

Online Knowledge Sharing and Psychological Well-Being among Chinese College Students

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Abstract: This survey study examines the relationship of online knowledge sharing and psychological well-being among undergraduate students in Hong Kong. A self-reported paper questionnaire was administered to a sample of 489 undergraduate students aged 17-25 from a local university. Online Knowledge Sharing Behavior (OKSB; Ma & Yuen, 2011) was adopted to measure the online communication of knowledge. There were two measures for psychological well-being – Satisfaction With Life Scale (SWLS; Diener et al., 1985) and Flourishing Scale (FS; Diener et al., 2010). Although the structural equation modeling (SEM) results showed online knowledge sharing significantly predicted life satisfaction and flourishing, it only accounted for very little variation in life satisfaction (1.3%) and flourishing (3.1%). The findings suggested that the positive effect of online knowledge sharing on psychological well-being has to be further investigated.

Keywords: Online knowledge sharing, Well-being, Life satisfaction, Flourishing

1. Introduction

Well-being is a long-lasting research of interest. It is a construct that concerns the optimal human experiences and functioning (Ryan & Deci, 2001). It is the meaning of life that anchors where we should go and live. The more we understand the factors related to well-being, the more we shall get hold of our own life. That is, it lets people to know what makes live worth living; for example, previous studies suggested that happiness is such one factor (King & Napa, 2008) and self-realization (Ryan & Deci, 2000).

Veroff & Veroff (1980) analyzed social incentives with a match to different developmental stages, including curiosity, attachment, assertiveness, social relatedness, belonging, consistency, interdependence and integrity. They suggested that individuals rated social incentives differently at different developmental stages. The factors to life satisfaction would depend on the stage and needs of an individual. Drawing from the theoretical grounds of prior studies, including Bowlby (1969) on attachment, Hill (1987) on affiliation motivation, and Baumeister and Leary (1995) on belonging, the social incentives of attachment, social relatedness, belonging and interdependence as suggested by Veroff and Veroff (1980), are very much general needs that could apply to young adults.

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Previous studies have explored the relationship between young adolescents' online behavior and their social well-being but the reasons for such relationships need further investigation. For example, a study (Pea et al., 2012) on social well-being among 8-12 year old girls found that negative social well-being was positively associated with levels of uses of media that are both centrally about interpersonal interaction (e.g., phone, online communication) and not (e.g., video, music, and reading). Moreover, video use was particularly strongly and negatively associated with social well-being indicators. Media multitasking was also negatively associated with social well-being. On the contrary, face-to-face communication was strongly and positively associated with social well-being. Online communication with smartphone and computer allows anytime, anywhere social interactions among users, hence, facilitating more knowledge sharing if they wish. As both social contact and knowledge are two key social incentives to college students at their developmental stage, it is worth to further investigate the relationship between media use and social well-being of young adults.

There were prior studies (e.g., Ghaedi et al., 2010) focused on quality of life in college students. Although income and happiness have been consistently linked to well-being (e.g., Biswas-Diener et al. 2010; King & Napa 1998), these two well-being indicators might not be perceived as the most important by college students. For example, a study on college students using Facebook (Manago et al., 2012) found that larger networks and larger estimated audiences predicted higher levels of life satisfaction and perceived social support on Facebook (p.369). Another previous study (Royuela et al., 2009) found that workers' subjective perceptions of job satisfaction revealed a strong relationship with quality of work life. Similar to workers work, it is reasonable to expect college students' subjective perceptions of learning satisfaction would have a strong relationship with quality of their studying life even though studying is part of college students' life.

Together, social interactions and knowledge are two important needs of college students. The behavior of knowledge sharing is suggested to fulfill both of these needs simultaneously. Young adults have frequent social contacts with peers that fulfill their needs to belongings. According to an investigation by Kettinger & Grover (1997), 613 Internet-based respondents across 20 different countries from various backgrounds (education, business and government), categorizing the electronic communication patterns to three main usages, namely broadcast, task and social communication. Among college students, they are full-time students and their work is to study as well as to perform in learning tasks. Except broadcast which is more likely an instructor's use of electronic communication, college students would be fully engaged in task (knowledge exchange) and in social (social interactions or contacts) communication. Actually, knowledge sharing behavior involves the both processes of social interaction and knowledge exchange.

