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UNDERSTANDING THE BLOGGERS' CONTINUANCE USAGE: INTEGRATING FLOW INTO THE EXPECTATION-CONFIRMATION THEORY INFORMATION SYSTEM MODEL

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Abstract

Blogs are very popular nowadays. Many big website portals, such as Yahoo Blog, PC home Blog, try to offer different functions and personal services to attract the potential users to be their Blog member, because this will bring more advertising income. For the portals, how to obtain users to continue use is very important to survival. Most previous articles focused on investigating system function and information quality issues on Blogs, but these technologies are very steady already. There are fewer studies to discuss the users' flow experience on using Blogs. The aim of this study investigated whether the users' flow experience affected the Bloggers' satisfaction and intention to continue using. 303 Bloggers were surveyed online. The research findings indicated that confirmation, perceived usefulness, flow, challenge, and arousal were positively affected to the Bloggers' satisfaction in using that Blog; perceived usefulness, satisfaction, flow were also positively influenced to the Bloggers' intention to continue using. In addition, the findings point out that the flow factors which we extend into ECTIS model weak positively influence satisfaction. The higher satisfaction users have, the more are continuance intention users get. Recommendations are given on how to make the Bloggers continue using Blogs for the service providers.

Keywords: Flow, Continuance Usage, Blogs, Expectation-Confirmation Theory Information System.

1 INTRODUCTION

The research of the Blog search engine *Technorati* shows that there are over one hundred and thirty three million people using the blogs every day. This research also points out that the most popular blogs help their owners earn about $6,000-7,500 advertising incomes (Technorati 2008). Market Intelligence and Consulting Institute (2008) investigates netmates behavior on blogs usage, and discovers that most of netmates have their own blogs, and the average usage is around two years. However, there are 32.3% of bloggers never updating their blogs after the establishment of their blogs. Reasons for this phenomenon are probably due to the bloggers' lake of time and their lost of interesting on blogs gradually. Our research, based on Post-Acceptance Model of IS Continuance (Bhattacherjee 2001a), the extended Expectation-Confirmation Theory in IS field, and the revised Hoffman and Novak's Conceptual Model of Online customer experience (Novak, Hoffman et al. 2000), explores the factors which may affect the bloggers' continuing blogs usage. We also integrate the "Flow" constructs into ECT in order to understand whether the bloggers' flow experiences influence their intentions to continue using blogs.

2 LITERATURE REVIEW

2.1 Expectation-Confirmation Theory

Expectation-Confirmation Theory (ECT) is a theory which focuses on what factors affect consumer satisfaction, product repurchase and service issues. In information system field, (Bhattacherjee 2001a) the Expectation-Confirmation Theory is also applied to explore the IS continuance intention, A Post-Acceptance Model of IS Continuance. Bhattacherjee considers that consumer repurchase intention is similar to user continuance intention. The main idea of the extended ECT is that the IS continuance intention is influenced by users satisfaction with prior IS use and perceived usefulness. Users' satisfaction is also affected by perceived usefulness and confirmation, and users' perceived usefulness is influence by their confirmation.

2.2 The Flow Construct

Proposed by Csikszentmihalyi (1975), "Flow" refers to a state of absorption deeply in an activity that is enjoyable intrinsically (Csikszentmihalyi 1990). People have flow experience in many kinds of activities, such as playing chess, dancing, writing, and reading (Csikszentmihalyi 1988). "Flow" can be divided into four parts in different situations: (1) flow state is with high challenge and high skill; (2) anxiety is with high challenge and low skill; (3) boredom is with low challenge and high skill, and (4) apathy is with low challenge and low skill (Csikszentmihalyi and Massimini 1985). While the users face more challenges and need higher skills, their flow experience will be increased. Moreover, the arousal state has positive influences on flow construct (Hoffman and Novak 1997; Novak et al. 2000) as well as the challenge factor (Hoffman and Novak 1997; Novak et al. 2000).

