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Why do we blog? From the perspectives of technology acceptance and media choice factors

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Blogs, or weblogs, have rapidly grown in recent years. Blogs are easy to use, possess interactive features and attract widespread use, leading them to be recognised as a communication medium in web-based information technology. However, why do so many people use blogs? The purpose of this study is to incorporate the technology acceptance model (TAM) with media choice factors to explain and predict blog acceptance behaviours. The media choice factors include media richness, critical mass, social influence (SI) and media experience (ME). This study conducted an online field survey and applied the structure equation modelling method to investigate the empirical strength of the relationships in the proposed model. In this study, 521 experienced blog users were surveyed to examine this model. The results strongly support the proposed hypotheses, indicating that technology acceptance and media choice factors influence blog acceptance behaviours. This article provides implications and recommendations resulting from the study.

Keywords: blog; media choice; media richness; critical mass; social influence; media experience; technology acceptance model (TAM)

1. Introduction

Blogs, or weblogs, have rapidly grown in recent years. According to Technorati (Sifry 2008, Winn 2009), the number of blogs doubled to 133 million between March 2007 and August 2008. A blog is a website comprising blog posts, or content written by the blogger (weblog designer), and is typically organised into categories and sorted in reverse chronological order (Wright 2006). Most blogs are similar to personal diaries or are corporate marketing channels for engaging current as well as potential customers. Because creating pages on blogs is simple (Du and Wagner 2006), they have become a common web authoring tool for both the novice and the expert.

Blogs are a form of web-based information technology (Du and Wagner 2006). However, they differ from other websites in two ways. First, websites tend to have static or rarely changing content. Blogs, by contrast, are dynamic and are developed to facilitate and accommodate frequent changes in content, particularly by giving readers the opportunity to comment on the primary messages that appear on them (Kim 2005). In most instances, readers are able to contribute to social media, such as blogs, without requiring authorisation. Thus, completely two-way online communication is made possible (Wright 2006, Kaplan and Haenlein 2010).

A second difference involves the empowerment characterised by the ease with which users can place content on blogs (Du and Wagner 2006). The creator of the message prepares the content without having to be familiar with special coding and uploads the message to blogs by clicking the ‘Publish’ button. Therefore, blogs can be considered as an easy to use communication medium in web-based information technology.

Over the previous two decades, the technology acceptance model (TAM) (Davis 1989, Davis *et al.* 1989) has been widely used to explain and predict the acceptance behaviours of information systems (e.g. Adams *et al.* 1992, Agarwal and Karahanna 2000, Karahanna *et al.* 2006, Venkatesh and Bala 2008). The TAM suggests that both perceived usefulness (PU) and perceived ease-of-use (PEOU) are key determinants of the adoption of user technology. Although the TAM is a well established model, many studies have extended the TAM with other constructs in various web-based information technologies, such as trust in online shopping (Gefen *et al.* 2003), playfulness in a World Wide Web (WWW) context (Moon and Kim 2001), perceived risk in online transactions (Pavlou 2003), perceived enjoyment in internet-based learning (Lee *et al.* 2005) and social influence (SI) in online gaming (Hsu and Lu 2004). Blogs have been an emerging web-based information technology (Boulos and Wheeler

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2007); hence, the TAM could be applied to explain and predict the acceptance behaviours of blog. Therefore, our study extends the TAM with some other constructs to investigate blog acceptance behaviours.

Blogs are not only web-based information technology, but also a form of communication media (Kim 2005, Yates *et al.* 2008, Kaplan and Haenlein 2010). Yates *et al.* (2008) addressed the genre model (Yates and Orlikowski 1992) to evaluate media usage, including blogs as a form of media. Kaplan and Haenlein (2010) provided a classification of social media according to media richness and self-presentation and included blogs. Media have been conceptualised as transmission conduits (Axley 1984) or channels (Fisher 1978) through which information can be conveyed. Media vary in their capacity to convey information, which can influence individual and organisational media choices (Daft *et al.* 1987, Carlson and Zmud 1999). Several media choice theories have been developed to study individual and organisational communication, including media richness (Daft and Lengel 1984, Rice 1992), critical mass (Markus 1987), SI (Schmitz and Fulk 1991, Fulk 1993) and media experience (ME) (Sitkin *et al.* 1992). Consequently, the purpose of this study is to incorporate the perspectives of technology acceptance and media choice factors to investigate blog acceptance behaviour. This study may lead to a clearer understanding of how the two aforementioned structures influence blog acceptance behaviour. This study conducted an online field survey and applied the structure equation modelling method to investigate the empirical strength of the relationships in the proposed model.

2. Literature review

2.1. Blog

Weblogs, or blogs, are defined as 'frequently modified web pages in which dated entries are listed in reverse chronological sequence' (Herring *et al.* 2005, p. 142). The original blogs were used mostly for web pages with links to other sites or blogs of interest, providing blogger commentary for added value (Blood 2002). After mid-1999, when free and easy-to-use blogging software (Pitas, Blogger and Groksoup) was released, the nature of blogs changed with numerous blogs becoming more like personal websites containing diverse types of content posted in reverse chronological order. According to Winer (www.scripting.com), a blogging pioneer, blogs have four characteristics: personalised, web-based, community-supported and automated (meaning easy-to-use). Herring *et al.* (2005) presented the results of the content analysis of 203 randomly-selected weblogs and proposed that blogs have the following characteristics: are frequently updated, have reverse chronological

order, include a personal journal, exhibit an asymmetrical exchange and offer hyperlinks. Blogs have facilitated the communication process in becoming much larger, less technical, with a higher number of users. Therefore, blogs create a platform for dialogues between bloggers and readers. Through conversations initiated by bloggers and engaged in by readers, blog platforms build a solid base of shared experiences and mutual relationships.

Blogs are often viewed as similar to other media such as email, bulletin board systems and web pages. Blogs are a form of internet media (Kim 2005) and the social media equivalent of personal web pages, coming in a multitude of variations, from personal diaries describing the author's life to summaries of all relevant information in one specific field (Kaplan and Haenlein 2010). In the previous few years, blogs have become an increasingly popular form of communication on websites and have been adopted by users for several applications in domains such as journalism (Hall and Davison 2007), business (Tikkanen *et al.* 2009) and education (Chang *et al.* 2008). For example, teachers use blogs as a tool for encouraging interaction between students to facilitate learning (Chang *et al.* 2008). Corporate established blogs act as marketing channels for engaging existing and potential customers (Tikkanen *et al.* 2009). Two famous business examples include Jonathan Schwartz, CEO of Sun Micro-systems, who maintains a personal blog to improve the transparency of his company and the automotive giant General Motors. Blogs have become a popular social medium on websites for facilitating interaction in a variety of specific fields. Consequently, blog acceptance behaviour can be explained in part by the TAM. This article discusses blog acceptance behaviour from the perspectives of technology acceptance and media choice.

