An Examination of Factors That Influence Social Networking Community Participation Among Millennials

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ABSTRACT

This study investigates main and moderating factors that influence Millennials' intention to participate in a social networking community (SNC). The authors modified the unified theory of consumers' acceptance and use of technology (UTAUT2) to incorporate six main and two moderating factors to explain Millennials' SNC participation intention. By considering the implications of the unique characteristics of Millennials on their social networking behavior, the authors' model is better suited to answer what drives these tech-savvy individuals to participate in a SNC via such sites as Facebook. Specifically, the authors find that hedonic motivation, trust in technology, trust in community, and social influence are significant factors in influencing Millennials' SNC participation intention, with hedonic motivation being the most influential factor. In addition, gender and educational background moderate the main effects of these determinants in different manner. Theoretical and practical implications of these findings are discussed.

KEYWORDS

Facebook, Hedonic Motivation, Millennials, Partial Least Square Method, Participation Intention, Social Networking Community, Trust in Community, Trust in Technology, UTAUT2

1. INTRODUCTION

The purpose of this paper is to further our understanding of factors that influence Millennials' participation intention in a social networking community (SNC). Millennials are individuals born between 1981 to 1996 (Dimock, 2018) who grew up in the Internet age and are regarded as the always connected, social and tech-savvy generation (Pew Research Center, 2014). The integral use of information technology (IT) in the Millennials' social lives sets them apart from generations before them (Pew Research Center, 2010). Being digital natives, Millennials belong to a generation in which they have been immersed with everything digital since childhood. It is no surprise that Millennials are the first adopters of emerging technologies like tablets and digital wearables (Fleming et al., 2015). They are also avid producers and consumers of all kinds of digital contents – from blogs to

video to photos to music to apps, with 55% of them posted a selfie on a social media (Pew Research Center, 2014). Over 75% of Millennials admit that they cannot live without their laptops or mobile phones (Brown, 2011). Social media defines their lives as 80% of Millennials are on sites like Twitter, Facebook and Weibo to chat, post comments, and send messages (Brown, 2011). Indeed, Millennials named "technology use" as what made their generation unique (Pew Research Center, 2010). Their technology use behavior has transformed social networking sites (where a group of people stay connected via social media) into SNCs (where a group of people interacting in social networking sites to fulfill their social needs and extend relationship building from family and friends to complete strangers), a phenomenon of interest in this paper. Note that unlike the formal-type of SNC such as Enterprise Architecture Group in LinkedIn, SNC here refers to an individual's personal group of friends and connections.

Millennials are also becoming a market segment of growing importance. They represent 25% of the world population, with 77 million in the US, 500 million in India, and 200 million in China (Brown, 2011). Millennials are the most educated generation with 33% of them having a college degree. They are highly optimistic about their financial future, with 53% believe they will have enough income to live the lives they want (Pew Research Center, 2014). Ten percent of them are already successful entrepreneurs and nearly 50% of them want to run their own business in the future (The Nielsen Company, 2014). A better understanding of the opportunities the Millennials present will equip business with effective strategies to reach, connect, and engage with this emerging economic power for long-term growth and success.

While much has been written about Millennials' beliefs, values, attitudes, traits and the like (e.g., they are multitaskers, open to change, adept with social networking, self-expressive, willing to share personal interests, opinion, and behaviors, community-minded, associate IT with information seeking and entertainment) (Moore, 2012; Seppanen and Gualtieri, 2012), there is a dearth of studies on exploring the implications of the unique characteristics of Millennials on their social networking behavior (Bolton et al., 2013). This is especially prudent as extant literature in information systems (IS) today focuses primarily on topics of IT acceptance and adoption from a utilitarian perspective in organizational contexts. We still know little about what drives individuals to SNC in particular, not to mention having to deal with a generation of individuals who are both avid providers and consumers of digital contents on SNCs. In order to fill this gap in literature, we argue for research that reexamines, challenges, and extends existing theories and models to better explain Millennials' participation in SNCs. As such, we develop a model based on Venkatesh et al.'s (2012) unified theory of consumers' acceptance and use of technology (UTAUT2) to do so.

UTAUT2 is an extension of Venkatesh et al.'s (2003) unified theory of technology acceptance and use of technology (UTAUT) to predict behavioral intention and use of a technology in a consumer context. UTAUT2 shares the same impressive explanatory power as UTAUT in accounting for about 70% of the variance in behavioral intention and 50% of the variance in technology use (Venkatesh et al., 2012). We retain relevant factors in UTAUT2 and add new relationships in our model after synthesizing past literature on SNC participation. The resultant model has trust in technology, trust in community, hedonic motivation, effort expectancy, social influence, and facilitating conditions as main factors and gender and educational background as moderating factors. We empirically tested our model from surveys of university students in Taiwan.

This study has both theoretical and practical contributions. Theoretically, we integrate IS technology use with psychological theories on knowledge sharing and intrinsic motivation to advance a model to explain Millennials' SNC participation intention. Practically, our study has managerial implications for SNC service providers, online advertisers, and brand managers.

The rest of the paper is organized as follows. We discuss the relevant theoretical background of this study leading to the development of our research model and hypotheses in the next two sections. The research method and research results are described in sections 4 and 5 respectively. Research

findings are presented in section 6. Finally, research implications and future research directions are detailed in section 7.

2. THEORETICAL BACKGROUND AND MODEL DEVELOPMENT

Extant literature has heavily relied on Davis' (1989) technology acceptance model (TAM) and its extension, particularly Venkatesh et al.'s (2003) unified theory of acceptance and use of technology (UTAUT), to explain IS adoption intention and behavior. TAM established perceived usefulness and perceived ease of use as the fundamental determinants of individuals' acceptance and use of IT (Davis, 1989). Since its inception, TAM has undergone validation (e.g., Davis and Venkatesh, 1996; Sambamurthy and Chin, 1994), extension (e.g., Gefen et al., 2003; Venkatesh and Davis, 2000), and unification (e.g., Venkatesh et al., 2003; Venkatesh et al., 2012). These extensions of TAM are reflective of the rapid advancement in IT that requires adapting current understanding of IT acceptance and use to new contexts, e.g., online banking (Chandio et al., 2017), mobile commerce, (Kalinic and Marinkovic, 2016), tablet adoption (Magsamen-Conrad et al., 2015), and social media use (Rauniar et al., 2014).

Of all the extensions of TAM, Venkatesh et al.'s (2012) UTAUT2 is by far the most up-to-date, comprehensive, theoretically-based and empirically-tested model to explain consumers' acceptance and use of IT. UTAUT2 extends Venkatesh et al.'s (2003) UTAUT from an organizational to a consumer context. UTAUT integrates eight theories of technology use into a model that consists of three direct determinants of intention to use IT (performance expectancy, effort expectancy, and social influence), two direct determinants of actual usage of IT (intention and facilitating conditions), and four moderators of key relationships (age, gender, experience, and voluntariness). The eight theories include theory of reasoned action (Fishbein and Ajzen, 1975), technology acceptance model (TAM) (Davis, 1989), PC utilization (Thompson et al., 1991), theory of planned behavior (TPB) (Ajzen, 1991), motivational model (Davis et al., 1992), combined TAM and TPB (Taylor and Todd, 1995), innovation and diffusion theory (Rogers, 1995), and social cognitive theory (Compeau et al., 1999). The determinants of UTAUT are about utilitarian/extrinsic motivation, time and effort, and intentionality. Recognizing that UTAUT is not applicable to a consumer context, Venkatesh et al. (2012) proposed UTAUT2 to incorporate three new constructs: hedonic motivation, price value, and habit as important drivers of consumer use of mobile Internet and drop voluntariness as a moderator. While empirical support of UTAUT2 was reported, Venkatesh et al. (2012) cautioned its generalizability. In particular, our study is about Millennials as participants of SNCs. They are both providers and consumers of digital contents, not simply consumers of IT products and services. As a result, we follow Venkatesh et al.'s (2012) three steps process to develop a new model for our study: (1) identify irrelevant constructs in UTAUT2, (2) identify relevant determinants from extant research, and (3) add new relationships. The way we develop the new model is in line with Venkatesh et al.'s (2016) recommendations for future UTAUT-related research.

2.1. UTAUT2 Adaption

UTAUT2 posits that there are seven direct determinants of consumer technology acceptance and use, namely, performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. The effect of these direct determinants is moderated by individual differences in age, gender, and experience (Venkatesh et al., 2012). In adapting UTAUT2 to our context, the unique characteristics of Millennials help simplify the conceptualization of UTAUT2 in our model development by identifying and removing irrelevant constructs from consideration. First, Millennials associate IT with social networking, information sharing and entertainment purposes (Moore, 2012; The Nielsen Company, 2014). Their perceived values/benefits of participation in SNCs are derived from hedonic/intrinsic motivation of fun and social connectivity instead of utilitarian/extrinsic motivation of performance gains and monetary trade-offs. Furthermore, they are both providers and

consumers of digital contents and not just consumers of IT products and services. This implies that performance expectancy and price value will no longer be meaningful determinants of Millennials' SNC participation intention and behavior. Second, Millennials are still in their formative stage when learning and experience can play a role in shaping their habitual behavior (Pew Research Center, 2010). Their openness to change means their technology usage behavior is neither automatic yet nor habitual. In fact, it has been speculated that Snapchat may surpass Facebook as the social media of choice for Millennials (Smith and Anderson, 2018; Plank and Shoulak, 2015). Consequently, habit is excluded as a determinant in our context. Third, Millennials are highly experienced with the use of IT and they belong to the below thirty age group. That means age and experience will not be significant individual differentiators among the Millennials. As a result, we drop performance expectancy, price value, habit, age, and experience from consideration in our model.