3 RESEARCH MODEL AND HYPOTHESIS

This research model is based on Post-Acceptance Model of IS Continuance, users' IS continuance intention is positively influenced by their satisfactions and perceived usefulness in their prior IS use experiences. Users' satisfactions are associated with their confirmation and perceived usefulness; and their perceived usefulness is affected by their confirmation (Bhattacherjee 2001a; Bhattacherjee 2001b; Hayashi et al. 2004; Hong et al. 2006; Roca et al. 2006; Liao et al. 2007; Limayem and Cheung 2008). These associations lead to the first to fifth hypotheses:

H1: User's satisfaction is positively associated with their continuance intention on using Blog.

H2: Users' perceived usefulness is positively associated with their continuance intention on using

Blog.

H3: User's perceived usefulness is positively associated with their satisfaction on using Blog.

H4: User's extent of confirmation is positively associated with their satisfaction on using Blog.

H5: Users' extent of Confirmation is positively associated with their perceived usefulness on using Blog.

The previous studies show that "Flow" is an important construct to understand the consumer's online behaviour. Factors which may affect flow construct are skills, the control, the interactive speed, challenges, arousal, the tele-presence, the time distortion, and focused attention (Hoffman and Novak 1996). In this study, we intend to know whether the flow experience in using blog will increase customer satisfaction or not. We suppose that if the bloggers have more challenges and arousal, their consumer flow experience may be positively influenced while using internet (Novak 1997; Thomas and Novak 2000). Thus, we include the challenge and the arousal construct into our research model. This assumption also leads to the sixth and the seventh hypotheses.

H6: The challenge is positively associated with their Flow on using Blog.

H7: The arousal is positively associated with their Flow on using Blog.

We think "flow" influences the users' satisfaction on using blogs. If bloggers have the flow experience, the flow experience will increase their satisfaction. Moreover, the challenge and the arousal affect bloggers' satisfaction, too. These assumptions lead to the eighth, ninth, tenth, eleventh hypotheses.

H8: User's flow is positively associated with their satisfaction on using Blog.

H9: User's challenge is positively associated with their satisfaction on using Blog.

H10: User's arousal is positively associated with their satisfaction on using Blog.

H11: User's extent of Flow is positively associated with their Continuance intention on Blog.

4　RESEARCH METHODOLOGY

4.1　Data Collection and Subjects

It collected empirical data for this research on online survey. The advantages of online survey comparing to traditional paper survey are faster response time, lower cost, and unlimited geography (Tan and Teo 2000). We placed the survey hyperlink on PTT, which is a large number of students and employers, and Wretch Blog (http://www.wretch.cc/blog/). The participants were asked to leave their E-mail address in order to avoid repeat responses.The subjects are the Bloggers who had Blog using experience. 330 Bloggers were surveyed online. It is 41.9% of male, 58.1% of female; most people are around 21-25 years old (65.3%); the level of education is above college (95.3%); students are occupied 72.9% of subjects; primary used Blog is Wretch Yahoo! (72.6%).

4.3　Measurement Development

In this research, the operationalization of each constructs as follows: Perceived Usefulness: The Bloggers is subjective assessment of the utility offered by the new IT in a specific task-related context with researching friends which adapted from (Gefen 2003); Arousal: The Bloggers feels interesting or has cordial emotions to continue doing activities which adapted from (Zimbardo 1994); Confirmation: The Bloggers' perception of the congruence between expectation of Blog use and its actual performance which adapted from (Bhattacherjee 2001a); Satisfaction: The Bloggers affect with (feelings about) prior Blog use which adapted from (Oliver 1981); IS Continuance Intention: The Bloggers intents to continued using the information system which adapted from (Bhattacherjee 2001a); Challenge: The degree of how difficult the Bloggers feels when they were using the Blog which adapted from (Jackson 1999); Flow: A state of complete absorption or engagement on Blog and refers to the optimal experience which adapted from (Csikszentmihalyi 1991). Measurement items are

shown in Table 1. All items used seven-point Likert scale; it is from "strongly disagree (1 point)" to "strongly agree (7 point)".

