

Research on the Continuous Knowledge Sharing Behavior of Virtual Community Based on Ecm-Isc

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Keywords: Pls, Continuous knowledge sharing behavior, Structural model

Abstract: This study aims to explore the influencing factors of the continuous knowledge sharing behavior of users in mobile knowledge sharing platform in virtual communities, and to provide management advice and reference for the operation and management of knowledge sharing platform. In this study, relevant data of 209 virtual community users were obtained through questionnaire survey. Smart PLS was used to analyze the data, to evaluate the measurement model and structural model, and to verify the effects of hypothesis testing and mediation. The results show that belonging plays a mediating role in the relationship between satisfaction and intention to continuous knowledge sharing. The multiple mediating effects of intention to continuous knowledge sharing and user habits on belonging and intention to continuous knowledge sharing are significant. This study takes the sense of belonging as a mediating variable to explore the mechanism of continuous knowledge sharing behavior from the perspective of emotion.

1. Introduction

Virtual community refers to the discussion of social groups on the network platform. After community members establish emotions with each other, an interpersonal network is formed [1]. The success of the virtual community depends on the continuous participation of users rather than the initial adoption, and the continuous knowledge sharing of users is more important than the initial acceptance [2]. A virtual community of Knowledge sharing builds a new system of knowledge generation, storage, sharing and use, which provides resources, technology and environment for knowledge sharing, and knowledge sharing also provides impetus for the sustainable development of virtual community.

On the whole, scholars seldom study users' continuous use behavior from the affective factors. Virtual community belongs to a learning information system. Users can meet their knowledge needs by asking questions and searching for knowledge, and they can improve their self-worth by sharing existing knowledge. Emotional factors will have a great impact on users' willingness and behavior to continue knowledge sharing. Sense of belonging is the emotion among members of a virtual community and associated with the group, as well as the shared belief that the needs of members can be met through their shared commitment. This study built a research model based on the ECM-ISC model and the technology acceptance model, and conducted an empirical test to reveal the mechanism and mediating effect of belonging on users' intention and behavior of continuous knowledge sharing.

2. Literature Review and Hypotheses

2.1 Ecm-Isc and Continuance Knowledge Sharing

Bhattacharjee [3] builds a theoretical model of information system continuous use (ECM-ISC)

based on expectation confirmation theory, and verifies that users' willingness to continue to use is determined by satisfaction and perceived usefulness, and expectation confirmation determines user satisfaction and perceived usefulness. Fishbein and Ajzen [4] first proposed the Theory of Reasoned Action (TRA), believing that individual behavior can be reasonably inferred from intention to some extent. Davis [5] proposed the Technology Acceptance Model (TAM) when studying the user's Acceptance of the information system, which was based on the theory of rational behavior (TRA). It believed that the intention to use was the main factor that determined the user's behavior, and other factors affected the user's behavior by affecting the intention. Ye et al.[6] proved that there is a strong direct relationship between intention and behavior. Yen [7] et al. showed that perceived usefulness significantly affected users' satisfaction with knowledge sharing behavior. The following hypotheses can be made:

H1a: Expectation confirmation is positively related to perceived usefulness.

H1b: Expectation confirmation is positively related to satisfaction.

H1c: Satisfaction is positively related to continuance knowledge sharing intention.

H1d: Perceived usefulness is positively related to satisfaction.

H1e: Perceived usefulness is positively related to continuance knowledge sharing intention.

H1f: Continuance knowledge sharing intention is positively related to continuance knowledge sharing behavior.

2.2 Sense of Belonging and Habit

Sense of belonging was first proposed by Maslow. It is used to describe the degree of identification of an individual or collective to something and the closeness of its association. This emotion exists objectively and can affect people's behavior. Hageyrtu [8] defines belonging as an individual's experience of participating in a system or environment in such a way that the individual feels part of that system or environment. Verplanken [9] first argued that habit is an unconscious mental activity that is difficult to control and goal-oriented. Limayem M (2007) [10] further extended the model by integrating the habit and ECM-ISC model, and extended the final dependent variable to continuous use. Kim et al. [11] found that habits are beneficial for increasing persistent behaviors. Hars and Ou [12] found that the more an individual considers himself to be a member of the virtual community, the more he is willing to contribute to the virtual community. If users form emotional connections with other members of the virtual community through frequent interactions, they are more likely to repeat the action. The following hypotheses can be made:

H2a: Satisfaction is positively related to the sense of belonging.