2.2. Technology acceptance model (TAM)

The TAM, adapted from the theory of reasoned action (TRA) (Fishbein and Ajzen 1975) and originally proposed by Davis (1989), has become a widely accepted model in the field of information systems to explain and predict an individual's acceptance of IT (Lee *et al.* 2003). The TRA suggests that an individual's behaviour is determined by his or her intention to perform the behaviour, which in turn is determined by the individual's attitude concerning the behaviour. The TAM is based on the belief-attitude-intention relationship of the TRA to explain an individual's IT acceptance behaviours.

The TAM assumes that an individual's attitude toward use affects behavioural intentions (BI), and that an individual's attitude toward using IT, is

determined by two beliefs: PU and PEOU (Davis 1989). Davis defined PU as 'the degree to which a person believes that using a particular system would enhance his or her job performance' (p. 320) and PEOU as 'the degree to which a person believes that using a particular system would be free of effort' (p. 320). PEOU will also influence PU. In addition, the belief persists that PU affects an individual's BI. Furthermore, both beliefs are influenced by external variables, such as development processes, system characteristics and SIs.

Based on the TAM, numerous studies have extended the TAM with other constructs to enhance the understanding of an individual's IT acceptance behaviour in a specific context. For example, Gefen *et al.* (2003) proposed trust as an extended variable of the TAM for online shopping acceptance research. Agarwal and Karahanna (2000) addressed cognitive absorption as a structure reflecting an individual's intrinsic belief in WWW acceptance. Moreover, other studies have shown that the TAM is a robust model of technology acceptance behaviour. The TAM has been successfully applied to predict technology acceptance behaviour, across time (Venkatesh 2000), across settings (Straub *et al.* 1997, Vance *et al.* 2008) and across samples (Taylor and Todd 1995). The TAM has not only been applied in job related IT acceptance (Gefen and Straub 1997, Lederer *et al.* 2000), but also revised in other IT applications such as entertainment (Hsu and Lu 2004), online consumer behaviour (Koufaris 2003, Kwon *et al.* 2007, Shin 2009) and media technology (Lederer *et al.* 2000). Because blogs are not only an IT application, but also a form of media, this research attempts to extend the TAM, using media choice factors to understand an individual's IT blog acceptance behaviours.

Although the TAM has been widely applied in MIS research, many limitations of the TAM also were discussed (Karahanna and Straub 1999, Agarwal and Karahanna 2000, Venkatesh and Davis 2000). Lee *et al.* (2003) investigated many TAM studies in a couple of decades and summarised its limitations as follows: the most commonly reported limitation is self-reported use, although 36 studies relied mainly on self-reported use, assuming that self-reported use successfully reflects actual usage. The second limitation is the generalisation problem, examining only one information system with a homogeneous group of subjects performing a single task at a single point of time. Other suggested limitations of TAM studies included student samples, a single subject (or restricted subjects), a one-time cross sectional study, single measurement scales and self-selection bias of the subjects. Consequently, follow-up IT acceptance studies which apply the TAM would avoid the limitations.

2.3. Media choice factors

Media have been conceptualised as transmission conduits (Axley 1984) or channels (Fisher 1978) through which information can be conveyed. Moreover, some researchers have considered the capacity of different media to convey data (Daft and Lengel 1984, Sitkin *et al.* 1992), while others have focused on the capacity of different media to convey symbolic meaning (Feldman and March 1981, Trevino *et al.* 1987). From the different perspectives of media, several interrelated theories and studies have examined a variety of contingencies that affect which media are chosen and how effective choices are likely to be. Several media choice theories have been developed to study individual/organisational communication and how to affect individual and organisational media attitudes, BI and usage behaviours (Carlson and Zmud 1994, Fulk *et al.* 1995, Webster 1998, Cameron and Webster 2005). Webster (1998) summarised the prior literature and outlined the media choice factors, including media richness (Daft and Lengel 1984, 1986, Daft *et al.* 1987, Rice 1992), critical mass (Markus 1987, Oliver and Marwell 1988), SI (Schmitz and Fulk 1991, Fulk 1993), individual characteristic ME (Sitkin *et al.* 1992), situational factors (Trevino *et al.* 1987, Rice 1992) and media symbolism (Trevino *et al.* 1990). This study selected media richness, critical mass, SI and ME, which are suited to the context of a blog, while excluding situational factors and media symbolism. The situational factors were excluded because blogs are a web-based application, that it is not limited by the distance between communication partners. Media symbolism was also excluded because a blog's symbolism is not clear. Media choice factors are introduced in the following sections.

2.3.1. Media richness

The media richness theory (MRT), introduced by Daft and Lengel (1984), suggests that the use of communication media in an organisation is a rational process that achieves a match between the information processing tasks and media capacities. Daft and Lengel (1986) defined media richness as the capacity of media to evolve shared meaning, overcome different frames of reference and clarify ambiguous issues to change understanding in a timely manner. Media richness could be measured by four criteria sets (Daft and Lengel 1986): (1) capacity for immediate feedback; (2) multiple information cues; (3) personalisation and (4) language verity. The MRT states that an organisation processes information to reduce uncertainty and equivocality (Daft and Lengel 1986). Uncertainty was defined as the difference between the amount of information required to perform the task and the

amount of information already possessed by the organisation (Galbraith 1977). Equivocality means that multiple and conflicting interpretations of an organisational situation exist (Weick 1976). Moreover, organisations can facilitate the amount of information to reduce uncertainty and the richness of information to reduce equivocality (Daft and Lengel 1986).

Rich media are thought to be ideal when communication is ambiguous. A richer medium can be seen as equally useful for unambiguous tasks as for ambiguous ones (Schmitz and Fluk, 1991). The capacity of processed information is as diverse as different communication media. Schmitz and Fulk (1991) ranked the order of media richness as face-to-face, telephone, email, personal written text (such as letters and memos), formal written text (for instance, documents) and formal numeric text. Face-to-face communication is the richest medium because it provides maximal immediate feedback, multiple cues via body language and tone of voice, and the message context is expressed in natural language.