2.2. Extant Research on SNC Participation

We found support from extant literature in retaining four main determinants (effort expectancy, social influence, facilitating conditions, hedonic motivation) and one moderating factor (gender) from UTAUT2 in our model. Effort expectancy or perceived ease of use is defined as the degree of ease associated with technology usage and has been found to have a significant effect on SNC participation intention (Sledgianowski and Kulviwat, 2009; Wu et al., 2014). Social influence is defined as the perceived social pressure from friends and family on using a particular technology. Since participants of SNCs are affecting and being affected by their circle of influence both before and after they start interacting in SNCs, a positive relationship is found between social influence and SNC participation intention (Al-Debei et al., 2013; Kim, 2011; Lin, 2006; Pelling et al., 2009; Wu et al., 2014). Facilitating conditions refer to the extent in which resources and opportunities are available to enable technology usage. A high level of facilitating conditions is found to increase SNC participation intention (Al-Debei et al., 2013; Lin, 2006; Wu et al., 2014). Hedonic motivation or perceived enjoyment is the extent of pleasure or fun when using a technology. It has been found to be a critical antecedent of users' SNC participation intention (Basak and Calisir, 2015; Gwebu et al., 2014; Sun et al., 2014). Finally, Gefen and Ridings (2005) found that gender differences in communication determined what made a virtual community successful because women communicated to give and get social support and affinity, as oppose to men communicated to maintain and reinforce social standing and independence. As a result, women were more likely than men to participate in a SNC for emotional support than information exchange. Therefore, gender is kept as a moderator in our model.

2.3. New Relationships Incorporated Into UTAUT2

UTAUT2 is proposed to model consumers' technology use intention and behaviors. Its emphasis is on explaining how and why consumers adopt such personal technology as mobile Internet. As mentioned earlier, our interest in this paper is about understanding Millennials' intention to participate in a SNC. It goes beyond studying Millennials' technology use as passive consumers of IT products/services to examining their knowledge-sharing and community building behaviors as active providers and users of digital contents. According to the social exchange theory (Blau, 1964) and social capital theory (Nahapiet and Ghoshal, 1998), two types of trust are pivotal in influencing individuals' knowledge-sharing behaviors – trust in technology and trust in community (Chen, 2012; Chiu et al., 2006; Chow and Chan, 2008; Fang and Chiu, 2010; Hsu and Lin, 2008; Hsu et al., 2007; Lin et al., 2009). Trust in technology refers to the trustworthiness of the technological environment where structural provisions are in place for privacy and security assurance. A trust in technology to provide proper security mechanisms (e.g., authentication, privacy protection, integrity, and reliability) is needed before a user willingly divulges personal opinions, photos, experiences, and the like on a SNC (Obal and Kunz, 2013; Gefen et al., 2003; McKnight et al., 2002). Trust in technology has been demonstrated to have a positive impact on behavioral intention in SNCs (Gwebu et al., 2014; Krasnova et al., 2010; Sledgianowski and Kulviwat, 2009; Sun et al., 2014; Wu et al., 2014).

Trust in community, on the other hand, is the tendency to rely on community participants to behave in a socially acceptable manner (e.g., refrain from opportunistic behavior, exhibit positive reciprocation, provide verified information). A trust in community that everyone behaves in such manner is crucial to establish interpersonal relationship within the SNC. It requires a faith in humanity that others act with integrity, competence, and benevolence. With such trust, one will risk becoming vulnerable and dependable on other community members (McKnight et al., 2002). Trust in community was shown to have an effect on participants' intention to give and get information through the SNC, thus affecting community building (Lin, 2006; Ridings et al., 2003). It is an important consideration for Millennials as well, as only 19% of them say people can be trusted, as opposed to 30 to 40% of generations before them (Pew Research Center, 2014). Following the significance of trust in knowledge sharing and community building, we incorporate trust in technology and trust in community into UTAUT2 as two new determinants in our model.

Recently, the theory of self-determination has been applied in knowledge sharing studies to underscore the importance of intrinsic motivation in driving human behaviors (Yoon and Rolland, 2012; Zhang et al., 2015). Self-determination theory posits that individuals are more inclined to perform intrinsically motivating activities that meet their psychological needs of competence, relatedness, and autonomy (Ryan and Deci, 2000). Yoon and Rolland (2012) showed that individuals' perceived competence and relatedness with a virtual community had a strong impact on their knowledge sharing behaviors in that community. More importantly, they found that familiarity with the virtual community, established through education and trainings, but not repeated interactions, was effective in raising perceptions of competence and relatedness. For example, knowing how to professionally share an article on a SNC shows one's competence in searching and using a technical tool. On the other hand, sharing a relevant popular topic and high quality SNC content indicates one's connectivity to the latest news and happenings online, and relatedness to the community needs. We conceptualize familiarity with SNC participation through learning in our context as educational background of the Millennials. Although Millennials are avid users of technologies, their level of familiarity with SNCs can still be impacted by formal IT education and training. As a result, we add educational background as a new moderator in our model.

3. HYPOTHESIS DEVELOPMENT

Figure 1 shows the modified UTAUT2 model we propose to examine Millennials' intention to participate in a SNC.

Our proposed model has six main determinants – trust in technology, trust in community, effort expectancy, hedonic motivation, social influence, and facilitating conditions. The main effects of these determinants are moderated by two factors – gender and educational background. A set of seven hypotheses are developed and presented as follows.

3.1. Trust in Technology as Moderated by Gender

Trust in technology as related to SNCs, as explained earlier, is the trustworthiness of the technological environment. It can be considered as an institution-based trust belief that "the needed structural conditions are present (e.g., on the Internet) to enhance the probability of achieving a successful outcome in an endeavor" (McKnight et al., 2002, p.339). These structural conditions include technological and legal safeguards that protect users from cyber-bullies (CBC News, 2007) and cyber-predators (The Canadian Press, 2010). Prior studies show that trust in technology has a direct and positive effect on a user's intention to participate in a SNC (Gwebu et al., 2014; Sledgianowski and Kulviwat, 2009; Sun, 2014; Wu et al., 2014). As such, SNC users who believe a site to be secure and trustworthy will be more willing to enter their personal details, photos, personal experiences, new discoveries and reviews on the site. The opposite is also true: when users feel that sites are vulnerable due to a lack of appropriate security mechanisms such as proper authentication of logon,

Figure 1. Research model
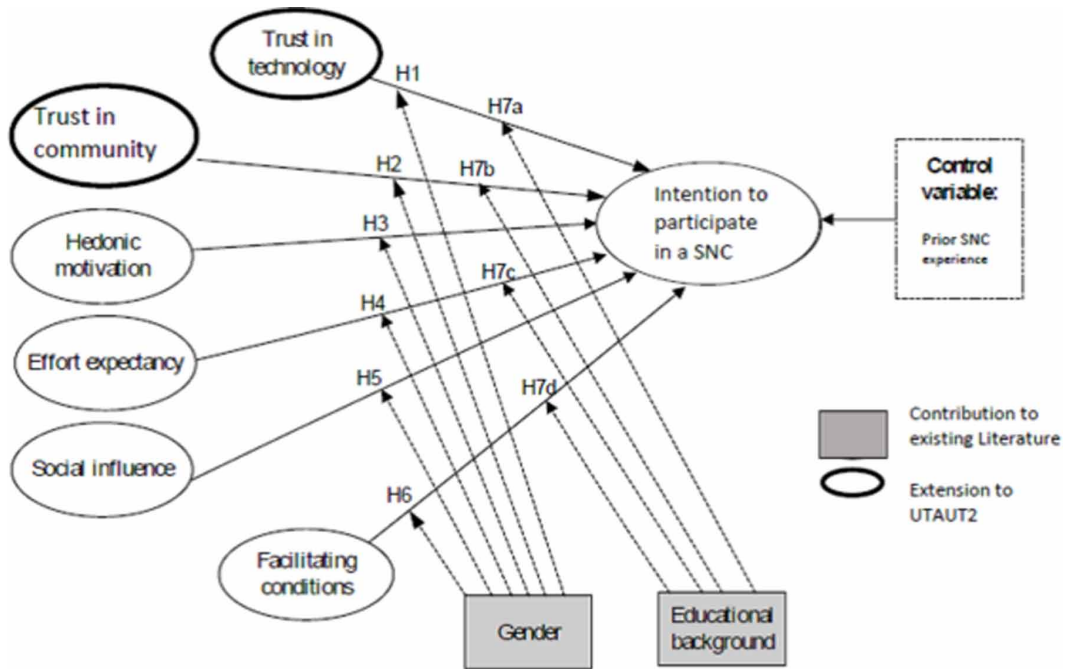
privacy protection and code of conduct provision, they are less likely to participate. Krasnova et al. (2010) found that users' perception of self-disclosure risk can be mitigated by their trust in the SNC provider and the availability of security and privacy control options.

Previous studies by Chaudhuri et al. (2003) and Buchan et al. (2008) on western countries and by Cho and Koh (2008) on the Asian continent suggest that trust is moderated by gender, such that men have a significantly higher level of trust in online activities than women. Women tend to be more skeptical of online activities (Rodgers and Harris, 2003) and less likely to trust and use online information resources. In contrast, men perceive a higher trustworthiness in online activities than women (Slyke et al., 2002), they are more likely to participate in online activities such as taking part in a SNC. Base on this line of reasoning, we hypothesize:

H1: The positive influence of trust in technology on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for men.

