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AN EMPIRICAL STUDY OF COLLECTIVE CONTINUANCE INTENTION ON VIRTUAL COMMUNITY PAGE OF SOCIAL NETWORK SITE

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Abstract

Web 2.0 sociable technologies (such as social network sites, SNS) create new online interpersonal collaboration and communication. Particularly, given the proliferation of virtual community page (VCP, ex. Facebook fan page and group) participation, the sustainability of VCP has been recognized as a critical issue. While existing studies have started to address this issue through classical individual-based models to investigate the use of SNS, some argued that individual approach may not be appropriate view point to explain "social" action. To fill this void, drawing on collective intention perspective, this study develops a model that investigates the relationship between organizational citizenship behaviours (OCBs), social loafing, group cohesion, and collective continuance intention on VCP of SNS. Based on 139 Facebook VCP users, we confirm our hypotheses that group cohesion positively affects OCBs which in turn influences collective continuance intention on VCP. Our research model broadens our knowledge about collective continuance intention on VCP of SNS.

Keywords: social network sites, virtual community page, collective continuance intention, organizational citizenship behaviours, altruism, conscientiousness, group cohesion, social loafing.

1   INTRODUCTION

In recent years, the proliferation of web 2.0 applications led to emergence of social network sites (SNS) such as Facebook, Twitter, and MySpace. According to Forrester Research (2008) Statistics report, more than 75% of Internet users join a wide variety of community media platform. In addition, Nielson Company and McKinsey (NM Incite 2011) published also pointed out that (1) users of internet spend more time on social network sites (SNS) and (2) 4/5 internet users participate in communities of SNS. Accordingly, SNS has become one important channel on internet. Such growing SNS usage also represents a novel social phenomenon that more social interactions (i.e. participation and continuance) occur on SNS.

SNS has some distinctive features that each user not only can be basically allowed to create and construct profile, online personas, and build a social networking list with other users, but also specially create virtual community page (VCP) (ex. Facebook fan page and group) and interacting with community members on it (Boyd and Ellison 2007; Chueng and Lee 2010). Practitioner viewed such VCP in SNS as a natural way for interacting with their customers and attracting more visitors to their VCP than traditional website (Cheung and Lee 2010). Therefore, many companies (such as: Coca Cola, Ford, IBM, Hewlett Packard, Xerox and other companies) not only encourage organization members to use SNS, but also apply and establish their own VCP in SNS. Therefore, the survival of VCP in SNS became vital and it depends on how retaining and activating their VCP members participation continually. However, a challenge in sustaining such VCP in SNS is to stick its members to continually participate in. In other word, the factors that influences VCP members' usage experience and their continual intentions which are important to VCP development strategies. Unfortunately, related works still remain less and it prevents us to know about how VCP keep sticking their members.

While recent works denoted that multiple factors including justice and trust (Fang and Chiu 2010) may influence on individual continuance to virtual communities, Cheung and Lee (2010) proposed that collective continuance intention to use SNS would be affected by social influence. Their result is consistent with Bagozzi and Dholakia (2002) study who argued that most part of human behaviour would not be characterized by isolated individual action. In other words, social behaviour like collective intentional continuance intention to use VCP in SNS could be affected by social interaction factors such as cohesiveness, social loafing, and organization citizenship behaviours (OCBs). Thus, the aim of this study is not only to provide explanations of how VCP members' intentional continuance social action (i.e. to use VCP in SNS collectively) is formed, but also to broaden our understanding of this social action through the lenses of OCB theory and perception of social interaction. A developed research model on collective continuance intention to use VCP in SNS would be examined in this study empirically. Like Cheung and Lee's study, the construct of collective intention (We-Intention) (Bagozzi and Dholakia 2002; Bagozzi and Lee 2002) is adopted to investigate the continuance intentional social action of VCP usage in SNS. Also, we adapted the measurement developed by Dholakia et al. (2007) and validate these measures of collective continuance intention to use VCP in SNS.

