

# The Influence of Perceived Belonging on Social Network Site Adoption

*Completed Research Paper*

**Claus-Peter H. Ernst**

Johannes Gutenberg-Universität Mainz  
ernstcp@uni-mainz.de

**Jella Pfeiffer**

Johannes Gutenberg-Universität Mainz  
jella.pfeiffer@uni-mainz.de

**Franz Rothlauf**

Johannes Gutenberg-Universität Mainz  
rothlauf@uni-mainz.de

## ABSTRACT

Adoption research on *Social Network Sites* (SNSs) indicates that all three popular *Technology Acceptance Model* (TAM) constructs, *Perceived Ease of Use*, *Perceived Enjoyment*, and *Perceived Usefulness*, influence the *Behavioral Intention to Use* SNSs. In contrast, little is known about the specific antecedents of *Perceived Enjoyment* and *Perceived Usefulness* in an SNS context. We address this gap by studying whether *Perceived Belonging*, which we describe as the degree to which a person feels connected to and accepted by other individuals, has an influence on these two constructs. After surveying 415 students and applying a structural equation modeling approach, we confirm that *Perceived Belonging* positively influences both *Perceived Enjoyment* and *Perceived Usefulness* and, hence, also indirectly influences overall SNS adoption behavior.

## Keywords

Adoption, Belonging, Social Network Site, Technology Acceptance Model.

## INTRODUCTION

*Social Network Sites* (SNSs) like *Facebook* have been gaining momentum and attracting a large amount of users. Indeed, two of the ten most popular websites were SNSs as of December 31, 2012 (Alexa, 2012). Boyd and Ellison (2007, p. 211) define them as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection [regularly referred to as SNS-friends], and (3) view and traverse their list of connections and those made by others within the system”. Since the total number of registered members determines the value of an SNS for its members and vendors alike (Gangadharbatla, 2008; Katz and Shapiro, 1985), there is a growing interest in studies that investigate SNS adoption.

The *Technology Acceptance Model* (TAM) (Davis, Bagozzi and Warshaw, 1989) is the most commonly used theory in adoption research (Venkatesh and Bala, 2008). It has been extended and modified multiple times but by and large postulates that the adoption of information technologies is primarily determined by their *Perceived Ease of Use*, *Perceived Enjoyment*, and *Perceived Usefulness* (Van der Heijden, 2004). Studies on the adoption of SNSs were able to confirm these postulated relationships (Alarcón-del-Amo, Lorenzo-Romero and Gómez-Borja, 2012; Hu, Poston and Kettinger, 2011; Sledgianowski and Kulviwat, 2008). However, the influence of *Perceived Enjoyment* and *Perceived Usefulness* on SNS adoption behavior does not provide vendors with specific guidance, since they still don't know *why* SNSs are perceived to be useful and fun. Yet, little is known about the specific antecedents of *Perceived Enjoyment* and *Perceived Usefulness* in an SNS context. We postulate that *Perceived Belonging*, which we describe as the degree to which a person feels connected to and accepted by other individuals (Baumeister and Leary, 1995; Maslow, 1943; Sheldon, Abad and Hinsch, 2011; Watson and Johnson, 1972), has a positive influence on both the *Perceived Enjoyment* and *Perceived Usefulness* of SNSs:

Belonging to a group is useful to individuals since it provides practical benefits such as support in times of need, in the form of encouragement, advice or material resources (Barrera, 1986; Baumeister and Leary, 1995; Cobb, 1976; Cohen and Wills, 1985; Eaton, 1978; Sandler, 1980; Watson and Johnson, 1972). Furthermore, the feeling of belonging is positively linked to *hedonic well-being* (e.g., Baumeister and Leary, 1995; Berkman and Syme, 1978; LaVeist, Sellers, Elliot Brown and Nickerson, 1997; Rook, 1984), which is represented by the presence of positive hedonic feelings such as fun, enjoyment, happiness and pleasure (Malhotra, Kim and Agarwal, 2004).

