RESEARCH

Claus-Peter H. Ernst

Factors Driving Social Network Site Usage

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[1] Johannes Gutenberg-Universität Mainz, Lehrstuhl für Wirtschaftsinformatik und BWL, Jakob-Welder-Weg 9, D-55128 Mainz, Germany

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List of Abbreviations

AGFI	Adjusted Goodness of Fit Index
ASV	Average Shared Squared Variance
AVE	Average Variance Extracted
CFI	Comparative Fit Index
CMIN/DF	Relative Chi-Square
CR	Composite Reliability
GFI	Goodness of Fit Index
MSV	Maximum Shared Squared Variance
RMSEA	Root Mean Square Error of Approximation
SNS	Social Network Site
SRMR	Standardized Root Mean Square Residual
TAM	Technology Acceptance Model

Introduction

Social Network Sites (SNSs) such as *Facebook* have been gaining momentum and attracting a large number of users. 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". Additionally, SNSs commonly provide multiple other functionalities to their members, such as the possibility of *chatting*, organizing events, or reminding users about their friends' birthdays (Raacke and Bonds-Raacke, 2008; Subrahmanyam et al., 2008; Bonds-Raacke and Raacke, 2010). Since the total number of registered members and their usage behavior determines the value of an SNS for its members and service providers alike (Katz and Shapiro, 1985; Gangadharbatla, 2008), there is a growing interest in studies that investigate SNS usage.

Most studies (e.g., Boyd and Ellison, 2007; Sledgianowski and Kulviwat, 2008; Thambusamy et al., 2010; Hu et al., 2011) consider SNSs as hedonic-oriented technologies that "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). Consistently with this view, Sledgianowski and Kulviwat (2008) as well as Hu et al. (2011) used the *Technology Acceptance Model* (TAM; Davis et al., 1989; Table 1.1) and its multiple extensions (e.g., Van der Heijden, 2004) to confirm that *Perceived Enjoyment* is an important driver of SNSs' *Actual System Use*.

Construct	Definition
Actual System Use	Refers to a person's actual use of a technology, i.e., how often he/she uses it (Straub et al., 1995)
Perceived Enjoyment	"[T]he 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)
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 1.1: Definitions of Actual System Use, Perceived Enjoyment, Perceived Usefulness

In contrast to this hedonic view, Alarcón-del-Amo et al. (2012) described SNSs as utilitarian technologies that "aim to provide instrumental value to the user" (Van der Heijden, 2004, p. 696). According to the TAM, utilitarian technologies are used according to their *Perceived Usefulness* (Table 1.1). However, various studies on the

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influence of *Perceived Usefulness* on SNS usage have revealed substantially different results: Whereas Alarcón-del-Amo et al. (2012) found a strong effect of *Perceived Usefulness* on SNS usage, Sledgianowski and Kulviwat (2008) only identified a weak effect, and Hu et al. (2011) found no significant effect at all. Hence, the question of what motivates members to use SNSs remains open. Do members use SNSs because of hedonic reasons, utilitarian reasons, or a blend of both?

This knowledge is necessary in order to determine the specific factors that drive SNS usage. More specifically, the question of whether the rather generic constructs *Perceived Enjoyment* and *Perceived Usefulness* influence *Actual System Use* holds only vague implications. However, answering the question of why SNSs are perceived to be enjoyable and useful will provide specific guidance to SNS service providers. More specifically, it will help them determine how to set up their services in order to increase the members' frequency of use. As of yet, little is known about such SNS-specific influence factors. Indeed, current studies on SNS usage neglect the potential antecedents of *Perceived Enjoyment* and *Perceived Usefulness* and, hence, neglect the potential indirect drivers of *Actual System Use*.

In addition to this limited knowledge regarding general SNS usage behavior and the factors driving it, researchers only have a limited understanding of SNS members' *specific usage behavior*: Generally, one central characteristic of SNSs is that they allow members to disclose personal information in a multitude of different ways (cf. Boyd and Ellison, 2007). Hence, using these services carries risks to members' privacy, since they cannot know and/or control how, when, or to what extent, someone might (mis)use their information (cf. Westin, 1968). Generally, people can address their *Perceived Privacy Risk* by performing *Privacy Protecting Behaviors* (Table 1.2). Indeed, the *Protection Motivation Theory* (Rogers, 1975; Maddux and Rogers, 1983; Rogers, 1983) postulates that an individual's evaluation of a threat (such as *Perceived Privacy Risk*) influences his/her actual *Protecting Behavior*. However, although *Privacy Protecting Behavior* can have severe negative influences on the SNS experience (cf. Bulgurcu et al., 2010), it is still unclear which specific *Protecting Behaviors* result from *Perceived Privacy Risk* in SNSs.

Furthermore, SNS usage as a whole can be classified into two distinct kinds of usage: *Receiving* usage, where information is acquired (such as *looking at other members' profiles*), and *Sharing* usage, where information is shared with other members, (such

as *sending private messages*) (cf. Benevenuto et al., 2009; Jiang et al., 2010; Backstrom et al., 2011). This distinction and the knowledge of the factors driving these kinds of usage is of critical importance to SNS service providers, since their business models are regularly based on selling personalized advertisements to their customers (e.g., Katz and Shapiro, 1985; Gangadharbatla, 2008; Krasnova et al., 2010b; Thambusamy et al., 2010; Cavusoglu et al., 2013). Although some studies have researched particular aspects of *Sharing* usage, such as members' self-disclosing behavior regarding the core data on their profile (age, address, name of employer, etc. (e.g., Lo, 2010)), the drivers of *Sharing* and *Receiving* usage still remain largely unknown.

Construct	Definition
Perceived Privacy Risk	The degree to which a person believes that using a technology has negative consequences with regards to his/her privacy (cf. Peter and Ryan, 1976; Featherman and Pavlou, 2003; Dinev and Hart, 2006; Kim et al., 2008; Wu et al., 2009; Krasnova et al., 2010b; Chen, 2013)
Privacy Protecting Behavior	The set of possibilities people have at their disposal to safeguard themselves against the potential negative consequences associated with the risks to their privacy (cf. Son and Kim, 2008; Wu et al., 2009; Krasnova et al., 2010b)

Table 1.2: Definitions of Perceived Privacy Risk and Privacy Protecting Behavior

1.1 Purpose of the Thesis

This thesis contributes to the research gaps identified above. SNS members appear to experience fun when using SNSs in general and, in particular, experience joy from the social interactions these platforms enable (e.g., Boyd and Ellison, 2007; Thambusamy et al., 2010). Additionally, several studies have shown that SNSs also fulfill utilitarian needs. Indeed, Raacke and Bonds-Raacke (2008), Subrahmanyam et al. (2008) as well as Bonds-Raacke and Raacke (2010), identified a broad range of SNS functionalities that provide external benefits to users, such as the ability to organize events, to set reminders for friends' birthdays, or to locate old friends. In line with this and drawing from the TAM, this thesis examines if there is a positive influence of *Perceived Enjoyment* and *Perceived Usefulness* on SNSs' *Actual System Use*.

This examination lays the groundwork for the study of indirect SNS-specific drivers of *Actual System Use*. In this thesis, *Perceived Belonging* and *Perceived Privacy Risk* are introduced as two potential antecedents of *Perceived Enjoyment* and/or *Perceived Usefulness* and, hence, as indirect drivers of *Actual System Use*.

Perceived Belonging is the degree to which a person feels connected to and accepted by other individuals (Maslow, 1943; Watson and Johnson, 1972; Baumeister and Leary, 1995; Sheldon et al., 2011). Being part of a group provides individuals with

practical benefits such as informational and instrumental support. This means that belonging to a group is considered to be useful (Cohen and Wills, 1985; Baumeister and Leary, 1995). Furthermore, the feeling of belonging is also positively linked to *hedonic well-being*, which is represented by the presence of positive hedonic feelings such as fun, enjoyment, happiness and pleasure (e.g., Berkman and Syme, 1978; Rook, 1984; Baumeister and Leary, 1995; LaVeist et al., 1997). In line with this, this thesis argues that if people believe SNSs can help them feel like part of a larger group, then they also perceive SNSs to be useful and fun. To determine if this is the case or not, it is examined if *Perceived Belonging* positively influences *Perceived Usefulness* and *Perceived Enjoyment*.

The findings of some studies suggest that *Perceived Privacy Risk* exerts no influence on SNSs' *Actual System Use* (e.g., Von Stetten et al., 2011). However, these studies neglect the potential indirect influences of *Perceived Privacy Risk* on *Actual System Use* through its central antecedents. Indeed, *Perceived Risk* can alter an individual's feelings (Yüksel and Yüksel, 2007). More specifically, the perceived negative consequences associated with *Perceived Risk* cause negative feelings such as anxiety, discomfort and uncertainty (Dowling and Staelin, 1994; Featherman, 2001). In this sense, *Perceived Privacy Risk* can also be expected to cause negative feelings. Therefore, this thesis examines the potential negative influence of *Perceived Risk* on SNS members' *Perceived Enjoyment*.

In addition to examining general SNS usage, this thesis also studies specific kinds of SNS usage behavior, namely *Privacy Protecting Behaviors* and *Sharing* and *Receiving* usages. More specifically, drawing on the *Protection Motivation Theory*, this thesis studies which of six specific *Protecting Behaviors* members use to address their *Perceived Privacy Risk* in SNSs. These six behaviors, which were identified in the literature, are: *Refusal*, *Misrepresentation*, *Removal*, *Selectivity in Connections*, *Termination of Connections*, and *Strictness of Privacy Settings* (cf. Son and Kim, 2008; Bulgurcu et al., 2010; Krasnova et al., 2010b; Table 1.3).

Furthermore, combining the findings and concepts from multiple streams of literature, this thesis examines the potential influence of six factors on *Sharing* and *Receiving* usage: *Extraversion*, *Curiosity*, *General Social Curiosity*, *Covert Social Curiosity*, *Perceived Informational Benefit*, and *Personal Network Size* (Table 1.4).

Construct	Definition
Misrepresentation	The extent to which a member intentionally provides dishonest or inaccurate information on SNSs (cf. Krasnova et al., 2010b)
Refusal	The extent to which a member intentionally refuses to provide specific information on SNSs
Removal	The extent to which a member intentionally removes specific information from SNSs
Selectivity in Connections	The extent of a member's selectiveness when forming connections on SNSs, e.g., SNS-friendships, connections with company/product pages, connections with applications (e.g., Facebook games), connections with third-party websites
Strictness of Privacy Settings	The extent to which a member has strict privacy settings on SNSs
Termination of Connections	The extent to which a member intentionally terminates specific connections on SNSs, e.g., SNS-friendships, connections with company/product pages, connections with applications (e.g., Facebook games), connections with third-party websites

Table 1.3: Definitions of Privacy Protecting Behaviors in SNSs

Construct	Definition
Covert Social Curiosity	"[A]n interest in interpersonal information that is obtained primarily by unobtrusive or covert exploratory behaviors" (Renner, 2006, p. 314)
Curiosity	A human being's desire to acquire information and knowledge (Renner, 2006)
Extraversion	A character trait that "implies an *energetic approach* [emphasis in original] to the social and material world …" (John and Srivastava, 1999, p. 121)
General Social Curiosity	"[A] broad interest in the acquisition of new information about how other people behave, act and feel" (Renner, 2006, p. 314)
Perceived Informational Benefit	The degree to which a person believes that using an SNS provides him/her with useful information
Personal Network Size	A member's actual number of contacts within the SNS's network (cf. Killworth et al., 1990)

Table 1.4: Definitions of the Potential Influence Factors of Sharing and Receiving Usage

1.2 Structure of the Thesis

This thesis by publication consists of five research articles. It is structured as follows: In chapter 2, it is postulated that SNSs are partly hedonic and partly utilitarian technologies. Based on a paper-and-pencil survey of 415 students from a German university attending an *Introduction to information systems* course and using a structural equation modeling approach via *AMOS 21.0.0.0* to test the research model, it is confirmed that both *Perceived Enjoyment* and *Perceived Usefulness* exert a positive influence on the *Actual System Use* of SNS. This result demonstrates the hedonic and utilitarian nature of SNSs.

Building on these findings, in chapter 3 *Perceived Belonging* is introduced as a potential influence factor of both SNSs' *Perceived Enjoyment* and *Perceived Usefulness* and, thus, also as a potential indirect antecedent of *Actual System Use*. Similarly, in chapter 4 *Perceived Privacy Risk* is introduced as another potential influence factor of SNSs' *Perceived Enjoyment*. Using the same sample and methodology as in chapter 2, it is confirmed that *Perceived Belonging* positively influences both *Perceived Enjoyment* and *Perceived Usefulness,* and that *Perceived*

Privacy Risk negatively influences *Perceived Enjoyment*. These results reveal that both *Perceived Belonging* and *Perceived Privacy Risk* are indirect influence factors of *Actual System Use*.

In chapter 5, SNS members' *Privacy Protecting Behaviors* are examined. Based on an online survey of 50 German-speaking Facebook users and using a structural equation modeling approach via *SmartPLS 2.0* (Ringle et al., 2005) to test the research model, it is confirmed that SNS members address their *Perceived Privacy Risk* by applying *Refusal*, *Selectivity in Connections*, and *Strictness of Privacy Settings,* but not by applying *Misrepresentation*, *Removal*, or *Termination of Connections*.

In chapter 6, it is differentiated between *Sharing* and *Receiving* usage and potential influence factors of these two kinds of SNS usage are introduced. Based on an online survey of 188 German-speaking Facebook users and using a structural equation modeling approach via *SmartPLS 2.0* to test the research model, it is confirmed that *Extraversion* and *Personal Network Size* positively influence *Sharing* usage and that *Covert Social Curiosity*, *General Social Curiosity*, and *Perceived Informational Benefit* positively influence *Receiving* usage.

Finally, chapter 7 includes a summary of the thesis and a list of its major contributions to the literature.

Bibliography

Alarcón-Del-Amo, M.-D.-C., Lorenzo-Romero, C. and Gómez-Borja, M.-A. (2012): Analysis of acceptance of social networking sites. African Journal of Business Management, 6 (29), pp. 8609-8619.

Backstrom, L., Bakshy, E., Kleinberg, J., Lento, T. and Rosenn, I. (2011): Center of attention: How facebook users allocate attention across friends. ICWSM 2011 Proceedings.

Baumeister, R.F. and Leary, M.R. (1995): The need to belong: Desire for interpersonal attachements as a fundamental human motivation. Psychological Bulletin, 117 (3), pp. 497-529.

Benevenuto, F., Rodrigues, T., Cha, M. and Almeida, V. (2009): Characterizing user behavior in online social networks. IMC 2009 Proceedings.

Berkman, L.F. and Syme, S.L. (1978): Social networks, host resistance, and mortality: A nine-year follow-up study of alameda county residents. American Journal of Epidemiology, 109 (2), pp. 186-204.

Bonds-Raacke, J. and Raacke, J. (2010): Myspace and facebook: Identifying dimensions of uses and gratifications for friend networking sites. Individual Differences Research, 8 (1), pp. 27-33.

Boyd, D.M. and Ellison, N.B. (2007): Social network sites: Definition, history, and scholarship. Journal of Computer-Mediated Communication, 13 (1), pp. 210-230.

Bulgurcu, B., Cavusoglu, H. and Benbasat, I. (2010): Understanding emergence and outcomes of information privacy concerns: A case of facebook. ICIS 2010 Proceedings. Paper 230.

Cavusoglu, H., Phan, T. and Cavusoglu, H. (2013): Privacy controls and content sharing patterns of online social network users: A natural experiment. ICIS 2013 Proceedings.

Chen, R. (2013): Member use of social networking sites - an empirical examination. Decision Support Systems, 54 (3), pp. 1219-1227.

Cohen, S. and Wills, T.A. (1985): Stress, social support, and the buffering hypothesis. Psychological Bulletin, 98 (2), pp. 310-357.

Davis, F.D. (1989): Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13 (2), pp. 319-340.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989): User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35 (8), pp. 982-1003.

Dinev, T. and Hart, P. (2006): An extended privacy calculus model for e-commerce transactions. Information Systems Research, 17 (1), pp. 61-80.

Dowling, G.R. and Staelin, R. (1994): A model of perceived risk and intended risk-handling activity. Journal of Consumer Research, 21 (1), pp. 119-134.

Featherman, M. (2001): Extending the technology acceptance model by inclusion of perceived risk. AMCIS 2001 Proceedings. Paper 148.

Featherman, M.S. and Pavlou, P.A. (2003): Predicting e-services adoption: A perceived risk facets perspective. International Journal of Human-Computer Studies, 59 (4), pp. 451-474.

Gangadharbatla, H. (2008): Facebook me: Collective self-esteem, need to belong, and internet self-efficacy as predictors of the igeneration's attitudes toward social networking sites. Journal of Interactive Advertising, 8 (2), pp. 5-15.

Hu, T., Poston, R.S. and Kettinger, W.J. (2011): Nonadopters of online social network services: Is it easy to have fun yet? Communications of the Association for Information Systems, 29 (1), pp. 441-458.

Jiang, J., Wilson, C., Wang, X., Huang, P., Sha, W., Dai, Y. and Zhao, B. (2010): Understanding latent interactions in online social networks. IMC 2010 Proceedings. pp. 369-382.