2   THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

As shown in Figure1, this study proposes three groups of hypotheses: (1) the influence of OCBs on collective continuance intention of VCP use in SNS—H1 and H2 (2) the impact of perceived group cohesion on OCBs — H3 and H4, (3) and the impact of perceived social loafing on OCBs — H5 and H6.
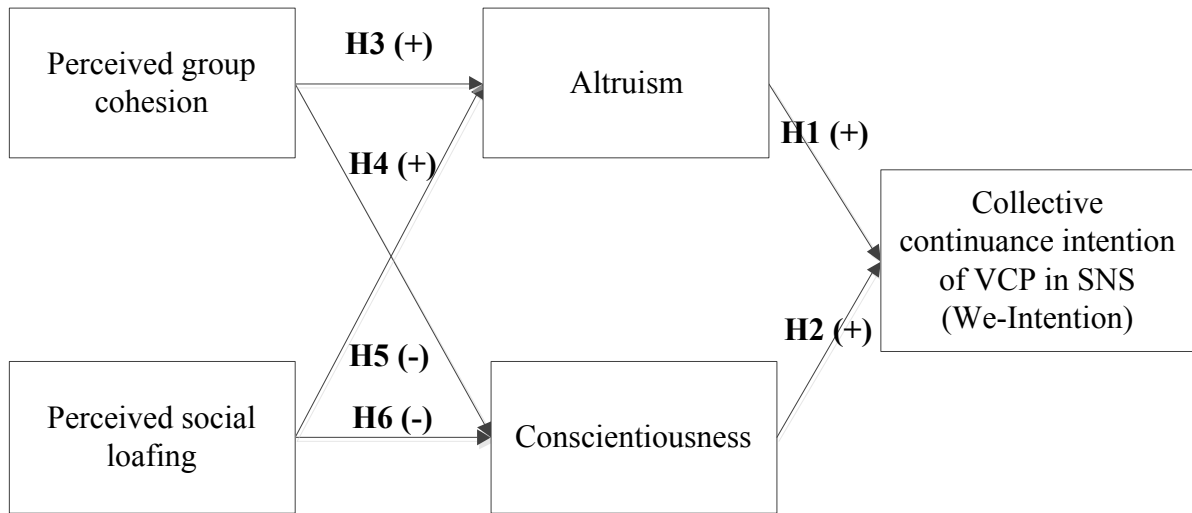
Figure 1. Research model

2.1 Collective continuance intention of use VCP in SNS

Social psychologists explore patterns of human behaviours while people engaged in activities of individuals and groups and mainly divide those patterns into three modes, including (1) the classic individual based models, (2) contingent consistency and other normative based models, and (3) group-based models (Bagozzi and Lee 2002). Prior works (Davis 1989, Venkatesh et al. 2003, Bock et al. 2005) on individual aspects of technology use were mostly based on the classic individual based models. In particular, those studies usually focus on the use of standalone IS (Cheung and Lee 2010, Kankanhalli et al. 2005). Previous studies also show that this approach is indeed useful for explaining individual intention (I-Intention, II) to use new technology or information systems. They also found that IS user form an intention might depend on individual reasons (ex. intrinsic motivation, extrinsic motivation, perceived performance expectation, etc.) (Davis 1989, Davis et al. 1992, Venkatesh et al. 2003, Bock et al. 2005). In SNS, people can contribute, interact, and collaborate with others more easily and naturally than traditional IS. In other words, the collective-aimed actions such as social connection and collaboration might become main part of online actions in SNS. This implied that the group-based models (We-Intention, WI) would be a more appropriate way to investigate VCP members' collective behaviour in SNS.

Different from II, researcher viewed WI as a collective commitment while perform a group action. WI thus academically were defined as "commitment of an individual to participate in joint action, and involves in an implicit and explicit agreement between the participants to engage in that joint action" (Tuomela 1995). For instance, while people with WI perform a specific action implied that group members' involvement is the vital parts of this action. Thus, this study adopts WI for investigating collective continuance intention to use VCP in SNS is more properly than II.