Many blogs offer communication tools for supporting interactions with others and the most distinctive characteristics are comments and 'Trackback' (Miura and Yamashita 2007), a reverse hyperlink tracking referrer weblogs. Blogs are usually managed by one author only, but readers can leave a comment on posted entries and authors can answer with another comment or by posting a subsequent or revised entry (Kaplan and Haenlein 2010). Therefore, blogs provide the capacity for feedback through reader comments, which are managed by the author, allowing the author to maintain his or her own personal requirements. In addition, blog readers can maintain personal requirements through 'Trackback'. Moreover, multiple information cues are present on blogs, because the majority of blogs provide multimedia capability (such as pictures, music and emoticons) to very different cues more than just text content (Du and Wagner 2006). Consequently, the media richness of blogs can be measured by the set of media richness criteria provided by Daft and Lengel, with blogs falling somewhere on the media richness scale.

Numerous studies have been conducted using the MRT to investigate media selection and usage behaviour (Dennis and Kinney 1998, Carlson and Zmud 1999, Lim and Benbasat 2000, Trevino *et al.* 2000, Cameron and Webster 2005). Trevino *et al.* (2000), for example, found that general attitudes toward different media (including email, fax, letters and face-to-face meeting) were influenced by perceived media richness (PMR). Moreover, new media attitudes were also influenced by person and technology interaction factors. Dennis and Kinney (1998) tested the media richness in computer-mediated and video communication

to examine the effects of cues, feedback and task equivocality. Therefore, this study proposed media richness as the factor that reflected the acceptance behaviours of blogs. In this study, we used the four criteria (immediate feedback, multiple information cues, personalisation and language verity) defined by Daft and Lengel to measure the media richness of blogs.

2.3.2. Critical mass

Critical mass refers to 'a small segment of the population that chooses to make big contributions to the collective action while the majority do little or nothing' (Oliver *et al.* 1985, p. 524). This definition suggests that critical mass is the basis for producing collective actions. Blog acceptance requires the participation and collective actions from all individuals whose activities are affected by the technology. Markus (1987) indicated that 'even individuals who would prefer to use interactive media may not really perceive these media to be viable options in the absence of universal access' (p. 506). Moreover, Markus and Connolly (1990) showed that interactive media might fail without securing a critical mass of users for the technology. Hence, the success of blog acceptance is not only dependent on an individual's use of blogs, but on other responses to this use. If few people are willing to contribute to the blog, it would not be effectively used. Furthermore, from the network externality perspective, critical mass refers to the effect that the value of technology to a user increases with the number of people who adopt it (Nault and Dexter 1994, Wang and Seidmann 1995). For example, the more people who use email, the more valuable email is to each user. Online social networks work similarly, with sites such as Twitter and Facebook being more useful as more users join. Applying the network externality perspective, Luo and Strong (2000) indicated that users may develop a perceived critical mass (PCM) through interaction with others. The perception of critical mass is rapidly strengthened as more people participate in network activities. Consequently, achieving a 'critical mass' of users has been recognised as the key to successful media acceptance (Markus and Connolly 1990, Grudin 1994, Lim *et al.* 2003, Cameron and Webster 2005, Slyke *et al.* 2007). Therefore, this study proposed critical mass as the factor that reflected blog acceptance behaviours.

2.3.3. Media experience (ME)

ME, representing individual use, skills and comfort with the media (King and Xia 1997), plays an important role in influencing user attitudes and can facilitate or constrain choices and general use (Sitkin

et al. 1992, King and Xia 1997). Some individuals may have little or no experience or skill with media and, as a result, have negative attitudes toward it and may avoid using it (Webster 1998). Schmitz and Fulk (1991) indicated that expertise in using new media facilitates choice and use. Moreover, human behaviour is influenced more by self-interest and is more efficiency oriented than rationality motivated (Williams *et al.* 1985). However, human behaviour is also experience-based. If individuals are uncomfortable or unfamiliar using a new medium and view learning a new medium as more time consuming and inefficient than using traditional media, they would choose a familiar medium rather than a rationally efficient medium (King and Xia 1997).

Carlson and Zmud (1994) indicated that media choice is determined by the fit of the PMR and the perceived information richness. These perceptions are built on previous experience with the media, in addition to the objective view of media characteristics. Experience enables the development of familiarity, expertise and comfort with the media, which in turn enables users to improve attitudes toward using (ATU) the media and to facilitate selecting appropriate media. For example, because individuals have high levels of expertise and familiarity with face-to-face communication, they naturally and instinctively prefer this medium over other those that are unfamiliar. This argument is consistent with the study by Schmitz and Fulk (1991), who determined face-to-face communication to be the richest medium. Empirical studies (Schmitz and Fulk 1991, Webster 1998) have provided confirmation of positive relationships between media attitudes and ME. Accordingly, this study proposed ME as the factor that best reflected blog acceptance behaviours.

2.3.4. Social influence (SI)

Fulk (1991) presented the SI model of technology usage to explain media choices. They suggested that SIs, such as work group norms, as well as co-worker and supervisor attitudes and behaviours, can influence individual and organisational media attitudes, use and choice. According to SI theory, media perceptions vary and are, at least in part, socially constructed. In addition, based on the TRA, an individual's BI are influenced by subjective norms, as well as attitude. Innovation diffusion research has also suggested that user adoption decisions are influenced by a social system that extends beyond an individual's decision style and the characteristics of the particular IT (Valente 1996).

The effect of SIs on media choices has been empirically supported in numerous studies (Schmitz

and Fulk 1991, Fulk 1993, Kraut *et al.* 1998, Gu and Higa 2009). Fulk (1991), for example, discovered that attitudes and email usage were affected by SIs from coworkers, supervisors and networks. Kraut *et al.* (1998) found that people used a particular system (for example, a video telephone) more when more people were using it. Gu and Higa (2009) identified SI as the most critical factor for primary medium selection in multiple media usage settings, followed by both rational and environmental factors. As empirical examples, Facebook and Twitter are famous for their social network services. They have successfully used SI to improve their customer bases quickly. Accordingly, this study proposed SI as the factor that reflected blog acceptance behaviours.