John, O.P. and Srivastava, S. (1999): The big five trait taxonomy: History, measurement, and theoretical perspectives. In: Pervin, L. A. & John, O. P. (eds.) Handbook of personality: Theory and research. 2nd ed., New York, NY: Guilford Press, pp. 102-138.

Katz, M.L. and Shapiro, C. (1985): Network externalities, competition, and compatibility. The American Economic Review, 75 (3), pp. 424-440.

Killworth, P., Johnsen, E., Bernard, H., Shelley, G. and Mccarty, C. (1990): Estimating the size of personal networks. Social Networks, 12 (4), pp. 289-312.

Kim, D.J., Ferrin, D.L. and Rao, H.R. (2008): A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. Decision Support Systems, 44 (2), pp. 544-564.

Krasnova, H., Spiekermann, S., Koroleva, K. and Hildebrand, T. (2010b): Online social networks: Why we disclose. Journal of Information Technology, 25 (2), pp. 109-125.

Laveist, T.A., Sellers, R.M., Elliot Brown, K.A. and Nickerson, K.J. (1997): Extreme social isolation, use of community-based senior support services, and mortality among african american elderly women. American Journal of Community Psychology, 25 (5), pp. 721-732.

Lo, J. (2010): Privacy concern, locus of control, and salience in a trust-risk model of information disclosure on social networking sites. AMCIS 2010 Proceedings. Paper 110.

Maddux, J. and Rogers, R. (1983): Protection motivation and self-efficacy: A revised theory of fear appeals and attitude change. Journal of Experimental Social Psychology, 19 (5), pp. 469-479.

Maslow, A.H. (1943): A theory of human motivation. Psychological Review, 50 (4), pp. 370-396.

Peter, J.P. and Ryan, M.J. (1976): An investigation of perceived risk at the brand level. Journal of Marketing Research, 13 (2), pp. 184-188.

Raacke, J. and Bonds-Raacke, J. (2008): Myspace and facebook: Applying the uses and gratifications theory to exploring friend-networking sites. CyberPsychology & Behavior, 11 (2), pp. 169-174.

Renner, B. (2006): Curiosity about people: The development of a social curiosity measure in adults. Journal of Personality Assessment, 83 (3), pp. 305-316.

Ringle, C.M., Wende, S. and Will, A. (2005): SmartPLS 2.0 (beta). http://www.smartpls.de.

Rogers, R. (1975): A protection motivation theory of fear appeals and attitude change. The Journal of Psychology: Interdisciplinary and Applied, 91 (1), pp. 93-114.

Rogers, R. (1983): Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In: Cacioppo, J. & Petty, R. (eds.) Social psychophysiology: A sourcebook. New York, NY: Guilford Press, pp. 153-176.

Rook, K.S. (1984): The negative side of social interactions: Impact on psychological well-being. Journal of Personality and Social Psychology, 46 (5), pp. 1097-1108.

Sheldon, K.M., Abad, N. and Hinsch, C. (2011): A two-process view of facebook use and relatedness need-satisfaction: Disconnection drives use, and connection rewards it. Journal of Personality and Social Psychology, 100 (4), pp. 766-775.

Sledgianowski, D. and Kulviwat, S. (2008): Social network sites: Antecedents of user adoption and usage. AMCIS 2008 Proceedings. Paper 83.

Son, J.-Y. and Kim, S.S. (2008): Internet users' information privacy-protective responses: A taxonomy and a nomological model. MIS Quarterly, 32 (3), pp. 503-529.

Straub, D., Limayem, M. and Karahanna-Evaristo, E. (1995): Measuring system usage: Implications for is theory testing. Management Science, 41 (8), pp. 1328-1342.

Subrahmanyam, K., Reich, S.M., Waechter, M. and Espinoza, G. (2008): Online and offline social networks: Use of social networking sites by emerging adults. Journal of Applied Developmental Psychology 29 (6), pp. 420-433.

Thambusamy, R., Church, M., Nemati, H. and Barrick, J. (2010): Socially exchanging privacy for pleasure: Hedonic use of computer-mediated social networks. ICIS 2010 Proceedings. Paper 253.

Van Der Heijden, H. (2004): User acceptance of hedonic information systems. MIS Quarterly, 28 (4), pp. 695-704.

Venkatesh, V. (2000): Determinants of perceived ease of use: Integrating perceived behavioral control, computer anxiety and enjoyment into the technology acceptance model. Information Systems Research, 11 (4), pp. 342-365.

Von Stetten, A., Wild, U. and Chrennikow, W. (2011): Adopting social network sites – the role of individual it culture and privacy concerns. AMCIS 2011 Proceedings. Paper 290.

Watson, G.B. and Johnson, D. (1972): Social psychology; issues and insights. 2nd ed., Philadelphia, PA: Lippincott.

Westin, A.F. (1968): Privacy and freedom. New York, NY: Atheneum.

Wu, Y.A., Ryan, S. and Windsor, J. (2009): Influence of social context and affect on individuals' implementation of information security safeguards. ICIS 2009 Proceedings. Paper 70.

Yüksel, A. and Yüksel, F. (2007): Shopping risk perceptions: Effects on tourists' emotions, satisfaction and expressed loyalty intentions. Tourism Management, 28 (3), pp. 703-713.

Hedonic and Utilitarian Motivations of Social Network Site Usage

Claus-Peter H. Ernst, Jella Pfeiffer, Franz Rothlauf

Abstract

Social Network Sites (SNSs) such as Facebook bring users enjoyment, which positively influences their Actual System Use. Whereas this finding is consistent across different studies and confirms hedonic motivations for SNS use, the question whether utilitarian motives also influence users' usage behavior remains open. Indeed, the findings concerning the influence of Perceived Usefulness differ substantially. Building on both the hedonic and utilitarian foundations of the Technology Acceptance Model, we study whether SNS usage is determined by hedonic motivations, utilitarian motivations, or both. We find that SNSs are dual technologies since both Perceived Usefulness and Perceived Enjoyment are critical influence factors of their Actual System Use. SNS usage is thus determined by both hedonic and utilitarian motivations.

2.1 Introduction

Social Network Sites (SNSs) such as *Facebook* have been gaining momentum and attracting a large number of users. 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 and their usage behavior determines the value of an SNS for its members and service providers alike (Katz and Shapiro, 1985; Gangadharbatla, 2008), there is a growing interest in studies that investigate SNS usage.

The *Technology Acceptance Model* (TAM; Davis et al., 1989) is one of the most commonly used theories in studies researching technology usage behavior (Venkatesh and Bala, 2008). It postulates that the usage of utilitarian technologies is primarily determined by their *Perceived Usefulness* and *Perceived Ease of Use*. Additionally, it

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has been shown that the usage of hedonic technologies, "aim[ing] 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), is better explained when integrating *Perceived Enjoyment* as an additional influence factor.

TAM is a common model used in studies about SNS usage. Studies see SNSs as either hedonic or utilitarian technologies and build on corresponding TAM foundations. Although the hedonic nature of SNSs can be confirmed in the literature since *Perceived Enjoyment* has been found to have a positive influence on SNS usage behavior (Sledgianowski and Kulviwat, 2008; Hu et al., 2011), the utilitarian nature of SNSs is still unclear. Indeed, the findings concerning the influence of *Perceived Usefulness* on SNS usage behavior substantially differ from one another. Combining both views regarding the nature of SNSs, we believe that SNSs are *dual* technologies, that are *both* hedonic- and utilitarian-oriented. We believe that the findings concerning the influence of *Perceived Usefulness* on SNS usage behavior are heterogeneous because the measurements of *Perceived Usefulness* differ greatly across the studies. Building on a dual TAM background and by using an appropriate operationalization of *Perceived Usefulness*, we are able to address the inconsistent findings in the literature and are able to explain whether SNS usage is determined by hedonic motivations, utilitarian motivations, or both.

The next section explains the initial TAM as proposed by Davis et al. (1989) as well as *Perceived Enjoyment* as an additional influence factor. We then give an overview of the current state of research on SNS usage and discuss the different studies with regards to their theoretical foundations and their operationalization of *Perceived Usefulness*. Afterwards, we present our research model and research design. Following this, we reveal and discuss our findings before concluding our article.

2.2 Background Literature

2.2.1 Technology Acceptance Model

The *Technology Acceptance Model* (TAM; Davis et al., 1989; Figure 2.1) has been used in numerous research articles (Chang et al., 2010) and thus acquired a prominent status in IS literature. It postulates that two beliefs, *Perceived Usefulness* and *Perceived Ease of Use* (Table 2.1 presents classic definitions of TAM's initial constructs), are of primary relevance for the technology usage behavior of individuals in work environments (Davis et al., 1989).

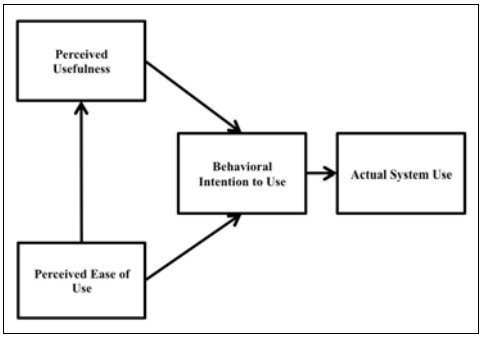

Figure 2.1: Technology Acceptance Model

Construct	Definition
Actual System Use	Refers to a person's actual use of a technology, i.e., how often he/she uses it (Straub et al., 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 2.1: Definitions of TAM's Constructs

Specifically, TAM builds a complete causal chain "linking external variables to … [a technology's] … actual use [in a work environment]" (Davis and Venkatesh, 1996, p. 20): it assumes that there is a causal relationship between the *Behavioral Intention to Use* and actual usage behavior (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980; Ajzen, 1991). *Behavioral Intention to Use* is in turn directly determined by the *Perceived Usefulness* of a technology and its *Perceived Ease of Use*; *Perceived Usefulness* also mediates the effect of *Perceived Ease of Use*.[1]

[1] Based on the *Theory of Reasoned Action*, Davis et al. (1989) initially included *Attitude Toward Using* ("[T]he degree to which a person has a favorable or unfavorable evaluation or appraisal of the [usage] behavior" (Ajzen, 1991, p. 188)), as a mediator between the two personal beliefs and *Behavioral Intention to Use* into the TAM. However, it was dropped in later versions because of its low predictive value (Davis et al., 1992; Venkatesh and Davis, 2000; Venkatesh et al., 2003; Venkatesh and Bala, 2008). Henceforth, in contrast to the *Theory of Reasoned Action*, personal beliefs, included in the TAM, were generally understood as direct antecedents of the *Behavioral Intention to Use*.

As described earlier, TAM's initial focus lay on technologies designed for work environments. These naturally "aim to provide instrumental value to the user" (Van der Heijden, 2004, p. 696) and are called utilitarian systems. Consistent with this utilitarian context, *Perceived Usefulness* centers on the motivations and benefits that are external to the system-user interaction itself, referred to as extrinsic motivations (Brief and Aldag, 1977; Van der Heijden, 2004). For example, the external benefits/extrinsic motivations of a text-processing program can be to foster a good writing performance in terms of a well-structured and orthographically error-free text (Davis et al., 1989).

Despite its initial utilitarian focus, the TAM was also used to study the usage of hedonic technologies. In contrast to utilitarian systems, hedonic systems (e.g., video games) "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). Due to the change of focus, *Perceived Usefulness* and *Perceived Ease of Use* became insufficient to explain the usage of such systems. The initial TAM was thus extended to include a new construct called *Perceived Enjoyment*. Since this is "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), it is the hedonic counterpart of *Perceived Usefulness*. It reflects the hedonic systems' intrinsic motivations 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 et al., 2012).

Finally, TAM was used to explain the usage of dual technologies such as shopping websites (e.g., Chesney, 2006). Consistent with the fact that these technologies are enjoyable to use and provide external benefits, both *Perceived Usefulness* and *Perceived Enjoyment* have been found to have an influence on the usage of such technologies (e.g., Childers et al., 2001). As an example, shopping websites like *Amazon.com* provide a utilitarian benefit to their users: they enable them to order goods. In addition, such websites also provide hedonic values through additional functionalities such as the possibility to pre-listen to music or to view movie trailers (Childers et al., 2001). Studies that consider the usage of dual technologies are nevertheless still sparse.

In summary, according to the TAM, *Perceived Enjoyment*, *Perceived Usefulness* and *Perceived Ease of Use* are three personal beliefs that (indirectly) predict the *Actual*

System Use of a technology. Whereas *Perceived Ease of Use* captures how easy the interaction with technologies is, *Perceived Enjoyment* and *Perceived Usefulness* capture, respectively, the hedonic and utilitarian aspects of technologies.

2.2.2 The Technology Acceptance Model in SNS Research

Alarcón-del-Amo et al. (2012) use the initial TAM as proposed by Davis et al. (1989), including *Perceived Usefulness* and *Perceived Ease of Use*, to study SNS usage. They confirm that both constructs play an important role in SNS usage behavior.

Sledgianowski and Kulviwat (2008, p. 3) "consider SNSs within a hedonic context, primarily used to bring enjoyment and pleasure to their users". Hu et al. (2011, p. 447) similarly describe SNSs as a "social hedonic-oriented type of IS, … primarily used in a nonwork environment" helping "users attain a sense of hedonic fulfillment in achieving personal needs" (Hu et al., 2011, p. 444). Hence, both extend their TAM research model by including *Perceived Enjoyment* as an additional factor and confirm its influence on SNS usage.

Further, with regards to their perception of SNSs as communication technologies, Sledgianowski and Kulviwat (2008) argue that SNSs can only fulfill this purpose if members are given the opportunity to associate with other members. They thus include *Perceived Critical Mass*[2] into their TAM model and confirm its influence on SNS usage. They also view *Trust*[3] as "a critical aspect of SNS services because of the potentially harmful opportunistic behaviors that have beleaguered the confidence in these services" (Sledgianowski and Kulviwat, 2008, p. 4) and confirm its influence on SNS usage.

Finally, Hu et al. (2011, p. 447) draw from psychological research and assume that "[i]f people who are important to a person think that the person should engage in a certain activity, then the person is much more likely to engage in it" (Fishbein and

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[2] *Perceived Critical Mass* "is the degree to which a current or potential user of … SNSs … perceives that the website has a significant number of members that he or she can associate with" (Sledgianowski and Kulviwat, 2008, p. 3).

[3] *Trust* is "the belief that the other party will behave in a socially responsible manner, and, by so doing, will fulfill the trusting party's expectations without taking advantage of its vulnerabilities" (Pavlou, 2003, p. 74).

Ajzen, 1975). Therefore, they postulate *Subjective Norm*[4] to be an influence factor of SNS usage behavior and confirm its influence in their empirical study.

2.3 Discussion of Current SNS Usage Research

2.3.1 SNSs Are Both Hedonic and Utilitarian Technologies

Sledgianowski and Kulviwat (2008) as well as Hu et al. (2011) describe SNSs as hedonic-oriented technologies. In contrast, Alarcón-del-Amo et al. (2012) assume that SNSs are utilitarian technologies. We believe that both views should be combined and postulate that SNSs are dual technologies – that is, that they are both hedonic- and utilitarian-oriented.

As suggested by the findings of Sledgianowski and Kulviwat (2008) as well as Hu et al. (2011) and discussed multiple times by, for example, Boyd and Ellison (2007) as well as Thambusamy et al. (2010), SNS members have fun while using SNSs in general and, in particular, experience joy from the social interactions they enable. It thus appears clear that SNSs are at least partly hedonic systems. However, other findings suggest that SNSs also fulfill utilitarian needs. Raacke and Bonds-Raacke (2008), Subrahmanyam et al. (2008) as well as Bonds-Raacke and Raacke (2010) identify a broad range of SNS functionalities providing users with external benefits, such as the ability to organize events, setting reminders for friends' birthdays, or locating old friends. Consistent with these findings, Alarcón-del-Amo et al. (2012) identify a strong influence of *Perceived Usefulness* on the *Behavioral Intention to Use* SNSs.

Combining these findings implies that SNSs are dual technologies that are partly hedonic and partly utilitarian. Looking at SNSs purely from a hedonic or utilitarian perspective appears insufficient, as it would neglect significant parts of their inherent nature. In terms of the TAM, both *Perceived Usefulness* and *Perceived Enjoyment* should be included in studies on SNS usage, and both are expected to have an impact on the *Actual System Use*.

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[4] *Subjective Norm* is the degree to which a persons believes "that most people who are important to him think he should or should not perform the behavior in question" (Fishbein and Ajzen, 1975, p. 302).

2.3.2 Perceived Usefulness Measurement Items Have to Fit SNSs' Contexts

Although we believe that SNSs are dual technologies, current SNS studies show inconsistent findings. While multiple studies confirm hedonic motivations for the use of SNSs in the form of *Perceived Enjoyment*, findings concerning utilitarian motivations (i.e., *Perceived Usefulness*) differ substantially. We credit these heterogeneous findings to the use of differing operationalization of *Perceived Usefulness* across studies.

As discussed by Van der Heijden (2004), the classic *Perceived Usefulness* measurement items, such as "Using [the technology] … would improve my job performance" (Davis, 1989, p. 340), focus on performance, productivity, effectiveness, etc. in a work environment. As a result, the initial work-based scale used for measuring *Perceived Usefulness* is inappropriate for most dual systems, and especially inappropriate for pure hedonic systems, since such systems are seldom used in work environments. Thus, researchers of hedonic and dual technologies have to pay particular attention while constructing their *Perceived Usefulness* measurements, to make sure they are consistent with their specific usage contexts (Moon and Kim, 2001).