2.2 Organizational citizenship behaviours

Organ (1988) defines OCB as "individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system and that in the aggregate promote (p. 4)." In organization literature, OCBs are critical predictors of organizational performance (Organ, 1990). It is reasonable

that we can view VCP as a kind of self-organized virtual communities (organization), so OCBs might still play an important role especially in such virtual environment (i.e. VCP in SNS) with lack of formal reward system (Fang and Chiu, 2010, Chou et al. 2010). According to Williams and Anderson (1991), there are two types of OCBs in organization research, including organizational citizenship behaviour – individuals (OCBI) and organizational citizenship behaviour-organizational (OCBO). While the former comprises behaviours that directed at other individuals such as altruism, the latter includes behaviours that aimed at the organization as a whole such as conscientiousness. Altruism indicates that one concerns the welfare of others and wants to help others voluntarily even at some cost oneself (Organ 1988; Organ, 1990). Wasko and Faraj (2000) found that altruism is as an enabler of participating in electronic communities of practice. Kwok and Gao (2004) denoted that altruism as a driver for knowledge sharing in decentralized P2P virtual community. Recently, Fang and Chiu (2010) found that altruism is positively associated with knowledge-sharing continuance intentions in virtual community. On the other hand, conscientiousness, as a kind of OCBO, refers to any actions beyond the minimum requirements of the organization (Organ, 1988). Coyne and Ong (2007) found that OCB would push individual to participate in organization tasks. Recent study also shows that higher conscientiousness is more likely to involve in continuance intention of knowledge-sharing (Fang and Chiu 2010). It is reasonable that OCBs (i.e. altruism and conscientiousness) might have positive influence on collective continuance intention of VCP member in SNS. Thus, we propose the following hypotheses:

H1: VCP members' altruism is positively related to their collective continuance intention of VCP in SNS.

H2: VCP members' conscientiousness is positively related to their collective continuance intention of VCP in SNS.

2.3   Group cohesion and social loafing

In our study, group cohesion is viewed as an enabler of OCBs. Carron and Brawley (2000) defined group cohesion as the propensity for a group to be unity while working toward a group goal. In organization research, group cohesion contributes to group performance (Mbaatyo 2001; Carron et al .2003; Cartwright 1968). Also, Hardy and Carron (2005) found higher group cohesion results in higher trust between team members. In recent IS studies, while group cohesion has been viewed as a vital predictor of ERP implement performance (Wang 2006), Shiue et al. (2010) argued that group cohesion plays important role in online community.

In VCP, group cohesion refers to the perception of how group members unite to achieve their common goal. While VCP members feel that group interact smoothly as one unit, they might spend more time and effort to contribute to the VCP. In other word, they might be more likely to help others and do more good to the VCP which they belong to. Thus, the following hypotheses are proposed:

H3: VCP members' perceived group cohesion is positively related to their altruism.

H4: VCP members' perceived group cohesion is positively related to their conscientiousness.

By contract, social loafing in this study is treated as an obstacle of OCB. Prior works denoted social loafing is a phenomenon that group member put out less effort when working in a group than working alone (Karau and Williams 1993; Williams et al. 1981; Williams and Karau 1991). Ringelmann (1913) found that individuals tend to reply on their co-workers to achieve their common task, because that they suppose that others will not care about how much they contribute to. In organization research,

previous works found similar reasons for explaining effect of social loafing (Brewer, 1995; Harkins and Szymanski, 1988; Szymanski and Harkins, 1993; Jackson and Williams 1993). In IS studies, some argued that social loafing is serious problem in most online communities (Shiue et al. 2010; Ridings et al. 2006). For instance, Ridings et al. (2006) found that the growth of online community would be hindered when social loafing occurs. Shiue et al. (2010) also argued that social loafing play a harmful role in virtual community development. In VCP, it is reasonable that social loafing is still likely to impede OCB in VCP of SNS. In other words, while VCP members think that one or more members are free riders, they may be unwilling to contribute to which VCP they participate in. Then, we proposed following hypotheses:

H5: VCP members' perceived social loafing is negatively related to their altruism.