Previous literature suggested that knowledge sharing is defined as both understanding and application (Argote 1999; Darr & Kurtzberg 2000; Ko et al., 2005). While the heavy usage of online communication with respect to technological and communication advancement, Ma & Yuen (2011) developed and defined online knowledge sharing behavior as "The online communication of knowledge so that knowledge is learned and applied by an individual (p.212)." With respect to this definition, knowledge sharing behavior involves the process of communication, the learning behavior, and the application of the knowledge in future or other context.

In terms of well-being measures, Diener et al. (1985) developed the Satisfaction With Life Scale (SWLS) to focus on assessing global life satisfaction, while excluding positive and negative affects. The scale was found to correlate moderately to highly with other measures of subjective well-being. The scale was widely adopted (e.g., Vella-Brodrick et al., 2009; Gouveia et al., 2009) and was suggested to be appropriate to use across different age groups (p.71). Diener et al. (2010) also developed Flourishing Scale as a measure of well-being to assess psychological flourishing and feelings, including positive feelings, negative feelings, and the difference between the two (p.143). The scale is composed of 8 items, summarized to measure respondent's self-perceived success in important areas such as relationships, self-esteem, purpose, and optimism. The scale is suggested to converge well with measures of emotions and affective well-being. Together, the two scales represent good measures of well-being of the respondents.

Based on the above discussion, we argue that the process of knowledge sharing behavior provides a way to social contacts and communion with others so as to satisfy college students' needs to social interaction while the knowledge gained in the knowledge sharing process fulfills college students' social and cognitive needs and enhances their life satisfaction as well as supports them to flourish. In this study, we postulate,

- H1: The more the online knowledge sharing behavior, the higher the well-being of college students.
- H2: The more online knowledge sharing behavior, the higher the flourishing of college students.

2. Method

2.1 Participants

The participants of this study enrolled at the same university across four departments (communication, counselling and psychology, social work, and sociology). The researchers distributed 550 paper questionnaires and 489 undergraduate students filled out the survey (response rate = 88.9%). Among the participants, 72.4% were female students ($n = 354$) and 27.6% were male students ($n = 135$). The sample proportion of female to male is comparable to the overall proportion of the university that is 70 percent to 30 percent. The average age of participants was 20.31 ($SD = 1.35$) years old. Most of them were sophomores (16.2% in Year 1; 46.2% in Year 2; 31.7% in Year 3; 5.9% in Year 4). About 37% of participants have a religion belief (2.1% Buddhist; 3.5% Catholic; 31.7% Christian; and 0.2% other religion).

2.2 Data Collection

In the Fall semester of 2013, the researchers got the permission of the instructors across four departments (communication, counselling and psychology, social work, and sociology) at a private university in Hong Kong and went to different classes to administer the self-reported paper questionnaires. The researchers first explained the purpose of the study to the students and obtained informed consent from the participants. All participants understood that the participation in the survey was voluntary and they could withdraw from the study at any time without any consequences. On average, the students took about 10-15 minutes to complete the questionnaire. The entire data collection process was completed in two weeks.

2.3 Measures

Although the English version of the three measures used in this study have been validated by previous studies and the Chinese versions were available, the researchers still checked and modified the translation in order to ensure the face validity and readability for local college students. The items and sources for each measure are listed in Table 1 below. There are five items on the Online Knowledge Sharing Behaviors (OKSB1 – OKSB5), five items on Satisfaction With Life Scale (SWLS1 – SWLS5), and eight items on Flourishing Scale (FS1 – FS8). All items are rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The items of the three measures were mixed together to avoid response bias. In addition, demographic information of the participants was collected, including age, gender, year of study, and religion.

2.4 Data Analysis

Descriptive analyses for each item and each measure were conducted. Also, the internal consistency of each measure was examined using Cronbach's alpha. Confirmatory factor analyses (CFAs) were conducted to examine the construct validity of each scale and a hypothesized structural equation model (SEM) was established to examine the relationship between online knowledge sharing and well-being.

We conducted the CFAs and SEM using the Mplus Version 6.0 package (Muthén & Muthén, 1998-2010) and several goodness-of-fit indices, including Root Mean Square Error of Approximation (RMSEA, < .01), Standardized Root Mean Square Residual (SRMR, < .05), CFI (> .90), and TFI (> .90) were used to evaluate the fitness of the hypothesized SEM model.