3.2. Trust in Community as Moderated by Gender

Trust in community is the tendency to rely on community participants to behave in a socially acceptable manner. It is a belief that community members will act with integrity, competence, and benevolence (McKnight et al., 2002). The predominant types of interaction for SNC users consist of sent or received messages or feedback from other participants. Users invite friends to be part of their own community through invitations. However, a user can request a connection with any other user. Although a SNC typically provides a permission function with which an individual can allow or prevent access to his or her online content (Sledgianowski and Kulviwat, 2009), it is still cumbersome to set access control to each element each time one shares contents on a SNC. Facebook, the biggest SNC site, continues to encounter photo tagging (for photo sharing) privacy issues (Mui, 2011), and privacy is a major concern for users — especially those who are unfamiliar with or neglectful of how

to change the default security and privacy settings. Therefore, the posting of personal details and/or accepting friendship invitations from a person require a fundamental sense of trust regarding other SNC users. This situation can be compared to the level of trust that must exist between a user and a vendor engaging in e-commerce (Wang and Benbasat 2005), or the level of trust required between citizens and the government within an e-government website (Teo et al., 2009). Other studies on virtual communities have found that interpersonal trust significantly influences members' intention to provide or access certain types of information (Lin, 2006; Ridings et al., 2003). As such, if users trust a SNC, they exhibit greater intention to participate.

Foubert and Sholley (1996) found that gender has a significant interaction effect on online self-disclosure. Other researchers have consistently discovered that trust is moderated by gender (Buchan et al., 2008; Chaudhuri and Gangadharn, 2003). Women tend to perceive a much higher risk than males in disclosing details of their private lives online (Mine and Rhom, 2000). They are also more concerned about privacy and disclosure of identifying information when communicating and forming relationships through a SNC than their male counterparts (Fogel and Nehmad, 2009). This is partially driven by the fact that women attempt to process information in a more comprehensive and conscientious manner than men (Kemp and Palan, 2006). As a result, women are more cautious about trusting a SNC. Following this line of argument, we hypothesize:

H2: The positive influence of trust in community on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for men.

3.3. Hedonic Motivation as Moderated by Gender

Hedonic motivation or perceived enjoyment is the extent of pleasure or fun when using a technology. Based on the general motivation theory, Davis et al. (1992), identified perceived enjoyment as a powerful intrinsic motivator for technology adoption and use. It pertains to an individual's perception of pleasure derived from engaging in an activity (Davis et al., 1992), such as using a SNC to maintain and develop interpersonal relationships. Unlike Web usage at work (Cheung et al., 2000), perceived enjoyment is certainly an important SNC participation factor for Millennials, as SNC usage is completely voluntary. Prior studies have found hedonic motivation to be a critical antecedent of users' SNC participation intention (Basak et al., 2015; Gwebu et al., 2014; Hsu and Lin, 2008; Kim et al., 2011; Sun et al., 2014).

A survey of 684 users of mobile chat services finds that enjoyment (as a hedonic motivation) is an important determinant of female users' intention to use SNCs, whereas their male counterparts are more motivated by extrinsic factors such as usefulness (Nysveen et al., 2005). SNCs are usually used for leisure purposes and this suggests that it better fits the desire for hedonic motivation among women. Therefore, we posit that:

H3: The positive influence of hedonic motivation on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.

3.4. Effort Expectancy as Moderated by Gender

Effort expectancy or perceived ease of use refers to the degree of ease associated with participating in a SNC. Following TAM's finding that perceived ease of use is a key determinant of intention to use the technology, past research has confirmed that users have a stronger SNC participation intention if they believe that such participation is free of effort (Lin, 2006; Wu et al., 2014).

Bozionelos (1996) suggests that effort expectancy is more salient for women than men. Other studies have found that effort expectancy is a stronger determinant of individual intention for women (Venkatesh and Morris, 2000). This is because men may possess stronger technical oriented skills than women (Friessen, 1992; Trauth et al., 2003) since women conventionally "must accept that

science and technology is considered a masculine domain which can easily lead to a scrutinizing of their skills and abilities" (Wilson, 1992, p. 901). In separate studies by Liaw and Huang (2009) in Taiwan and Comber et al. (1997) in the United Kingdom, male students were found to exhibit a more positive attitude toward the use of computers than female students. As a result, we expect that:

H4: The positive influence of effort expectancy on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.

3.5. Social Influence as Moderated by Gender

Social influence reflects the degree to which an individual believes that important others think or expect him or her to participate in a SNC. It is a construct integrating the concepts of social norm (Fishbein and Ajzen, 1975) and social factors (Thompson et al., 1991) to explain IT acceptance and use (Venkatesh et al., 2003). SNCs provide a platform for social connections among friends and other like-minded individuals to share knowledge, post comments, share photos, chat, seek information, send/ receive messages, etc. It has been estimated that global social network users will increase from 1.47 billion people in 2012 to 2.55 billion people by 2017 (eMarketer, 2013). SNC sites such as Facebook, Twitter, LinkedIn and Weibo offer users a channel for friends or fans to extend their social influence across politics (Lebeaux, 2008), business (Richardson, 2008), knowledge management (Cayzer 2004), social networking and communications (Lin and Anol, 2008). Social influence, clearly, plays a role in influencing individual's SNC participation intention (Wu et al., 2014; Al-Debei et al., 2013; Kim, 2011; Sledgianowski and Kulviwat, 2009; Lin, 2006).

Women have a higher disposition towards interpersonal relationships than men (Venkatesh and Morris, 2000; Venkatesh et al., 2000). This relational disposition tends to motivate women, more so than men, to participate in SNCs for rapport building and social connectivity reasons to maintain and strengthen existing relationships (Foster et al., 2012). Other researchers have found that social influence becomes more salient in terms of forming an intention to use new technology for women than for men (Venkatesh et al., 2000). Rhoades (1981) says that women are easier to be persuaded than men. A similar finding is reported by Carli (2001) and Bae and Lee (2011), stating that women are more easily influenced than men. Based on these findings, we posit:

H5: The positive effect of social influence on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.

3.6. Facilitating Conditions as Moderated by Gender

Facilitating conditions refers to the degree to which an individual believes that resources and support are available to enable participations in a SNC. Facilitating conditions, including self-efficacy, resource availability, and objective factors in the environment, affect an individual's perceptions of control over external and internal constraints on his/her behavior (Taylor and Todd, 1995; Thompson et al., 1991). Cheung et al. (2000) confirm that facilitating conditions are one of the most important factors influencing Internet usage. This is substantiated by a recent study showing that students with greater access to required resources (i.e., in the presence of facilitating conditions) spend more time using SNC sites (Hargittai, 2007). Logically, people look for support to resolve problems or difficulties in conducting online activities. A high level of facilitating conditions is found to increase SNC participation intention (Al-Debei et al., 2013; Lin, 2006; Wu et al., 2014).

Slyke et al. (2002) indicate that women rate the complexity of Web activities higher than men and are more likely to require assistance in conducting online activities than their male counterparts. Following this line of reasoning, we hypothesize that:

H6: The positive influence of facilitating conditions on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.

3.7. Moderating Effects of Educational Background

Educational background refers to the education and training that influence one's skills, knowledge, confidence, self-efficacy and therefore familiarity with the subject matter. As such, individuals with an IT educational background are expected to have a deep understanding of how to use technology effectively and efficiently. Gefen (2000) finds that familiarity with Web technologies builds trust in technology that promotes online purchasing intention. Similarly, Wang (2002) suggests that familiarity with IT influences one's trust in technology (or perceived credibility) of an electronic tax filing system. This in turn affects the behavioral intention to use the system. Recently, Yoon and Rolland (2012) show that individuals who are more familiar with virtual communities from education and training increase their trust of other people, thus become more active in sharing their knowledge in their virtual communities. Based on this reasoning, individuals with an IT educational background are more familiar with and more likely to trust a SNC because they have a higher level of self-efficacy and relatedness that motivate them to use the SNC, participate in online activities and interact with others in the community. As such, we hypothesize:

H7a: The positive influence of trust in technology on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals with IT background.
H7b: The positive influence of trust in community on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals with IT background.

Prior studies (Grant et al., 2009; Wallace and Clariana, 2005) show that individuals without an IT educational background put forth greater effort with SNCs as they perceive more cognitive efforts are required to operate the system and their self-efficacies are lower. They also tend to need help to use the system (Cowan and Jack, 2011). Following this line of argument, we propose:

H7c: The positive influence of effort expectancy on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals without an IT background.
H7d: The positive influence of facilitating conditions on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals without an IT background.

3.8. Control Variable

We regard familiarity and experience with SNCs as two related but distinct concepts. Familiarity with SNCs deals with the knowledge of SNCs gained through learning and interactions with them (Gefen, 2000). As such, familiarity is operationalized as educational background, as a moderator, in our model. Experience, on the other hand, is one's extent of exposure to SNCs and is defined as the passage of time from initial SNC participation (Venkatesh et al., 2012). In order to ensure that the empirical results of this study are not caused by prior SNC experience, it is included as a control variable.