H6: VCP members' perceived social loafing is negatively related to their conscientiousness.

3 METHODOLOGY

3.1 Sample, data collection, and questionnaire

To examine our research model, we used a convenience sample of Facebook VCP members (i.e. members who join fan page or groups) and employed the survey method for data collection. We first constructed the preliminary questionnaire which is based on original measures in English. Then, each item of questionnaire was adapted to the context of this study. This version of the questionnaire was modified several times to be suitable to the context of VCP in SNS and then translated into Chinese by a bilingual research associate. Two MIS professors and one senior doctoral student who are familiar with IS continuance issue helped verify and refine the Chinese version of questionnaire to ensure the translation accuracy and readability. With the help of four research assistants who are familiar with Facebook, 139 students were willing to fill out the questionnaire. 93 of them completed the questionnaire and returned it to us. A total of 93 valid responses were used for data analysis. Table 1 demonstrates the respondents' profile and demographic information respectively.

All constructs, including collective continuance intention of VCP in SNS, altruism, conscientiousness, perceived group cohesion, and perceived social loafing were measured using multi-item scales. All items employed seven-point Likert scales from "1: very strongly disagree" to "7: very strongly agree". Each item was developed based on validated measures from related literature. The operational definition of each constructs is also described in Appendix.

Gender	# of Response	%	Experience of SNS	# of Response	%
Female	56	60.2%	~2 years	34	36.5%
Male	37	39.8%	2~3 years	26	27.9%
Total	**93**	**100%**	3~4 years	22	23.7%
Age			4~ years	11	11.9%
~20	9	9.6%	**Total**	**93**	**100%**
21~25	79	84.9%			
25~	5	5.5%			
Total	**93**	**100%**			

Table 1.   Profile of respondents.

3.2 Data analysis

PLS (SmartPLS version 2.0 M3) (Ringle et al. 2005) was employed to examine the proposed hypotheses. In IS literature, PLS is one widely adopted structural equation modeling technique. By

using component-based estimation method, there is no restriction of normal distribution and small sample sizes are acceptable (Chin et al. 2003). Thus, it is proper to employ PLS for investigate our research model. In this study, two-stage analytical procedures (Hair et al. 1998) were also conducted for evaluating the measurement model and the structural model. Results were shown as following section.

4   RESULTS

4.1   Measurement model

To assess the measurement model in PLS, we examined reliability, convergent validity, and discriminant validity. We first tested composite reliability and average variance extracted (AVE) of the measures (Hair et al. 1998). 0.7 is a recommended value for a reliable construct (Chin et al. 2003). The values of composite reliability ranged from 0.879 to 0.940 as listed in Table 2, showing acceptable reliability. As to the AVE, a score of 0.5 implies acceptability (Fornell and Larcker 1998). From Table 3, the measures of AVE ranged from 0.647 to 0.838, indicating the acceptability.

Measures	Items	Composite Reliability	Average variance extracted (AVE)	Cronbach's Alpha
ALT	3	0.886	0.722	0.814
COH	7	0.932	0.663	0.915
CONS	3	0.922	0.797	0.872
SOL	4	0.879	0.647	0.857
WI	3	0.940	0.838	0.904

*Table 2.   Reliability and average variance extracted of the constructs*

Finally, we investigated the discriminant validity of our measures by looking at the square root of AVE (Fornell and Larcker 1998). Based on the results shown in Table 3, the square root of AVE for each construct was greater than the levels of correlation involving the construct. The results of the inter-construct correlation also revealed that each construct shared larger variance with its own measures than with other measures, establishing the discriminant validity.