Table 1. Items and Sources for OKSB, SWLS, and FS

Measures (Source)	Items
Online Knowledge Sharing Behavior (OKSB; Ma & Yuen, 2011)	1. The advice I receive from other members using the internet group/platform has increased my knowledge of the work.
	2. The advice I receive from other members using the internet group/platform has increased my understanding of the work.
	3. The advice I receive from other members using the internet group/platform allows me to improve the quality of similar work.
	4. The advice I receive from other members using the internet group/platform allows me to conduct similar tasks with greater independence.
	5. The advice I receive from other members using the internet group/platform allows me to compare similar tasks more efficiently.
The Satisfaction With Life Scale (SWLS; Diener et al., 1985)	1. In most ways my life is close to my ideal.
	2. The conditions of my life are excellent.
	3. I am satisfied with life.
	4. So far I have gotten the important things I want in life.
	5. If I could live my life over, I would change almost nothing.
Flourishing Scale (FS; Diener et al. 2010)	1. I lead a purposeful and meaningful life.
	2. My social relationships are supportive and rewarding.
	3. I am engaged and interested in my daily activities.
	4. I actively contribute to the happiness and well-being of others.
	5. I am competent and capable in the activities that are important to me.
	6. I am a good person and live a good life.
	7. I am optimistic about my future.
	8. People respect me.

3. Results

Table 2 summarizes the descriptive statistics and Cronbach alpha values of the measures. For OKSB, the mean of each item was slightly above the mid-point (neutral), indicating that on average respondents slightly agreed with the statements. For FS, the averages suggested respondents mostly agreed with the statements. For SWLS, all items were above the mid-point (neutral) except item 5 (“If I could live my life over, I would change almost nothing”), indicating that on average college students would like to have a little change of their lives. The Cronbach alphas showed that all three measures had very high reliability (0.896-0.932).

Table 2. Descriptive Analysis of OKSB, SWLS, and FS

OKSB (n = 477)	M (SD)	SWLS (n = 486)	M (SD)	FS (n = 481)	M (SD)
OKSB1	4.41 (1.198)	SWLS1	4.97 (1.232)	FS1	5.06 (1.142)
OKSB2	4.21 (1.216)	SWLS2	4.89 (1.230)	FS2	5.05 (1.054)
OKSB3	4.15 (1.177)	SWLS3	5.00 (1.239)	FS3	5.08 (1.021)
OKSB4	4.14 (1.150)	SWLS4	4.74 (1.347)	FS4	5.09 (1.054)
OKSB5	4.17 (1.183)	SWLS5	3.71 (1.525)	FS5	5.11 (0.982)
				FS6	5.39 (1.061)
				FS7	5.14 (1.224)
				FS8	5.37 (0.958)
Cronbach α	0.932	Cronbach α	0.896	Cronbach α	0.915

Next, CFA using maximum likelihood estimation technique was performed to validate the constructs and the results are shown in Table 3. It is noted that the factor loadings of all construct items were statistically significant ($p < .001$). Furthermore, all the factor loadings of the three constructs were high or very high, except for item 5 (0.572) on the SWLS.

Table 3. Confirmatory Factor Analysis of the Constructs

OKSB	Factor Loadings	SWLS	Factor Loadings	FS	Factor Loadings
OKSB1	0.711***	SWLS1	0.855***	FS1	0.778***
OKSB2	0.874***	SWLS2	0.914***	FS2	0.748***
OKSB3	0.914***	SWLS3	0.923***	FS3	0.820***
OKSB4	0.916***	SWLS4	0.704***	FS4	0.653***
OKSB5	0.866***	SWLS5	0.572***	FS5	0.688***
				FS6	0.782***
				FS7	0.794***
				FS8	0.782***

Note. N = 487; *** $p < .001$

Finally, a hypothesized SEM model (see Figure 1) was tested to examine the relationship between online knowledge sharing behaviors and psychological well-being, namely, the direct effect from OKSB on life satisfaction as well as the direct effect from OKSB on flourishing. In addition, a bivariate relationship between life satisfaction and flourishing was added. For model testing, all goodness of fit indices (RMSEA of 0.065, SRMR of 0.036, CFI of 0.957, and TFI of 0.950) met the suggested criteria, indicating the hypothesized model fitted the data quite well. Next, we focused on the direct effect and explanatory power of using OSKB to predict psychological well-being. OKSB had significant positive effect on life satisfaction ($\beta = .115, p < .05$) and flourishing ($\beta = .176, p < .001$). Nevertheless, OKSB only accounted for only 1% of variance in life satisfaction and about 3% of variance in flourishing.