4. RESEARCH METHOD

4.1. Samples

The participants in this study are undergraduate students at a comprehensive university in Taiwan. University students are good representatives of the Millennials as they are the embodiment of a

generation that grew up in the Internet age. For example, educated Millennials are more likely to be online, use SNCs, post/read digital contents, use mobile internet, and send/receive text messages (Pew Research Center, 2010). In addition, Millennials in Taiwan share comparable attitudes and behaviors as Millennials in other parts of the world (Brown, 2011). In fact, the pervasiveness of technology in the lives of Millennials has been attributed to the "global homogeneity" of this generation (Moore, 2012). The targeted SNC site is Facebook, as it is the largest and the most popular social networking site. More than 30% of their 1.4 billion monthly active visitors are from Asia-Pacific countries, as compared to 15% in the US (Plank and Tovar, 2015).

4.2. Instrument and Data Analysis Method

A survey research method was adopted for this research. The survey instrument was developed with items validated by prior research, whenever possible, and was adapted to the technologies and individuals considered in the present study. The measurements of the constructs used in this study are provided in Table 1. A paper-based survey was administered to the participating university students in the classroom. Their responses were collected after they completed the survey. The survey questions and their associated references are listed in Appendix A.

A total of 337 students took part in this study. The collected survey data were analyzed using the Partial Least Squares (PLS) method which was applied for testing similar models in the studies by Venkatesh (2008; 2003). PLS is used in this study because it is a preferred method when constructs are measured using reflective scales, and theoretical testing research in the field of SNCs is relatively

Table 1. Measurement of constructs

Latent Construct	Construct Type	Sub Construct	Sub-Construct Type	Code	No. of Items	Reference
Trust in technology	Reflective	Perceptions of trust in technology	Reflective	TT1-3	3	(McKnight et al. 2002)
Trust in community	Reflective	Perceptions of trust in community	Reflective	TC1-3	3	(McKnight et al. 2002)
Hedonic Motivation	Reflective	Perceived enjoyment	Reflective	HM1-4	4	(Agarwal and Karahanna 2000; Davis et al. 1992)
Effort expectancy	Reflective	Perceived ease of use	Reflective	EE1-5	5	(Davis 1989),
Social influence	Reflective	Subjective norm	Reflective	SI1-2	2	(Ajzen 1991)
		Social factor	Reflective	SI3	1	(Thompson et al. 1991)
Facilitating conditions	Reflective	Perceived Behavioral Control	Reflective	FC1-3	3	(Ajzen 1991)
		Facilitating Conditions	Reflective	FC4	1	(Thompson et al. 1991)
Intention to participate in a SNC	Reflective	Continuance participation intention	Reflective	IP1-3	3	(Agarwal and Karahanna 2000)

small (Gefen et al., 2011). The PLS software utilized was SmartPLS (Ringle et al., 2005). The decision rules set by Jarvis et al. (2003) were used to determine whether constructs should be designated as reflective or formative (see Table 1). These decision rules involved considering the direction of causality from construct to indicators/items, interchangeability of the indicators, covariation among the indicators, and the nomological net of the construct indicators (Jarvis et al., 2003). To test the validity of reflective constructs, we examined the construct validity, discriminant validity, and internal reliability (using Cronbach's Alpha) of the constructs. To confirm the convergent and discriminant validity of the collected data, both intra-construct item correlations and inter-construct item correlations were examined (Fornell and Larcker, 1981).

In an effort to rigorously identify the statistical significance of differences across gender groups and educational background groups and to conduct the statistical comparison of paths, the procedures suggested by Chin et al. (1996) was used in this study, similar to Keil et al. (2000) and Ahuja & Thatcher (2005). On the other hand, in evaluating the moderating effects, Kenny (2009) suggests that a complete moderation occurs when the causal effect of a predictor on an outcome variable becomes null as a moderator takes on a particular value. In addition, a discrete variable such as gender has a moderating effect on a causal relationship if "… the results are not strongly consistent within subgroups, or the results are strongly consistent but do not coincide with the overall results obtained after pooling over the subgroups" (Wermuth, 1989): p.82. The R-square statistic produced by the PLS indicates the fit of the research model in terms of explaining the variance in the sample.

5. DATA ANALYSIS AND RESULTS

5.1. Demographic Data

Among the 337 participants, the valid response rate was 89% after discounting the responses of 36 students who did not use a SNC voluntarily. Out of the remaining 301 undergraduate students, 198 of them (65.8%) were IT majors, who had taken quite a number of programming languages (such as Visual Basic, C++, Java, ASP.net), system design and analysis, database management and management information systems courses. The remaining 103 students (34.2%) were non-IT majors, who had taken only one introductory course in management information systems. A detailed cross-tabulation between gender and SNC experience is given in Table 2. Specifically, 48% were male, and 65% had more than 12 months experience using SNCs. Approximately 17% had between 3 and 12 months' experience using SNCs, and the remaining 18% had less than three months experience. It is observed in Figure 2 that the SNC participation rate among IT major students is higher than that of non-IT major students. The distributions of the male and female groups for both IT major and non-IT major undergraduate students are shown in Table 3.

5.2. The Measurement Model

To test for the problem of common method bias in the collected data, Harman's single factor test was conducted (Podsakoff et al., 2003). For this purpose, principle component factor analysis for

Table 2. Gender and SNC experience cross-tabulation

	SNC Experience						Total
	< 1mth	1-3mths	3-6mths	6-9mths	9-12mths	>12mths	
Male	18	14	8	8	9	88	145
Female	12	11	10	4	11	108	156
Total	30	25	18	12	20	196	301

Figure 2. Major and SNC experience (in months)
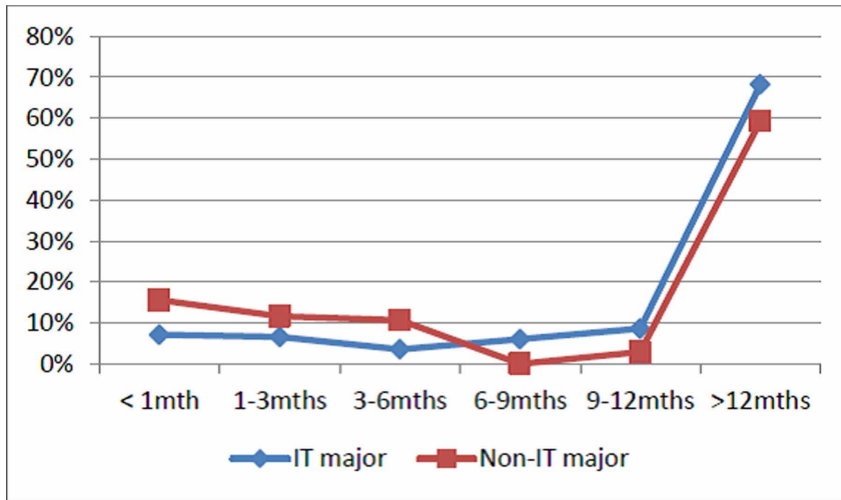
Table 3. Distribution of male and female groups

	IT Major	Non-IT Major
Male	105	40
Female	93	63
Total	198	103

one extracted factor and none-rotation was run using the SPSS. The result shows that the single factor explains less than 38% of the variation in sample data. Thus, the collected data does not indicate evidence of severe common method bias. Next, to further test the common method bias, the modeling of a latent common factor, as suggested in Liang et al. (2007) is carried out in SmartPLS. The results are shown in Appendix B. The average substantive variance of the indicators is 0.785, whereas the average method-based variance is 0.022. Besides, the ratio of the substantive variance to method variance is about 36:1 and most of the method factor loadings are either insignificant or less significant than the substantive factor loadings. This confirms that common method bias is unlikely to be a serious problem in this study.

In order to confirm the convergent validity of the constructs, the factor loadings of each item on its corresponding construct were examined. Items with loadings less than 0.5 had been dropped, as shown in Table 4. As a result, items FC4, HM4, and SI3 were excluded from further path analysis. The Average Variance Extracted (AVE) for each construct is given in Table 5. All figures exceeded the 0.5 threshold suggested by Fornell and Larcker (1981). Moreover, the composite reliability values were all above 0.7, which was the internal consistency threshold recommended in the literature (Fornell and Larcker 1981; Nunnally 1978). Furthermore, discriminant validity was evident—all items loaded more heavily on their corresponding constructs than on other constructs (Table 4), and the square root of all AVEs exceeded the correlations among constructs (Table 6).