3. Research model and hypotheses

3.1. Research model

Figure 1 illustrates our proposed model, which incorporates the TAM with media choice factors in a blog context. The proposed model has as at its core the TAM constructs and the four media choice factors: media richness, critical mass, SI and ME. The specific elements of the model and related hypotheses are presented in further detail below.

3.2. Hypotheses

3.2.1. Perceived media richness (PMR)

Following Daft and Lengel (1986), PMR is the degree to which an individual perceives the capacity of a blog to evolve shared meaning, overcome different frames of reference and clarify ambiguous issues to change understanding in a timely manner. Blogs offer various communication functions to provide a more efficient channel to exchange information than do other forms of websites. Trevino *et al.* (1987) argued that rich media can more successfully manage a greater variety of tasks because they can convey equivocal messages more effectively. When individuals perceive a medium as rich, that medium is likely to be perceived as more useful because it may be used successfully for more and different tasks. Fulk (1993) and Lim and Benbasat (2000) have indicated that media richness has a positive effect on PU. Furthermore, if resources are not constrained, individuals would tend to use a rich media instead of a lean one. For example, individuals can have a highly positive attitude toward face-to-face communication, because it is the richest medium providing the largest capacity for communication. Researchers have provided empirical evidence that associates media richness with positive media attitudes (Trevino *et al.* 2000). Therefore, PMR could affect

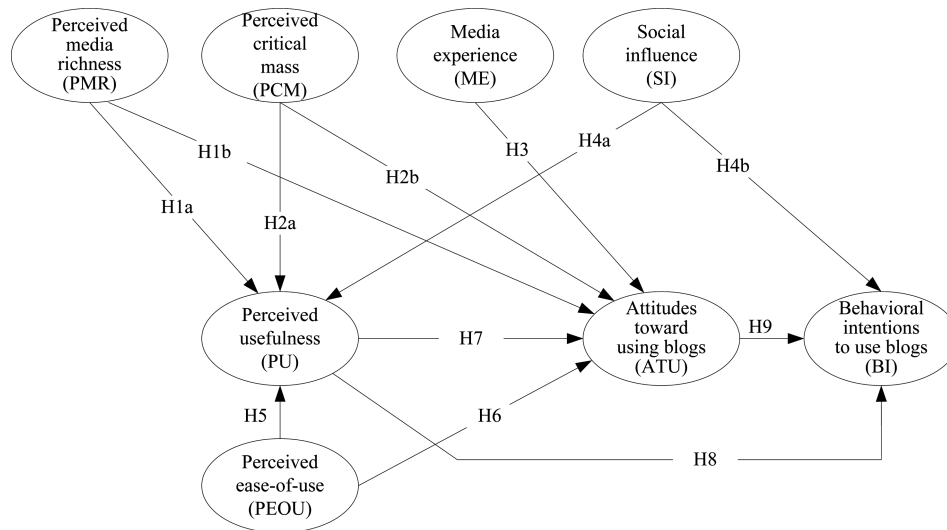


Figure 1. The proposed research model.

both PU and ATU blogs. Consequently, the following hypotheses are proposed:

- H1a.** PMR will have a positive effect on PU of blogs.
- H1b.** PMR will have a positive effect on ATU blogs.

3.2.2. Perceived critical mass (PCM)

This study defined PCM as the degree to which a person believes that most of his or her peers are using blogs. Critical mass refers to the fact that the value of interactive media to a user increases when the number of its adopters also increases (Markus 1987). One reason for this is that using an interactive medium that has reached critical mass allows users to communicate to the largest number of adopters with the least amount of effort. In addition, Metcalfe's law states that the value of a communications network increases with the square of its number of users. Metcalfe's law has been used to explain the growth of many technologies ranging from phones, cell phones and faxes, to web applications and social networks (Hendler and Golbeck 2008). Blogs can be considered as a communications network for exchanging information with other participants. As the number of participants on blogs grows, the connectivity increases, and blogs then become increasingly useful for communication, the value growing at an enormous rate. Luo and Strong (2000) provided empirical evidence of the positive impact of PCM on PU. From social psychological and economic perspectives, PCM is a type of SI. Rice and Aydin (1991) indicated that individual attitudes toward a new medium are affected by SI. That is, critical mass affects individual attitudes toward a new medium. Hsu and Lu (2004) and Slyke

et al. (2007) have found that critical mass positively affects individual ATU IT. Therefore, PCM could affect both PU and ATU. Consequently, the following hypotheses are proposed:

- H2a.** PCM will have a positive effect on PU.
- H2b.** PCM will have a positive effect on ATU blogs.

3.2.3. Media experience (ME)

Following King and Xia (1997), ME is the degree to which an individual perceives his or her use, skills and comfort using media such as blogs. Experience enables the development of familiarity, expertise and comfort with the medium, in turn enabling users to improve ATU that particular medium. Empirical studies (Fulk *et al.* 1995, Webster 1998) have confirmed positive relationships between media attitudes and ME. Consequently, the following hypothesis is proposed:

- H3.** ME will have a positive effect on ATU blogs.

3.2.4. Social influence (SI)

In this article, SI is defined as the degree to which an individual perceives that others approve of their participation in blogs. Social psychological theory suggests that group members tend to comply with social norms and, moreover, that these in turn influence the perceptions and behaviours of members (Lascu and Zinkhan 1999). According to this theory, perceptions of media are proposed to vary and be, at least in part, socially constructed. Employing the TRA has identified attitude and SI (social norms) as the two sole determinants of BI (Fishbein and Ajzen 1975).

When blog users interact with each other, they tend to comply with the social norm and influence each others' behaviours. Webster and Trevino (1995) suggested that SI more positively affects choices of new media. Furthermore, Schmitz and Fluk (1991) discovered that co-worker use of email and supervisor perceptions of usefulness of the medium, namely SI, had a significant effect on PU of email. Clearly, SI could affect both PU and BI to use blogs. Consequently, the following hypotheses are proposed:

H4a. SI will have a positive effect on PU.

H4b. SI will have a positive effect on BI to use blogs.

3.2.5. TAM

This research model adopted the belief–attitude–intention–behaviour relationship of the TAM, revalidating those relationships in the context of blogs with the following hypotheses:

H5. PEOU will have a positive effect on PU.

H6. PEOU will have a positive effect on ATU blogs.

H7. PU will have a positive effect on ATU blogs.

H8. PU will have a positive effect on BI to use blogs.

H9. ATU blogs will have a positive effect on BI to use blogs.