4. Discussion

4.1 Key findings

To summarize, there were two key findings for this study:

1. Online knowledge sharing behavior was significantly and positively related to global life satisfaction, utilizing the Satisfaction With Life Scale (SWLS). In other words, the more the online knowledge sharing behavior, the higher the life satisfaction of college students.
2. Online knowledge sharing behavior was significantly and positively related to respondent's self-perceived success in important areas such as relationships, self-esteem, purpose and optimism, utilizing the Flourishing Scale. That is, the more the online knowledge sharing behavior, the higher the self-perceived success of college students.

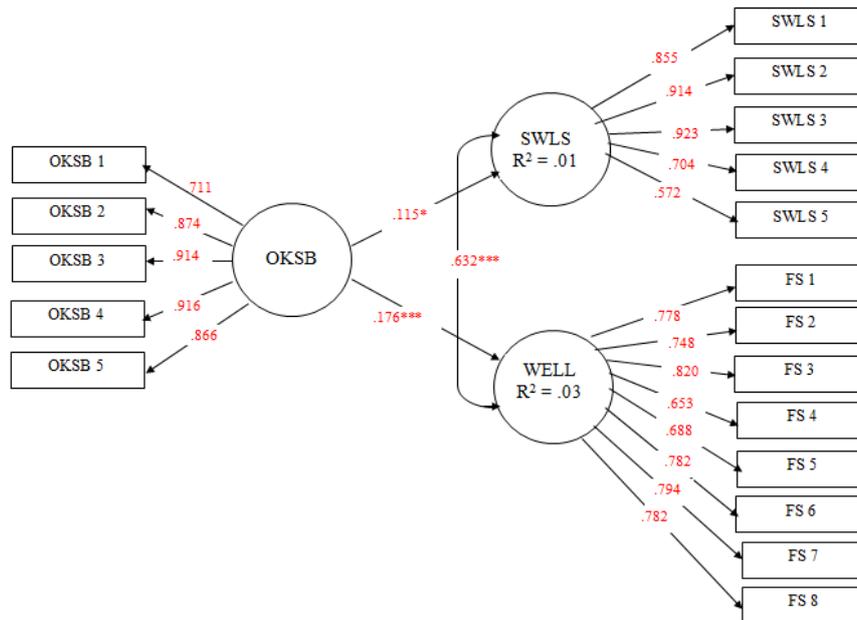


Figure 1. SEM Model for Online Knowledge Sharing and Well Being

The aim of the study is to explore factors contributing to well-being of college students. To answer this research question, the strategy is two folds. This study reviews literatures to understand needs at different life stages. While acknowledging that attachment, social relatedness, belonging and interdependence are among the important social incentives, this study focuses on social interaction and knowledge sharing as key possible areas of concern of college students. In addition, this study limits its scope within the college community and its respondents are individual college students. In real life, these full-time college students spend substantial amount of time on studying every day. This subject domain's regular daily tasks are all relevant to learning, collaboration and knowledge. Together, this study assumes knowledge sharing can significantly predict well-being of college students. Specifically, due to the heavy use of technology and online communication of individual college students, this study adopts an online knowledge sharing behavior scale to predict individual college student's well-being measured with their life satisfaction and their self-perceived success in relationships, self-esteem, purpose, and optimism.

The findings confirmed the significant positive relationship between online knowledge sharing behavior and satisfaction with life ($\beta = .115, p < .05$) as well as with self-perceived success in different aspects of life ($\beta = .176, p < .001$). Thus, the more the online knowledge sharing behavior involved, the higher the well-being of college students. In measuring online knowledge sharing behavior, there are actually three main components. Specifically, it measures online activities, it refers to a two-way communication, and it involves understanding and application of knowledge. That is, this study tries to incorporate social interaction and knowledge exchange in a specific online communication context of college students. The results also supported the theoretical grounds from Bowlby (1969) on attachment, Veroff and Veroff (1980) on social incentive, Hill (1987) on affiliation motivation, and Baumeister and Leary (1995) on belonging, in understanding the developmental needs of college students.

4.2 Limitations and further studies

The low predictive power of online knowledge sharing to well-being suggests that there are other possible factors related to the well-being of college students. This study did not consider more traditional factors to well-being, such as, happiness and income (e.g., Biswas-Diener et al. 2010; King & Napa 1998), as the study would like to target on specific factors to the college community and the learning context. However, more potential factors from both top-down and bottom-up dimensions should be included in further studies. In addition, this study only collected data from a local university and this may limit the generalizability of the results. Although the respondents in the present study came

from various departments and various years of study from the university, further studies may adopt a more rigorous random sampling procedure in order to get a more representative sample.

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