To justify for multi-group analysis, according to Sarstedt and Ringle (2010), an appropriate means of testing measurement model invariance in PLS may build on whether the measurement parameters are the same across all subgroups and whether the same construct is measured in all subgroups. The analysis in Appendix C proves that both the

Table 4. Factor loadings for the seven constructs

	Factor						
	EE	**FC**	**HM**	**IP**	**TT**	**SI**	**TC**
EE1	.644						
EE2	.741						
EE3	.777						
EE4	.605						
EE5	.781						
FC1		.797					
FC2		.731					
FC3		.892					
HM1			.542				
HM2			.711				
HM3			.701				
IP1				.802			
IP2				.820			
IP3				.789			
TT1					.865		
TT2					.866		
TT3					.909		
SI1						.882	
SI2						.803	
TC1							.557
TC2							.612
TC3							.695

EE= Effort expectancy, FC= Facilitating conditions, HM=Hedonic motivation, IP= Intention to participate in a SNC, TT= Trust in technology, SI= Social influence, TC= Trust in community

Table 5. Descriptive statistics, average variance extracted and composite reliability

Construct	Mean	Std. Dev.	AVE	Composite Reliability	Cronbach's Alpha
Trust in technology (TT)	4.066	1.344	0.872	0.953	0.927
Trust in community (TC)	4.715	1.027	0.740	0.895	0.825
Hedonic Motivation (HM)	5.112	1.062	0.788	0.918	0.866
Effort expectancy (EE)	4.914	1.031	0.648	0.901	0.865
Social influence (SI)	4.096	1.449	0.872	0.931	0.855
Facilitating conditions (FC)	4.771	1.176	0.822	0.932	0.892
Intention to participate in a SNC (IP)	4.914	1.173	0.863	0.949	0.921

Table 6. Correlation table

	TC	HM	EE	SI	TT	FC	IP
TC	**0.860**						
HM	0.650	**0.888**					
EE	0.471	0.522	**0.805**				
SI	0.296	0.308	0.193	**0.934**			
TT	0.341	0.222	0.051	0.044	**0.934**		
FC	0.401	0.386	0.427	0.196	0.137	**0.907**	
IP	0.526	0.596	0.357	0.309	0.308	0.349	**0.929**

Note: The square root of AVE is shown on the diagonal.

gender subgroups (in Appendix C) and the educational background subgroups (in Appendix C) demonstrate same and adequate construct reliability and discriminant validity within their subgroups. In addition, for analyzing the moderating effect in PLS, Carte and Russell (2003) suggest that item weights (for all constructs) showing that the two subgroups do not vary significantly in construct score weighting are required. This requirement is met, and the results are shown in Appendix D for the gender subgroups and Appendix D for the educational background subgroups. All of the results indicate that items load and cross-load consistently across samples. Appendix D also shows convergent validity in both subgroups of gender and educational background.

5.3. The Structural Model

Based on the PLS analysis, the R-squared for the research model not including any of the moderating effects is 0.429. We found that trust in technology, trust in community, hedonic motivation, and social influence all have significant positive effects on the intention to participate in a SNC. Hedonic motivation (path coefficient = 0.388, t-value = 5.323, p < 0.001) is the most significant factor, followed by trust in technology (path coefficient = 0.153, t-value = 3.149, p < 0.01), trust in community (path coefficient = 0.140, t-value = 2.130, p < 0.05) and social influence (path coefficient = 0.120, t-value = 2.184, p < 0.05). Surprisingly, effort expectancy does not exhibit any significant effect on the intention to participate in a SNC (Figure 3). The reason may be that the hedonic factor outweighs the effort expectancy factor, or because the survey respondents do not perceive that an additional cognitive effort is required to participate in a SNC, due to the unique characteristics of early exposure to the digital world for Millennials.

To justify for comparing the structural model results across the gender subgroups in a more rigorous way, t-statistics as suggested by Chin et al. (1996) to evaluate the differences in path coefficients across the model are computed in Appendix E. Following this, we can then make a valid comparison between the path model for the male subgroup (Figure 4-a) and the female subgroup (Figure 4-b). The result shows the significant positive influence of trust in technology (path coefficient = 0.247, t-value = 3.408, p < 0.001) and trust in community (path coefficient = 0.156, t-value = 1.983, p < 0.05) on the intention to participate in a SNC for male respondents, but not for female respondents. It appears that a complete moderation occurred. The statistical analysis for testing the significance of differences in the corresponding path coefficient between the male and female subgroups in Appendix E shows that the two path coefficients are significantly different. This suggests that the male subgroup in our sample trust in technology and social network community more than the female counterparts.

Figure 3. Path analysis results for the entire sample
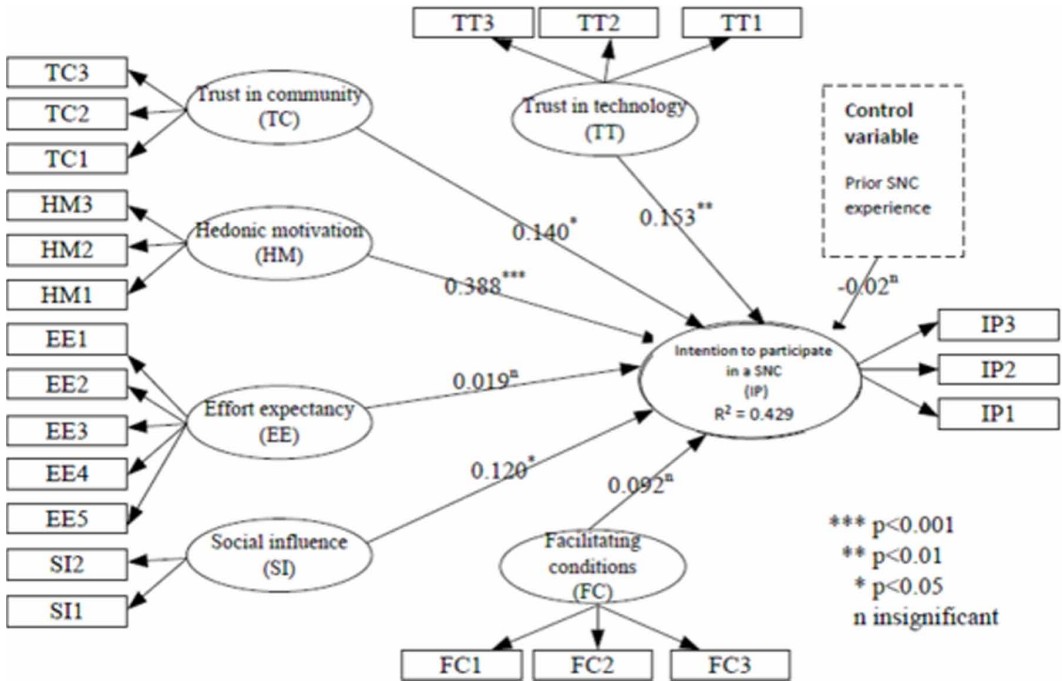
As such, H1 stating that the positive influence of trust in technology on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for men, is supported. In addition, H2, which states that the positive influence of trust in community on the intention to participate in SNC is moderated by gender, such that the effect is stronger for men, is supported. These are consistent with prior results (Lewis et al. 2008) that suggest women are more protective of their personal information, which in turn implies that women are more cautious with other people than their male counterparts are.

Both the male (path coefficient = 0.363, t-value = 4.185, $p < 0.001$) and female (path coefficient = 0.412, t-value = 3.738, $p < 0.001$) groups exhibited a significant positive influence of hedonic motivation on the intention to participate in a SNC. The path coefficient for the female subgroup is greater than the male subgroup; and this difference is statistically significant (see Appendix E). This provides the support for H3, which states that the influence of hedonic motivation on intention to participate in a SNC is moderated by gender, such that the effect is stronger for women. This result indicates that female perceives relatively more enjoyments in the participation in social networks; and this explains the reason women like SNCs (cf. (Hargittai, 2007)), and are more active in their use of SNCs compared to their male counterparts (Brenner, 2013). In contrast, the motivation for the male group to use SNCs would be something other than enjoyment – a similar situation in the use of other online systems.

Although effort expectancy seemingly has no significant influence on either the male or female subgroup in regards to their intention to participate in a SNC, the path coefficients from effort expectancy on the intention to participate in a SNC for men (path coefficient = -0.001, t-value = 0.016) and women (path coefficient = 0.023, t-value = 0.261) are significantly different from one another (|t-value| = 2.556, see Appendix E). According to Kenny (2007), the difference between the subgroups rather than the path coefficient significance determines the moderation effect. As a result,

H4, which states that the positive influence of effort expectancy (i.e., perceived ease of use) on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women, is supported. This demonstrates that, to some degree, female subgroup thinks that the use of social media networks still requires a bit of related technology skill and familiarity than the male subgroup.

The results in Figures 4a and 4b indicate that social influence had no significant positive effect on the intention to participate in a SNC for both the male subgroup (path coefficient = 0.128, t-value = 1.620, p > 0.05) and the female subgroup (path coefficient = 0.123, t-value = 1.375, p > 0.05). The comparison test on the path coefficients from social influence to the intention to participate in a SNC conducted for the two subgroups (shown in Appendix E) are also found to be insignificantly different. Therefore, H5, which states that the effect of social influence on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women, is not supported. This implies that there is no significant difference between men and women on how social influence affects their intention to participate in a SNC. So, in contrast to prior studies, our study does not support the notion that women are more easily persuaded by others than men to participate in a SNC. This finding can be due to differences in different generation group, having different social exposure and mindsets.

Facilitating conditions are found to be insignificant at p < 0.05 for both the male subgroup (path coefficient = 0.058, t-value = 0.667, p > 0.05) and female subgroup (path coefficient = 0.124, t-value = 1.488, p > 0.05). However, the statistical comparison test in Appendix E shows that there is a significant difference in the corresponding path coefficient between the male and female subgroups. Therefore, H6, which states that the influence of facilitating conditions on intention to participate in a SNC is moderated by gender, such that the effect is stronger for women, is supported. This finding is related to one's technology self-efficacy, i.e. when one's technology self-efficacy is low than facilitating conditions are needed to provide supports, otherwise it can cause barrier in one's intention to continue to use that technology.

Similar to the subgroup analysis involved in the gender subgroups, to justify for comparing the structural model results across the educational background subgroups in a more rigorous way, t-statistics as suggested by Chin et al. (1996) are computed to evaluate the differences in path coefficients across the models. The multi-group comparison test results, between the two subgroups of students majoring in IT and non-IT, are summarized in Table 7 (see Appendix F for details). We find that the IT major group, which has more of an IT educational background, shows a significantly stronger effect of the positive influence of trust in technology, and trust in community on participants' intention to participate in a SNC than the non-IT major subgroup. However, the t-statistics for testing the differences in the path coefficient, from trust in technology to the intention to participate in a SNC across the models, shows that there is no practical significance in the difference between the IT-major subgroup and non-IT major subgroup. Thus, H7a is partially supported and H7b is supported.