However, current SNS studies follow heterogeneous approaches to construct their *Perceived Usefulness* scales. Table 2.2 lists the items of *Perceived Usefulness* that are currently used, and the resulting findings regarding its influence on SNS usage.

Studies	Used Perceived Usefulness items (Identifier)	Findings
Alarcón-del-Amo et al. (2012)	I consider that the functions of SNS are useful for me (1)	*Perceived Usefulness* has the greatest total effect on the *Behavioral Intention to Use* SNSs
	Using the SNS contributes to interaction with others people (2)	
	Using SNS enables me to access a lot of information (3)	
	Overall, the SNS are useful (4)	
Sledgianowski and Kulviwat (2008)	This website helps me be more effective (5)	*Perceived Usefulness* has only a weak effect on the *Behavioral Intention to Use* SNSs
	This website helps me be more productive (6)	
	This website requires the fewest steps to accomplish what I want to do with it (7)	
Hu et al. (2011)	I would use an OSNS if it was useful in establishing online social networks with people (8)	*Perceived Usefulness* has no effect on the *Behavioral Intention to Use* SNSs.
	I would use an OSNS if it was productive in establishing online social networks with people (9)	
	I would use an OSNS if it enhanced my effectiveness in establishing online social networks with people (10)	
	I would use an OSNS if it improved my performance in establishing online social networks with people (11)	

Table 2.2: Items Used to Measure Perceived Usefulness and the Resulting Findings

In order to measure the *Perceived Usefulness* of SNSs, Alarcón-del-Amo et al. (2012) use two generic items that refer to the overall usefulness of SNSs (1, 4) as well as two items that specifically address the external benefits of SNSs regarding *interaction* and *information access* (2, 3). They find that it has a strong effect on the *Behavioral Intention to Use* SNSs. In a different study, Sledgianowski and Kulviwat (2008) use one item that refers to the individual usage purposes of SNSs in a generic manner (7) and two classic work-based *Perceived Usefulness* items (5, 6). They only identify a weak effect on the *Behavioral Intention to Use*. Hu et al. (2011) develop *Perceived Usefulness* items (8-11) based on the assumption that the only purpose of SNS usage is to "[establish] online social networks" (Hu et al., 2011, p. 457). They find no significant effect of *Perceived Usefulness* on the *Behavioral Intention to Use* SNSs.

Based on the above analysis, we ascribe the heterogeneity of these findings to the use of differing measurements across the studies and come to two conclusions concerning the context of SNS usage: first, *Perceived Usefulness* items have to be formulated without relating them to the work context, and, second, focusing on only one functionality is inappropriate.

2.4 Research Model

Based on our discussion above concerning SNS usage research, we now build on both the hedonic and utilitarian foundations of the TAM as well as use a *Perceived Usefulness* measurement scale that fits the specific usage contexts of SNSs in order to study whether SNS usage is determined by hedonic motivations, utilitarian motivations, or both. Figure 2.2 presents our research model.[5]

As described earlier, SNSs are both hedonic and utilitarian technologies (Raacke and Bonds-Raacke, 2008; Sledgianowski and Kulviwat, 2008; Subrahmanyam et al., 2008; Bonds-Raacke and Raacke, 2010; Hu et al., 2011; Alarcón-del-Amo et al., 2012). Moreover, TAM's *Perceived Enjoyment* and *Perceived Usefulness* capture the hedonic

[5] Due to the low predictive value of *Attitude Toward Using*, we did not include it in our research model (cf. Davis et al., 1992; Venkatesh and Davis, 2000; Venkatesh et al., 2003; Venkatesh and Bala, 2008). Additionally, in line with other TAM studies that examined a specific behavior rather than the *intentions* to perform this specific behavior, we did not include the *Behavioral Intention to Use* in our study. Indeed, we conceptualized a direct relationship between *Perceived Usefulness*, *Perceived Enjoyment*, *Perceived Ease of Use* and *Actual System Use* (cf. Yousafzai et al., 2007).

and utilitarian aspects of a technology (e.g., Van der Heijden, 2004). Hence, drawing from our previous argumentation, both constructs can be expected to have an impact on the *Actual System Use* of an SNS. We hypothesize that:

H2.1: The *Perceived Usefulness* of a Social Network Site positively influences its *Actual System Use*.

H2.2: The *Perceived Enjoyment* of a Social Network Site positively influences its *Actual System Use*.

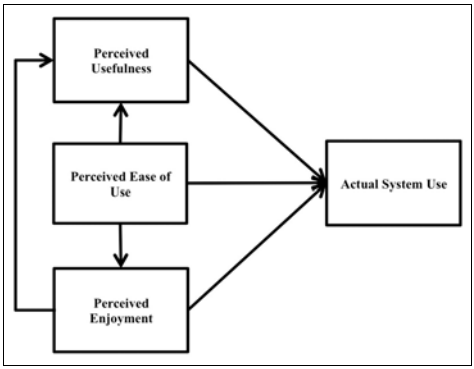

Figure 2.2: Research Model

Further, *Perceived Enjoyment* has been confirmed multiple times to have a positive influence on *Perceived Usefulness* (e.g., Venkatesh et al., 2002; Sun and Zhang, 2006). The rationale behind this is that intrinsic motivations "increase the deliberation and thoroughness of cognitive processing and lead to enhanced perceptions of … extrinsic motivation[s]" (Sun and Zhang, 2006, p. 629). We hypothesize that:

H2.3: The *Perceived Enjoyment* of a Social Network Site positively influences its *Perceived Usefulness*.

Additionally, in line with the initial TAM and its multiple extensions/modifications, the *Perceived Ease of Use* of a technology is commonly accepted to be an important antecedent of usage behavior as well as *Perceived Usefulness* (e.g., Venkatesh and Davis, 2000; Venkatesh and Bala, 2008). Also, multiple studies confirm that *Perceived Ease of Use* has a significant positive influence on *Perceived Enjoyment* (e.g., Davis et al., 1992; Moon and Kim, 2001; Van der Heijden, 2004; Chesney, 2006). The most common explanation for this is that an easy-to-use system saves time for the user, thus

allowing him/her to spend additional time enjoying the experience of it (Van der Heijden, 2004; Hu et al., 2011). Hence, we hypothesize that:

H2.4: The *Perceived Ease of Use* of a Social Network Site positively influences its *Actual System Use*.

H2.5: The *Perceived Ease of Use* of a Social Network Site positively influences its *Perceived Usefulness*.

H2.6: The *Perceived Ease of Use* of a Social Network Site positively influences its *Perceived Enjoyment*.

2.5 Research Design

2.5.1 Data Collection

To empirically evaluate our research model, we surveyed students from a German university attending an *Introduction to information systems* course. In this manner, we obtained 415 complete paper-and-pencil questionnaires. 220 respondents were male (53 percent) and 195 were female (47 percent). The average age was 21.17 years (standard deviation: 2.63).

2.5.2 Measurement

We used existing reflective scales to measure *Actual System Use*, *Perceived Ease of Use*, and *Perceived Enjoyment* so as to ensure the content validity of our measurement model (Davis et al., 1989; Davis, 1989; Davis et al., 1992). However, as discussed previously, due to the heterogeneous *Perceived Usefulness* measurements used in current SNS studies, we constructed new items that fit the specific usage contexts of SNSs.

A common approach to constructing context-specific *Perceived Usefulness* measurement scales for hedonic and dual technologies is to first identify the main benefit external to the system-user interaction itself and then use it to define reflective items (e.g., Childers et al., 2001; Moon and Kim, 2001; Van der Heijden, 2004; Chesney, 2006). As an example, Van der Heijden (2004) studies the usage of a website that offers information about movies. Based on the external benefit "[being] informed about new movies" (Van der Heijden, 2004, p. 704), he then formulates reflective *Perceived Usefulness* items such as "[b]y using [the website] … I am better informed about new movies" (Van der Heijden, 2004, p. 704).

However, in contrast to other technologies such as shopping websites, SNSs offer not only one utilitarian motivated functionality, but rather a broad range of functionalities, such as picture posting or party planning. Moreover, these functionalities are also used to different extents by different users (Raacke and Bonds-Raacke, 2008; Subrahmanyam et al., 2008; Bonds-Raacke and Raacke, 2010). Raacke and Bonds-Raacke (2008), for example, find less commonly reported uses such as learning about events, academic purposes and dating purposes which were only used by 33.7%, 10.9%, and 7.9% of their respondents, respectively. Additionally, Bonds-Raacke and Raacke (2010) report significant differences between the sexes.

Hence, with regards to measurement reliability and validity, it would be inappropriate to formulate reflective items based on multiple specific external benefits, since, for example, one member might find SNSs to be useful for posting pictures but not for party planning. Likewise, due to the broad range of SNS functionalities, we also did not consider a formative scale, consisting of all benefits, to be appropriate (cf. Diamantopoulos and Winklhofer, 2001). Therefore, we decided to build on the two generic items of Alarcón-del-Amo et al. (2012) and used four reflective, generic, overarching *Perceived Usefulness* items that refer to SNSs as a whole. In this manner, we ensured that our measurements fit the individual SNS usage purposes of all members while still preserving the utilitarian nature of the scale and its content validity (Moon and Kim, 2001).

Table 2.3 presents our four *Perceived Usefulness* items as well as the three-item scales of the other studied constructs. *Actual System Use* was measured in the same manner as Davis et al. (1989, p. 991), and all other items were measured using a seven-point Likert-type scale ranging from “strongly agree” to “strongly disagree”. In our sample, the mean (standard deviation) was 5.11 (1.14) for *Perceived Enjoyment*, 5.47 (1.07) for *Perceived Usefulness*, 5.52 (1.02) for *Perceived Ease of Use*, and 6.03 (1.43) for *Actual System Use* (based on the item average of each construct).

2.6 Results

2.6.1 Measurement Model

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 *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 et al., 2010b).

Construct	Items (Labels)	Source/adapted from
Actual System Use	On average, how often do you use SNSs? (AU1)	Davis et al. (1989)
	How frequently do you use SNSs? (AU2)	
Perceived Ease of Use	I find SNSs to be easy to use (PEOU1)	Davis (1989)
	It was easy to learn how to use SNSs (PEOU2)	
	Using SNSs is not difficult (PEOU3)	
Perceived Enjoyment	I have fun using SNSs (PE1)	Davis et al. (1992)
	Using SNSs is pleasant (PE2)	
	I find using SNSs to be enjoyable (PE3)	
Perceived Usefulness	Overall, SNSs are useful (PU1)	Alarcón-del-Amo et al. (2012)
	SNSs benefit me (PU2)	
	SNSs are an effective tool (PU3)	
	I consider that SNSs are useful to me (PU4)	

Table 2.3: Items of our Measurement Model

Cronbach's alpha was .82 or greater for all constructs (Table 2.4); all items loaded high (.72 or higher) and significant ($p<.01$) on their parent factor (Table 2.5); Table 2.6 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 correlations between constructs; *Bollen-Stine corrected p-value*, *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 .115, 1.678, .969, .950, .991, .040, and .028, respectively. Hence, our measurement model is well-specified since it meets all desirable reliability, convergent/discriminant validity, and model fit thresholds (Hair et al., 2009).[6]

[6] To ensure reliability and convergent/discriminant validity, Cronbach's alpha is recommended to be greater than .70 (Nunnally, 1978); the loading of each item on its parent factor should be significant and exceed the threshold of .60 (Bagozzi and Yi, 1988); the CR should be greater than the AVE and they should lie above .70 and .50, respectively (Hair et al., 2009); the square root of the AVE of each construct should be larger than the absolute value of the construct's correlations with its counterparts (Fornell and Larcker, 1981); and, finally, the AVE should be greater than the MSV and ASV (Hair et al., 2009). To ensure model fit, the Bollen-Stine corrected p-value, GFI, AGFI, and CFI should be higher than .05, .90, .80, and .95, respectively (Jöreskog and Sörbom, 1989; Hu and Bentler, 1999; Byrne, 2001). Additionally, the CMIN/DF, RMSEA, and SRMR should be less than 3.00, .06, and .08, respectively (Hu and Bentler, 1999; Hair et al., 2009).

	Actual System Use	Perceived Ease of Use	Perceived Enjoyment	Perceived Usefulness
Cronbach's alpha	.89	.82	.93	.92

Table 2.4: Cronbach's Alphas

Item labels	AU1	AU2	PEOU1	PEOU2	PEOU3	PE1	PE2	PE3	PU1	PU2	PU3	PU4
Parent factor loadings	.87	.93	.84	.79	.72	.95	.92	.85	.88	.88	.83	.87

Table 2.5: Parent Factor Loadings

	CR	AVE	MSV	ASV		AU	PEOU	PE	PU
Actual System Use (AU)	.90	.81	.49	.36		-			
Perceived Ease of Use (PEOU)	.83	.62	.18	.13		.33	-		
Perceived Enjoyment (PE)	.93	.82	.51	.39		.69	.42	-	
Perceived Usefulness (PU)	.92	.74	.51	.37		.70	.31	.71	-

Table 2.6: CR, AVE, MSV, ASV and Correlations between Constructs

2.6.2 Structural Model

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., 2010b).

Fit measures indicate a good model fit (Bollen-Stine corrected p-value = .115, CMIN/DF = 1.678, GFI = .969, AGFI = .950, CFI = .991, RMSEA = .040, SRMR = .028). Figure 2.3 presents the standardized regression weights regarding the previously hypothesized relationships as well as the R^2s of each endogenous variable (* = p<.001, ns = non-significant).

Perceived Usefulness (β=.427, p<.001) and *Perceived Enjoyment* (β=.366, p<.001) have been found to have positive influences on the *Actual System Use* of SNSs, confirming hypotheses 2.1 and 2.2; *Perceived Enjoyment* has been found to have a positive influence on *Perceived Usefulness* (β=.707 p<.001), confirming hypothesis 2.3. Combined, these empirical results support our argumentation that SNSs are dual technologies that are determined by both hedonic and utilitarian motivations. *Perceived Ease of Use* has been found to have a positive influence on *Perceived Enjoyment* (β=.418, p<.001), confirming hypothesis 2.6. The explanatory power of our structural model is good since it explains 57.0% of the variance of *Actual System Use*.

In contrast, hypotheses 2.4 and 2.5 were not supported since *Perceived Ease of Use* had no significant influence on *Actual System Use* (β=.049, p=.282) and *Perceived*

Usefulness (β=.014, p=.763). Whereas the rejection of hypothesis 2.4 is consistent with the findings of Alarcón-del-Amo et al. (2012) and several other TAM studies (e.g., Karahanna et al., 1999), the rejection of hypothesis 2.5 stands in contrast to Alarcón-del-Amo et al. (2012) and Hu et al. (2011), who confirm this relationship in a 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, *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 their *Actual System Use*.

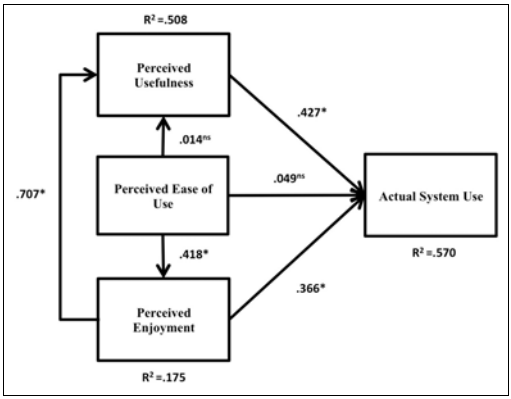

Figure 2.3: Findings

2.7 Conclusions

Our article is motivated by the inconsistent findings of comparable studies with regards to the influence of *Perceived Usefulness* on SNS usage. Ascribing the inconsistency to the use of differing *Perceived Usefulness* measurements across studies, we seek to answer whether SNS usage is determined by hedonic motivations, utilitarian motivations, or both, by using an appropriate *Perceived Usefulness* scale and combining the currently used theoretical foundations.

In our *Perceived Usefulness* scale, we use four reflective, generic, overarching items referring to SNSs as a whole instead of referring to all or some of their provided benefits, because of the plethora of existing functionalities available in SNSs (Raacke

and Bonds-Raacke, 2008; Subrahmanyam et al., 2008; Bonds-Raacke and Raacke, 2010). In contrast to current studies that see SNSs as either hedonic or utilitarian technologies, we believe them to be a blend of the two – dual technologies. More specifically, we build on both the hedonic and utilitarian foundations of the Technology Acceptance Model and hypothesize that both *Perceived Enjoyment* and *Perceived Usefulness* affect SNS usage. After surveying 415 students and applying a structural equation modeling approach, we confirm both to be critical determinants of the *Actual System Use* of SNSs.

Our study has some limitations. Our sample was limited to German students attending an *Introduction to information systems* course with an average age of 21.17 years. Hence, the results might not hold true for people from other countries with different educational backgrounds or from a different age group. For example, it is possible that, in contrast to our findings, the influences of *Perceived Ease of Use* on *Actual System Use* and *Perceived Usefulness* are significant for older people that are not experienced with the Internet, or for new users of SNSs. Hence, future studies should test the influences of *Perceived Enjoyment*, *Perceived Usefulness*, and *Perceived Ease of Use* using different sample structures in order to improve our understanding of the determinants of SNS usage within different demographic groups.