	Mean	S.D.	ALT	COH	CONS	SOL	WI
ALT	4.857	1.066	0.850				
COH	4.819	1.278	0.447	0.814			
CONS	4.817	1.038	0.701	0.483	0.893		
SOL	3.935	1.301	-0.174	-0.161	-0.185	0.804	
WI	5.211	0.987	0.508	0.251	0.521	0.231	0.916

Table 3.   Correlation between constructs

4.2   Structural model

The aim of structural model is to examine the path coefficients significant or not. After the acceptable measurement model, we then employ PLS to validate the proposed research model, including estimating the significant level of each path coefficient (or β) and the amount of predictive power by the independent variables (or R^2). A bootstrap resampling procedure (resamples of 300) was performed for conducting a confidence estimation procedure. The results are shown in Figure 2 and summarized in Table 4.
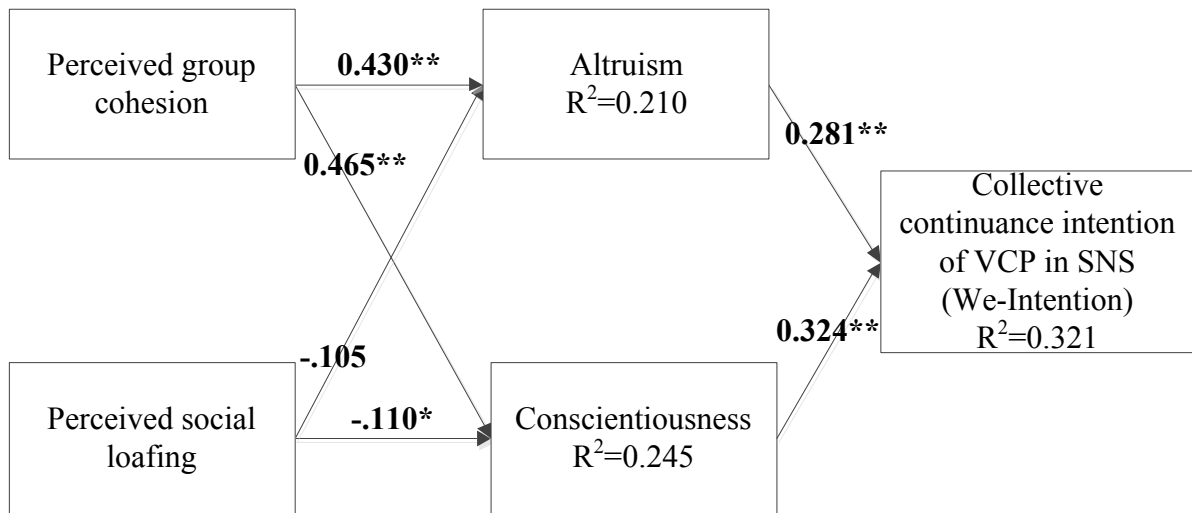
Note. *: p<0.05, **: p <0.01

Figure 2.   Results of PLS analysis

Hypotheses	Beta(t-value)	Results
H1: ALT→WI	0.281(3.620)**	Supported
H2: CONS → WI	0.324(4.154)**	Supported
H3: COH→ALT	0.430(8.157)**	Supported
H4: COH →CONS	0.465(9.906)**	Supported
H5: SOL → ALT	-.105(1.406)	Not Supported
H6: SOL → CONS	-.110(1.942)*	Supported

Table 4. Results of hypothesis testing

For members' altruism (R^2 = 0.21), VCP members' perceived group cohesion is found as a significant antecedent while social loafing is not. Furthermore, perceived group cohesion and social loafing are both counted for 24.5% of the variance of members' conscientiousness. Finally, for collective continuance intention, the structural model explains 32.1% of the variance.