The result for H7a suggests that our survey respondents, regardless of their IT educational background, possess an almost similar level of trust in technology. On the other hand, the result for H7b indicates that IT educational background positively influences one's perceived relatedness, belonging and trust in one's SNC. This could be that trust is transferred from trust in IT/SNC to trust in community (Ng 2013).

Although the t-values are not significant (in Table 7) for the paths from effort expectancy and facilitating conditions on the intention to participate in a SNC, the non-IT major subgroup shows a stronger negative effect of effort expectancy (path coefficient = -0.122) as well as a stronger positive effect of facilitation conditions (path coefficient = 0.121) on the intention to participate in a SNC, as compared to the IT major group (path coefficient = 0.110 and path coefficient = 0.092, respectively). In comparing the significance of differences in the corresponding two path coefficients, the multi-group comparisons based on the parametric approach in Table 7 indicate that these two path coefficients are significantly different between the IT major and non-IT major subgroups. Thus, H7c is partially

Figure 4. (a) Path analysis results for male group; (b) Path analysis results for female group
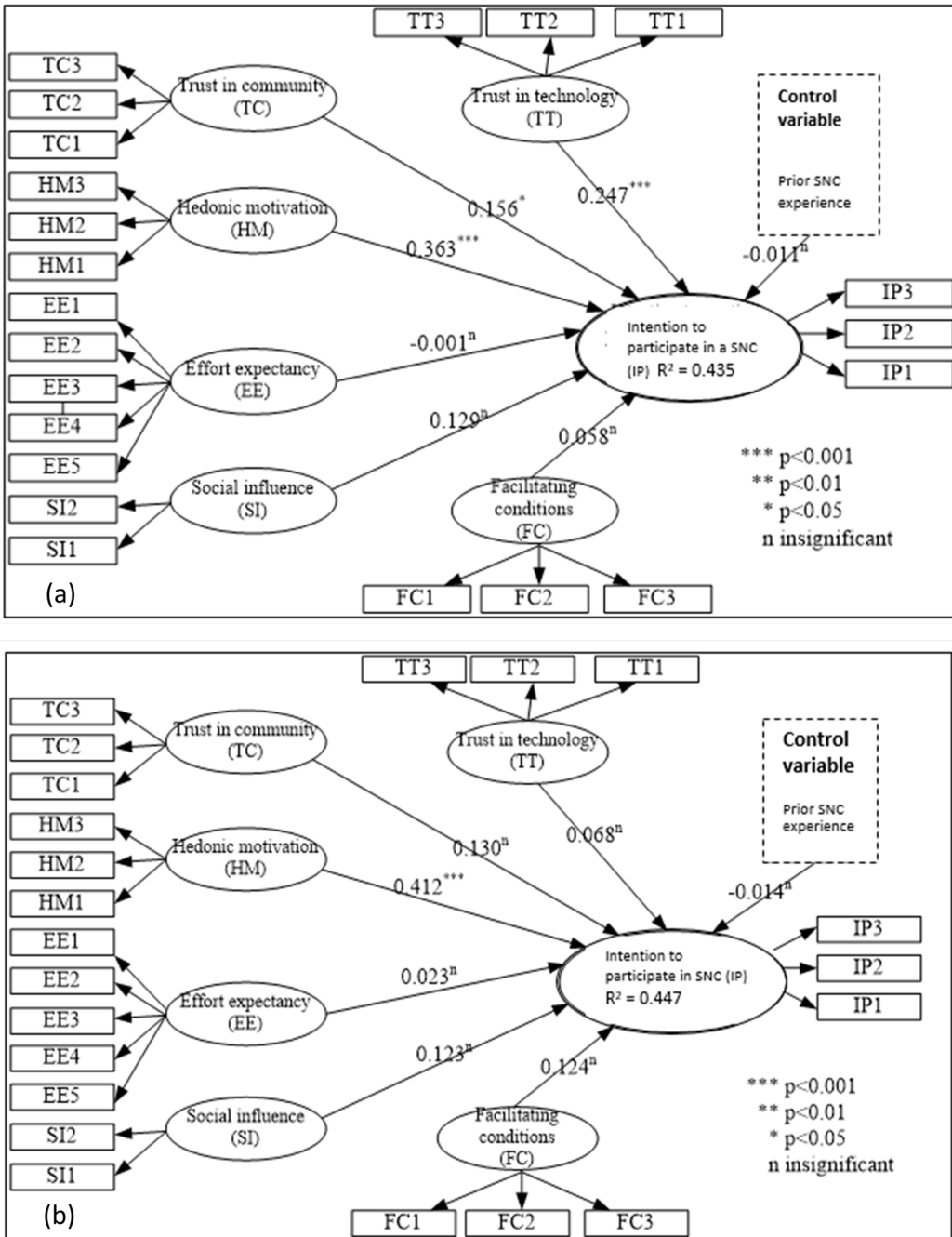
supported and H7d is supported. In general, the non-IT major group shows a stronger effect of the positive influence of facilitating conditions on the intention to participate in a SNC than the IT major group. This is because the availability of facilitating conditions can serve as a stimulus in case one (e.g., the non-IT major group) faces difficulties in using the technology.

Table 7. PLS results - moderating effect of educational background

	IT Major		Non-IT Major		Statistical Comparison of Path Coefficients[A]
	β	T-Value	β	T-Value	T-Value
Trust in technology (TT)	0.164**	2.857	0.157	1.815	0.827
Trust in community (TC)	0.168*	2.334	0.064	0.634	10.238***
Hedonic Motivation (HM)	0.305***	3.495	0.534***	4.925	-19.820***
Effort expectancy (EP)	0.110	1.422	-0.122	1.532	24.400***
Social influence (SI)	0.161*	2.568	0.049	0.594	13.206***
Facilitating conditions (FC)	0.092	1.246	0.130	1.191	-3.595***
Experience	-0.055	0.930	0.051	0.803	
R-square	0.437		0.469		

*p < .05; **p < .01;***p < .001; A – see Appendix F for details

6. DISCUSSION

In this study, hedonic motivation, trust in technology, trust in community, and social influence are demonstrated to be significant factors in influencing Millennials' intention to participate in a SNC, with hedonic motivation exhibiting the most impact. This is consistent with the results of Gwebu et al. (2014), and Sledgianowski et al. (2009). As such, website designers looking to improve a SNC should consider incorporating enjoyable entertainment applications and interesting user interfaces to maintain and increase the popularity and attractiveness of the SNC. They should also implement privacy and security mechanisms to ensure the trustworthiness of their sites. In addition, ways to increase participants' relatedness by promoting trust and bonding among one another while bridging ties with new participants should be considered.

Our results concerning the influence of effort expectancy on users' intention to participate in a SNC differ from prior studies (Lin, 2006; Sledgianowski and Kulviwat, 2009; Wu et al., 2014) since we do not find this factor to be significant. As the Millennial generation becomes more IT literate and access to the Internet becomes more widespread, the impact of effort expectancy on IT or online systems adoption will continue to diminish over time. Interestingly, in the absence of hedonic motivation, effort expectancy does become a significant determinant of the intention to participate in a SNC, which suggests that a lack of enjoyable applications leads users to focus greater attention on perceived ease of use of the system for social interaction and communication.

A summary of the tested hypotheses is presented in Table 8. Gender exhibits a moderating effect on the intention to participate in a SNC through trust in technology, trust in community, hedonic motivation, effort expectancy and facilitating conditions. However, contrary to previous studies, the impact of social influence is not moderated by gender. This finding is in line with the observation that both male and female Millennials place less trust in people and are less influenced by those who are unrelated to and/or unassociated with them (Pew Research Center, 2014). Furthermore, while men and women may have different goals in participating in a SNC, they are under no obligation to participate in a community that does not meet their needs, no matter who is in that community.

Educational background, operationalized as IT background (as seen in Tables 8), was found to play an important role in moderating the main effect of trust in community, hedonic motivation, effort expectancy, social influence and facilitating conditions. For students who are non-IT majors, social influence has no impact on their behavioral intention to participate in a SNC. We also observe

Table 8. Summary of tests of hypotheses and results

Hypothesis	Test Result
H1: The positive influence of trust in technology on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for men.	Supported
H2: The positive influence of trust in community on intention to participate in a SNC is moderated by gender, such that the effect is stronger for men.	Supported
H3: The positive influence of hedonic motivation on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.	Supported
H4: The positive influence of effort expectancy on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.	Supported
H5: The positive effect of social influence on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.	Not Supported
H6: The positive influence of facilitating conditions on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.	Supported
H7a: The positive influence of trust in technology on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals with IT background.	Partially Supported*
H7b: The positive influence of trust in community on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals with IT background.	Supported
H7c: The positive influence of effort expectancy on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals without IT background.	Partially Supported**
H7d: The positive influence of facilitating conditions on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals without IT background.	Supported

* The positive influence of trust in technology on the intention to participate in a SNC is stronger for individuals with IT educational background; but this relationship is not practically significantly moderated by educational background.

**The positive effect of effort expectancy on the intention to participate in a SNC has not been found to be stronger for individuals without IT training.

that the negative effects of effort expectancy on the intention to participate in a SNC are indeed stronger for the non-IT major male group than the IT major male group, and likewise for the non-IT major female group versus the IT major female group. The majority of the hypotheses related to the moderator of educational background (as listed in Table 8) is proved to be significant. This indicates that one's choice of major is an important factor that influences behavioral intention to participate in a SNC through factors such as trust in community, facilitating conditions, and effort expectancy.