Hence, we argue that if people believe SNSs can help them feel like part of a larger group or help them cultivate stronger relationships with other individuals, they perceive them to be useful and fun. After surveying 415 students and applying a structural equation modeling approach, we confirm that *Perceived Belonging* positively influences both *Perceived Enjoyment* and *Perceived Usefulness*.

The next section explains the TAM with *Perceived Enjoyment* as an additional influence factor and presents TAM's past use in SNS adoption research. Following this, we discuss *Perceived Belonging* as an additional TAM construct and present our research and measurement models. We then reveal and discuss our results before summarizing our findings, presenting their theoretical as well as practical implications, and providing an outlook on further research.

## THEORETICAL BACKGROUND

### The Technology Acceptance Model and its Use in SNS Adoption Research

The *Technology Acceptance Model* (TAM) (Davis et al., 1989) has been used in numerous research articles (Chang, Chou and Yang, 2010) and thus acquired a prominent status in IS adoption literature. It postulates that two personal beliefs, *Perceived Usefulness* and *Perceived Ease of Use*, predict the *Behavioral Intention to Use* an information technology, which, in turn, predicts the *Actual System Use* (see Table 1 for classic definitions of TAM's initial constructs).

Construct	Definition
Actual System Use	Refers to a person's actual use of an information technology (Straub, Limayem and Karahanna-Evaristo, 1995).
Behavioral Intention to Use	"[Behavioral] Intentions ... capture the motivational factors that influence a [person's] behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior" (Ajzen, 1991, p. 181).
Perceived Ease of Use	"[T]he degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320).
Perceived Usefulness	"[T]he degree to which a person believes that using a particular system would enhance his or her job [and task] performance" (Davis, 1989, p. 320).

Table 1. Definitions of TAM's Constructs

Since its initial description, the TAM has been extended and modified several times; the inclusion of *Perceived Enjoyment* as an additional construct was among its most prominent modifications (e.g., Moon and Kim, 2001; Van der Heijden, 2004). It is defined as "the extent to which the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences resulting from system use" (Venkatesh, 2000, p. 351) and, thus, reflects the users' intrinsic motivations to use information technologies such as fun, enjoyment, and other positive experiences, which stem directly from the system-user interaction (Brief and Aldag, 1977; Van der Heijden, 2004; Venkatesh, Thong and Xu, 2012).

Alarcón-del-Amo et al. (2012), Hu et al. (2011), and Sledgianowski and Kulviwat (2008) build on the TAM to study SNS adoption. Their findings indicate that all three popular constructs, *Perceived Ease of Use*, *Perceived Enjoyment*, and *Perceived Usefulness*, influence the *Behavioral Intention to Use* SNSs. However, it is still unclear why SNSs are perceived as fun and useful. In the following section, we address this gap by presenting *Perceived Belonging* as an SNS-specific antecedent of *Perceived Enjoyment* and *Perceived Usefulness*.

### Perceived Belonging

We believe that *Perceived Belonging*, which we describe as the degree to which a person feels connected to and accepted by other individuals (Baumeister and Leary, 1995; Maslow, 1943; Sheldon et al., 2011; Watson and Johnson, 1972), has a positive influence on both the *Perceived Enjoyment* and *Perceived Usefulness* of SNSs:

Having likely an evolutionary basis, to belong to a group provided once benefits in terms of survival and breeding (Baumeister and Leary, 1995). For example, hunting large animals for food or defending against threats was a much easier and less dangerous task to accomplish as a group of individuals than as a single isolated individual. Today, people depend on the establishment and maintenance of social relationships as potential support resources (Barrera, 1986; Sandler, 1980).

Among the most influential support resources are *informational* and *instrumental support* (Cohen and Wills, 1985). *Informational support* is intangible and helps individuals define, understand and cope with stressful and problematic events (Cohen and Wills, 1985) by providing encouragement and advice in times of need and periods of crisis (Cobb, 1976; Eaton, 1978; Watson and Johnson, 1972). In contrast, *instrumental support* is tangible and provides individuals with material resources, financial aid and needed services to deal with problems or achieve personal goals (Cohen and Wills, 1985; Watson and Johnson, 1972). In summary, belonging to a group provides individuals with practical benefits, meaning that it is useful to them.