Despite these limitations, our empirical study supports our argumentation that SNSs are dual technologies determined both by hedonic and utilitarian motivations. Hence, SNS service providers should not focus on providing solely utilitarian or hedonic functionalities; rather they must focus on providing both kinds of functionalities simultaneously. Likewise, future studies on SNS usage should consider both the utilitarian and hedonic aspects of SNSs.

Bibliography

Ajzen, I. and Fishbein, M. (1980): Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I. (1991): The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50 (2), pp. 179-211.

Alarcón-Del-Amo, M.-D.-C., Lorenzo-Romero, C. and Gómez-Borja, M.-A. (2012): Analysis of acceptance of social networking sites. African Journal of Business Management, 6 (29), pp. 8609-8619.

Bagozzi, R.P. and Yi, Y. (1988): On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 16 (1), pp. 74-94.

Bonds-Raacke, J. and Raacke, J. (2010): Myspace and facebook: Identifying dimensions of uses and gratifications for friend networking sites. Individual Differences Research, 8 (1), pp. 27-33.

Boyd, D.M. and Ellison, N.B. (2007): Social network sites: Definition, history, and scholarship. Journal of Computer-Mediated Communication, 13 (1), pp. 210-230.

Brief, A.P. and Aldag, R.J. (1977): The intrinsic-extrinsic dichotomy: Toward conceptual clarity. Academy of Management Review, 2 (3), pp. 496-500.

Byrne, B.M. (2001): Structural equation modeling with amos: Basic concepts, applications, and programming. Mahwah, NJ: Lawrence Erlbaum Associates.

Chang, S.-H., Chou, C.-H. and Yang, J.-M. (2010): The literature review of technology acceptance model: A study of the bibliometric distributions. PACIS 2010 Proceedings. Paper 158.

Chesney, T. (2006): An acceptance model for useful and fun information systems. Human Technology, 2 (2), pp. 225-235.

Childers, T.L., Carr, C.L., Peck, J. and Carson, S. (2001): Hedonic and utilitarian motivations for online retail shopping behavior. Journal of Retailing, 77 (4), pp. 511-535.

Davis, F.D. (1989): Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13 (2), pp. 319-340.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989): User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35 (8), pp. 982-1003.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1992): Extrinsic and intrinsic motivation to use computers in the workplace. Journal of Applied Social Psychology, 22 (14), pp. 1111-1132.

Davis, F.D. and Venkatesh, V. (1996): A critical assessment of potential measurement biases in the technology acceptance model: Three experiments. International Journal of Human-Computer Studies, 45 (1), pp. 19-45.

Diamantopoulos, A. and Winklhofer, H.M. (2001): Index construction with formative indicators: An alternative to scale development. Journal of Marketing Research, 38 (2), pp. 269-277.

Fishbein, M. and Ajzen, I. (1975): Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley.

Fornell, C. and Larcker, D.F. (1981): Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18 (1), pp. 39-50.

Gangadharbatla, H. (2008): Facebook me: Collective self-esteem, need to belong, and internet self-efficacy as predictors of the igeneration's attitudes toward social networking sites. Journal of Interactive Advertising, 8 (2), pp. 5-15.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2009): Multivariate data analysis. 7th ed., Upper Saddle River, NJ: Prentice Hall.

Hu, L.-T. and Bentler, P.M. (1999): Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling, 6 (1), pp. 1-55.

Hu, T., Poston, R.S. and Kettinger, W.J. (2011): Nonadopters of online social network services: Is it easy to have fun yet? Communications of the Association for Information Systems, 29 (1), pp. 441-458.

Jöreskog, K. and Sörbom, D. (1989): Lisrel 7: User's reference guide. Mooresville, IN: Scientific Software International.

Karahanna, E., Straub, D.W. and Chervany, N.L. (1999): Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs. MIS Quarterly, 23 (2), pp. 183-213.

Katz, M.L. and Shapiro, C. (1985): Network externalities, competition, and compatibility. The American Economic Review, 75 (3), pp. 424-440.

Krasnova, H., Spiekermann, S., Koroleva, K. and Hildebrand, T. (2010b): Online social networks: Why we disclose. Journal of Information Technology, 25 (2), pp. 109-125.

Moon, J.-W. and Kim, Y.-G. (2001): Extending the tam for a world-wide-web context. Information & Management, 38 (4), pp. 217-230.

Nunnally, J. (1978): Psychometric theory. 2nd ed., New York, NY: McGraw-Hill.

Pavlou, P.A. (2003): Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. International Journal of Electronic Commerce, 7 (3), pp. 69-103.

Raacke, J. and Bonds-Raacke, J. (2008): Myspace and facebook: Applying the uses and gratifications theory to exploring friend-networking sites. CyberPsychology & Behavior, 11 (2), pp. 169-174.

Sledgianowski, D. and Kulviwat, S. (2008): Social network sites: Antecedents of user adoption and usage. AMCIS 2008 Proceedings. Paper 83.

Straub, D., Limayem, M. and Karahanna-Evaristo, E. (1995): Measuring system usage: Implications for is theory testing. Management Science, 41 (8), pp. 1328-1342.

Subrahmanyam, K., Reich, S.M., Waechter, M. and Espinoza, G. (2008): Online and offline social networks: Use of social networking sites by emerging adults. Journal of Applied Developmental Psychology 29 (6), pp. 420-433.

Sun, H. and Zhang, P. (2006): Causal relationships between perceived enjoyment and perceived ease of use: An alternative approach. Journal of the Association for Information Systems, 7 (9), pp. 618-645.

Thambusamy, R., Church, M., Nemati, H. and Barrick, J. (2010): Socially exchanging privacy for pleasure: Hedonic use of computer-mediated social networks. ICIS 2010 Proceedings. Paper 253.

Van Der Heijden, H. (2004): User acceptance of hedonic information systems. MIS Quarterly, 28 (4), pp. 695-704.

Venkatesh, V. (2000): Determinants of perceived ease of use: Integrating perceived behavioral control, computer anxiety and enjoyment into the technology acceptance model. Information Systems Research, 11 (4), pp. 342-365.

Venkatesh, V. and Davis, F.D. (2000): A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management Science, 46 (2), pp. 186-204.

Venkatesh, V., Speier, C. and Morris, M.G. (2002): User acceptance enablers in individual decision making about technology: Toward an integrated model. Decision Sciences, 33 (2), pp. 297-316.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003): User acceptance of information technology: Toward a unified view. MIS Quarterly, 27 (3), pp. 425-478.

Venkatesh, V. and Bala, H. (2008): Technology acceptance model 3 and a research agenda on interventions. Decision Sciences, 39 (2), pp. 273-315.

Venkatesh, V., Thong, J.Y.L. and Xu, X. (2012): Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 36 (1), pp. 157-178.

Yousafzai, S.Y., Foxall, G.R. and Pallister, J.G. (2007): Technology acceptance: A meta-analysis of the tam: Part 2. Journal of Modelling in Management, 2 (3), pp. 281-304.

The Influence of Perceived Belonging on Social Network Site Usage

Claus-Peter H. Ernst, Jella Pfeiffer, Franz Rothlauf

Abstract

Research on Social Network Sites (SNSs) indicates that all three popular Technology Acceptance Model constructs, Perceived Ease of Use, Perceived Enjoyment, and Perceived Usefulness, influence their Actual System Use. 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 usage behavior. Overall, our study suggests that SNS service providers 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.

3.1 Introduction

Social Network Sites (SNSs) such as *Facebook* have been gaining momentum and attracting a large number of users. 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 and their usage behavior determines the value of an SNS for its members and service providers alike (Katz and Shapiro, 1985; Gangadharbatla, 2008), there is a growing interest in studies that investigate SNS usage.

The *Technology Acceptance Model* (TAM; Davis et al., 1989) is one of the most commonly used theories in studies researching technology usage (Venkatesh and Bala,

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2008). It has been extended and modified multiple times but by and large postulates that the usage of technologies is primarily determined by their *Perceived Ease of Use*, *Perceived Enjoyment*, and *Perceived Usefulness* (Van der Heijden, 2004). Studies on SNS usage were able to confirm these postulated relationships (Sledgianowski and Kulviwat, 2008; Hu et al., 2011; Alarcón-del-Amo et al., 2012). However, the influence of *Perceived Enjoyment* and *Perceived Usefulness* on SNS usage behavior does not provide SNS service providers 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 (Maslow, 1943; Watson and Johnson, 1972; Baumeister and Leary, 1995; Sheldon et al., 2011), 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 (Watson and Johnson, 1972; Cobb, 1976; Eaton, 1978; Sandler, 1980; Cohen and Wills, 1985; Barrera, 1986; Baumeister and Leary, 1995). Furthermore, the feeling of belonging is positively linked to *hedonic well-being*, which is represented by the presence of positive hedonic feelings such as fun, enjoyment, happiness and pleasure (e.g., Berkman and Syme, 1978; Rook, 1984; Baumeister and Leary, 1995; LaVeist et al., 1997).

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 research. Following this, we discuss *Perceived Belonging* as an additional TAM construct and present our research model and research design. 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.

3.2 Theoretical Background

3.2.1 The Technology Acceptance Model and its Use in SNS Research

The *Technology Acceptance Model* (TAM; Davis et al., 1989) has been used in numerous research articles (Chang et al., 2010) and thus acquired a prominent status in IS literature. It postulates that two personal beliefs, *Perceived Usefulness* and *Perceived Ease of Use*, predict the *Behavioral Intention to Use* a technology, which, in turn, predicts the *Actual System Use* (see Table 3.1 for classic definitions of TAM's initial constructs).[7]

Construct	Definition
Actual System Use	Refers to a person's actual use of a technology, i.e., how often he/she uses it (Straub et al., 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 3.1: 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 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 et al., 2012).

[7] Based on the *Theory of Reasoned Action*, Davis et al. (1989) initially included *Attitude Toward Using* ("[T]he degree to which a person has a favorable or unfavorable evaluation or appraisal of the [usage] behavior" (Ajzen, 1991, p. 188)), as a mediator between the two personal beliefs and *Behavioral Intention to Use* into the TAM. However, it was dropped in later versions because of its low predictive value (Davis et al., 1992; Venkatesh and Davis, 2000; Venkatesh et al., 2003; Venkatesh and Bala, 2008). Henceforth, in contrast to the *Theory of Reasoned Action*, personal beliefs, included in the TAM, were generally understood as direct antecedents of the *Behavioral Intention to Use.*

Alarcón-del-Amo et al. (2012), Hu et al. (2011), and Sledgianowski and Kulviwat (2008) build on the TAM to study SNS usage. Their findings indicate that all three popular constructs, *Perceived Ease of Use*, *Perceived Enjoyment*, and *Perceived Usefulness*, (indirectly) influence the *Actual System Use* of 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*.

3.2.2 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 (Maslow, 1943; Watson and Johnson, 1972; Baumeister and Leary, 1995; Sheldon et al., 2011), 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 (Sandler, 1980; Barrera, 1986). 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 (Watson and Johnson, 1972; Cobb, 1976; Eaton, 1978). 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 (Watson and Johnson, 1972; Cohen and Wills, 1985). 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 (Watson and Johnson, 1972; Cobb, 1976; Eaton, 1978; Sandler, 1980; Cohen and Wills, 1985; Barrera, 1986). 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 (Berkman and Syme, 1978; Rook, 1984; Baumeister and Leary, 1995; LaVeist et al., 1997; Malhotra et al., 2004). *Perceived Enjoyment* reflects the hedonic motivations of 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.

3.3 Research Model

Drawing from our discussion above concerning the potential role of *Perceived Belonging* on SNS usage, we now present our research model in Figure 3.1 and outline our corresponding hypotheses.[8]

3.3.1 Basic TAM Relationships

Raacke and Bonds-Raacke (2008), Subrahmanyam et al. (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 systems (Ernst et al., 2013a), 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' *Actual System Use*. Indeed, Sledgianowski and Kulviwat (2008)

[8] Due to the low predictive value of *Attitude Toward Using*, we did not include it in our research model (cf. Davis et al., 1992; Venkatesh and Davis, 2000; Venkatesh et al., 2003; Venkatesh and Bala, 2008). Additionally, in line with other TAM studies that examined a specific behavior rather than the *intentions* to perform this specific behavior, we did not include the *Behavioral Intention to Use* in our study. Indeed, we conceptualized a direct relationship between *Perceived Usefulness*, *Perceived Enjoyment*, *Perceived Ease of Use* and *Actual System Use* (cf. Yousafzai et al., 2007).

and Alarcón-del-Amo et al. (2012) identify that *Perceived Usefulness* has an influence on people's SNS usage behavior. We hypothesize that:

H3.1: The *Perceived Usefulness* of a Social Network Site positively influences its *Actual System Use*.

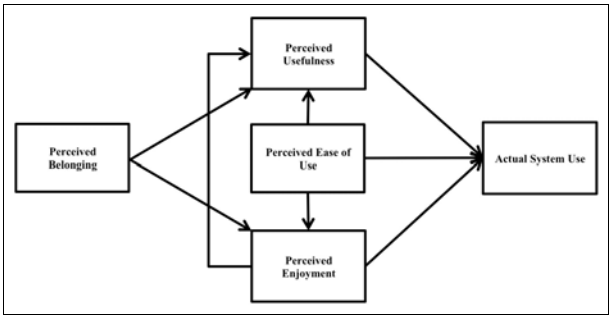

Figure 3.1: Research Model

As discussed multiple times (e.g., Boyd and Ellison, 2007; Thambusamy et al., 2010), SNS members have fun using SNSs. Therefore, SNSs are also partly hedonic systems (Ernst et al., 2013a), 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 SNS usage. We hypothesize that:

H3.2: The *Perceived Enjoyment* of a Social Network Site positively influences its *Actual System Use*.

Further, *Perceived Enjoyment* has been confirmed multiple times to have a positive influence on *Perceived Usefulness* (e.g., Venkatesh et al., 2002; Sun and Zhang, 2006). The rationale behind this is that intrinsic motivations "increase the deliberation and thoroughness of cognitive processing and lead to enhanced perceptions of … extrinsic motivation[s]" (Sun and Zhang, 2006, p. 629). We hypothesize that:

H3.3: The *Perceived Enjoyment* of a Social Network Site positively influences its *Perceived Usefulness*.

Additionally, in line with the initial TAM and its multiple extensions and modifications, the *Perceived Ease of Use* of a technology is commonly accepted to be

an important antecedent of usage behavior as well as *Perceived Usefulness* (e.g., Venkatesh and Davis, 2000; Venkatesh and Bala, 2008). Also, multiple studies confirm that *Perceived Ease of Use* has a significant positive influence on *Perceived Enjoyment* (e.g., Davis et al., 1992; Moon and Kim, 2001; Van der Heijden, 2004; Chesney, 2006). 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 (Van der Heijden, 2004; Hu et al., 2011). In an SNS context, the corresponding relationships are also confirmed (Sledgianowski and Kulviwat, 2008; Hu et al., 2011; Alarcón-del-Amo et al., 2012). We hypothesize that:

H3.4: The *Perceived Ease of Use* of a Social Network Site positively influences its *Actual System Use*.

H3.5: The *Perceived Ease of Use* of a Social Network Site positively influences its *Perceived Usefulness*.

H3.6: The *Perceived Ease of Use* of a Social Network Site positively influences its *Perceived Enjoyment*.

3.3.2 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 (Cohen and Wills, 1985; Baumeister and Leary, 1995). 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:

H3.7: The *Perceived Belonging* of a Social Network Site positively influences its *Perceived Usefulness*.

Furthermore, as found in multiple studies, the feeling of belonging is positively linked to *hedonic well-being* (e.g., Berkman and Syme, 1978; Rook, 1984; Baumeister and Leary, 1995; LaVeist et al., 1997). *Perceived Enjoyment* reflects the hedonic motivations associated with 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:

H3.8: The *Perceived Belonging* of a Social Network Site positively influences its *Perceived Enjoyment*.

3.4 Research Design

3.4.1 Data Collection

To empirically evaluate our research model, we surveyed students from a German university attending an *Introduction to information systems* course. In this manner, we obtained 415 complete paper-and-pencil questionnaires. 220 respondents were male (53 percent) and 195 were female (47 percent). The average age was 21.17 years (standard deviation: 2.63).

3.4.2 Measurement

We used existing reflective scales to measure *Actual System Use*, *Perceived Ease of Use*, *Perceived Enjoyment*, and *Perceived Usefulness* so as to ensure the content validity of our measurement model (Davis et al., 1989; Davis, 1989; Davis et al., 1992; Alarcón-del-Amo et al., 2012; Ernst et al., 2013a). For *Perceived Belonging* we adapted the prominent reflective *Need to Belong*[9] scale by Leary et al. (2007). For example, whereas they measured the individual extent of people's *Need to Belong* 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 3.2 presents the resulting items and the corresponding sources.

Actual System Use was measured in the same manner as Davis et al. (1989, p. 991), and all other items were measured using a seven-point Likert-type scale ranging from "strongly agree" to "strongly disagree". In our sample, the mean (standard deviation) was 6.03 (1.43) for *Actual System Use*, 3.76 (1.27) for *Perceived Belonging*, 5.52 (1.02) for *Perceived Ease of Use*, 5.11 (1.14) for *Perceived Enjoyment*, and 5.47 (1.07) for *Perceived Usefulness* (based on the item average of each construct).

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[9] According to the *Need to Belong* theory (e.g., Watson and Johnson, 1972; Baumeister and Leary, 1995), also referred to as *Belonginess 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.

3.5 Results

3.5.1 Measurement Model

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 et al., 2010b).