H2b: Sense of belonging is positively related to continuance knowledge sharing intention.

H2c: Sense of belonging is positively related to habits.

H2d: Habits is positively related to Continuance knowledge sharing behavior.

3. Methods

3.1 Measure Development

Table 1 Profile of Respondents.

Category	Item	Frequency	%
Gender	Male	98	46.89
	Female	111	53.11
Position	Senior high school	34	16.27
	Undergraduate	108	51.67
	Master Student	67	32.06
Age	<18	7	3.35
	18-25	103	49.28
	26-35	73	34.93
	35 and above	26	12.44
Virtual community knowledge sharing experience	< 6 months	37	17.70
	6 months-1 year	34	16.27
	1-3 years	89	42.58
	> 3 years	49	23.45

The questions were all adapted from the classical literature in the relevant field, and Likert 7-level scale was, ranging from very disagree to very agree. Questionnaire survey through the network platform, ultimately recycling effective questionnaire 209(Table.1)

3.2 Data Analysis and Result

This study using PLS for data analysis, and use SmartPLS3.0 of structure model and hypothesis test, using the PLS Algorithm to verify the path of the relationship between the variables.

3.2.1 Measurement Model Validation

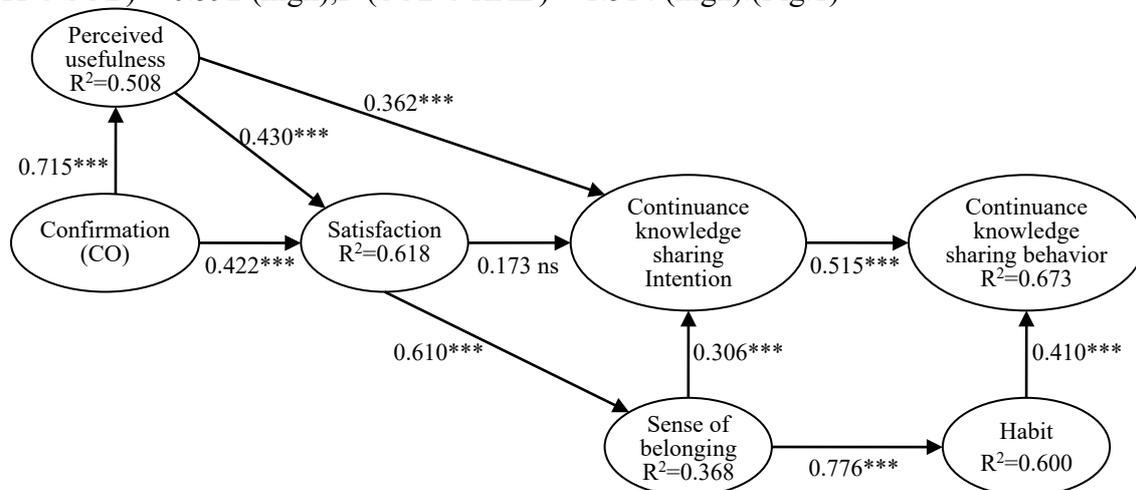
There's no multicollinearity problem(VIF<4). Cronbach's Alpha was all greater than 0.7. Combined Reliability all above 0.7. AVE is all greater than 0.5 (Table.2)

Table 2 Overview of Measurement Model.

Constructs	Items	Cronbach's Alpha	AVE	CR
CO	3	0.876	0.802	0.924
PU	3	0.885	0.814	0.929
SAT	3	0.759	0.675	0.861
CSI	3	0.804	0.719	0.885
CSB	4	0.872	0.722	0.912
SOB	3	0.850	0.769	0.909
HAB	3	0.756	0.672	0.860

3.2.2 Structural Model with Results

R^2 (CSB) =0.673 has high explanatory power, and $0.368 \leq R^2$ (SOB, PU, CSI, HAB, SAT) ≤ 0.618 has moderate explanatory power. f^2 (CO→PU) = 1.045 (high), f^2 (CSI→CSB) = 0.546 (high), f^2 (SAT→SOB) = 0.592 (high), f^2 (SOB→HAB) = 1.514 (high).(Fig.1)



*p<0.05 **p<0.01 ***p<0.001 ns: not significant

Fig.1 Research Model with Results.

