

> *H2: There is a significant relationship between the perceived online relationship commitment of individual online users of social media platforms and their knowledge sharing behavior.*

Online social media relationships are an extension of the users' relationships in the physical world. Individuals build and create relationship links using social media to provide better and more efficient ways to stay in contact with their friends. Therefore, the more friends or affiliations an individual has, the stronger the individual's perceived relationship commitment to that community. This gives rise to the following hypothesis.

> *H3: There is a significant relationship between the perceived attachment motivation of individual online users and their perceived online relationship commitment; that is, the greater the perceived online attachment motivation, the greater the perceived online relationship commitment.*

2.3 Altruism

Altruism has been variously described as a form of unconditional kindness without the expectation of a return (Fehr & Gächter, 2000), providing help and achieving a sense of satisfaction from the action (Kollock, 1999), and helping others regardless of whether anything is received in return (Davenport & Prusak, 2000). He and Wei (2009) investigate the motivation for continued knowledge sharing and argue that

knowledge workers contribute to knowledge management systems because they enjoy helping others. Hung et al. (2011) find that altruism significantly increases satisfaction in relation to knowledge sharing outcomes. Kankanhalli et al. (2005) investigate knowledge sharing factors and find that the joy in helping others significantly effects knowledge contributors' use of electronic knowledge repositories. Lee et al. (2011) find that altruism significantly affects the brand communities on online social networking Websites. Fang and Chiu (2010) define altruism as "the voluntary helping actions where one attempts to improve the welfare of others at some cost to oneself" (p. 237) and examine altruism as an antecedent of knowledge sharing intentions. They find that the altruism of virtual community members is positively associated with knowledge-sharing continuance intentions. Fang and Chiu (2010) contend that altruistic behavior is an important facilitator of knowledge sharing intentions and argue that members who display altruistic behaviors tend to be more willing to share knowledge in virtual communities. Although they do not investigate knowledge sharing behavior, Fang and Chiu's (2010) findings provide clues to the link between altruism and knowledge sharing. However, how altruistic behavior helps and facilitates knowledge sharing is still unknown.

An earlier study has provided the best available explanation of the effects of altruism. Eddleston and Kellermanns (2007) find that altruism significantly reduces relationship conflict and enhances participative processes. They argue that in the case of family enterprises, altruism promotes bonding by "fostering loyalty, interdependence and commitment to the family's long term prosperity" (p. 550).

Knowledge sharing is a complicated process that involves communication between two parties. It is necessary for both parties to be willing to interact smoothly, as the communication process will break down if there are any hiccups. In consequence, knowledge sharing cannot take place if the parties in the communication process are unable to interact smoothly. Therefore, altruism is likely to be an important contingency factor in reducing conflict and enhancing participation and thereby providing the necessary conditions for knowledge sharing to take place. Therefore, we test the following hypothesis.

H3: There is a significant relationship between an individual social media user's altruism and his or her online knowledge sharing.

3. Research method

3.1 Background, Subjects, and Data Collection

Social media have become increasingly popular among teenagers. The current social media can be divided into a number of different platforms, including social networking, publishing, photo sharing, audio sharing, video sharing, and interpersonal sites. Individual users can access the various kinds of social media through devices such as desktop computers, tablets, and smartphones. It is not uncommon for individual users to stay connected to social media sites twenty-four hours a day, seven days a week. Individual users can also either passively browse information or actively participate in social interaction, such as by posting messages and comments, or uploading media files (photo, audio, video etc.).

This study was conducted in the summer of 2013. The participants were all post-secondary students taking the Hong Kong Diploma of Secondary Education (HKDSE). While they were waiting in line to submit their applications to a local university in Hong Kong, they were handed a paper questionnaire, which they were asked to complete and return. Most of the participants completed the questionnaire within ten minutes. Over the three day survey period, a total of 299 completed questionnaires were returned for further analysis. The participants were aged from 17 to 21, with an average age of 17.96 years.