Construct	Items (Labels)	Source/adapted from
Actual System Use	On average, how often do you use SNSs? (AU1)	Davis et al. (1989)
	How frequently do you use SNSs? (AU2)	
Perceived Belonging	When I use SNSs, I feel less alone (PB1)	Leary et al. (2007)
	When I use SNSs, I feel accepted (PB2)	
	When I use SNSs, I feel close and connected to people that are important to me (PB3)	
Perceived Ease of Use	I find SNSs to be easy to use (PEOU1)	Davis (1989)
	It was easy to learn how to use SNSs (PEOU2)	
	Using SNSs is not difficult (PEOU3)	
Perceived Enjoyment	I have fun using SNSs (PE1)	Davis et al. (1992)
	Using SNSs is pleasant (PE2)	
	I find using SNSs to be enjoyable (PE3)	
Perceived Usefulness	Overall, SNSs are useful (PU1)	Alarcón-del-Amo et al. (2012) Ernst et al. (2013a)
	SNSs benefit me (PU2)	
	SNSs are an effective tool (PU3)	
	I consider that SNSs are useful to me (PU4)	

Table 3.2: Items of our Measurement Model

Cronbach's alpha was .82 or greater for all constructs (Table 3.3); all items loaded high (.720 or higher) and significant ($p<.01$) on their parent factor (Table 3.4); Table 3.5 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 correlations between constructs; *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 1.749, .957, .935, .987, .043, and .030, respectively. Hence, our measurement model is well-

specified since it meets all desirable reliability, convergent/discriminant validity, and model fit thresholds (Hair et al., 2009).[10]

	Actual System Use	Perceived Belonging	Perceived Ease of Use	Perceived Enjoyment	Perceived Usefulness
Cronbach's alpha	.89	.84	.82	.93	.92

Table 3.3: Cronbach's Alphas

Item labels	AU1	AU2	PB1	PB2	PB3	PEOU1	PEOU2	PEOU3	PE1	PE2	PE3	PU1	PU2	PU3	PU4
Parent factor loadings	.87	.93	.89	.77	.78	.84	.79	.72	.94	.92	.85	.88	.88	.82	.87

Table 3.4: Parent Factor Loadings

	CR	AVE	MSV	ASV		AU	PB	PEOU	PE	PU
Actual System Use (AU)	.90	.81	.50	.31		-				
Perceived Belonging (PB)	.85	.66	.32	.18		.38	-			
Perceived Ease of Use (PEOU)	.83	.62	.18	.10		.33	.16	-		
Perceived Enjoyment (PE)	.93	.82	.51	.37		.69	.56	.42	-	
Perceived Usefulness (PU)	.92	.75	.51	.33		.70	.48	.31	.71	-

Table 3.5: CR, AVE, MSV, ASV and Correlations between Constructs

3.5.2 Structural Model

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., 2010b).

Fit measures indicate a good model fit (CMIN/DF = 1.741, GFI = .957, AGFI = .936, CFI = .987, RMSEA = .042, SRMR = .031). Figure 3.2 presents the standardized

[10] To ensure reliability and convergent/discriminant validity, Cronbach's alpha is recommended to be greater than .70 (Nunnally, 1978); the loading of each item on its parent factor should be significant and exceed the threshold of .60 (Bagozzi and Yi, 1988); the CR should be greater than the AVE and they should lie above .70 and .50, respectively (Hair et al., 2009); the square root of the AVE of each construct should be larger than the absolute value of the construct's correlations with its counterparts (Fornell and Larcker, 1981); and, finally, the AVE should be greater than the MSV and ASV (Hair et al., 2009). To ensure model fit, the GFI, AGFI, and CFI should be higher than .05, .90, .80, and .95, respectively (Jöreskog and Sörbom, 1989; Hu and Bentler, 1999; Byrne, 2001). Additionally, the CMIN/DF, RMSEA, and SRMR should be less than 3.00, .06, and .08, respectively (Hu and Bentler, 1999; Hair et al., 2009).

regression weights regarding the previously hypothesized relationships as well as the R^2s of each endogenous variable (** = p<.001, * = p<.05, ns = non-significant).

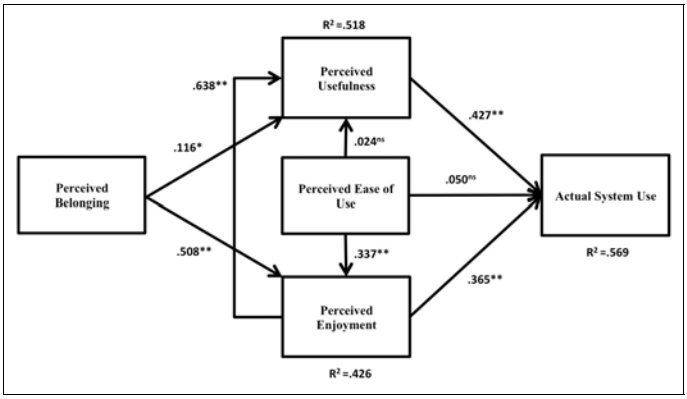

Figure 3.2: Findings

Perceived Usefulness (β=.427, p<.001) and *Perceived Enjoyment* (β=.365, p<.001) was found to have a positive influence on the *Actual System Use* of SNSs, confirming hypotheses 3.1 and 3.2; *Perceived Enjoyment* was found to have a positive influence on *Perceived Usefulness* (β=.638, p<.001), confirming hypothesis 3.3; *Perceived Ease of Use* was found to have a positive influence on *Perceived Enjoyment* (β=.337, p<.001), confirming hypothesis 3.6; and finally, *Perceived Belonging* was found to have a strong positive influence on *Perceived Enjoyment* (β=.508, p<.001) and a relatively weaker but significant influence on *Perceived Usefulness* (β=.116, p<.05), confirming hypotheses 3.7 and 3.8.

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 3.4 and 3.5 were not confirmed since *Perceived Ease of Use* had no significant influence on *Actual System Use* (β=.050, p=.268) and *Perceived Usefulness* (β=.024, p=.604). Whereas the rejection of hypothesis 3.4 is consistent with the findings of Alarcón-del-Amo et al. (2012) and several other TAM studies (e.g., Karahanna et al., 1999), the rejection of hypothesis 3.5 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, *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 their *Actual System Use*.

Overall, the explanatory power of our structural model is good since it explains 56.9% of the variance of *Actual System Use*. 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 usage 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 usage.

3.6 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 usage. 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 usage determinants. On the whole, our results suggest that SNS service providers 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.

Bibliography

Ajzen, I. (1991): The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50 (2), pp. 179-211.

Alarcón-Del-Amo, M.-D.-C., Lorenzo-Romero, C. and Gómez-Borja, M.-A. (2012): Analysis of acceptance of social networking sites. African Journal of Business Management, 6 (29), pp. 8609-8619.

Bagozzi, R.P. and Yi, Y. (1988): On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 16 (1), pp. 74-94.

Barrera, M. (1986): Distinctions between social support concepts, measures, and models. American Journal of Community Psychology, 14 (4), pp. 413-445.

Baumeister, R.F. and Leary, M.R. (1995): The need to belong: Desire for interpersonal attachements as a fundamental human motivation. Psychological Bulletin, 117 (3), pp. 497-529.

Berkman, L.F. and Syme, S.L. (1978): Social networks, host resistance, and mortality: A nine-year follow-up study of alameda county residents. American Journal of Epidemiology, 109 (2), pp. 186-204.

Bonds-Raacke, J. and Raacke, J. (2010): Myspace and facebook: Identifying dimensions of uses and gratifications for friend networking sites. Individual Differences Research, 8 (1), pp. 27-33.

Boyd, D.M. and Ellison, N.B. (2007): Social network sites: Definition, history, and scholarship. Journal of Computer-Mediated Communication, 13 (1), pp. 210-230.

Brief, A.P. and Aldag, R.J. (1977): The intrinsic-extrinsic dichotomy: Toward conceptual clarity. Academy of Management Review, 2 (3), pp. 496-500.

Byrne, B.M. (2001): Structural equation modeling with amos: Basic concepts, applications, and programming. Mahwah, NJ: Lawrence Erlbaum Associates.

Chang, S.-H., Chou, C.-H. and Yang, J.-M. (2010): The literature review of technology acceptance model: A study of the bibliometric distributions. PACIS 2010 Proceedings. Paper 158.

Chesney, T. (2006): An acceptance model for useful and fun information systems. Human Technology, 2 (2), pp. 225-235.

Cobb, S. (1976): Social support as a moderator of life stress. Psychomatic Medicine, 38 (5), pp. 300-314.

Cohen, S. and Wills, T.A. (1985): Stress, social support, and the buffering hypothesis. Psychological Bulletin, 98 (2), pp. 310-357.

Davis, F.D. (1989): Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13 (2), pp. 319-340.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989): User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35 (8), pp. 982-1003.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1992): Extrinsic and intrinsic motivation to use computers in the workplace. Journal of Applied Social Psychology, 22 (14), pp. 1111-1132.

Eaton, W.W. (1978): Life events, social supports, and psychiatric symptoms: A re-analysis of the new haven data. Journal of Health and Social Behavior, 19 (2), pp. 230-234.

Ernst, C.-P.H., Pfeiffer, J. and Rothlauf, F. (2013a): Hedonic and utilitarian motivations of social network site adoption. Johannes Gutenberg University Mainz: Working Papers in Information Systems and Business Administration.

Fornell, C. and Larcker, D.F. (1981): Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18 (1), pp. 39-50.

Gangadharbatla, H. (2008): Facebook me: Collective self-esteem, need to belong, and internet self-efficacy as predictors of the igeneration's attitudes toward social networking sites. Journal of Interactive Advertising, 8 (2), pp. 5-15.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2009): Multivariate data analysis. 7th ed., Upper Saddle River, NJ: Prentice Hall.

Hofstede, G. (1983): The cultural relativity of organizational practices and theories. Journal of International Business Studies, 14 (2), pp. 75-89.

Hu, L.-T. and Bentler, P.M. (1999): Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling, 6 (1), pp. 1-55.

Hu, T., Poston, R.S. and Kettinger, W.J. (2011): Nonadopters of online social network services: Is it easy to have fun yet? Communications of the Association for Information Systems, 29 (1), pp. 441-458.

Jöreskog, K. and Sörbom, D. (1989): Lisrel 7: User's reference guide. Mooresville, IN: Scientific Software International.

Karahanna, E., Straub, D.W. and Chervany, N.L. (1999): Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs. MIS Quarterly, 23 (2), pp. 183-213.

Katz, M.L. and Shapiro, C. (1985): Network externalities, competition, and compatibility. The American Economic Review, 75 (3), pp. 424-440.

Krasnova, H., Spiekermann, S., Koroleva, K. and Hildebrand, T. (2010b): Online social networks: Why we disclose. Journal of Information Technology, 25 (2), pp. 109-125.

Laveist, T.A., Sellers, R.M., Elliot Brown, K.A. and Nickerson, K.J. (1997): Extreme social isolation, use of community-based senior support services, and mortality among african american elderly women. American Journal of Community Psychology, 25 (5), pp. 721-732.

Leary, M.R., Kelly, K.M., Cottrell, C.A. and Schreindorfer, L.S. (2007): Individual differences in the need to belong: Mapping the nomological network. Duke University: Unpublished manuscript.

Malhotra, N.K., Kim, S.S. and Agarwal, J. (2004): Internet users' information privacy concerns (iuipc): The construct, the scale, and a causal model. Information Systems Research, 15 (4), pp. 336-355.

Maslow, A.H. (1943): A theory of human motivation. Psychological Review, 50 (4), pp. 370-396.

Moon, J.-W. and Kim, Y.-G. (2001): Extending the tam for a world-wide-web context. Information & Management, 38 (4), pp. 217-230.

Nunnally, J. (1978): Psychometric theory. 2nd ed., New York, NY: McGraw-Hill.

Raacke, J. and Bonds-Raacke, J. (2008): Myspace and facebook: Applying the uses and gratifications theory to exploring friend-networking sites. CyberPsychology & Behavior, 11 (2), pp. 169-174.

Rook, K.S. (1984): The negative side of social interactions: Impact on psychological well-being. Journal of Personality and Social Psychology, 46 (5), pp. 1097-1108.

Sandler, I.N. (1980): Social support resources, stress and maladjustment of poor children. American Journal of Community Psychology, 8 (1), pp. 41-52.

Sheldon, K.M., Abad, N. and Hinsch, C. (2011): A two-process view of facebook use and relatedness need-satisfaction: Disconnection drives use, and connection rewards it. Journal of Personality and Social Psychology, 100 (4), pp. 766-775.

Sledgianowski, D. and Kulviwat, S. (2008): Social network sites: Antecedents of user adoption and usage. AMCIS 2008 Proceedings. Paper 83.

Straub, D., Limayem, M. and Karahanna-Evaristo, E. (1995): Measuring system usage: Implications for is theory testing. Management Science, 41 (8), pp. 1328-1342.

Subrahmanyam, K., Reich, S.M., Waechter, M. and Espinoza, G. (2008): Online and offline social networks: Use of social networking sites by emerging adults. Journal of Applied Developmental Psychology 29 (6), pp. 420-433.

Sun, H. and Zhang, P. (2006): Causal relationships between perceived enjoyment and perceived ease of use: An alternative approach. Journal of the Association for Information Systems, 7 (9), pp. 618-645.

Thambusamy, R., Church, M., Nemati, H. and Barrick, J. (2010): Socially exchanging privacy for pleasure: Hedonic use of computer-mediated social networks. ICIS 2010 Proceedings. Paper 253.

Van Der Heijden, H. (2004): User acceptance of hedonic information systems. MIS Quarterly, 28 (4), pp. 695-704.

Venkatesh, V. (2000): Determinants of perceived ease of use: Integrating perceived behavioral control, computer anxiety and enjoyment into the technology acceptance model. Information Systems Research, 11 (4), pp. 342-365.

Venkatesh, V. and Davis, F.D. (2000): A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management Science, 46 (2), pp. 186-204.

Venkatesh, V., Speier, C. and Morris, M.G. (2002): User acceptance enablers in individual decision making about technology: Toward an integrated model. Decision Sciences, 33 (2), pp. 297-316.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003): User acceptance of information technology: Toward a unified view. MIS Quarterly, 27 (3), pp. 425-478.

Venkatesh, V. and Bala, H. (2008): Technology acceptance model 3 and a research agenda on interventions. Decision Sciences, 39 (2), pp. 273-315.

Venkatesh, V., Thong, J.Y.L. and Xu, X. (2012): Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 36 (1), pp. 157-178.

Watson, G.B. and Johnson, D. (1972): Social psychology; issues and insights. 2nd ed., Philadelphia, PA: Lippincott.

Yousafzai, S.Y., Foxall, G.R. and Pallister, J.G. (2007): Technology acceptance: A meta-analysis of the tam: Part 2. Journal of Modelling in Management, 2 (3), pp. 281-304.

Risk Hurts Fun: The Influence of Perceived Privacy Risk on Social Network Site Usage

Claus-Peter H. Ernst

Abstract

Some studies suggest that Perceived Privacy Risk exerts no influence on the Actual System Use of a Social Network Site (SNS). However, the potential indirect relationships between Perceived Privacy Risk and Actual System Use through its central antecedents have so far been overlooked. In this paper, I postulate that Perceived Privacy Risk exerts a negative influence on the Perceived Enjoyment of SNSs, one of the central antecedents of Actual System Use. After surveying 415 students and applying a structural equation modeling approach, I confirmed an indirect negative effect of Perceived Privacy Risk on Actual System Use through Perceived Enjoyment. Overall, my study suggests that SNS service providers need to actively manage people's perceptions of privacy risk.

4.1 Introduction

Social Network Sites (SNSs) such as *Facebook* provide many opportunities to disclose personal information. As a result, the use of SNSs carries risks with regards to members' privacy, since they cannot know and/or control how, when, or to what extent, someone might (mis)use their information (cf. Westin, 1968). The findings of some studies suggest that *Perceived Privacy Risk* — the degree to which a person believes that using an SNS has negative consequences with regards to his/her privacy (cf. Peter and Ryan, 1976; Featherman and Pavlou, 2003; Dinev and Hart, 2006; Kim et al., 2008; Wu et al., 2009; Krasnova et al., 2010b; Chen, 2013) — exerts no influence on SNSs' *Actual System Use*, i.e., how often SNSs are used (e.g., Von Stetten et al., 2011).

However, the potential *indirect* influences of *Perceived Privacy Risk* on *Actual System Use* through its central antecedents have not yet been examined (cf. Davis et al., 1989; Van der Heijden, 2004). In this paper, I postulate that *Perceived Privacy Risk* has a negative influence on SNSs' *Perceived Enjoyment*, which is one of the central

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antecedents of *Actual System Use* (e.g., Van der Heijden, 2004) and 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).

After surveying 415 students and applying a structural equation modeling approach, I further the state-of-the-art of SNS research by confirming an indirect negative effect of *Perceived Privacy Risk* on *Actual System Use* through *Perceived Enjoyment*, a relationship that has been overlooked in the literature so far. Overall, my study suggests that SNS service providers need to actively manage people's perception of the privacy risks regarding their service in order to achieve an even greater market penetration and maintain their strong growth trajectory.

The next section explains the theoretical foundations of *Perceived Enjoyment* and *Perceived Privacy Risk*. Following this, I present my research model and research design. I then reveal and discuss my results before summarizing my findings, presenting their theoretical as well as practical implications, and providing an outlook on further research.