SNSs provide functionalities that enable their users “to make new friends” and “to keep in touch with [old and] current friends” (Raacke and Bonds-Raacke, 2008, p. 171). SNSs thus help their users feel that they belong, i.e., that they are connected to and accepted by others. As described above, belonging to a group is useful for individuals (Barrera, 1986; Cobb, 1976; Cohen and Wills, 1985; Eaton, 1978; Sandler, 1980; Watson and Johnson, 1972). Similarly, we expect that if people believe SNSs help them feel connected to a larger group or help them cultivate stronger relationships with other individuals, then they perceive SNSs to be useful. Consequently, we expect *Perceived Belonging* to positively influence *Perceived Usefulness* in an SNS context.

Furthermore, as found in multiple studies, the feeling of belonging is positively linked to hedonic well-being, represented by the presence of positive hedonic feelings such as enjoyment, happiness, and pleasure, with socially isolated people suffering more from psychological problems and illnesses (Baumeister and Leary, 1995; Berkman and Syme, 1978; LaVeist et al., 1997; Malhotra et al., 2004; Rook, 1984). *Perceived Enjoyment* reflects the hedonic motivations of information system use, such as fun, enjoyment and other positive experiences and feelings (Brief and Aldag, 1977; Van der Heijden, 2004; Venkatesh et al., 2012). Consequently, we believe that *Perceived Belonging* has a positive influence on *Perceived Enjoyment* in an SNS context.

## RESEARCH MODEL

Drawing from our discussion above concerning the potential role of *Perceived Belonging* on SNS adoption, we now present our research model in Figure 1 and outline our corresponding hypotheses.

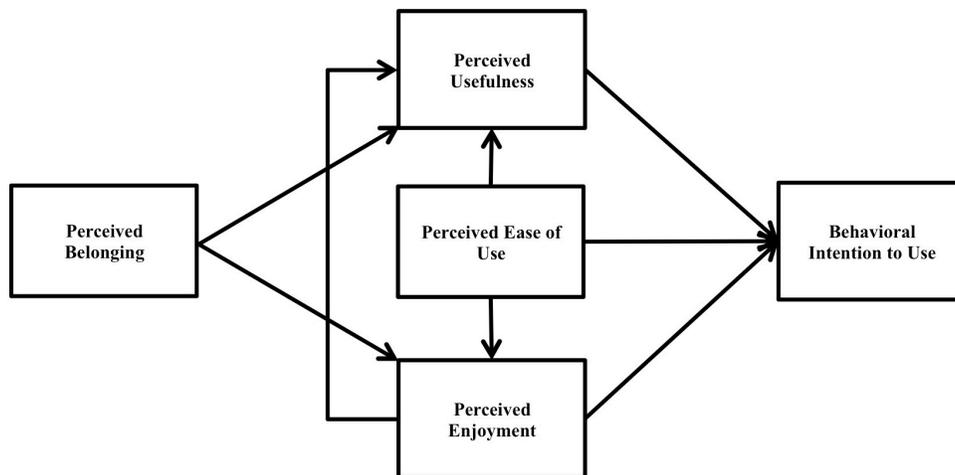


Figure 1. Research Model

### Basic TAM Relationships

Raacke and Bonds-Raacke (2008), Subrahmanyam, Reich, Waechter and Espinoza (2008) as well as Bonds-Raacke and Raacke (2010) identify a broad range of SNS functionalities that provide users with external benefits such as the ability to organize events, setting reminders for friends’ birthdays, or locating old friends. Hence, SNSs are at least partly utilitarian information systems, which “aim to provide instrumental value to the user” (Van der Heijden, 2004, p. 696). This suggests that the *Perceived Usefulness* of SNSs can influence users’ *Behavioral Intention to Use* them. Indeed, Sledgianowski and

Kulviwat (2008) and Alarcón-del-Amo et al. (2012) identify that *Perceived Usefulness* has an influence on the *Behavioral Intention to Use SNSs*. We hypothesize that:

**H1:** There is a positive relationship between the *Perceived Usefulness* of a Social Network Site and the *Behavioral Intention to Use it*.