3.2.6. Control variables

To lower the impact of individual specific characteristics on bias levels, control variables were introduced, including blog experiences and demographics that may influence attitudes and BI to use blogs. Schmitz and Fulk (1991) suggested that email experience positively influenced email use. Fulk (1993) used respondent age and education as control variables to study social construction of communication technology. Therefore, a respondent's blog experience, age and education were introduced as control variables. Without loss of generality, these three variables may act as antecedents to all dependent and mediating variables in the proposed model and are thus controlled.

4. Methodology

4.1. Measurement development

The questionnaires were developed from related literature. Items used to measure the constructs were adopted from previous research to ensure content validity. PEOU and PU were developed from the study of Davis (1989) and were slightly modified to fit the blog context. ATU blogs was measured using five standard seven-point semantic differential rating

scales, as suggested by Ajzen and Fishbein (1980) for operationalising attitudes toward behaviours. The scale items for measuring BI were adopted from Agarwal and Karahanna (2000). Additionally, developing the scale items to measure PCM was based on Luo and Strong (2000). SI was measured according to items taken from Venkatesh and Morris (2000). ME was measured according to items modified from King and Xia (1997). Finally, four items for each set of criteria to measure PMR were adapted from Carlson and Zmud (1999). Seven-point Likert scales with anchors ranging from 'strongly disagree' (1) to 'strongly agree' (7) were used for all items except for the items of ATU. The list of items is presented in Appendix 1.

Both a pre-test and pilot test of the measures were conducted by the selected users, as well as by experts in the field of web design. In the pre-test process, five blog experts were asked to comment on the design of questionnaires. Based on expert feedback, a slight modification was made in the questionnaires and in the wording of some of the items to reflect the practices in the blogosphere. The second stage of the pilot test involved 50 blog users answering the questionnaire to improve the length, tone and content of the questionnaire.

4.2. Data collection and analysis

This study conducted an online field survey to test the proposed model. The target population was experienced blog users in Taiwan. The questionnaire was placed on <http://www.my3q.com>, a specific online questionnaire website allowing people to respond voluntarily. To increase the response rate of participants and expose our survey message to the target population as many as possible, this study placed several survey messages on the top 10 heavily trafficked online message boards in Taiwan (Market Intelligence and Consulting Institute 2009), such as the Wretch blog (<http://www.wretch.cc/blog>), Yahoo! Kimo blog (<http://tw/blog.yahoo.com>), Sina blog (<http://blog.sina.com.tw>), Xuite blog (<http://blog.xuite.net>) and Pixnet blog (<http://www.pixnet.net/blog>), during the two-month period of data collection. The users of blog webs on those online message boards were almost the target population of this study. The message stated the study purpose and provided a hyperlink to our online questionnaire on <http://www.my3q.com>. The participants could respond to the online questionnaire by entering the URL provided on the message.

Incomplete responses to questionnaires were considered invalid samples. Those without blogging experience were not accounted for when testing the hypotheses. As a result, the number of valid samples

was 521. The size of sample was within acceptable thresholds (Nunnally 1967, Westland 2010). The characteristics of the samples are shown in Table 1. The data indicate that respondents matched a gender ratio of F:M=53.8%:46.2%; 88% were aged between 16 and 25, 83.7% had college degrees, 80% used blogs at home, 50.6% had 1–3 years of blogging experience and 84.9% maintained their own blogs at the time of the survey. The demographic findings from respondents were roughly consistent with the 2008 Market Intelligence and Consulting Institute (MIC) report (Market Intelligence and Consulting Institute 2009).

When participants fail to return a survey or fill it out completely, the results can affect the characteristics of the sample. Non-response bias occurs when some subjects choose not to respond to particular questions and when the non-respondents are different in some way from those who do respond (Armstrong and Overton 1977). Palmquist and Stueve (1996) suggested

Table 1. Demographic profile.

Measure items	Frequency	Percent (%)	Cumulative (%)
Gender			
Male	242	46.2	46.2
Female	279	53.8	100.0
Age			
Less than 15	3	0.6	0.6
16–20	241	46.3	46.9
21–25	219	42.2	89.0
26–30	34	6.4	95.5
31–35	14	2.6	98.1
36–40	4	0.8	98.9
Over 41	6	1.1	100.0
Education			
Junior high school or less	3	1.1	1.1
High school	61	11.6	12.7
Bachelor's degree	438	83.7	96.4
Graduate degree	17	3.2	99.6
Doctor's degree	2	0.4	100.0
Place of blogging			
Home	415	80.0	80.0
Campus	65	12.3	92.3
Office	32	6.0	98.3
Other	9	1.7	100.0
Experience in blogging			
Under six months	76	14.4	14.4
6 months–1 year	86	16.3	30.6
1 year–2 years	144	27.2	58.0
2 year–3 years	117	23.4	81.5
3 year–4 years	50	9.5	90.9
4 year–5 years	30	5.7	96.6
Over five years	18	3.4	100.0
Currently maintain their own blog(s)			
Yes	441	84.9	84.9
No	80	15.1	100.0

that younger and more affluent males are the individuals most likely to respond to surveys on the web. To measure non-response bias, we divided respondents into two groups according to response time (Armstrong and Overton 1977, Straub 1989): earlier respondents (71%) and latter respondents (29%) (the latter were surveyed one month later than the former). The descriptive statistics of constructs according to response time are shown in Table 2, and MANOVA results showed no significant difference between the two groups on the means of all constructs (Wilks's Lambda=0.95, $F=3.11$, $p < 0.01$). Those results indicated that non-response to the internal validity of this study's results was limited, suggesting that the respondent sample was a random subset of the total population.

Following data collection, structural equation modelling (SEM) was used for analysis. Data analysis were performed in accordance with a two-stage methodology developed by Anderson and Gerbing (1988). In the first stage, the measurement model was assessed in terms of item loading, internal consistency and convergent and discriminant validity of the constructs using confirmatory factor analysis (CFA). Next, the structural model was used to evaluate the proposed research model by examining the path coefficients. The SAS and AMOS were adopted as tools to compute the results.

5. Results

5.1. Measurement model

The measurement model in CFA was revised by dropping items. The modification index (MI) is the

Table 2. Descriptive statistics of constructs by response time.