4.2 Theoretical Background

4.2.1 Perceived Enjoyment's Role on SNSs' Actual System Use

SNSs are generally acknowledged to be (partly) hedonic technologies (cf. Ernst et al., 2013a) that "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, SNS members have fun while using SNSs in general and, in particular, experience joy from the social interactions they enable (e.g., Boyd and Ellison, 2007; Sledgianowski and Kulviwat, 2008; Thambusamy et al., 2010; Hu et al., 2011).

Perceived Enjoyment — "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) — reflects a hedonic system's intrinsic motivations, 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 et al., 2012). Various studies in multiple contexts have consistently confirmed that *Perceived Enjoyment* is a central antecedent of the *Actual System Use* of hedonic technologies (e.g., Van der Heijden, 2004). Indeed, the findings

of Ernst et al. (2013b), Hu et al. (2011), and Sledgianowski and Kulviwat (2008) suggested that *Perceived Enjoyment* is an important influence factor of SNSs' *Actual System Use*.

4.2.2 Perceived Privacy Risk

Definition

Privacy is "the claim of individuals … to determine for themselves when, how, and to what extent information about them is communicated to others" (Westin, 1968, p. 7) and *risk* can be generally described as "the extent to which there is an uncertainty in significant and disappointing outcomes that may be realized" (Sitkin and Pablo, 1992; Chen, 2013, p. 1222). *Perceived Risk* is thus consistently understood as "the expectation of losses associated with … [specific actions]" (Peter and Ryan, 1976, p. 185).

In an SNS context, Krasnova et al. (2010b, p. 112) described *Perceived Privacy Risk* generically as "[b]eliefs about the potential uncertain negative consequences related to individual self-disclosure on … [SNSs]". Wu et al. (2009) provided insights into which negative consequences are most important with regards to an individual's privacy (cf. Dinev and Hart, 2006): while they referred explicitly to only one central aspect of *privacy risk* in their definition, that is, *the potential misuse of personal information*, their construct measurement implicitly includes another central aspect: *the loss of control over personal information*. This is consistent with the understanding of *Perceived Privacy Risk* in other research contexts (e.g., Featherman and Pavlou, 2003). Indeed, the first aspect (*the misuse of personal information*) includes any unwelcome use of an individual's personal information: this includes using the information for commercial purposes, becoming the target of personal attacks (for example, bullying), data being misinterpreted, and/or becoming an unknowing participant in illegal activities (for example, identity theft) (cf. Krasnova et al., 2010a). The second aspect of privacy risk (*the loss of control over personal information*) depicts any loss of control regarding how, when, or to what extent, someone (for example, employers, teachers, parents, unknown persons (Krasnova et al., 2010a)) might see/use personal information (cf. Westin, 1968).

Drawing from the works presented above, I describe *Perceived Privacy Risk* as the degree to which a person believes that using an SNS has negative consequences with regards to his/her privacy (cf. Peter and Ryan, 1976; Featherman and Pavlou, 2003;

Dinev and Hart, 2006; Kim et al., 2008; Wu et al., 2009; Krasnova et al., 2010b; Chen, 2013).

Previous Research

Perceived Risk, in general, can exert an influence on people's behavior (e.g., Tan, 1999). This influence has been a popular topic in previous research, especially in studies related to e-commerce and e-services. Indeed, multiple studies confirmed the existence of a negative influence of *Perceived Risk* on the usage of such services and their associated products (e.g., Jarvenpaa et al., 2000; Pavlou, 2001; Featherman and Pavlou, 2003; Pavlou, 2003; Malhotra et al., 2004).

Since SNSs offer innumerable opportunities to disclose personal information, the influence of privacy risk-related constructs on people's usage behaviors is of particular interest to SNS research. Indeed, multiple studies have confirmed a negative influence of *Perceived Privacy Risk* on SNS members' information disclosure behavior. For example, Lo (2010) found that *Perceived Privacy Risk* negatively influences the general *Willingness to provide personal information to SNSs*; Krasnova et al. (2010b) found that it has a negative influence on the actual amount of self-disclosed information.

In contrast, only little is known about the role of *Perceived Privacy Risk* on SNSs' *Actual System Use*. Whereas some findings suggest that it has no influence on *Actual System Use*, others suggest it does. For example, Von Stetten et al. (2011) were not able to confirm an influence of a privacy risk-related construct (*Privacy Concerns*) on *Usage*. However, Chen (2013) confirmed a positive influence of a privacy risk-related construct (*Privacy Abuse Concern*) on general risk perception, which, in turn, was found to exert a negative influence on SNSs' *Site Use*.

However, no study I am aware of has examined the potential *indirect* influence of *Perceived Privacy Risk* on SNSs' *Actual System Use* through its central antecedents so far (cf. Davis et al., 1989; Van der Heijden, 2004). My study aims to fill this gap in the literature. Indeed, I believe that *Perceived Privacy Risk indirectly* influences *Actual System Use* through *Perceived Enjoyment*, which is one of the central antecedents of *Actual System Use* (e.g., Van der Heijden, 2004).

4.3 Research Model

In the following section, I will present my research model in Figure 4.1 and then outline my corresponding hypotheses.

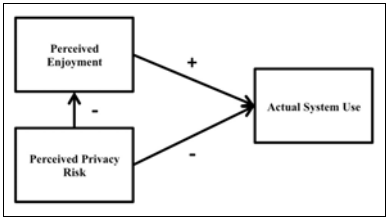

Figure 4.1: Research Model

As described earlier, members have fun while using SNSs in general and, in particular, experience joy from the social interactions they enable (e.g., Boyd and Ellison, 2007; Thambusamy et al., 2010). Therefore, SNSs are at least partly hedonic systems (Van der Heijden, 2004; Ernst et al., 2013a) that provide positive feelings and experiences for their users in the form of *Perceived Enjoyment* (Sledgianowski and Kulviwat, 2008; Hu et al., 2011; Ernst et al., 2013b). *Perceived Enjoyment* has been shown to be an important antecedent of hedonic technologies' *Actual System Use* (e.g., Van der Heijden, 2004). Indeed, Ernst et al. (2013b), Hu et al. (2011), and Sledgianowski and Kulviwat (2008) identified a positive influence of *Perceived Enjoyment* on SNS usage. I hypothesize that:

H4.1: The *Perceived Enjoyment* of a Social Network Site positively influences its *Actual System Use*.

Perceived Risk, in general, can alter an individual's feelings (Yüksel and Yüksel, 2007). Specifically, due to the perceived negative consequences associated with it, *Perceived Risk* causes negative feelings such as anxiety, discomfort and uncertainty (Dowling and Staelin, 1994; Featherman, 2001). Indeed, in a shopping context, Yüksel and Yüksel (2007) confirmed a negative influence of *Perceived Risk* on *Pleasure*, which is "the degree to which the person feels good, joyful, happy, or satisfied in the situation" (Yüksel and Yüksel, 2007, p. 706). In this sense, due to its potential negative consequences with regards to an individual's privacy, *Perceived Privacy Risk* can also be expected to cause negative feelings, i.e., to negatively influence an individual's *Perceived Enjoyment*. I hypothesize that:

H4.2: The *Perceived Privacy Risk* of a Social Network Site negatively influences its *Perceived Enjoyment*.

The *Theory of Reasoned Action* (Fishbein and Ajzen, 1975) postulates that an individual's behavior is influenced by his/her particular beliefs concerning the behavior's consequences (e.g., *Perceived Enjoyment*). Consequently, *Perceived Privacy Risk* can be expected to exert an influence on *Actual System Use*. More precisely, since *Perceived Privacy Risk* is associated with negative feelings, the influence it could be exerting on *Actual System Use* is probably negative. Although the findings regarding this relationship in a SNS context are ambiguous (cf. Von Stetten et al., 2011; Chen, 2013), multiple studies from other contexts have confirmed that various risk perceptions negatively influence usage behavior (Jarvenpaa et al., 2000; Pavlou, 2001; Featherman and Pavlou, 2003; Pavlou, 2003). Hence, I choose to include the direct relationship between *Perceived Privacy Risk* and *Actual System Use* into my research model and hypothesize that:

H4.3: The *Perceived Privacy Risk* of a Social Network Site negatively influences its *Actual System Use*.

4.4 Research Design

4.4.1 Data Collection

To empirically evaluate my research model, I surveyed students from a German university attending an *Introduction to information systems* course. In this manner, I obtained 415 complete paper-and-pencil questionnaires. 220 respondents were male (53 percent) and 195 were female (47 percent). The average age was 21.17 years (standard deviation: 2.63).

4.4.2 Measurement

I used existing reflective scales to measure *Actual System Use* and *Perceived Enjoyment* so as to ensure the content validity of my measurement model (Davis et al., 1989; Davis et al., 1992). For *Perceived Privacy Risk*, I adapted three items from Chen (2013) (cf. Dinev and Hart, 2006), Featherman and Pavlou (2003), and Krasnova et al. (2010b) (cf. Malhotra et al., 2004). Table 4.1 presents the resulting items and the corresponding sources.

Actual System Use was measured in the same manner as Davis et al. (1989, p. 991), and all other items were measured using a seven-point Likert-type scale ranging from

"strongly agree" to "strongly disagree". In my sample, the mean (standard deviation) was 6.03 (1.43) for *Actual System Use*, 5.11 (1.14) for *Perceived Enjoyment*, and 5.56 (1.15) for *Perceived Privacy Risk* (based on the item average of each construct).

Construct	Items (Labels)	Source/adapted from
Actual System Use	On average, how often do you use SNSs? (AU1)	Davis et al. (1989)
	How frequently do you use SNSs? (AU2)	
Perceived Enjoyment	I have fun using SNSs (PE1)	Davis et al. (1992)
	Using SNSs is pleasant (PE2)	
	I find using SNSs to be enjoyable (PE3)	
Perceived Privacy Risk	Using SNSs leads to a loss of control over the privacy of my personal data (PPR1)	Chen (2013) Featherman and Pavlou (2003) Krasnova et al. (2010b) (cf. Malhotra et al., 2004; Dinev and Hart, 2006)
	Using SNSs allows others to misuse my personal data (PPR2)	
	Overall, I see a threat to my privacy due to my presence on SNSs (PPR3)	

Table 4.1: Items of my Measurement Model

4.5 Results

4.5.1 Measurement Model

To test my measurement model for reliability, validity, and model fit, I computed *Cronbach's alpha* for each construct using *SPSS 21.0.0.0* and performed a confirmatory factor analyses using *AMOS 21.0.0.0*. Parameters were estimated using maximum likelihood and, since my data was not distributed joint multivariate normal, a bias-corrected bootstrapping approach with 2000 replications was used to test for significance (Byrne, 2001; Krasnova et al., 2010b).

Cronbach's alpha was .84 or greater for all constructs (Table 4.2). All items loaded high (.73 or higher) and significant ($p<.01$) on their parent factor (Table 4.3); Table 4.4 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 correlations between constructs; *Bollen-Stine corrected p-value*, *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 .279, 1.466, .985, .968, .996, .034, and .018, respectively.

Hence, my measurement model is well-specified since it meets all desirable reliability, convergent/discriminant validity, and model fit thresholds.[11]

	Actual System Use	Perceived Enjoyment	Perceived Privacy Risk
Cronbach's alpha	.89	.93	.84

Table 4.2: Cronbach's Alphas

Item labels	AU1	AU2	PE1	PE2	PE3	PPR1	PPR2	PPR3
Parent factor loadings	.85	.95	.95	.92	.84	.73	.76	.93

Table 4.3: Parent Factor Loadings

	CR	AVE	MSV	ASV		AU	PE	PPR
Actual System Use (AU)	.90	.82	.47	.24		-		
Perceived Enjoyment (PE)	.93	.82	.47	.25		.69	-	
Perceived Privacy Risk (PPR)	.85	.66	.02	.02		-.11	-.15	-

Table 4.4: CR, AVE, MSV, ASV and Correlations between Constructs

4.5.2 Structural Model

To test my research model, I conducted a structural equation modeling approach using *AMOS 21.0.0.0*. Parameters were estimated using maximum likelihood and significance was assessed by using a bias-corrected bootstrapping approach with 2000 replications (Byrne, 2001; Krasnova et al., 2010b). Fit measures indicated a good model fit (Bollen-Stine corrected p-value = .279, CMIN/DF = 1.466, GFI = .985, AGFI = .968, CFI = .996, RMSEA = .034, SRMR = .018). Figure 4.2 presents the standardized regression weights regarding the previously hypothesized relationships as well as the R^2s of each endogenous variable (** = p<.01, * = p<.05, ns = non-significant).

[11] To ensure reliability and convergent/discriminant validity, Cronbach's alpha is recommended to be greater than .70 (Nunnally, 1978); the loading of each item on its parent factor should be significant and exceed the threshold of .60 (Bagozzi and Yi, 1988); the CR should be greater than the AVE and they should lie above .70 and .50, respectively (Hair et al., 2009); the square root of the AVE of each construct should be larger than the absolute value of the construct's correlations with its counterparts (Fornell and Larcker, 1981); and, finally, the AVE should be greater than the MSV and ASV (Hair et al., 2009). To ensure model fit, the Bollen-Stine corrected p-value, GFI, AGFI, and CFI should be higher than .05, .90, .80, and .95, respectively (Jöreskog and Sörbom, 1989; Hu and Bentler, 1999; Byrne, 2001). Additionally, the CMIN/DF, RMSEA, and SRMR should be less than 3.00, .06, and .08, respectively (Hu and Bentler, 1999; Hair et al., 2009).

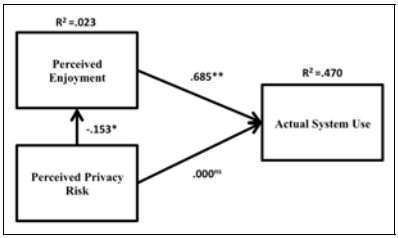

Figure 4.2: Findings

Perceived Enjoyment (β=.685, p<.01) was found to have a positive influence on the *Actual System Use* of SNSs and *Perceived Privacy Risk* was found to have a negative influence on *Perceived Enjoyment* (β=-.153, p<.05), confirming hypotheses 4.1 and 4.2. In contrast, but in line with the findings of other similar studies (e.g., Von Stetten et al., 2011), hypothesis 4.3 was not confirmed since *Perceived Privacy Risk* had no significant direct influence on *Actual System Use* (β=.000, p<.929).[12]

4.6 Conclusions

I studied the role of *Perceived Privacy Risk* on SNS usage, i.e., its relationship to *Perceived Enjoyment* and *Actual System Use*. After surveying 415 students and applying a structural equation modeling approach, I confirmed an indirect negative effect of *Perceived Privacy Risk* on *Actual System Use* through *Perceived Enjoyment*.

My study has some limitations. First, it suffers from the general problems of using a student sample. Indeed, my results might not hold true for people from other countries, with different educational backgrounds or from different age groups. Also, I did not base my study on a specific SNS; rather, I used generic items that asked about SNSs as a whole. Hence, there might be differences between SNSs that are used for professional reasons, such as *LinkedIn,* and SNSs that are used for personal reasons, such as *Facebook*. Consequently, future studies might address my limitations by testing the influences of *Perceived Privacy Risk* for different demographic groups and

[12] The direct effect of *Perceived Privacy Risk* on *Actual System Use* was also not significant when *Perceived Enjoyment* was not included into the model. Overall, I found no fully or partially mediated effect of *Perceived Privacy Risk* on *Actual System Use* but rather an *indirect effect* through *Perceived Enjoyment* (β= -.105, p<.05) (cf. Baron and Kenny, 1986; Hair et al., 2009).

differentiating between professional and personal SNSs in order to broaden the understanding of *Perceived Privacy Risk's* role on SNS usage.

In summary, my study furthers the state-of-the-art of SNS research by confirming an indirect negative effect of *Perceived Privacy Risk* on *Actual System Use* through *Perceived Enjoyment*, a relationship that has been overlooked in the literature so far. Additionally, my findings have practical implications for SNS service providers. Indeed, my findings suggest that SNS service providers need to actively manage people's privacy risk perception, in order to increase their *Perceived Enjoyment* and, hence, also their *Actual System Use*, to ultimately achieve an even greater market penetration and to maintain their strong growth trajectory.

Bibliography

Bagozzi, R.P. and Yi, Y. (1988): On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 16 (1), pp. 74-94.

Baron, R. and Kenny, D. (1986): The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51 (6), pp. 1173-1182.

Boyd, D.M. and Ellison, N.B. (2007): Social network sites: Definition, history, and scholarship. Journal of Computer-Mediated Communication, 13 (1), pp. 210-230.

Brief, A.P. and Aldag, R.J. (1977): The intrinsic-extrinsic dichotomy: Toward conceptual clarity. Academy of Management Review, 2 (3), pp. 496-500.

Byrne, B.M. (2001): Structural equation modeling with amos: Basic concepts, applications, and programming. Mahwah, NJ: Lawrence Erlbaum Associates.

Chen, R. (2013): Member use of social networking sites - an empirical examination. Decision Support Systems, 54 (3), pp. 1219-1227.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989): User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35 (8), pp. 982-1003.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1992): Extrinsic and intrinsic motivation to use computers in the workplace. Journal of Applied Social Psychology, 22 (14), pp. 1111-1132.