As discussed multiple times (e.g., Boyd and Ellison, 2007; Thambusamy, Church, Nemati and Barrick, 2010), SNS members have fun using SNSs. Therefore, SNSs are also partly hedonic information systems, which “aim to provide self-fulfilling value to the user, ... [which] is a function of the degree to which the user experiences fun when using the system” (Van der Heijden, 2004, p. 696). Indeed, Hu et al. (2011) and Sledgianowski and Kulviwat (2008) identify an influence of *Perceived Enjoyment* on the *Behavioral Intention to Use SNSs*. We hypothesize that:

**H2:** There is a positive relationship between the *Perceived Enjoyment* of a Social Network Site and the *Behavioral Intention to Use it*.

Furthermore, *Perceived Enjoyment* has been confirmed multiple times to have a positive influence on *Perceived Usefulness* (e.g., Sun and Zhang, 2006; Venkatesh, Speier and Morris, 2002). The rationale behind this is that intrinsic motivations amplify people’s perceptions of extrinsic motivations (Batra and Ray, 1986) and increase the deliberation and thoroughness of cognitive processing (Bagozzi, Gopinath and Nyer, 1999). We hypothesize that:

**H3:** There is a positive relationship between the *Perceived Enjoyment* of a Social Network Site and its *Perceived Usefulness*.

Additionally, in line with the initial TAM and its multiple extensions and modifications, the *Perceived Ease of Use* of an information technology is commonly accepted to be an important antecedent of *Behavioral Intention to Use* and *Perceived Usefulness* (e.g., Venkatesh and Bala, 2008; Venkatesh and Davis, 2000). Also, multiple studies confirm that *Perceived Ease of Use* has a significant positive influence on *Perceived Enjoyment* (e.g., Chesney, 2006; Davis, Bagozzi and Warshaw, 1992; Moon and Kim, 2001; Van der Heijden, 2004). The most common explanation for this is that an easy-to-use system saves time for the user, thus allowing him/her to spend more time enjoying the experience of it (Hu et al., 2011; Van der Heijden, 2004). In an SNS context, the corresponding relationships are also confirmed (Alarcón-del-Amo et al., 2012; Hu et al., 2011; Sledgianowski and Kulviwat, 2008). We hypothesize that:

**H4:** There is a positive relationship between the *Perceived Ease of Use* of a Social Network Site and the *Behavioral Intention to Use it*.

**H5:** There is a positive relationship between the *Perceived Ease of Use* of a Social Network Site and its *Perceived Usefulness*.

**H6:** There is a positive relationship between the *Perceived Ease of Use* of a Social Network Site and its *Perceived Enjoyment*.

### **The Influence of Perceived Belonging**

As discussed above, being part of a group provides individuals with practical benefits such as informational and instrumental support. Hence, belonging to a group is useful (Baumeister and Leary, 1995; Cohen and Wills, 1985). SNSs can help their users feel they belong to a larger group or help them cultivate stronger relationships with other individuals. Hence, we postulate that if people believe SNSs help them feel like they belong, they perceive SNSs to be useful. We hypothesize that:

**H7:** There is a positive relationship between the *Perceived Belonging* of a Social Network Site and its *Perceived Usefulness*.

Furthermore, as found in multiple studies, the feeling of belonging is positively linked to *hedonic well-being* (e.g., Baumeister and Leary, 1995; Berkman and Syme, 1978; LaVeist et al., 1997; Rook, 1984). *Perceived Enjoyment* reflects the hedonic motivations associated with information systems, such as fun, enjoyment, and other positive experiences and feelings (Brief and Aldag, 1977; Van der Heijden, 2004; Venkatesh et al., 2012). We hypothesize that:

**H8:** There is a positive relationship between the *Perceived Belonging* of a Social Network Site and its *Perceived Enjoyment*.