3.2 Measures

A survey instrument was used to obtain self-reported information from the participants. The questionnaire was divided into two parts. The first part collected the respondents' basic personal information, including gender, age, and the social networking sites they used most frequently the week before they completed the questionnaire. The second part asked the respondents to rate their opinions on a range of items relating to social media. All of the questionnaire items were adapted from previously validated scales and measured on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Specifically, the respondents were asked to answer five items on perceived online attachment motivation (POAM), five items on perceived online relationship commitment (PORC), and five items on online knowledge sharing behavior (OKSB) from the validated instrument in Ma and Yuen (2011). They were also asked to answer 12 items on altruism (Eddleston &

Kellermanns, 2007; Fang & Chiu, 2010; Hung et al., 2011). The complete instrument and sources are listed in the Appendix.

4. Results

4.1 Descriptive Statistics of the Respondents

The descriptive statistics of the respondents are presented in Table 1 below.

Table 1. Descriptive statistics of the respondents *(N=299)*

Items / Descriptive	
Gender: Male - 215 (71.9%); Female - 84 (28.1%)	
Average Age: 17.96	
Most frequently used: Facebook (89%); Others (11%)	
In the last week,…	**Mean (1-10)(Std.Dev)**
how often did you visit there?	6.77 (2.413)
how often did you use the message inbox there?	4.03 (2.571)
how often did you share news there?	2.82 (2.022)
how often did you post messages to all friends there?	3.19 (2.349)
how often did you chat there?	4.05 (2.494)
how often did you upload photo(s) there?	3.01 (2.247)
how often did you upload video(s) there?	1.83 (1.557)
how often did you make comment(s) there?	4.20 (2.469)
how often did you edit your profile there?	2.60 (1.913)
how often did you share music there?	2.60 (2.152)

Table 2. Descriptive statistics and confirmatory factor loadings of the constructs

	Min	Max	Mean	Std. Dev.	Cronbach's Alpha	Factor Loadings
Perceived Online Attachment Motivation (POAM)						
POAM1	1	7	3.58	1.307	0.869	0.734#
POAM2	1	7	3.33	1.296		0.718***
POAM3	1	7	3.48	1.270		0.775***
POAM4	1	7	3.74	1.300		0.710***
POAM5	1	7	3.66	1.269		0.818***

Perceived Online Relationship Commitment (PORC)						
PORC1	1	7	3.89	1.286	0.853	0.717#
PORC2	1	6	3.81	1.243		0.766***
PORC3	1	7	3.72	1.278		0.767***
PORC4	1	7	3.43	1.380		0.674***
PORC5	1	7	3.65	1.221		0.762***
Online Knowledge Sharing Behavior (OKSB)						
OKSB1	1	7	3.99	1.197	0.864	0.735#
OKSB2	1	7	4.11	1.173		0.710***
OKSB3	1	7	3.90	1.126		0.794***
OKSB4	1	7	3.94	1.123		0.795***
OKSB5	1	7	3.85	1.126		0.713***
Altruism (ALT)						
ALT1	1	7	4.07	1.251	0.918	0.636#
ALT2	1	7	3.66	1.111		0.671***
ALT3	1	7	4.05	1.262		0.670***
ALT4	1	7	4.06	1.237		0.730***
ALT5	1	7	4.10	1.237		0.656***
ALT6	1	7	4.03	1.246		0.720***
ALT7	1	7	3.66	1.214		0.697***
ALT8	1	6	3.61	1.172		0.699***
ALT9	1	7	3.69	1.254		0.676***
ALT10	1	7	3.75	1.180		0.694***
ALT11	1	7	3.73	1.169		0.711***
ALT12	1	7	3.74	1.172		0.685***

#regression weight set to 1

4.2 Instrument Validation

The descriptive statistics of the means and standard deviations of each item are presented in the above table (Table 2). Cronbach's alpha was used to validate the internal consistency of the instrument. All of the constructs exhibited internal

consistency with alpha values greater than 0.7, as suggested by previous studies (Nunnally & Bernstein, 1994). The convergent validity of the instrument was examined by confirmatory factor analysis via AMOS v20. As shown in the above table, all of the factor loadings were significant at either the p<0.01 or p<0.001 level, thereby demonstrating the convergent validity of the items in relation to the construct.