Structure	Earlier respondents ($n = 370$)		Latter respondents ($n = 151$)	
	Mean	Standard deviation	Mean	Standard deviation
Perceived media richness (PMR)	5.08	1.18	4.92	1.22
Perceived critical mass (PCM)	5.18	1.39	5.02	1.37
Media experience (ME)	3.65	1.22	3.24	1.09
Social influence (SI)	4.71	1.34	4.39	1.29
Perceived usefulness (PU)	4.98	1.17	4.94	1.15
Perceived ease-of-use (PEOU)	5.13	1.21	5.10	1.19
Attitudes toward using (ATU) blogs	5.05	1.23	5.06	1.14
Behavioral intentions (BI) to use blogs	4.97	1.28	4.76	1.31

Table 3. Goodness-of-fit indices for measurement model.

Indices	χ^2	df	<i>p</i> -value	NFI	NNFI	CFI	GFI	AGFI	RMSEA
Measurement model	516.87	312	< 0.001	0.96	0.98	0.98	0.94	0.92	0.04

Notes: NFI, normed fit index; NNFI, non-normed fit index; CFI, comparative-fit index; GFI, goodness-of-fit index; AGFI, adjusted GFI; RMSEA, root mean square error of approximation.

index used to select indicator variables (Joreskog and Sorbom 1984). Through repeated filtering, three indicator variables were deleted (see the items with the * symbol in Appendix 1). After dropping items, CFA showed an acceptable model fit (Hatcher 1994). The fit

Table 4. Descriptive statistics and reliability.

Variables	Mean	Standard deviation	Standardised factor loading, <i>p</i> < 0.001	<i>t</i> -value
Perceived media richness (PMR)				
PMR1	4.98	1.35	0.83	21.8
PMR2	4.88	1.33	0.83	21.7
PMR3	5.09	1.33	0.83	21.7
PMR4	5.21	1.35	0.84	21.9
Perceived critical mass (PCM)				
PCM1	5.20	1.44	0.94	28.3
PCM2	5.07	1.48	0.90	26.6
PCM3	5.16	1.50	0.92	27.7
Media experience (ME)				
ME1	3.32	1.40	0.69	16.6
ME2	3.74	1.23	0.94	13.8
Social influence (SI)				
SI1	4.57	1.42	0.88	24.9
SI2	4.69	1.40	0.90	25.2
Perceived usefulness (PU)				
PU1	5.04	1.37	0.84	23.2
PU2	5.01	1.29	0.83	22.4
PU3	4.84	1.36	0.80	21.6
PU4	4.80	1.40	0.73	19.0
PU5	5.07	1.33	0.87	24.6
Perceived ease-of-use (PEOU)				
PEOU1	5.22	1.30	0.85	23.9
PEOU2	5.04	1.33	0.84	22.9
PEOU3	5.07	1.32	0.87	24.5
PEOU5	5.10	1.33	0.87	24.7
PEOU6	5.12	1.36	0.90	26.2
Attitudes toward using (ATU) blogs				
ATU1	5.12	1.30	0.88	25.2
ATU2	5.06	1.35	0.93	27.7
ATU3	5.09	1.35	0.89	25.6
ATU4	4.96	1.28	0.86	24.3
Behavioural intentions (BI) to use blogs				
BI1	4.91	1.34	0.87	24.0
BI2	4.86	1.41	0.84	22.3
BI3	4.97	1.40	0.86	23.5

indices are within acceptable thresholds, except for the chi-square to degrees of freedom ratio, which is slightly lower than the commonly cited threshold (the ideal value between being two and three) (Hair *et al.* 2006): the chi-square to degrees of freedom ratio (chi-square/d.f.) of 1:1.66, CFI=0.98, GFI 0.94, NFI=0.96, NNFI=0.98 and RMSEA=0.04. The overall goodness-of-fit indices are shown in Table 3.

Descriptive statistics for the research constructs are presented in Table 4. Fornell and Larcker (1981) recommended that item loading (standardised factor loading) and internal consistencies greater than 0.7 be considered acceptable. Overall item loadings exhibited high loadings (>0.7) on their respective constructs. In CFA, composite reliability can reflect the internal consistency of the indicators with their respective constructs. In Table 4, all composite reliabilities greater than 0.7, Cronbach's alphas greater than 0.7 and average variance extracted (AVE) greater than 0.5, exhibit good internal consistency with the measurement model (Hatcher 1994).

To assess convergent validity, the *t* test for the factor loading in the same construct should be statistically significant (Hatcher 1994). Table 3 indicates that all indicators were satisfactory. To assess discriminant validity, the square root of AVE should exceed the inter-construct correlation (Hatcher 1994, Hair *et al.* 2006). As shown in Table 5, the inter-construct correlation among indicators was smaller than the square root of AVE by the constructs. Therefore, these results indicate that convergent and discriminant validities were all achieved.

5.2. Structural model

Figure 2 shows the standardised path coefficients and explains the variances. This study used maximum likelihood estimates for each parameter. The analytical results for the proposed research model are presented in Table 6. Most of the hypotheses are supported, except for Hypothesis 2a. PMR had significant positive effects on PU ($\beta_{1a}=0.28, p < .001$) and ATU ($\beta_{1b}=0.20, p < 0.01$), rendering support for Hypotheses 1a and 1b. PCM had significant effect on ATU ($\beta_{2b}=0.15, p < 0.01$), providing support for Hypothesis 2b. Unexpectedly, PCM had no significant effect on PU ($\beta_{2a}=0.06, p > 0.05$) and did not support Hypothesis 2a. PMR had significant positive effects on ATU ($\beta_3=0.07, p < 0.05$), validating Hypothesis 3. SI had significant positive effects on PU ($\beta_{4a}=0.16, p < 0.05$) and BI ($\beta_{4b}=0.35, p < 0.01$), validating Hypotheses 4a and 4b. The TAM hypotheses were all significant ($\beta_5=0.44, p < 0.01$; $\beta_6=0.22, p < 0.01$; $\beta_7=0.36, p < 0.01$; $\beta_8=0.13, p < 0.01$; $\beta_9=0.48, p < 0.01$), providing support for Hypotheses 5–9.

ATU blogs is directly and significantly affected by PMR, PCM, ME, PU and PEOU. Together, they accounted for 65% of the variance in ATU. Moreover, PU is directly and significantly affected by PMR, SI and PEOU. Together, they accounted for 53% of the variance in PU. Finally, BI is significantly affected by ATU, SI and PU. Together, they accounted for 69% of the variance in BI.