Dinev, T. and Hart, P. (2006): An extended privacy calculus model for e-commerce transactions. Information Systems Research, 17 (1), pp. 61-80.

Dowling, G.R. and Staelin, R. (1994): A model of perceived risk and intended risk-handling activity. Journal of Consumer Research, 21 (1), pp. 119-134.

Ernst, C.-P.H., Pfeiffer, J. and Rothlauf, F. (2013a): Hedonic and utilitarian motivations of social network site adoption. Johannes Gutenberg University Mainz: Working Papers in Information Systems and Business Administration.

Ernst, C.-P.H., Pfeiffer, J. and Rothlauf, F. (2013b): The influence of perceived belonging on social network site adoption. AMCIS 2013 Proceedings.

Featherman, M. (2001): Extending the technology acceptance model by inclusion of perceived risk. AMCIS 2001 Proceedings. Paper 148.

Featherman, M.S. and Pavlou, P.A. (2003): Predicting e-services adoption: A perceived risk facets perspective. International Journal of Human-Computer Studies, 59 (4), pp. 451-474.

Fishbein, M. and Ajzen, I. (1975): Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley.

Fornell, C. and Larcker, D.F. (1981): Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18 (1), pp. 39-50.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2009): Multivariate data analysis. 7th ed., Upper Saddle River, NJ: Prentice Hall.

Hu, L.-T. and Bentler, P.M. (1999): Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling, 6 (1), pp. 1-55.

Hu, T., Poston, R.S. and Kettinger, W.J. (2011): Nonadopters of online social network services: Is it easy to have fun yet? Communications of the Association for Information Systems, 29 (1), pp. 441-458.

Jarvenpaa, S.L., Tractinsky, N. and Vitale, M. (2000): Consumer trust in an internet store. Information Technology and Management, 1 (1/2), pp. 45-71.

Jöreskog, K. and Sörbom, D. (1989): Lisrel 7: User's reference guide. Mooresville, IN: Scientific Software International.

Kim, D.J., Ferrin, D.L. and Rao, H.R. (2008): A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. Decision Support Systems, 44 (2), pp. 544-564.

Krasnova, H., Kolesnikova, E. and Guenther, O. (2010a): Leveraging trust and privacy concerns in online social networks: An empirical study. ECIS 2010 Proceedings. Paper 160.

Krasnova, H., Spiekermann, S., Koroleva, K. and Hildebrand, T. (2010b): Online social networks: Why we disclose. Journal of Information Technology, 25 (2), pp. 109-125.

Lo, J. (2010): Privacy concern, locus of control, and salience in a trust-risk model of information disclosure on social networking sites. AMCIS 2010 Proceedings. Paper 110.

Malhotra, N.K., Kim, S.S. and Agarwal, J. (2004): Internet users' information privacy concerns (iuipc): The construct, the scale, and a causal model. Information Systems Research, 15 (4), pp. 336-355.

Nunnally, J. (1978): Psychometric theory. 2nd ed., New York, NY: McGraw-Hill.

Pavlou, P.A. (2001): Integrating trust in electronic commerce with the technology acceptance model: Model development and validation. AMCIS 2001 Proceedings. Paper 159.

Pavlou, P.A. (2003): Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. International Journal of Electronic Commerce, 7 (3), pp. 69-103.

Peter, J.P. and Ryan, M.J. (1976): An investigation of perceived risk at the brand level. Journal of Marketing Research, 13 (2), pp. 184-188.

Sitkin, S.B. and Pablo, A.L. (1992): Reconceptualizing the determinants of risk behavior. The Academy of Management Review, 17 (1), pp. 9-38.

Sledgianowski, D. and Kulviwat, S. (2008): Social network sites: Antecedents of user adoption and usage. AMCIS 2008 Proceedings. Paper 83.

Tan, S.J. (1999): Strategies for reducing consumers' risk aversion in internet shopping. Journal of Consumer Marketing, 16 (2), pp. 163-180.

Thambusamy, R., Church, M., Nemati, H. and Barrick, J. (2010): Socially exchanging privacy for pleasure: Hedonic use of computer-mediated social networks. ICIS 2010 Proceedings. Paper 253.

Van Der Heijden, H. (2004): User acceptance of hedonic information systems. MIS Quarterly, 28 (4), pp. 695-704.

Venkatesh, V. (2000): Determinants of perceived ease of use: Integrating perceived behavioral control, computer anxiety and enjoyment into the technology acceptance model. Information Systems Research, 11 (4), pp. 342-365.

Venkatesh, V., Thong, J.Y.L. and Xu, X. (2012): Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 36 (1), pp. 157-178.

Von Stetten, A., Wild, U. and Chrennikow, W. (2011): Adopting social network sites – the role of individual it culture and privacy concerns. AMCIS 2011 Proceedings. Paper 290.

Westin, A.F. (1968): Privacy and freedom. New York, NY: Atheneum.

Wu, Y.A., Ryan, S. and Windsor, J. (2009): Influence of social context and affect on individuals' implementation of information security safeguards. ICIS 2009 Proceedings. Paper 70.

Yüksel, A. and Yüksel, F. (2007): Shopping risk perceptions: Effects on tourists' emotions, satisfaction and expressed loyalty intentions. Tourism Management, 28 (3), pp. 703-713.

Privacy Protecting Behavior in Social Network Sites

Claus-Peter H. Ernst, Jella Pfeiffer, Franz Rothlauf

Abstract

The use of Social Network Sites (SNSs) poses risks to the privacy of members: for example, the members' information could be used for unwelcome commercial purposes or they could become the target of personal attacks. Risks generally lead to Protecting Behavior. However, it is still unknown which specific Protecting Behavior results from Perceived Privacy Risk in SNSs. Based on a study of the literature, we identified six potential Privacy Protecting Behaviors that SNS members could use. Drawing from the Protection Motivation Theory, we argue that not only does SNS members' Perceived Privacy Risk (Threat Appraisal) influence the implementation of specific Privacy Protecting Behaviors; their evaluation of the potential Privacy Protecting Behaviors themselves (Coping Appraisal) influences it as well. After surveying 50 German-speaking Facebook users and applying a structural equation modeling approach, we confirmed a positive influence of Perceived Privacy Risk on Refusal, Selectivity in Connections, and Strictness of Privacy Settings. In contrast, we were not able to confirm an influence of Perceived Privacy Risk on Misrepresentation, Removal, and Termination of Connections. However, this confirmed our hypotheses that Perceived Privacy Risk has a greater influence on Refusal than on Misrepresentation and Removal, and that it has greater influence on Selectivity in Connections than on Termination of Connections.

5.1 Introduction

Social Network Sites (SNSs) provide multiple possibilities to disclose personal information (Boyd and Ellison, 2007). As a result, using them presents risks to the privacy of their members: indeed, the members' information could be used for unwelcome commercial purposes or members could become the target of personal attacks (cf. Krasnova et al., 2010a).

People can address their *Perceived Privacy Risk* by performing *Privacy Protecting Behaviors* (e.g., Son and Kim, 2008). *Perceived Privacy Risk* is the degree to which a

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person believes that using an SNS has negative consequences with regards to his/her privacy (cf. Peter and Ryan, 1976; Featherman and Pavlou, 2003; Dinev and Hart, 2006; Kim et al., 2008; Wu et al., 2009; Krasnova et al., 2010b; Chen, 2013); *Privacy Protecting Behavior* is the set of possibilities SNS members have at their disposal to safeguard themselves against the potential negative consequences associated with the risks to their privacy (cf. Son and Kim, 2008; Wu et al., 2009; Krasnova et al., 2010b). The *Protection Motivation Theory* (Rogers, 1975; Maddux and Rogers, 1983; Rogers, 1983) postulates that an individual's evaluation of a threat (*Threat Appraisal*) as well as his/her evaluation of the possible *Protecting Behaviors* that address the threat (*Coping Appraisal*) both influence the individual's actual *Protecting Behavior*. But which specific *Protecting Behaviors* result from *Perceived Privacy Risk* in SNSs?

In this article, we draw from the *Protection Motivation Theory* to postulate an influence of *Perceived Privacy Risk* (*Threat Appraisal*) on six *Privacy Protecting Behaviors* SNS members can use, which we identified in the literature: *Refusal*, *Misrepresentation*, *Removal*, *Selectivity in Connections*, *Termination of Connections*, and *Strictness of Privacy Settings* (cf. Son and Kim, 2008; Bulgurcu et al., 2010; Krasnova et al., 2010b). Moreover, we argue that because of differences between the *Coping Appraisals* of the six identified *Privacy Protecting Behaviors*, the extent of the influence of *Perceived Privacy Risk* on these six behaviors differs. More specifically, we suggest that *Misrepresentation* and *Removal* have a lower *Coping Appraisal* than *Refusal,* and that the *Coping Appraisal* of *Termination of Connections* is lower than that of *Selectivity in Connections*. Consequently, we hypothesize that *Perceived Privacy Risk* leads rather to *Refusal* than to *Misrepresentation* or *Removal*, and that it will lead rather to *Selectivity in Connections* than to *Termination of Connections*.

After surveying German-speaking Facebook users via an online questionnaire and applying a structural equation modeling approach, we confirm that SNS members address their *Perceived Privacy Risk* by *refusing* to provide specific personal information, being *selective* when accepting or requesting connections in SNSs, and using *privacy settings* with strict information access control. In line with our arguments about differences in the *Coping Appraisals*, we were not able to confirm a relationship between SNS members' *Perceived Privacy Risk* and their *falsifying* of personal information, their *removal* of personal information, or their *termination of specific connections*.

Our findings suggest that SNS service providers need to actively manage people's privacy risk perception since SNS members' resulting *Refusal*, and *Strictness of Privacy Settings* hinders their business model, i.e., the selling of personal advertisements (e.g., Krasnova et al., 2010b; Thambusamy et al., 2010). Furthermore, SNS service providers should put their greatest effort into getting users to connect and reveal information, since it is unlikely that users will undo their actions. Also, our findings suggest that advertisers can rely for the most part on the veracity of the information provided by SNS members', which means that they can truly target their intended audience within SNSs' networks.

The next section explains the theoretical foundations of *Protection Motivation Theory* and *Privacy Protecting Behavior*. Following this, we present our research model and empirical study. 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.

5.2 Theoretical Background

5.2.1 Protection Motivation Theory

The *Protection Motivation Theory* (Rogers, 1975; Maddux and Rogers, 1983; Rogers, 1983; Figure 5.1) generally postulates that an individual's *Threat Appraisal* and *Coping Appraisal* both influence his/her *Protection Motivation,* which is the direct antecedent of his/her *Actual Protecting Behavior* (Table 5.1 defines *Protection Motivation Theory's* central constructs).

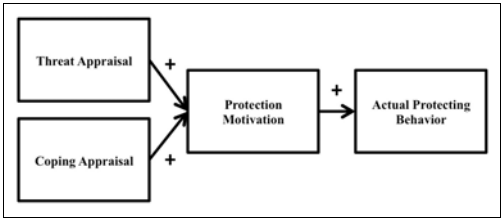

Figure 5.1: Protection Motivation Theory

More specifically, an individual has two possibilities to cope with a threat he/she is facing: (1) do nothing or (2) take counteractions. Whereas *Threat Appraisal* evaluates the threat itself, i.e., both the positive and negative consequences that might occur if an individual chooses to do nothing about it, *Coping Appraisal* evaluates the possible

Protecting Behaviors that might safeguard against the threat. Indeed, *Coping Appraisal* is a calculus of *Response Efficacy*, *Self-Efficacy*, and *Response Costs* (Figure 5.2; Table 5.2). Whereas *Response Efficacy and Self-Efficacy* increase *Coping Appraisal*, the *Response Costs* decrease it (Floyd et al., 2000).

Construct	Definition
Threat Appraisal	An individual's evaluation of the consequences that might occur if no actions to protect the self from a potential threat/risk are performed (Floyd et al., 2000)
Coping Appraisal	An individual's evaluation of "the ability to cope with and avert the threatened danger" (Floyd et al., 2000, p. 410)
Protection Motivation	An individual's intention to protect the self from a potential threat/risk (cf. Floyd et al., 2000)
Actual Protecting Behavior	An individual's actual "activity to protect the self from danger" (Maddux and Rogers, 1983, p. 470)

Table 5.1: Definitions of the Protection Motivation Theory's Core Constructs

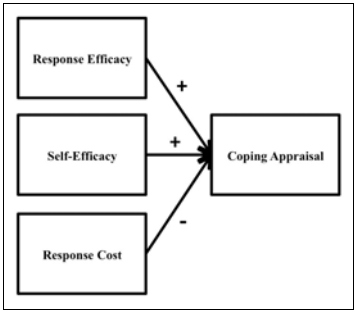

Figure 5.2: Calculus of Coping Appraisal

Construct	Definition
Response Efficacy	"[T]he belief that the adaptive response will work, that taking the protective action will be effective in protecting the self …" (Floyd et al., 2000, p. 411)
Self-Efficacy	"[T]he perceived ability of the person to actually carry out the adaptive response (Floyd et al., 2000, p. 411)
Response Costs	"[A]ny costs (e.g., monetary, personal, time, effort) associated with taking the adaptive coping response" (Floyd et al., 2000, p. 411)

Table 5.2: Definitions of Response Efficacy, Self-Efficacy and Response Costs

Multiple studies have successfully used the *Protection Motivation Theory* to explain people's *Protecting Behavior* in different contexts. For example, this theory has been used to explain people's behavior when addressing health threats. For an overview, see Floyd et al. (2000).

In the following section, we describe the six *Privacy Protecting Behaviors* that can be used by SNS members to cope with their *Perceived Privacy Risk*, a specific manifestation of *Threat Appraisal*.

5.2.2 Privacy Protecting Behavior

SNSs provide multiple possibilities to disclose personal information. First and foremost, members construct a profile containing personal data, such as their name, profile picture, birthday, address, and telephone number (Boyd and Ellison, 2007). Additionally, they are encouraged to upload photos and videos, express their opinions and preferences, take polls, browse the profiles of other members and companies, etc. This ubiquitous provision of personal information bears risks, that is, "the extent to which there is an uncertainty in significant and disappointing outcomes that may be realized" (Sitkin and Pablo, 1992; Chen, 2013, p. 1222), with regards to the privacy of the members, i.e., their "claim … to determine for themselves when, how, and to what extent information about them is communicated to others" (Westin, 1968, p. 7).

It is known that SNS members can choose to perform *Privacy Protecting Behaviors* in order to protect themselves against their *Perceived Privacy Risk*. Overall, we identified three kinds of studies that deal with *Privacy Protecting Behaviors*:

One research-in-progress study crafted a catalogue of behaviors that people could use to safeguard their privacy: Bulgurcu et al. (2010) researched members' comments to proposed changes to Facebook's privacy policy. They identified the *Intention to Quit the Platform*, *Intention to Quit Third-Party Applications*, *Intention to Limit Socialization*, *Intention to Terminate Connections*, *Intention to Give False Information*, and *Intention to Search for Additional Protection Tools* as potential reactions to privacy issues.

Furthermore, some studies examined the privacy-related antecedents of *Privacy Protecting Behavior* in general. These studies did not differentiate between different kinds of protecting behavior at the construct level, rather they differentiated between different kinds of protecting behavior at the item level: Chen et al. (2009) found a positive influence of *Privacy Concerns* on *Information Privacy Protective Responses* in SNSs. Their dependent construct was measured using a four-item scale with each item representing one specific kind of protective response, i.e., *Removal*, *Negative Word-of-Mouth*, *Complaining Directly to Online Companies*, and *Complaining Indirectly to Third-Party Organizations* (cf. Son and Kim, 2008). Also, Wu et al.

(2009) found that *Perceived Privacy Risk* positively influences the use of *Privacy Safeguards* and that this relationship is moderated by a person's *Affect* toward SNSs. Like Chen et al. (2009), they measured their dependent construct using a four-item scale with each item representing one specific kind of protective response. However, they partly focused on different kinds of protective responses, i.e., *Managing Personally Identifiable Information Diligently*, *Changing Privacy Settings*, and *Exercising Caution Before Downloading and Using SNS Applications*. Litt (2013) found that *Privacy Concerns* have a positive influence on the usage of *Technological Privacy Tools* in SNSs. Her dependent construct was measured using "an index that sums the number of technological privacy tools an individual reported using" (Litt, 2013, p. 1652). More specifically, each respondent was asked whether he/she *Changes Their Privacy Setting*, *Deletes People from Network/Friend Lists*, *Untags Photos*, *Limits Certain Updates to Certain People*, and *Deletes Others' Comments from Their Own Profile*.