4.3 Model Testing Results

The corresponding hypotheses were examined using structural equation modelling via AMOS v20. The analysis followed a series of steps designed to compare competing models.

First, the original model from previous studies (Ma & Yuen, 2011), which includes the PORC and POAM toward OKSB, was used to estimate the explanatory and predictive power of the causal relationships (see Figure 2). All of the goodness-of-fit indices exceed the suggested required values (Hair et al., 2010), indicating that the model fits the data well. Consistent with previous studies (Ma & Yuen, 2011), POAM (β=0.310, p<0.001) and PORC (β=0.493, p<0.001) were found to have significant, strong, and direct effects on OKSB. POAM (β=0.750, p<0.001) also had a significant, direct, and positive effect on PORC. The explanatory power of the model was examined using R^2 for OKSB (R^2=0.568) and was found to be significant and strong, and comparable with previous studies (Ma & Yuen, 2011; Ma, Sun, & Ma, 2012).
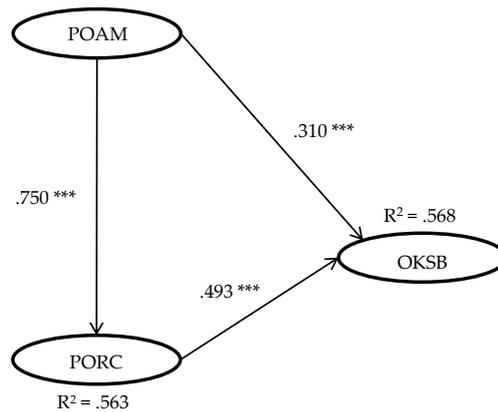
TLI = .951
CFI = .960
RMSEA = .060
SRMR = .037

Figure 1. Testing of the online knowledge sharing model (competing model 1)

The second model was constrained to only the additional construct, Altruism. All of the goodness-of-fit indices exceed the suggested required values (Hair et al., 2010), indicating that this model also fits the data well. The explanatory power of this model is comparable with the first, with an R^2 equal to 0.552. The causal path testing shows that Altruism had a positive, direct, and strong effect on OKSB (β=0.743, p<0.001).

$R^2 = .552$

OKSB

.743 ***

ALT

TLI = .969
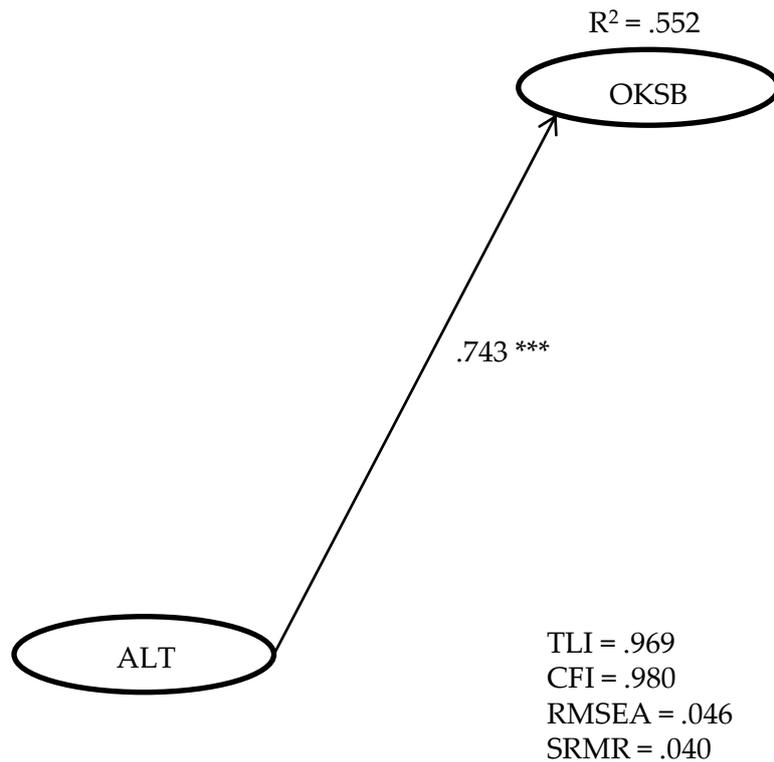CFI = .980
RMSEA = .046
SRMR = .040