As shown from hypotheses testing results, H1 (β = 0.281, p< 0.01) and H2 (β = 0.324, p< 0.01) are both supported as expected. The above results demonstrate that both VCP members' altruism and conscientiousness affect collective continuance intention of VCP (WI) significantly. VCP members' perceived group cohesion positively influences both altruism (H3, β = 0.430, p< 0.01) and conscientiousness (H4, β = 0.465, p< 0.01). While VCP members' perceived social loafing has no causal relationship with altruism, hypothesis 5 is not supported. Finally, the relationship between VCP members' perceived social loafing and conscientiousness is significant (H6, β = -.110, p< 0.05).

5   CONCLUSION

The goal of this study is to develop and examine empirically a VCP members' collective continuance intention model in SNS context. Our findings increase the understanding of how such a collective social action (i.e. collective continuance intention) can be improved by levering OCBs, and how perception of social interaction within VCP to influence OCBs. In sum, the results advance research on VCP in SNS setting. Our findings have the following insights.

First, the results indicate that perception of social loafing will hinder the community members' OCBs especially for conscientiousness. It can be viewed as a behavioural obstacle that creates a negative

attitude towards OCBs and this is consistent with previous studies (Shuie and Chiu 2010). In VCP, the factors that enhancing social loafing, including the absence of evaluation for individual performance, lower identifiability, and higher expectation toward co-members, will corrode the tendency toward OCBs. For practitioners, the mechanisms that can decrease the members' perceived social loafing will also prevent them from engaging in social loafing behaviour.

Second, group cohesion is found as an important factor in enhancing OCBs. Therefore, designing and holding highly cohesive activities, such as collaborative activities in VCP, might uplift the perception of group cohesion and contribute to the formation of OCBs between the VCP members. It is a reasonable that a united climate of VCP is attributable to more collaborative interaction. While the number of times of those interactions is appropriate, OCBs might occur in suitable time. Thus, the result denoted that group cohesion will probably result in strong OCBs.

Third, this study identifies the factors (i.e. two OCBs – altruism and conscientiousness) salient to collective continuance intention of VCP use. There is sufficient evidence that the altruism and conscientiousness lead to higher levels of collective continuance intention. In addition, conscientiousness is particularly important in determining user decision to continuance on VCP in SNS. This is consistent with previous studies that OCBs enhance members' intention to involve in organization activities.

Given the proliferation of VCP participation, the sustainability of VCP becomes more important. By using different theories (e.g. the OCB view and perception of social interaction), this study successfully deepen our understanding about how OCBs helps a VCP improve its stickiness in SNS context, including increasing the tendency of OCBs.

6   LIMITATION AND FUTURE RESEARCH

This study has three limitations. First, we emphasized a limited number of variables that may affect collective continuance intention. Although these factors play important roles in affecting dependent variable, other factors such as flow experience and SNS self-efficacy may also influence collective intention. Second, this study emphasized the impact of OCBs and perception of social interaction on collective continuance intention, but we did not consider the interaction effect of them that may also affect the forgoing relationships. Future study may take this into consideration. Finally, the cross-sectional natures of this study, the inference of causality among forgoing relationships does not be allowed. Future study may conduct a temporal comparison for realizing how these underlying variables change over time in VCP.

Appendix

Constructs	Items	Definition	Source
Collective continuance intention of VCP in SNS	3	The degree to which VCP member believes that they will engage in using VCP of SNS continually	Adapted from Bagozzi and Dholakia (2002), Cheung and Lee (2010)
Altruism	3	The degree of VCP member's positive feelings about helping other VCP members even cost themselves	Adapted from Fang and Chiu (2010)
Conscientiousness	3	The degree of VCP member's positive feelings about improve themselves for contributing to VCP voluntarily	Adapted from Fang and Chiu (2010)
Perceived group cohesion	7	The perception of togetherness	Adapted from Shiue et al. (2010)
Perceived social loafing	4	The perception that other members contributing less than I anticipated	Adapted from Shiue et al. (2010)

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