6. Discussion

Numerous factors affect an individual's decision to select web-based media. Some previous studies have incorporated the TAM with one or two media choice

Table 5. Discriminant validity and composite reliability.

	Composite reliability (CR)	Cronbach's alphas	AVE	1	2	3	4	5	6	7	8
1 Perceived media richness (PMR)	0.90	0.92	0.69	0.83							
2 Perceived critical mass (PCM)	0.94	0.94	0.85	0.59	0.92						
3 Media experience (ME)	0.81	0.79	0.71	0.26	0.35	0.84					
4 Social influence (SI)	0.88	0.88	0.82	0.58	0.74	0.38	0.90				
5 Perceived usefulness (PU)	0.91	0.91	0.66	0.63	0.47	0.29	0.50	0.81			
6 Perceived ease-of-use (PEOU)	0.94	0.95	0.75	0.66	0.56	0.33	0.51	0.67	0.87		
7 Attitudes toward using (ATU) blogs	0.94	0.93	0.79	0.66	0.57	0.34	0.65	0.72	0.69	0.89	
8 Behavioural intentions (BI) to use blogs	0.89	0.92	0.74	0.59	0.60	0.45	0.70	0.64	0.66	0.78	0.86

Note: Diagonals elements are the square root of average variance extracted (AVE). Off-diagonals elements are the correlations between the different constructs.

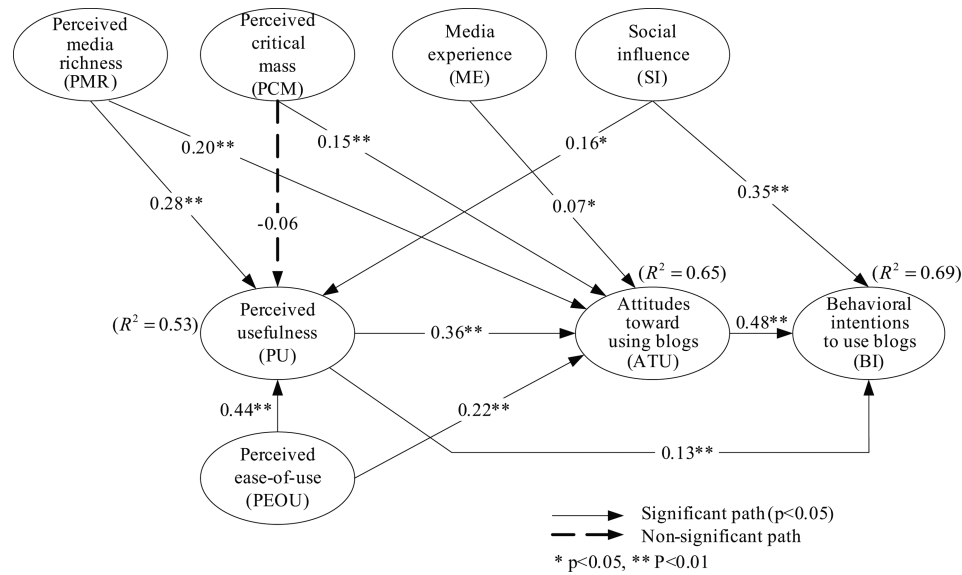


Figure 2. Results of structural modelling analysis.

Table 6. Parameter estimates for hypothesised paths in structure equation modelling.

Research hypothesis	Path description	Path coefficient	Result
H1a	PMR → PU	0.28**	Supported
H1b	PMR → ATU	0.20**	Supported
H2a	PCM → PU	-0.06	Not supported
H2b	PCM → ATU	0.15**	Supported
H3	ME → ATU	0.07*	Supported
H4a	SI → PU	0.16*	Supported
H4b	SI → BI	0.35**	Supported
H5	PEOU → PU	0.44**	Supported
H6	PEOU → ATU	0.22**	Supported
H7	PU → ATU	0.36**	Supported
H8	PU → BI	0.13**	Supported
H9	ATU → BI	0.48**	Supported

Notes: PMR = Perceived media richness; PCM = Perceived critical mass; ME = Media experience; SI = Social influence; PU = Perceived usefulness; PEOU = Perceived ease-of-use; ATU = Attitudes toward using blogs; BI = Behavioural intentions (BI) to use blogs. * $p < 0.05$; ** $p < 0.01$.

factors. Those studies might have incorporated the TAM with SI (Hsu and Lu 2004), ME (Stoel and Lee 2003), critical mass (Luo and Strong 2000) or media richness (Liu *et al.* 2009), though not simultaneously. This study considered more facets of media choice than have previous studies. This study examined two theoretical aspects of this decision, the TAM and four media choice factors, and showed how these aspects relate to the acceptance of a blog. The results of this proposed model show that the TAM hypotheses were all supported, and the media choice factors, significantly and directly, affect ATU blogs and BI to

use blogs in different ways. Incorporating technology acceptance with media choice factor perspectives predicts ATU blogs ($R^2 = 0.65$) and BI to use blogs ($R^2 = 0.69$). By comparing these results with other web-based media acceptance studies (Luo and Strong 2000, Moon and Kim 2001) that have applied the TAM with some or no media choice factors, our proposed model could more accurately predict attitudes and BI.

By examining the relative importance of the four media choice antecedents identified in this study, we found that PMR, PCM and ME beliefs of structural assurances have a direct effect on ATU blogs. PMR has by far the largest effect on ATU blogs of the four media choice factors. The standardised path coefficient of PMR was 0.28, whereas the other path coefficients of PCM and ME were 0.15 and 0.07, respectively. Therefore, PMR presents a critical factor in media acceptance behaviours. Although some previous studies (Dennis and Kinney 1998, Carlson and Zmud 1999, Trevino *et al.* 2000, Liu *et al.* 2009) have also considered PMR as an influential factor in media selection, this result suggests that PMR is more essential than are other media choice factors. A possible explanation of this finding may be as follows. Because blogs were in their infant stage, users were not numerous and most had limited experience. However, blogs offered various communication functions to support users in effectively interacting with each other. Therefore, users consider PMR as more vital than they do other media choice factors. In addition, PMR and SI have an indirect effect on ATU blogs through PU. PU is an effective mediator between media choice factors and attitudes toward use. These results are also

consistent with previous studies (Luo and Strong 2000, Stoel and Lee 2003, Liu *et al.* 2009). Consequently, media choice factors not only directly influence ATU blogs, but also indirectly and partially influence ATU blogs through PU.