Figure 2. Testing of altruism on online knowledge sharing (competing model 2)

For the final model, the first two models were combined to produce the extended online knowledge sharing model, which includes the effects of POAM, PORC, and Altruism on OKSB. The explanatory power of the model for individual constructs was again examined using R^2 for OKBC. The results for the model with sample size N=299 produced a list of goodness-of-fit indices, including TFI (0.923), CFI (0.933), and RMSEA (0.058). The values of these and all other indices exceed the suggested values, indicating that the model fits the data well (Hair et al., 2010). The testing results are summarized in the figure and table below.

Together, POAM, PORC, and Altruism explain 64.9 percent of the variance observed in OKSB. Altruism appears to contribute more to the observed explanatory

power than the other constructs. At the same time, POAM accounts for 56.2 percent of the variance observed in PORC. The predictive power of the model was examined and the postulated hypotheses tested based on the path coefficients between the constructs. The data support most of the causal paths in the postulated model: POAM (β=0.189, p<0.05) has a positive, direct, and significant effect on OKSB. Thus, Hypothesis H1 is supported. The coefficient suggests that every standard unit increase in POAM will strengthen an individual's OKSB by 0.189 units. However, as the above figures show, this predictive strength is significantly reduced when Altruism is included in the model. POAM also had a positive, direct, and significant effect on PORC (β=0.749, p<0.001). Thus, Hypothesis H2 is supported. PORC has a positive, direct, and significant effect on OKSB (β=0.242, p<0.01). Thus, Hypothesis H3 is supported. Again, the presence of Altruism seems to have had a strong mediating effect such that the strength of the effect of PORC on OKSB is reduced by half. Altruism has a positive, direct, and significant effect on OKSB (β=0.456, p<0.001). Thus, Hypothesis H3 is supported. In comparison, the effect of Altruism on OKSB is nearly double that of PORC and nearly triple that of POAM. To conclude, this final model fits the data well and provides better explanatory power than the previous competing models.
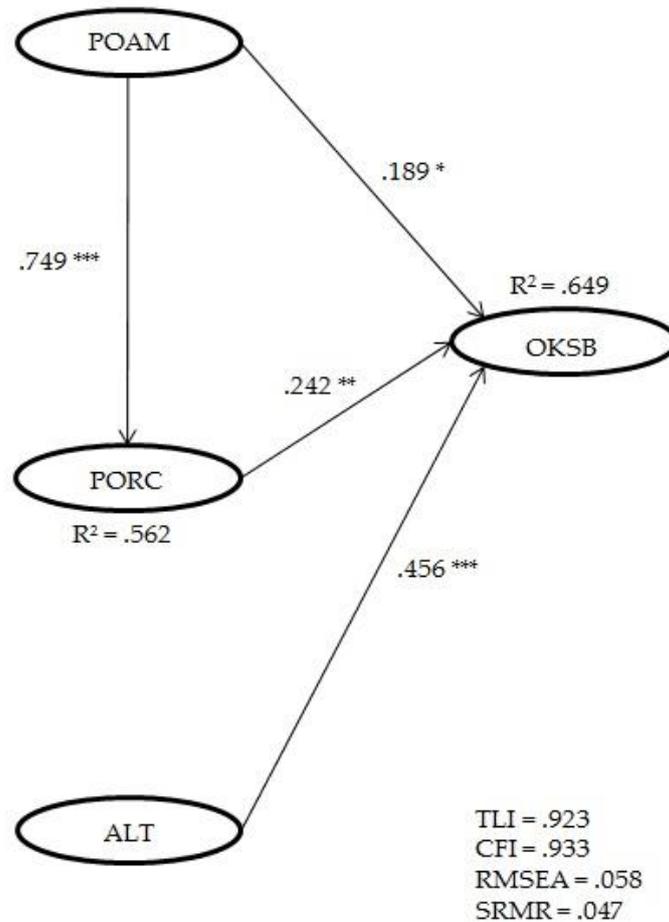
Figure 3. Testing of the extended online knowledge sharing model (competing model 3)