Construct	Measurement items	Source
Perceived Usefulness(PU)	I can move quickly to Blog what I want to browse. I can make decision quickly to move Blog what I want to browse. I can make decision quickly to link specific Blog.	(Gefen 2003)
Arousal (AS)	I feel stimulated when I was using Blog. I feel excited when I was using Blog.	(Thomas P. Novak Winter 2000)
Confirmation (CONFI)	I generally get the level of service I expect from my Blog. My Blog provides me with services as I would expectations. Services recommended to me by my Blog meet my expectations.	(Bhattacherjee 2001a; Bhattacherjee 2001b)
Satisfaction (SA)	I am satisfied with my decision my Blog use. I am happy with my earlier decision to use my Blog. My experience with using this Blog was very satisfactory. I think I did the right thing by deciding to use my Blog.	(Bhattacherjee 2001b)
Continuance Intention (INT)	I intend to continue using Blog rather than discontinue its use. I will keep using Blog as regularly as I do now.	(Bhattacherjee2001b) (Thong, Hong et al. 2006)
Challenge (CH)	Using the Blog provides a good test of my skills. I find that using the Blog stretches my capabilities to my limits.	(Thomas P. Novak Winter 2000)
Flow (FL)	I think I have ever experienced flow on the Blog. In general, I have experienced "flow" frequently when I use the Blog. Most of the time I use the Blog I feel that I am in flow.	(Thomas P. Novak Winter 2000)

Table 1.   Measurement items

5   DATA ANALYSIS AND RESULTS

5.1   Measurement model analysis

The measurement model is assessed by confirmatory factor analysis (CFA) using LISREL 8.8. To examine the Goodness of Fit Statistics of the overall CFA model is the first step. The measure indications of this model are fit in with the experts' suggestion. The statistics of fit indications are acceptable compared to the ideal level, as presented in Table 2.

Indications	χ^2	d.f	χ^2 / d.f	GFI	AGFI	SRMR	CFI	RMSEA	NFI	NNFI	IFI
Model	131	401.09	3.06	0.88	0.83	0.041	0.97	0.08	0.96	0.96	0.97
Ideal scale	--	--	< 5	> 0.88	> 0.8	< 0.1	> 0.9	< 0.08	> 0.9	> 0.9	> 0.9

Table 2.   Goodness of Fit Statistics for Measurement model

Second, the convergent validity is evaluated by the factor loading of items, composite reliabilities, average variance extracted (AVE), and discriminate validity mainly (Fornell and Larcker 1981). The factor loading of all items should exceed 0.5 (Nunnally 1978; Wixom and Watson 2001) and be significant (p<0.01) (Bock et al. 2005), composite reliabilities should exceed 0.7 (Bagozzi an Yi 1988), and AVE of each construct should exceed 0.5. In this research, all of the indices are fit for experts' suggestions (See Table 3).

Third, to test discriminate validity in measurement model analysis. The purpose is to discriminate the correlate from latent variables to others. The AVE for each construct should be greater than the square of correlation between others (Chin 1998). In this research, the discriminate validity is met (See Table 3).

Construct	Number of items	Reliability	AVE	Factor correlations						
				PU	AS	CONFI	SA	INT	CH	FL
PU	3	0.89	0.74	1						
AS	2	0.95	0.91	0.13	1					
CONFI	3	0.93	0.81	0.43	0.35	1				
SA	4	0.91	0.71	0.51	0.41	0.66	1			
INT	2	0.88	0.79	0.5	0.28	0.42	0.71	1		
CH	2	0.85	0.75	0.34	0.43	0.41	0.48	0.39	1	
FL	3	0.95	0.87	0.21	0.48	0.4	0.42	0.43	0.46	1

*Table 3.*   *Scale properties and correlations*

5.2   Structural Model analysis and evaluation of hypotheses

The measure indications of Goodness-of-fit in structural model are similar with CFA model. The statistics of fit indications are acceptable compared to the ideal level, as presented in Table 4.