### **MEASUREMENT MODEL**

We used existing scales to measure *Behavioral Intention to Use*, *Perceived Ease of Use*, *Perceived Enjoyment*, and *Perceived Usefulness* (Alarcón-del-Amo et al., 2012; Davis, 1989; Davis et al., 1992; Ernst, Pfeiffer and Rothlauf, 2013; Hu et al., 2011; Venkatesh, Morris, Davis and Davis, 2003). For *Perceived Belonging* we adapted the prominent *Need to Belong* scale

by Leary, Kelly, Cottrell and Schreindorfer (2007).<sup>1</sup> For example, whereas the individual extent of people's *Need to Belong* is measured by items such as "I do not like being alone", we measured *Perceived Belonging* by using items such as: "When I use SNSs, I feel less alone".

Table 2 presents the resulting items and the corresponding sources. All items were measured using a seven-point Likert-type scale ranging from "strongly agree" to "strongly disagree".

Construct	Item	Source/adapted from
Behavioral Intention to Use	I intend to use SNSs in the next 6 months	Hu et al. (2011) Venkatesh et al. (2003)
	In the future, I am very likely to use SNSs	
	I predict that I will use SNSs in the next 6 months	
Perceived Belonging	When I use SNSs, I feel less alone	Leary et al. (2007)
	When I use SNSs, I feel accepted	
	When I use SNSs, I feel close and connected to people that are important to me	
Perceived Ease of Use	I find SNSs to be easy to use	Davis (1989)
	It was easy to learn how to use SNSs	
	Using SNSs is not difficult	
Perceived Enjoyment	I have fun using SNSs	Davis et al. (1992)
	Using SNSs is pleasant	
	I find using SNSs to be enjoyable	
Perceived Usefulness	Overall, SNSs are useful	Alarcón-del-Amo et al. (2012)
	SNSs benefit me	
	SNSs are an effective tool	Ernst et al. (2013)
	I consider that SNSs are useful to me	

**Table 2. Items of our Measurement Model**

## FINDINGS

For our main study, we surveyed students from a German university attending an *Introduction to computer science* course, resulting in a sample size of 415 complete questionnaires. 220 respondents were male (53 percent); 195 were female (47 percent); the average age was 21.17 years (standard deviation: 2.63); for *Behavioral Intention to Use (BI)*, *Perceived Belonging (PB)*, *Perceived Ease of Use (PEOU)*, *Perceived Enjoyment (PE)*, and *Perceived Usefulness (PU)*, the mean (standard deviation) was 6.27 (1.15), 3.76 (1.27), 5.52 (1.02), 5.11 (1.14), and 5.47 (1.07), respectively (based on the item average of each construct).

To test our measurement model for reliability, validity and model fit, we computed Cronbach's alpha for each construct using SPSS 21.0.0.0 and performed a confirmatory factor analyses using covariance-based AMOS 21.0.0.0. Parameters were estimated using maximum likelihood and, since our data was not distributed joint multivariate normal, a bias-corrected bootstrapping approach with 2000 replications was used to test for significance (Byrne, 2001; Krasnova, Spiekermann, Koroleva and Hildebrand, 2010). Cronbach's alpha was greater than .82 for all constructs; all items loaded high (more

<sup>1</sup> According to the *Need to Belong* theory (e.g., Baumeister and Leary, 1995; Watson and Johnson, 1972), also referred to as *Belongingness hypotheses* [sic] (Baumeister and Leary, 1995), *need for love, affection and belongingness* (Maslow, 1943), or *Relatedness Need* (Sheldon et al., 2011), every person has, to individual extents, a fundamental need to connect to and be accepted by other people.