Table 3. Summary of the testing of the extended online knowledge sharing model

Hypothesis	Causal paths	Coefficients	Results
H1a	POAM →OKSB	0.189*	Supported
H1b	POAM → PORC	0.749***	Supported
H2	PORC → OKSB	0.242**	Supported
H3	ALT → OKSB	0.456***	Supported
R^2: OKSB = 0.649	R^2: PORC = 0.562		

Table 4. A summary of the testing of the competing models

Causal paths	Model 1	Model 2	Model 3
POAM →OKSB	0.310***	-	0.189*
POAM → PORC	0.750***	-	0.749***
PORC → OKSB	0.493***	-	0.242**

ALT → OKSB	-	0.743***	0.456***
R^2: OKSB	0.568	0.552	0.649
ΔR^2			0.081

5. Discussion

5.1 The key findings are:

1. Perceived online attachment motivation has both a direct and significant effect on online knowledge sharing behavior (supporting H1a) and perceived online relationship commitment (supporting H1b).

2. Perceived online relationship commitment has a direct and significant effect on online knowledge sharing behavior (supporting H2).

3. Altruism has a direct, significant, and strong effect on online knowledge sharing behavior (supporting H3).

5.2 Interpersonal Perspective

From the interpersonal relationship perspective, the findings are consistent with previous studies (Ma & Yuen, 2011; Ma, Sun, & Ma, 2012) in that both perceived online attachment motivation and perceived online relationship commitment are found to be key determinants of online knowledge sharing. The online knowledge sharing model proposed in this study was empirically examined and validated in relation to a new subject domain and social environment, thereby extending the applicability of the model. Moreover, it was interesting to find that the significant effect of PORC on POAM observed in previous studies (Ma & Yuen, 2011; Ma, Sun, & Ma, 2012) was reversed in this study, to a significant effect of POAM on PORC. However, the social environment examined in previous studies did not

provide familiar faces to help individual users make friends. Rather, the social environment consisted only of the allocation of a student identity number to help instructors. In this study, most of the users of social media used Facebook. In the Facebook environment, users know each other. They also form communities that are based on the physical world in which the users already know each other and only extend their networks to the Facebook world. Suddenly, anonymity is no longer the unique feature that helps people communicate. Instead, the social environment has been built on real networks that help individual users to maintain their social relationships. The maintenance of online relationships is very important and is fully supported by the social environment. However, it is not easy to gain new friends. Even if new friends are found in the social environment, they are quickly incorporated into the social network, thereby requiring continued maintenance of the network. To conclude, the interpersonal relationship perspective provides important clues to explain online knowledge sharing, although individual users also demonstrate the process of how online knowledge sharing occurs through their use of the social environment.

5.3 Altruism

In this study, the previous online knowledge sharing model (Ma & Yuen, 2010, 2011) was extended to include altruism, with respect to previous supports (Lee & Lee, 2010; Parra-Lopez et al., 2011). Consistent with previous research, altruism was found to be a key determinant of online knowledge sharing (Eddleston & Kellermanns, 2007; Fang & Chiu, 2010). Altruism is important to families, communities, and organizations as it promotes bonding by fostering loyalty,

interdependence, and commitment to long term prosperity. We propose that altruism is especially important in social media environments in which communities are formed based on common interest. However, because users can voluntary come and go, the structure of the online social environments tends to be maintained by weak social ties. In the virtual world especially, people tend to come and go without reason and without monetary return. Therefore, some kind of glue is needed to bind users together so that they make frequent social contact and are willing to stay in the network. Altruistic individuals refer to those who are more willing to help others. In the online social environments, altruistic users are more likely to use the social and communication technologies to keep in touch with the people important to them and use the technologies to show their care for and give help to others (Wright & Li, 2011, p.1962). In this respect, altruistic and prosocial behaviors provide such cohesion. Accordingly, the question of how altruism works is especially crucial in relation to a complicated process such as knowledge sharing. Knowledge sharing is not just the sum of an individual's social contacts or interactions. Moreover, knowledge sharing does not necessary occur because of previous positive intentions, as there are all sorts of hurdles that can undermine the communication process. Relevant knowledge needs to be the central idea during the communication process. Knowledge sharing cannot be said to exist if the knowledge is not understood or is unable to be applied in the future. Because knowledge sharing is complicated, numerous situational factors need to be in place for it to happen. The testing of the competing models shows that altruism complements the interpersonal perspective constructs, which become key determinants of online knowledge sharing. We agree with Eddleston and Kellermanns's (2007) suggestion that altruism helps reduce