7. CONCLUSION

7.1. Theoretical Implications

This study adapts UTAUT2 model to explain Millennials' intention to participate in a SNC by integrating the underlying eight theories of UTAUT with social exchange, social capital, and self-determination theories from psychology. Our resultant model has six determinants (*hedonic motivation*, *trust in community*, *trust in technology*, *effort expectancy*, *social influence*, and *facilitating conditions*) and two moderators (*gender* and *educational background*). We provide a better understanding of Millennials' intention to participate in a SNC from an intrinsic motivation of enjoyment and relatedness perspective. This implies that Millennials will participate in a SNC as long as their innate psychological need of pleasure and the desire to be connected to others are met.

7.2. Implications for SNC Service Providers

SNC sites that provide interesting and enjoyable applications are better able to retain and/or increase Millennials' loyalty, and can better manage relationships with these tech savvy users. However, satisfying all Millennials is difficult because of their individual differences. Findings of our study show that individual differences pertaining to gender and IT educational background impose different requirements and standards for facilitating conditions, effort expectancy, trust in technology and trust in community. SNC service providers can consider the feasibility of providing Millennials with customized and dynamic SNC content and functionality tailored to their individual differences. For example, chat support, Q&A forum, or SNC training can be offered to women and individuals with non-IT background to increase their trust in technology, trust in community, facilitating conditions, and effort expectancy. SNC service providers can also develop more mechanisms to improve SNC security and privacy protection to ensure women Millennials feel safe and comfortable in the SNC environment. Trust is an important issue with social networking especially for the future development of social commerce. By properly establishing and maintaining site standards, and by promoting SNC familiarity through education and training, trust in technology and community can be elevated across all Millennials to ensure their SNC participations.

7.3. Implications for Online Advertising

Consumers in general and Millennials in particular are accessing new and existing types of online media, such as SNC, more frequently and for longer periods of time. Enterprises recently allocate greater percentages of their marketing budgets to this channel due to its relatively low costs and its pervasiveness. Although there are research and market reports indicating that many users of Facebook and other SNCs remain dissatisfied with privacy levels (Xu et al., 2013), frequent website changes, and increases in commercialization and advertising (Gaudin, 2010), this does not necessarily mean that online advertising does not have its place within SNCs. The issue simply relates to how and who to target with what types of advertisements.

The findings from this research help to answer these questions. A better understanding of the characteristics and preferences of Millennials enables advertisers to provide target advertising more efficiently, deliver the right content to the right audience, as well as develop a platform for brand management. For example, e-marketers can focus more on advertising male-oriented products as male Millennials have more trust in technology and communities than females. In addition, knowing women Millennials' SNC participations are more intrinsically motivated than men, advertising to women should be more than expressing a brand message. It should provide a platform of two-way communication between women and the brand for relationship building, feedback and/or review solicitation, and electronic word-of-mouth viral marketing (IBM 2012; Tadena 2015).

7.4. Limitations and Future Study

This study focuses on Millennial users of Facebook in Taiwan. As such, the results discussed are only applicable to other SNCs with similar purposes, contents, and user groups. In addition, this study excludes performance expectancy from the research model as Millennials associate IT primarily for fun and enjoyment instead of work-related activities. Some studies, however suggest that perceived usefulness has a significant influence on users' intention to use SNCs (Al-Debei, 2013; Lin and Lu, 2011; Shin, 2010; Wu, 2014) and different countries also present different motivators and barriers for using SNCs (see Chang and Zhu, 2011; Kim et al., 2011). Thus, further studies may examine other motivations behind using a SNC such as the performance expectancy factor especially if job-related SNCs are examined.

Different types of SNCs such as Snapchat (a photo sharing site), Twitter (a microblogging site), LinkedIn (a SNC for professional occupations) and Research Gate (a SNC for researchers and scientists) require additional studies focusing on a different set of factors such as credibility of a user profile,

reliability of the data provided, reciprocity/shared values among members, and cultural differences. Moreover, in light of the low R-square value, further study is needed to examine additional factors that may be significant in influencing SNC participations, potentially including webpage design, website navigation style (cf. Nathan and Yeow, 2011), and the impact of online advertising.

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APPENDIX A

Table 9. Survey items and associated reference

Construct	Items	Ref.
Trust in technology	1. The Internet has enough safeguards to make me feel comfortable using it. 2. I feel assured that legal and technological structures adequately protect me from problems on the Internet. 3. I feel confident that the encryption and other technological advances on the Internet make it safe for me to transact (i.e., socialize with others) there.	(McKnight et al., 2002)
Trust in community	1. I feel fine interacting with the SNC since it fulfills my needs of interaction efficiently. 2. I always feel confident that I can rely on the responses and feedback from the SNC when I interact with them. 3. I am comfortable relying on the contents of any discussion topic from the SNC.	(McKnight et al., 2002)
Hedonic motivation	1. The actual process of participating in a SNC is pleasant. 2. I have fun participating in a SNC. 3. Participating in a SNC bores me. 4. I enjoy participating in a SNC.	(Agarwal and Karahanna 2000; Davis et al., 1992)
Effort expectancy	Perceived ease of use 1. Learning to operate the system would be easy for me. 2. I would find it easy to get the system to do what I want it to do. 3. I would find the system easy to use. 4. Using Facebook involves too much time doing mechanical operations (e.g. data input). (reversed scale) 5. It takes too long to learn how to use Facebook to make it worth the effort. (reversed scale)	(Davis, 1989)
Social influence	Subjective Norm 1. My friends think that I should use the system. 2. My classmates think that I should use the system.	(Ajzen, 1991)
	Social Factors 3. I use the system because of a proportion of my classmates use it.	(Thompson et al., 1991)
Facilitating conditions	Perceived Behavioral (Control) 1. I have control over using the system. 2. I have the resources necessary to use the system. 3. I have the knowledge necessary to use the system.	(Ajzen, 1991)
	Facilitating Conditions 4. Specialized instruction concerning the system was available to me.	(Thompson et al., 1991)
Intention to participate in a SNC	1. I intend to participate in a SNC in the future. 2. I expect my use of the SNC to continue in the future. 3. I plan to use the SNC in the future.	(Agarwal and Karahanna, 2000)

APPENDIX B

Table 10. Common method bias analysis

Construct	Indicator	Substantive Factor Loading (R1)	R1-Square	Method Factor Loading (R2)	R2-Square
Facilitating conditions	FC1	0.904***	0.818	0.099	0.010
	FC2	0.895***	0.802	0.117	0.014
	FC3	0.920***	0.847	0.076	0.006
Intention to participate in a SNC	IP1	0.938***	0.879	0.088	0.008
	IP2	0.927***	0.860	0.095	0.009
	IP3	0.922***	0.851	0.097	0.009
Hedonic Motivation	HM1	0.864***	0.747	0.117	0.014
	HM2	0.908***	0.825	0.139*	0.019
	HM3	0.891***	0.794	0.203***	0.041
Effort expectancy	EE1	0.793***	0.629	0.077	0.006
	EE2	0.837***	0.700	0.051	0.003
	EE3	0.837***	0.701	0.145*	0.021
	EE4	0.729***	0.531	0.438***	0.192
	EE5	0.835***	0.696	0.280	0.078
Social influence	SI1	0.932***	0.868	0.029	0.001
	SI2	0.938***	0.879	0.059	0.004
Trust in community	TC1	0.855***	0.731	0.163**	0.026
	TC2	0.872***	0.760	0.174**	0.030
	TC3	0.854***	0.730	0.034	0.001
Trust in technology	TT1	0.933***	0.870	0.020	0.000
	TT2	0.922***	0.850	0.003	0.000
	TT3	0.947***	0.897	0.007	0.000
	Average	0.884	0.785	0.114	0.022

*p < .05; **p < .01;***p < .001

APPENDIX C

Table 11. Composite reliabilities and discriminant validity for the two gender and educational background subgroups

3-1: The Gender Subgroups																
	Male Subgroup								Female Subgroup							
	CR	Correlation of Constructs							CR	Correlation of Constructs						
		1	2	3	4	5	6	7		1	2	3	4	5	6	7
1. EE	0.90	**0.80**							0.90	**0.81**						
2. FC	0.93	0.43	**0.90**						0.93	0.42	**0.91**					
3. IP	0.94	0.31	0.28	**0.92**					0.96	0.40	0.41	**0.94**				
4. HM	0.90	0.49	0.36	0.58	**0.87**				0.93	0.56	0.42	0.62	**0.91**			
5. SI	0.93	0.21	0.16	0.24	0.23	**0.93**			0.93	0.18	0.22	0.37	0.37	**0.93**		
6. TC	0.90	0.46	0.37	0.51	0.63	0.16	**0.86**		0.90	0.49	0.43	0.55	0.67	0.40	**0.86**	
7. TT	0.96	0.06	0.05	0.40	0.27	-0.04	0.34	**0.95**	0.94	0.05	0.22	0.23	0.17	0.14	0.35	**0.92**
3-2: The Educational Background Subgroups																
	IT Major Subgroup								Non-IT Major Subgroup							
	CR	Correlation of constructs							CR	Correlation of constructs						
		1	2	3	4	5	6	7		1	2	3	4	5	6	7
1. EE	0.89	**0.79**							0.92	**0.83**						
2. FC	0.92	0.44	**0.89**						0.95	0.41	**0.93**					
3. IP	0.95	0.42	0.33	**0.93**					0.95	0.27	0.43	**0.92**				
4. HM	0.90	0.55	0.34	0.57	**0.87**				0.95	0.52	0.51	0.64	**0.92**			
5. SI	0.93	0.15	0.14	0.31	0.25	**0.93**			0.93	0.28	0.35	0.29	0.36	**0.93**		
6. TC	0.89	0.47	0.33	0.53	0.64	0.24	**0.94**		0.90	0.48	0.52	0.52	0.68	0.37	**0.87**	
7. TT	0.95	0.02	0.10	0.29	0.18	0.02	0.27	**0.94**	0.95	0.12	0.23	0.36	0.30	0.08	0.47	**0.93**