In addition, the TAM construct of PU remains the most crucial predictor of acceptance behaviours, as in many previous TAM studies (Venkatech and Morris 2000, Gefen *et al.* 2003). Of the significant standardised β coefficients, PU is larger ($\beta = 0.36$) than are PEOU and all media choice factors. This suggests that, while all factors are crucial, PU is a stronger direct predictor than are other TAM or media choice factors.

7. Implications and conclusions

The purpose of this study was to apply the media choice factor perspective and modify the TAM to explain and predict individual acceptance of IT related to blogs. This study conducted an online field survey to examine the proposed model empirically. The results indicate that blog acceptance was significantly affected by technology acceptance and media choice factors. The media choice factors included media richness, critical mass, SI and ME. These findings provide contributions to both researchers and practitioners.

For researchers, this study attempted to develop a new theory by grounding new factors in a well-accepted general model (TAM) and applying them in a new context. It is imperative to note that the four new media choice factors – media richness, critical mass, SI and ME – are placed within the nomological structure of the original model and are compatible with TAM factors. This approach is likely to ensure a consistent model for the drivers of web-based media, as well as stable theory development. Therefore, the proposed model makes an important contribution to the emerging literature on web-based media.

The characteristics of web-based media can affect an individual's media acceptance behaviour, but the strengths of these influences may vary at different stages. The media innate characteristics (such as media richness) are more critical than are SI and experience characteristics at the infant stage. The reasons are that the threshold of participants must be crossed before a social movement emerges and participants are users with limited experience. Given the findings of this study, it appears necessary for media researchers to compare the influences of media choice factors at different stages by conducting longitudinal studies.

Prior studies have suggested that media choice factors directly influence attitudes or BI; however, this study included a mediating factor, namely, PU. This study found that media choice factors not only directly

affect individual attitudes or BI, but also indirectly affect them through PU. User interest in new media results from various characteristics of the media. However, users may first need to perceive its usefulness or uselessness before changing their attitude and BI. Therefore, future research could further examine direct and indirect influences between media choice factors and individual behaviour to obtain a clearer understanding of the media acceptance process.

For practitioners, this study also generated practical implications for blog-hosting service providers and bloggers. First, this article highlights the importance of media richness in blog acceptance. Blogs provide a communication channel for both blog posts and readers. A blog with high media richness reduces uncertainty and equivocality between users to increase interactions effectively. Accordingly, bloggers should provide a more rapid response and more diverse information to maintain high media richness on their blogs, and blog-hosting service providers should incorporate more communication functions to enable the utilisation of richer forms of media. Second, SI is a critical factor in blogging that affects an individual's acceptance behaviour. Therefore, blog-hosting service providers should strengthen the development of community applications to attract more users. Third, two beliefs, namely, PU and PEOU, have crucial influences on an individual's acceptance behaviour. Blogs allow users to communicate with the largest number of people with the least amount of effort, providing a useful communication environment. Bloggers prepare their blog entries without having to be familiar with special coding and upload messages to their blogs by clicking the 'Publish' button. Blog-hosting service providers should be committed to providing a more user-friendly and accessible environment to attract more bloggers.

8. Limitations

Although our findings have meaningful implications for enhancing the understanding of individual blog acceptance behaviour, this study has some limitations. However, none of the limitations is critical. First, to assess the external validity of this study, one needs to consider the setting and the respondents in which the study took place (Cook and Campbell 1979). The respondents were blog users in Taiwan, and the setting of these blog webs should be almost Chinese blogs. Culture and lifestyle may differ among countries. Therefore, the generalisability of the respondents' behaviours to a more general workforce may be limited. Second, given that measurements of all structures were taken at the same time using the same instrument, causality can only be inferred with

the potential for common method variance. Finally, because of the blog features and the restrictions on research methods, some media choice factors were not accounted for.

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Appendix 1. Question constructs and items used in the study

Construct and items	Measure
Perceived media richness (PMR) (Carlson and Zmud 1999)	
PMR1	Blog allows poster and replier to give and receive timely feedback
PMR2	Blog allows poster and replier to tailor their messages to their own personal requirements
PMR3	Blog allows poster and replier to communicate a variety of different cues (such as emotional tone, attitude or formality) in their messages
PMR4	Blog allows poster and replier to use rich and varied language in their messages
Perceived critical mass (PCM) (Luo and Strong 2000)	
PCM1	Most people in my group used blog frequently
PCM2	Most people in my community used blog frequently
PCM3	Most people in my class/office used blog frequently
Media experience (ME) (King and Xia 1997)	
ME1	I use blog frequently
ME2*	I feel competent using blog
ME3	I feel comfortable when using blog
Social influence (SI) (Venkatesh and Morris 2000)	
SI1	People who influence my behaviour think that I should use blog
SI2	People who are important to me think that I should use blog
Perceived usefulness (PU) (Davis 1989)	
PU1	Using blog enables me to receive\share information more quickly
PU2	Using blog improve my performance on receiving\sharing information
PU3	Using blog increase my productivity of receiving\sharing information
PU4	Using blog enhance my effectiveness on receiving\sharing information
PU5	Using blog make receiving\sharing information easier
Perceived ease-of-use (PEOU) (Davis 1989, Gefen <i>et al.</i> 2003)	
PEOU1	Learning to use blog is easy for me
PEOU2	I find it easy to get blog to do what I want it to do
PEOU3	My interaction with blog is clear and understandable
PEOU4*	I find blog to be flexible to interact with*
PEOU5	It is easy for me to become skillful at using blog
PEOU6	Overall, I find blog easy to use
Attitudes toward using (ATU) blogs (Ajzen and Fishbein 1980)	
ATU1	All things considered, I feel using a blog is: Bad–Good
ATU2	Foolish–Wise
ATU3	Unfavourable–Favourable
ATU4	Harmful–Beneficial
ATU5*	Negative–Positive
Behavioural intentions to use blog (BI) (Agarwal and Karahanna 2000)	
BI1	I plan to use blog in the future
BI2	I intend to continue using blog in the future
BI3	I expect my use of blog to continue in the future

Notes: 1. All constructs except ATU have seven-points scales ranging from 1 (disagree strongly) to 7 (agree strongly). ATU is measured using five standard seven-point semantic differential rating scales. 2. *Denotes that items were dropped from data analysis.