conflict and promote participative processes. In addition to being the necessary conditions for interpersonal relationships to start, these important contingent factors help resolve the difficulties in the complicated knowledge sharing process. Together, these factors make online knowledge sharing possible.

5.4 Limitations and further studies

Despite the usefulness of findings, this study has several limitations. First, the generalizability of the findings is constrained by the specific context of high school graduates who mostly use one social media platform. Moreover, the sample in this study comprised more male (71.9%) than female (28.1%). This composition was comparable to the ratio of the university in general. Independent 2-samples t-test was conducted but found no significant differences between the male and the female in the three constructs, perceived online attachment motivation (p=0.115), perceived online relationship commitment (p=0.193), online knowledge sharing behavior (p=0.179); however, it did find significant differences in altruism (p=0.006<0.01). Prior studies suggested that there might be differences among male and female in ways to help others (e.g., Wright & Li, 2011, p.1960). Future studies may consider more analysis in the area. Furthermore, the proposed knowledge sharing model is based on only four constructs. To better understand the complex social interaction involved in social media online knowledge sharing, future research should consider additional variables, such as the external/situational perspective, users' activities on social media platforms, and the characteristics of the social media platform.

Appendix A. Measured items

Construct (Sources) – Measurement Items

Perceived online attachment motivation (POAM) (Ma & Yuen, 2011)

POAM1   If I feel unhappy or kind of depressed, I usually try to be around other members using the social media to make me feel better.

POAM2   I usually have the greatest need to have other members using the social media around me when I feel upset.

POAM3   I often have a strong need to be around other social media users who are impressed with what I am like and what I do.

POAM4   I mainly like to be around other users who think I am an important, exciting person together.

POAM5   I often have a strong desire to get other users around to notice me and appreciate what I am like together.

Perceived online attachment motivation (PORC) (Ma & Yuen, 2011)

PORC1   I am committed to maintaining my relationship with other members using social media.

PORC2   I want our relationship with other members using the social media to last for a very long time.

PORC3   I feel very strongly linked to my relationship with other members using the social media.

PORC4   I would feel very upset if my relationship with other members using the social media were to end.

PORC5   I tend toward the long-term future of my relationship with other members using the social media.

Online knowledge sharing behavior (OKSB) (Ma & Yuen, 2011)

OKSB1   The advice I receive from other members using the social media has increased my understanding.

OKSB2   The advice I receive from other members using the social media has increased my knowledge.

OKSB3   The advice I receive from other members using the social media allows me to complete similar tasks more efficiently.

OKSB4   The advice I receive from other members using the social media allows me to improve the quality of similar work.

OKSB5   The advice I receive from other members using the social media allows me to conduct similar tasks with greater independence.

Altruism (ALT) (Eddleston & Kellermanns, 2007)

ALT1   When I have the opportunity, I help other members using the social media solve

	their posting questions.
ALT2	When I have the opportunity, I orient new members using the social media even though it is not required.
ALT3	When I have the opportunity, I give my time to help other members using the social media when needed.
ALT4	I like helping other members using the social media.
ALT5	Writing and commenting on the social media can help other members using the social media with similar problems
ALT6	I enjoy helping other members using the social media through writing or commenting there.
ALT7	I often help other members using the social media with their work when they are absent.
ALT8	I often volunteer to do things for other members using the social media that is not required by them.
ALT9	I often help other members using the social media who have heavy workloads.
ALT10	I often assist other members using the social media with their work.
ALT11	I often make innovative suggestions to improve work of other members using the social media.
ALT12	I often participate in tasks that are not required, but that help other members using the social media.

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