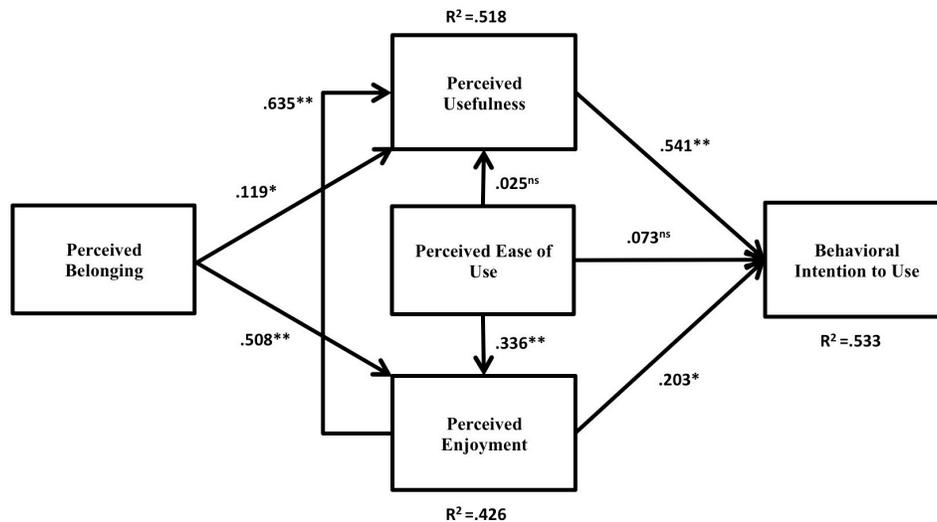
than .720) and significant ( $p < .01$ ) on their parent factor; Table 3 presents the Composite-Reliability (CR), Average-Variance-Extracted (AVE), Maximum-Shared-Squared-Variance (MSV), and Average-Shared-Squared-Variance (ASV) of all factors as well as the factor correlations with the square root of the AVE on the diagonal; Relative-Chi-Square (CMIN/DF), Goodness-of-Fit-Index (GFI), Adjusted-Goodness-of-Fit-Index (AGFI), Comparative-Fit-Index (CFI), Root-Mean-Square-Error-of-Approximation (RMSEA), and Standardized-Root-Mean-Square-Residual (SRMR) were 1.829, .951, .929, .985, .045, and .028, respectively. Hence, our measurement model is well-specified since it meets all desirable reliability, convergent/discriminant validity, and model fit thresholds (Hair, Black, Babin and Anderson, 2009).

	CR	AVE	MSV	ASV	BI	PU	PEOU	PE	PB
BI	.955	.876	.501	.285	.936				
PU	.921	.745	.508	.334	.708	.863			
PEOU	.827	.616	.174	.100	.325	.309	.785		
PE	.932	.820	.508	.345	.619	.713	.417	.906	
PB	.851	.656	.316	.180	.387	.480	.159	.562	.810

**Table 3. Reliability and Validity of the Measurement Model**

In order to make sure that *common method bias* was no threat to our study, we performed *Harman’s single-factor test* in SPSS 21.0.0.0 by loading all of our variables into an exploratory factor analysis (Podsakoff, MacKenzie, Lee and Podsakoff, 2003). Since four factors emerged from the analysis with no single factor accounting for a majority of the covariance among the variables, *common method bias* was not a problem for our study.

To test our research model, we conducted a structural equation modeling approach using AMOS 21.0.0.0. Parameters were estimated using maximum likelihood; significance was assessed by using a bias-corrected bootstrapping approach with 2000 replications (Byrne, 2001; Krasnova et al., 2010). Fit measures indicate a good model fit (CMIN/DF = 1.810, GFI = .951, AGFI = .930, CFI = .986, RMSEA = .044, SRMR = .028). Figure 2 presents the standardized regression weights regarding the previously hypothesized relationships as well as the  $R^2$ s of each endogenous variable (\*\* =  $p < .01$ , \* =  $p < .05$ , ns = non-significant).



**Figure 2. Findings**

*Perceived Usefulness* ( $\beta=.541, p<.01$ ) and *Perceived Enjoyment* ( $\beta=.203, p<.05$ ) was found to have a positive influence on the *Behavioral Intention to Use* SNSs, confirming hypotheses 1 and 2; *Perceived Enjoyment* was found to have a positive influence on *Perceived Usefulness* ( $\beta=.635, p<.01$ ), confirming hypothesis 3; *Perceived Ease of Use* was found to have a positive influence on *Perceived Enjoyment* ( $\beta=.336, p<.01$ ), confirming hypothesis 6; and finally, *Perceived Belonging* was found to have a strong positive influence on *Perceived Enjoyment* ( $\beta=.508, p<.01$ ) and a relatively weaker but significant influence on *Perceived Usefulness* ( $\beta=.119, p<.05$ ), confirming hypotheses 7 and 8.