Indications	χ^2	d.f	χ^2 / d.f	GFI	AGFI	SRMR	CFI	RMSEA	NFI	NNFI	IFI
Model	428.32	138	3.1	0.88	0.83	0.06	0.97	0.081	0.95	0.96	0.97
Ideal scale	--	--	< 5	> 0.88	> 0.8	< 0.1	> 0.9	< 0.08	> 0.9	> 0.9	> 0.9

Table 4.   *Goodness of Fit Statistics for Structure model*

In structural model, it is important to determine the significance and association of each hypothesized path, and the variance explained (R^2 value). It shows the path coefficient in standardized and the significance of each path which were reported by LISREL (See Figure 1). About the path significance of each hypothesized in this research, all of them were supported.
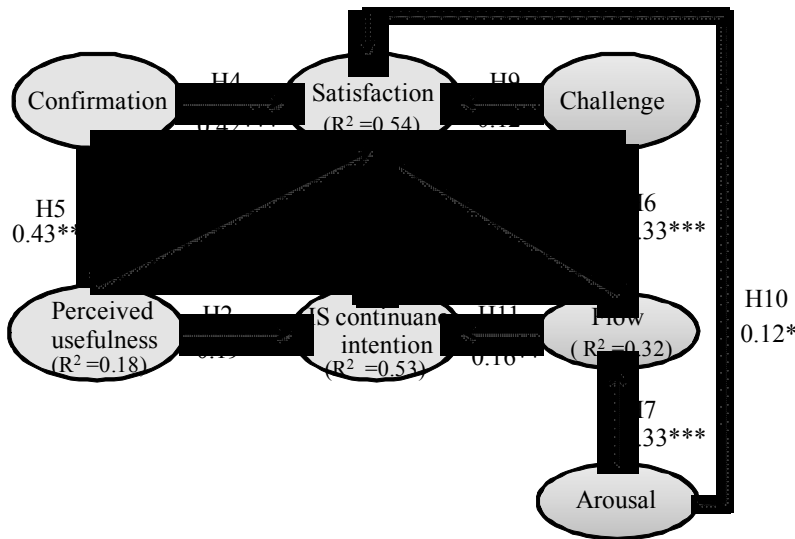
*p<0.05; **P<0.01; ***p<0.001

Figure 1.   *LISREL analysis of research model*

6   DISCUSSION

Although there are seven factors, which may affect the flow experience in Novak and Hoffman's model, we merely choose two of them in our extended ECTIS model, the challenge and the arousal factors. We assume that the challenge and the arousal are the most two important factors influencing the flow and the satisfaction of bloggers' continuing blog usage. The arousal factor means that bloggers perceived excited experience in using blogs, the challenge factor allows the bloggers to obtain more chances to strengthen their abilities, in writing or in their blog interface modification, and

these enhance the bloggers flow and satisfaction.

In this research, we find out that the confirmation, the perceived usefulness, the flow, the challenge, and the arousal are positive significant influence on bloggers' satisfaction. The more positive senses the bloggers experience, the more satisfaction the bloggers have. Besides, if the bloggers' post experiences conform to their expectations, bloggers will feel satisfied with using blogs.

Since blogger's perceived usefulness, satisfaction, and flow experience affect their blog continuance intention, especially the bloggers' satisfaction ($\beta = 0.54$), we suggest that the blog companies pay attention to the factors which can increase the bloggers' sense of usefulness, and offer more services that allow bloggers to have flow experiences and satisfaction to promote their continuance intention.

7 CONCLUSION

Based on ECTIS (Bhattacherjee 2001a), we set a new model to investigate the bloggers' continuance intention. We add the flow, the challenge and the arousal into our new model. We discover that flow experiences affect the blogger's satisfaction and continuance intention on blogs usage. Therefore, we advise blog companies to make efforts to increase bloggers' satisfaction and continuance intention.

About the subjects which are Taiwanese but not included other areas. It makes response the situation in Taiwan. In the other hand, about online survey, because of research time and cost we choose this way to survey, but it may cause that our raw data was from the Bloggers particular period situations, not for a long time to explore the factors to affect the Bloggers' dynamic behavior.

Our extended ECTIS model adds three flow factors, but the findings show that these factors just weak significant influence satisfaction. In the future, researchers are encouraged to add different flow factors in this model and to discover other crucial elements which may influence bloggers' satisfaction and continuance intention.

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