3.2.3 Mediating Effect of Sense of Belonging between Satisfaction and Continuanace Knowledge Sharing Intention.

Table 3 Mediating Effects Of Satisfaction.

Path	Path coefficient	P value	Result
SAT→CSI	0.630	***	Positive effect
SAT→SOB	0.612	***	Positive effect
SOB→CSI	0.371	***	Positive effect
SAT→ CSI	0.398	***	Positive effect

H1c: satisfaction is not significant to the intention to continue knowledge sharing, which is inconsistent with previous research results. Therefore, the mediating effect of the latent variable belonging between satisfaction and the intention to continue knowledge sharing is tested, Shows in

Table3. Sense of belonging in the satisfaction to the partial intermediary effect between knowledge sharing intention, the mediation effect of total effect ratio was 36.04%.

3.2.4 Multiple Mediation in the Relationship between Sense of Belonging and Continuance Knowledge Sharing Behavior

Table 4 Bootstrapping Test For Mediating Effect.

	Path	Product of Coefficients			Bootstrapping 95% BCa Confidence Interval	
		SE.	T	p	Lower	Upper
Total Indirect Effects	SOB→CSB	0.064	8.122	***	0.393	0.644
Total Effects	SOB→CSI	0.047	13.117	***	0.520	0.705
	CSI→CSB	0.073	6.373	***	0.326	0.608
	SOB→HAB	0.031	24.673	***	0.712	0.834
	HAB→CSB	0.083	3.577	***	0.138	0.464
	SOB→CSB	0.041	17.093	***	0.613	0.778
Specific Indirect Effects	SOB →CSI→CSB	0.053	5.446	***	0.191	0.394
	SOB →HAB→CSB	0.067	3.427	***	0.105	0.367

Both continuous knowledge sharing intention and habit have significant mediating effects between belonging and continuous knowledge sharing behavior. Further testing the mediating effect value difference between the intention and habit of continuous knowledge sharing with significant mediating effect, it is found that the mediating effect of continuous knowledge sharing intention is greater than that habit (the mediating effect difference is 0.06). Therefore, in the process of belonging influencing the continuous knowledge sharing behavior, it mainly plays a role through the continuous knowledge sharing intention and habit . However, these two components have a counteracting and inhibiting effect in this process, in which the willingness to continue knowledge sharing plays a greater role.(Table.4)

4. Discussion and Implication

PU and SOB is positive influence on CSI. The influence of SAT to CSI was not significant. This and previous isn't consistent, the reason is in the field of knowledge sharing has the ability to share knowledge of users can be more long time, some old academic study groups, but limited to the reasons of their own time, frequency of interaction in knowledge sharing platform is limited. CSI and HAB had a significant positive effect on CSB, this conclusion is consistent with the predecessors' research results. SOB positively affected HAB, this study beyond the previous definition of habit formation, can promote habit formation before because of repeated mechanism was established. SAT has a significant impact on SOB, this indicates that users' satisfaction with knowledge sharing increases, and their sense of belonging also increases, which indirectly affects HAB and CSB. SOB played a partial mediating role between SAT and CSI, indicating that the effect of SAT on CSI is partially realized indirectly through SOB. The mediating effect of CSI and HAB on SOB and CSB is significant. This study found that SOB through CSI and HAB chain multiple mediation indirect effects for CSB.

(1)The platform can improve the use of the system and the breadth of knowledge, enhance operability, systematize and update knowledge, and improve user satisfaction; (2) The platform can set up a reasonable incentive mechanism to protect the interests of users sharing knowledge, establish communication channels, strengthen the contact and interaction between community members, and enhance users' emotional belonging to the platform; (3) Cultivate user habits, use big data to appropriately push the content that users are interested in, and reward users with points according to the number of login times, interaction times, online duration, etc.

Acknowledgment

This study was supported by the National Social Science Foundation of China [Grant Numbers

19BSH120], the Major Projects of Philosophy and Social Sciences Research, Hubei province [Grant Numbers 20D023, 20D024], the National Training Programs of Innovation and Entrepreneurship for Undergraduates [Grant Numbers 201810488038] and Hubei Education Scientific Planning Project [Grant Numbers 2017GB018].

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