EE=Effort expectancy, FC= Facilitating conditions, IP= Intention to participate in a SNC, HM= Hedonic motivation, SI= Social influence, TC= Trust in community, TT=Trust in technology.CR= Composite reliability, Note: Diagonal is the square-root of the construct's AVE. For adequate discriminate validity, diagonal elements should be greater than corresponding off-diagonal elements

APPENDIX D

Table 12. Item weights and cross loadings for the two gender subgroups

	Male Subgroup							Female Subgroup						
	EE	FC	IP	HM	SI	TC	TT	EE	FC	IP	HM	SI	TC	TT
EE1	**0.77**							**0.84**						
EE2	**0.85**							**0.89**						
EE3	**0.87**							**0.83**						
EE4	**0.69**							**0.66**						
EE5	**0.81**							**0.82**						
FC1	0.39	**0.92**						0.44	**0.93**					
FC2	0.41	**0.88**						0.35	**0.88**					
FC3	0.36	**0.91**						0.33	**0.91**					
IP1	0.37	0.28	**0.93**					0.41	0.36	**0.95**				
IP2	0.26	0.23	**0.93**					0.31	0.37	**0.93**				
IP3	0.23	0.25	**0.89**					0.38	0.41	**0.94**				
HM1	0.47	0.39	0.53	**0.88**				0.49	0.31	0.52	**0.85**			
HM2	0.39	0.28	0.51	**0.88**				0.54	0.43	0.60	**0.95**			
HM3	0.43	0.25	0.45	**0.85**				0.50	0.41	0.57	**0.92**			
SI1	0.22	0.13	0.17	0.17	**0.90**			0.16	0.17	0.33	0.32	**0.93**		
SI2	0.18	0.17	0.26	0.25	**0.96**			0.18	0.24	0.36	0.37	**0.94**		
TC1	0.43	0.38	0.46	0.59	0.17	**0.86**		0.47	0.41	0.53	0.64	0.36	**0.89**	
TC2	0.40	0.32	0.49	0.58	0.16	**0.89**		0.38	0.36	0.44	0.58	0.39	**0.87**	
TC3	0.35	0.23	0.35	0.45	0.07	**0.83**		0.40	0.35	0.44	0.50	0.28	**0.83**	
TT1	0.07	0.03	0.38	0.24	-0.06	0.33	**0.94**	0.04	0.21	0.19	0.17	0.14	0.30	**0.90**
TT2	0.00	0.03	0.33	0.22	-0.06	0.25	**0.94**	0.07	0.18	0.24	0.15	0.14	0.31	**0.92**
TT3	0.09	0.09	0.42	0.31	0.00	0.37	**0.97**	0.03	0.23	0.20	0.15	0.10	0.36	**0.92**

EE=Effort expectancy, FC= Facilitating conditions, IP= Intention to participate in a SNC, HM= Hedonic motivation, SI= Social influence, TC= Trust in community, TT=Trust in technology. Note: Bold are the item weights showing that the two subgroups do not vary significantly in construct score weighting (Carte and Russell 2003).

APPENDIX E

Table 13. Item weights and cross loadings for the two educational background subgroups

	IT Major Subgroup							Non-IT Major Subgroup						
	EE	FC	IP	HM	SI	TC	TT	EE	FC	IP	HM	SI	TC	TT
EE1	**0.78**							**0.86**						
EE2	**0.89**							**0.82**						
EE3	**0.82**							**0.89**						
EE4	**0.62**							**0.78**						
EE5	**0.82**							**0.81**						
FC1	0.42	**0.92**						0.44	**0.94**					
FC2	0.41	**0.85**						0.34	**0.93**					
FC3	0.35	**0.91**						0.34	**0.91**					
IP1	0.46	0.32	**0.94**					0.29	0.38	**0.95**				
IP2	0.33	0.27	**0.92**					0.23	0.42	**0.94**				
IP3	0.37	0.33	**0.93**					0.23	0.39	**0.88**				
HM1	0.54	0.33	0.51	**0.86**				0.44	0.45	0.52	**0.88**			
HM2	0.45	0.30	0.50	**0.88**				0.50	0.48	0.65	**0.96**			
HM3	0.44	0.24	0.46	**0.86**				0.51	0.49	0.61	**0.93**			
SI1	0.12	0.15	0.27	0.21	**0.93**			0.32	0.21	0.19	0.28	**0.89**		
SI2	0.15	0.11	0.31	0.26	**0.94**			0.23	0.39	0.32	0.37	**0.96**		
TC1	0.44	0.34	0.50	0.63	0.18	**0.87**		0.49	0.48	0.50	0.61	0.42	**0.89**	
TC2	0.38	0.31	0.46	0.55	0.24	**0.87**		0.40	0.40	0.47	0.64	0.36	**0.90**	
TC3	0.40	0.19	0.40	0.46	0.20	**0.83**		0.35	0.48	0.39	0.50	0.15	**0.82**	
TT1	0.02	0.08	0.26	0.16	0.02	0.27	**0.93**	0.11	0.20	0.34	0.30	0.07	0.42	**0.93**
TT2	0.01	0.08	0.29	0.17	0.06	0.24	**0.93**	0.08	0.17	0.28	0.21	0.01	0.36	**0.92**
TT3	0.03	0.11	0.26	0.18	-0.01	0.27	**0.95**	0.13	0.26	0.38	0.32	0.12	0.53	**0.94**

EE=Effort expectancy, FC= Facilitating conditions, IP= Intention to participate in a SNC, HM= Hedonic motivation, SI= Social influence, TC= Trust in community, TT=Trust in technology. Note: Bold are the item weights showing that the two subgroups do not vary significantly in construct score weighting (Carte and Russell 2003).

APPENDIX F

Table 14. Model summary – Statistical comparison of paths for the two gender subgroups

Construct	Male (N1=145, R1-Squared=0.435)			Female (N2=156, R-Squared=0.447)			Statistical Comparison of Paths[A]
	Std. Path Coefficient	T-Value	Std. Error	Std. Path Coefficient	T-Value	Std. Error	T-Value
Trust in technology -> Intention to participate in a SNC	0.247***	3.408	0.073	0.068	0.865	0.079	20.459***
Trust in community -> Intention to participate in a SNC	0.156*	1.983	0.078	0.130	1.255	0.104	2.391*
Hedonic motivation -> Intention to participate in a SNC	0.363***	4.185	0.087	0.412***	3.738	0.110	-4.270***
Effort expectancy -> Intention to participate in a SNC	-0.001	0.016	0.074	0.023	0.261	0.087	-2.556*
Social influence -> Intention to participate in a SNC	0.128	1.620	0.079	0.123	1.375	0.089	0.542
Facilitating conditions -> Intention to participate in a SNC	0.058	0.667	0.087	0.124	1.488	0.083	-6.714***

*=0.10 significance **= 0.05 significance, ***= 0.001 significance

[A]The statistical comparison of paths was carried out using the following procedure as suggested byChin et al. (1996) and applied by Keil et al. (2000) and Ahuja & Thatcher (2005):

$S_{pooled} = sqrt\{ [(N_1-1) / (N_1 + N_2 -2)] \times SE_1^2 + [(N_2-1) / (N_1 + N_2 -2)] \times SE_2^2 \}$

$t = (PC_1 - PC_2) / [S_{pooled} \times sqrt(1/N_1 + 1/N_2)]$

APPENDIX G

Table 15. Model summary – Statistical comparison of paths for the two educational background subgroups

Construct	IT Major (N1=198, R1-Squared=0.437)			Non-IT Major (N2=103, R-Squared=0.469)			Statistical Comparison of Paths[A]
	Std. Path Coefficient	T-Value	Std. Error	Std. Path Coefficient	T-Value	Std. Error	T-Value
Trust in technology -> Intention to participate in a SNC	0.164**	2.857	0.057	0.157	1.815	0.086	0.827
Trust in community -> Intention to participate in a SNC	0.168*	2.334	0.072	0.064	0.634	0.101	10.238***
Hedonic motivation -> Intention to participate in a SNC	0.305***	3.495	0.087	0.534	4.925	0.108	-19.820***
Effort expectancy -> Intention to participate in a SNC	0.110	1.422	0.078	-0.122	1.532	0.079	24.400***
Social influence -> Intention to participate in a SNC	0.161*	2.568	0.063	0.049	0.594	0.082	13.206***
Facilitating conditions -> Intention to participate in a SNC	0.092	1.246	0.074	0.130	1.191	0.109	-3.595***

* = 0.10 significance ** = 0.05 significance, *** = 0.001 significance

[A]The statistical comparison of paths was carried out using the following procedure as suggested byChin et al. (1996) and as shown in Appendix F.

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