We explain the relatively weaker influence of *Perceived Belonging* on *Perceived Usefulness* through the limitations of support provision within an SNS ecosystem. Whereas individuals might provide their SNS friends with intangible, informational support by sending them text messages or having a video chat, providing tangible, instrumental support is only possible to a minor degree since, for example, lending objects or helping sick friends by buying their groceries is impossible for SNS friends that live in other cities or countries. Therefore, social relationships maintained exclusively within an SNS ecosystem might be perceived to be less useful than their real-life counterparts since they promise fewer benefits.

Hypotheses 4 and 5 were not confirmed since *Perceived Ease of Use* had no significant influence on *Behavioral Intention to Use* ( $\beta=.073, p<.267$ ) and *Perceived Usefulness* ( $\beta=.025, p<.607$ ). Whereas the rejection of hypothesis 4 is consistent with the findings of Alarcón-del-Amo et al. (2012) and several other TAM studies (e.g., Karahanna, Straub and Chervany, 1999), the rejection of hypothesis 5 stands in contrast to Alarcón-del-Amo et al. (2012) and Hu et al. (2011), who confirm this relationship in an SNS context. One possible explanation for the insignificance of both relationships in our study might be the general simplicity of SNSs. More specifically, anyone familiar with the Internet is able to operate them (Alarcón-del-Amo et al., 2012). Since today's students are used to the Internet and the way it works (87.4 percent of our respondents indicated that they use SNSs at least once a day), *ease of use* might not be seen as an important quality but rather be taken for granted, making SNSs' *Perceived Ease of Use* a non-determinant for their *Perceived Usefulness* and the *Behavioral Intention to Use* them.

Overall, the explanatory power of our structural model is good since it explains 53.3% of the variance of *Behavioral Intention to Use* SNSs. Further, 42.6% of *Perceived Enjoyment's* as well as 51.8% of *Perceived Usefulness'* variance are explained.

In summary, our findings indicate that *Perceived Belonging* directly influences *Perceived Enjoyment* and *Perceived Usefulness*, and thus indirectly influences overall SNS adoption behavior as well. Hence, our study contributes to the question as to why SNSs are perceived to be useful and fun, and also enhances our understanding of overall SNS adoption.

## CONCLUSIONS

We built on the TAM and studied whether people's *Perceived Belonging* influences the *Perceived Enjoyment* and *Perceived Usefulness* in an SNS context. After surveying 415 students and applying a structural equation modeling approach, we confirmed both postulated relationships.

Our study has some limitations since it suffers from the general problems of using a student sample. Indeed, our results might not hold true for people from other countries, with different educational backgrounds or from different age groups. More specifically, since Germany is an individualistic society whose "highest motivation is supposed to stem from the individuals' need to fulfill their obligations towards themselves", there may be a stronger influence of *Perceived Belonging* on *Perceived Usefulness* in collectivist societies such as Indonesia where people "try primarily to fulfill their obligations towards their in-group" (Hofstede, 1983, p. 88). Also, people who gain significant benefits from being well-connected, such as business people, might reveal a stronger relationship between *Perceived Belonging* and *Perceived Usefulness* than students would.

In summary, our study is a first step in researching the effects of *Perceived Belonging* on SNS adoption. Future studies can draw on ours and test the influences of *Perceived Belonging*, *Perceived Ease of Use*, *Perceived Enjoyment*, and *Perceived Usefulness* for different demographic groups, so as to further improve our understanding of SNS adoption determinants. On the whole, our results suggest that SNS vendors have to strongly focus on providing functionalities that enable users to connect and interact with each other in order to achieve an even greater market penetration and maintain a strong growth trajectory.

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