Finally, some studies examined the privacy-related antecedents of specific *Privacy Protecting Behaviors*. These studies differentiated between different kinds of behavior at the construct level: In a general online context, Son and Kim (2008) developed a taxonomy containing six *Information Privacy-Protective Responses*: *Refusal*, *Misrepresentation*, *Removal*, *Negative-Word-of-Mouth*, *Complaining Directly to Online Companies*, and *Complaining Indirectly to Third-Party Organizations*. They found that *Information Privacy Concerns* have a positive influence on all responses but *Misrepresentation*. Krasnova et al. (2009) found that *Privacy Concerns* negatively influence the amount of *Self-Disclosure.* Thambusamy et al. (2010) found that *Enjoyment* has a negative influence on the likelihood to *remove* personal information from SNSs, and a negative influence on the likelihood to contribute to *negative word-of-mouth*. In contrast, they did not find an influence of *Enjoyment* on both the likelihood to *refuse* to disclose personal information and the likelihood to *misrepresent* personal information on SNSs (cf. Son and Kim, 2008). Stutzman and Kramer-Duffield (2010) found that the expectation of privacy violations from non-close SNS friends as well as increased levels of interpersonal privacy management increase the probability of having a non-public SNS profile. Similarly, Lankton and Tripp (2013) found *Privacy Concern* to have a positive influence on the *Change of Privacy Settings* in SNSs. However, they did not find an influence of *Privacy Concern* on the number of SNS friends and on "allowing only friends one has interacted with a lot in one's

friends list" (Lankton and Tripp, 2013, p. 3). Furthermore, Chakraborty et al. (2013) researched the *Privacy-Preserving Actions* of older adults (aged 55 and above) regarding uploaded photos, college information, and past/present employers in Facebook. They found that older adults' decision to enable or to disable the public visibility of this particular information through *Privacy Settings* is influenced by their Facebook friends' corresponding settings. Also, they found that older males hide their employer information more often than older females. Krasnova et al. (2010b) identified five kinds of privacy-related behavior in SNSs via a *focus group* discussion: *Information Disclosure*, *Information Falsification*, *Selectivity in Friends*, *Privacy Settings*, and *Complaining to SNS Service Provider or Other Parties*. In a subsequent empirical study, they confirmed that *Perceived Privacy Risk* negatively influences *Self-Disclosure*. Also, Lo (2010) confirmed a negative influence of *Perceived Risk* (with regards to privacy) on the *Willingness to provide personal information to SNSs*. Chen (2013) found a positive influence of *Privacy Abuse Concern* on general risk perception, which, in turn, was found to be an antecedent of how often people use SNSs. Similarly, Ernst (2014) confirmed an indirect negative effect of *Perceived Privacy Risk* on *Actual System Use* through *Perceived Enjoyment*. Table 5.3 gives an overview of all the (implicitly) examined *Privacy Protecting Behaviors* presented above.

Whereas *Quitting the SNS Platform* or limiting *Actual System Use* are two possibilities SNS members can use to safeguard their privacy, in doing so, they simultaneously limit or prevent themselves from accessing the SNSs' beneficial services. *Complaining to SNS Service Provider or Other Parties*, *Complaining Directly to Online Companies*, *Complaining Indirectly to Third-Party Organizations*, *Negative Word-of-Mouth*, and *Searching for Additional Protection Tools* only promise SNS members indirect possibilities of safeguarding themselves against *Privacy Risks*. *Managing Personally Identifiable Information Diligently* is a rather general behavior that can include multiple different specific behaviors. Overall, we do not consider any of these behaviors in the following study. Rather, we focus on the remaining behaviors found in the literature that promise members immediate chances for success at safeguarding their privacy without simultaneously limiting or preventing their access to the SNSs' beneficial services.

These behaviors can be summarized by six *Privacy Protecting Behaviors*, which we define in Table 5.4: *Refusal*, *Misrepresentation*, *Removal*, *Selectivity in Connections*,

Termination of Connections, and *Strictness of Privacy Settings* (cf. Son and Kim, 2008; Bulgurcu et al., 2010; Krasnova et al., 2010b). Indeed, *Refusal* summarizes *Information Disclosure/Self-Disclosure* and *Willingness to provide personal information to SNSs*. *Misrepresentation*, *Giving False Information*, and *Information Falsification* are different labels for the same kind of behavior. *Deletion of Others' Comments from the Own Profile* and *Untagging Photos* can be summarized by *Removal*. *Selectivity in Connections* includes all of the following behaviors: *Allowing Only Friends One Has Interacted With A Lot in One's Friends List, Exercising Caution Before Downloading and Using SNS Applications*, *Limiting Socialization*, *Number of SNS friends*, and *Selectivity in Friends*. *Deletion of People from Network/Friend Lists* and *Quitting Third-Party Applications* are both a specific manifestation of *Termination of Connections* and, hence, can be summarized by it. Finally, *Strictness of Privacy Settings* describes *Changing Privacy Settings*, *Limiting Certain Updates to Certain People*, *Privacy Settings* and *Having a Non-Public SNS Profile*. Table 5.5 gives an overview of this classification.

Examined Privacy Protecting Behavior	Study
Refusal; Misrepresentation; Removal; Negative-Word-of-Mouth; Complaining Directly to Online Companies; Complaining Indirectly to Third-Party Organizations	Son and Kim (2008)
Removal; Negative Word-of-Mouth; Complaining Directly to Online Companies; Complaining Indirectly to Third-Party Organizations	Chen et al. (2009)
Self-Disclosure	Krasnova et al. (2009)
Managing Personally Identifiable Information Diligently; Changing Privacy Settings; Exercising Caution Before Downloading and Using SNS Applications	Wu et al. (2009)
Quitting the Platform; Quitting Third-Party Applications; Limiting Socialization; Terminating Connections; Giving False Information; Searching for Additional Protection Tools	Bulgurcu et al. (2010)
Information Disclosure/Self-Disclosure; Information Falsification; Selectivity in Friends; Privacy Settings; Complaining to SNS Service Provider or Other Parties	Krasnova et al. (2010b)
Willingness to provide personal information to SNSs	Lo (2010)
Having a Non-Public SNS Profile	Stutzman and Kramer-Duffield (2010)
Refusal; Misrepresentation; Removal; Negative-Word-of-Mouth	Thambusamy et al. (2010)
Changing Privacy Settings	Chakraborty et al. (2013)
Actual System Use	Chen (2013)
Changing Privacy Settings; Number of SNS friends; Allowing Only Friends One Has Interacted With A Lot in One's Friends List	Lankton and Tripp (2013)
Changing Privacy Setting; Deletion of People from Network/Friend Lists; Untagging Photos; Limiting Certain Updates to Certain People; Deletion of Others' Comments from one's Own Profile	Litt (2013)
Actual System Use	Ernst (2014)

Table 5.3: Studied Privacy Protecting Behaviors in the Literature

5.3 Research Model

In this section, we draw from the *Protection Motivation Theory* to build our research model. More specifically, we use the *Protection Motivation Theory's* upper causal chain (*Threat Appraisal→Protection Motivation→Actual Protecting Behavior*) to postulate an influence of *Perceived Privacy Risk* (*Threat Appraisal*) on each of the six *Privacy Protecting Behaviors* (*Actual Protecting Behavior*) identified earlier. Furthermore, we use *Protection Motivation Theory's* lower causal chain (*Coping Appraisal→Protection Motivation→Actual Protecting Behavior*) to build hypotheses concerning the extent of *Perceived Privacy Risk's* influences on these behaviors. Figure 5.3 presents our research model.[13]

Privacy Protecting Behavior	Definition
Refusal	The extent to which a member intentionally refuses to provide specific information on SNSs
Misrepresentation	The extent to which a member intentionally provides dishonest or inaccurate information on SNSs (cf. Krasnova et al., 2010b)
Removal	The extent to which a member intentionally removes specific information from SNSs
Selectivity in Connections	The extent of a member's selectiveness when forming connections on SNSs, e.g., SNS-friendships, connections with company/product pages, connections with applications (e.g., Facebook games), connections with third-party websites
Termination of Connections	The extent to which a member intentionally terminates specific connections on SNSs, e.g., SNS-friendships, connections with company/product pages, connections with applications (e.g., Facebook games), connections with third-party websites
Strictness of Privacy Settings	The extent to which a member has strict privacy settings on SNSs

Table 5.4: Definitions of Privacy Protecting Behaviors

Perceived Privacy Risk is a privacy-specific manifestation of *Threat Appraisal*. Indeed, it describes the SNS members' evaluation of the negative consequences to their privacy[14] that might occur if they choose maladaptive behavior, i.e., do not protect themselves within SNSs' networks (cf. Floyd et al., 2000).

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[13] In contrast to the original *Protection Motivation Theory*, we conceptualized a direct relationship between *Threat Appraisal* and the *Actual Protecting Behaviors*. This is in line with multiple studies from different contexts that do not examine the *intentions* to perform a specific behavior, but rather the behavior itself (cf. Yousafzai et al., 2007).

[14] The *misuse of personal information* as well as the *loss of control of personal information* are regularly seen as the two most severe negative consequences with regards to an individual's privacy (e.g., Featherman and Pavlou, 2003; Wu et al., 2009). *Misuse of personal information* includes any unwelcome use of an individual's personal information: this includes using the information for commercial purposes, becoming the target of personal attacks (for example, bullying), data being misinterpreted, and/or becoming an unknowing participant in illegal activities (for example, identity theft) (cf. Krasnova et al., 2010a). *Loss of control of personal*

Privacy Protecting Behavior	Assigned behavior from the literature
Refusal	- Information Disclosure/Self-Disclosure (Krasnova et al., 2009; Krasnova et al., 2010b) - Refusal (Son and Kim, 2008; Thambusamy et al., 2010) - Willingness to provide personal information to SNSs (Lo, 2010)
Misrepresentation	- Giving False Information (Bulgurcu et al., 2010) - Information Falsification (Krasnova et al., 2010b) - Misrepresentation (Son and Kim, 2008; Thambusamy et al., 2010)
Removal	- Deletion of Others' Comments from one's Own Profile (Litt, 2013) - Removal (Son and Kim, 2008; Chen et al., 2009; Thambusamy et al., 2010) - Untagging Photos (Litt, 2013)
Selectivity in Connections	- Allowing Only Friends One Has Interacted With A Lot in One's Friends List (Lankton and Tripp, 2013) - Exercising Caution Before Downloading and Using SNS Applications (Wu et al., 2009) - Limiting Socialization (Bulgurcu et al., 2010) - Number of SNS friends (Lankton and Tripp, 2013) - Selectivity in Friends (Krasnova et al., 2010b)
Termination of Connections	- Deletion of People from Network/Friend Lists (Litt, 2013) - Quitting Third-Party Applications (Bulgurcu et al., 2010) - Terminating Connections (Bulgurcu et al., 2010)
Strictness of Privacy Settings	- Changing Privacy Settings (Wu et al., 2009; Chakraborty et al., 2013; Lankton and Tripp, 2013; Litt, 2013) - Privacy Settings (Krasnova et al., 2010b) - Limiting Certain Updates to Certain People (Litt, 2013) - Having a Non-Public SNS Profile (Stutzman and Kramer-Duffield, 2010)

Table 5.5: Classification of Literature's Privacy Protecting Behaviors

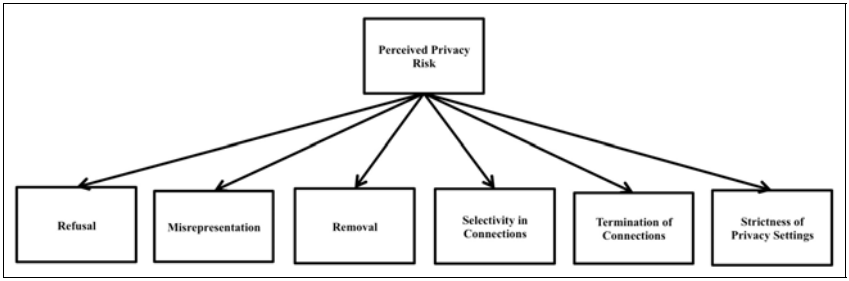

Figure 5.3: Research Model

Each of the six *Privacy Protecting Behaviors* identified earlier generally enables SNS members to safeguard themselves against potential negative consequences associated with the risks to their privacy: First, by *refusing* to provide specific personal

information depicts any loss of control regarding how, when, or to what extent, someone (for example, employers, teachers, parents, unknown persons (Krasnova et al., 2010a)) might see/use personal information (cf. Westin, 1968).

information, *falsifying* personal information, and/or *removing* previously disclosed personal information (cf. Son and Kim, 2008), SNS members protect their privacy by controlling the actual information that is accessible by others. Indeed, SNS members cannot lose control of missing/false personal information. Likewise, information that is protected in this manner cannot be misused by others (cf. Dinev and Hart, 2006; Wu et al., 2009). Furthermore, by being *selective* when accepting or requesting connections in SNSs (cf. Bulgurcu et al., 2010), *terminating specific connections* (cf. Bulgurcu et al., 2010), and/or using *privacy settings* with strict information access control (cf. Krasnova et al., 2010b), SNS members are able to protect their privacy by controlling the entities that have access to their personal information. Indeed, allowing profile access only to connected entities and limiting these to trustworthy ones decreases the likelihood of losing control of personal information and decreases the likelihood that the personal information be misused (cf. Dinev and Hart, 2006; Wu et al., 2009).

Drawing from the *Protection Motivation Theory's* upper causal chain, which postulates that *Threat Appraisal* (indirectly) influences an individual's *Actual Protecting Behavior*, we hypothesize that:

H5.1: The *Perceived Privacy Risk* of a Social Network Site positively influences *Refusal*.

H5.2: The *Perceived Privacy Risk* of a Social Network Site positively influences *Misrepresentation*.

H5.3: The *Perceived Privacy Risk* of a Social Network Site positively influences *Removal*.

H5.4: The *Perceived Privacy Risk* of a Social Network Site positively influences *Selectivity in Connections*.

H5.5: The *Perceived Privacy Risk* of a Social Network Site positively influences *Termination of Connections*.

H5.6: The *Perceived Privacy Risk* of a Social Network Site positively influences *Strictness of Privacy Settings*.

Furthermore, according to the *Protection Motivation Theory*, not only does the *Perceived Privacy Risk*, i.e. *Threat Appraisal*, influence an individual's actual behavior; so does the evaluation of the potential protecting behaviors themselves, i.e., *Coping Appraisal* (Rogers, 1975; Maddux and Rogers, 1983; Rogers, 1983). In other

words, in order to respond to a *Perceived Privacy Risk,* SNS members prefer to use *Privacy Protecting Behaviors* that they consider as superior to the alternatives. In the following paragraphs, we discuss which of the six *Privacy Protecting Behaviors* might have better *Coping Appraisals* than their direct alternatives (as a result to their respective *Response Efficacies*, *Self-Efficacies*, and *Response Costs*; Figure 5.2). We then use this information to build hypotheses regarding the extent that *Perceived Privacy Risk* influences them.

Disclosing *incorrect personal information* or *refusing* to give information within SNSs' networks both equally protect members against *privacy risks*. Indeed, no one can misuse missing or incorrect information. Likewise, an SNS member cannot lose control over information that is protected with *Misrepresentation* or *Refusal*. Hence, SNS members can be expected to consider the *Response Efficacy* of *Misrepresentation* and *Refusal* to be more or less equal. However, the *Misrepresentation* of information is more challenging than *Refusal*. Indeed, in order to give misrepresented information, SNS members have to first invent this information. In contrast, in order to perform *Refusal*, members literally do nothing at all. Hence, an individual's *Self-Efficacy* regarding *Misrepresentation* can be expected to be lower than an individual's *Self-Efficacy* regarding *Refusal*. Moreover, there are specific negative side effects, i.e. *Response Costs*, which also differentiate *Misrepresentation* from *Refusal*. For example, SNS contacts might take falsified information as truth, thus, getting a false impression of the corresponding SNS member. Also, members using a fake name in an SNS network might not be found by their real-life contacts. Hence, whereas *Misrepresentation* and *Refusal* can be expected to have equal *Response Efficacies*, *Misrepresentation* has a lower *Self-Efficacy* and higher *Response Costs*.

Furthermore, *Removing* personal information from SNSs and *refusing* to give this information in the first place lead to the same negative results that might arise from missing information. Likewise, both *Removal* and *Refusal* are comparably challenging to perform. However, whereas *refusing* to give personal information ensures that no one can access the corresponding information in an SNS (because it is not present, and was never present), *removing* previously disclosed information does not provide the same extent of protection. Indeed, anyone might have seen the information when it was present. Hence, SNS members using *Removal* to protect their privacy can neither be sure that they have control over the previously disclosed information, nor that someone might not misuse it sometime in the future. Hence, whereas *Removal* and

Refusal can be expected to have equal *Self-Efficacies* and *Response Costs*, *Removal* has a lower *Response Efficacy*.

Finally, *terminating* existing connections in SNSs or being *selective* when accepting them in the first place lead to the same negative results that might arise due from not having certain connections. Also, both behaviors are comparably challenging to perform. However, whereas *Selectivity in Connections* ensures that specific entities do not have access to personal information in SNSs, *terminating* existing connections does not provide the same extent of protection. Indeed, a former contact might have seen the personal information when the connection existed. Hence, like *Removal*, *Termination of Connections* can neither ensure SNS members that they have control over their personal information, nor that someone might not misuse it sometime in the future. Hence, whereas *Termination of Connections* and *Selectivity in Connections* can be expected to have equal *Self-Efficacies* and *Response Costs*, *Termination of Connections* has a lower *Response Efficacy*.

In summary, there are differences between *Refusal*, *Misrepresentation*, *Removal*, *Selectivity in Connections*, and *Termination of Connections* regarding the *Self-Efficacies*, *Response Efficacies* and/or *Response Costs* of these behaviors. More specifically, regarding the *Privacy Protecting Behaviors* that control the accessible information, *Misrepresentation* has a lower *Self-Efficacy* and higher *Response Costs* than *Refusal*; and *Removal* has a lower *Response Efficacy* than *Refusal*. Furthermore, regarding the *Privacy Protecting Behaviors* that control entities that have access to personal information, *Termination of Connections* has a lower *Response Efficacy* than *Selectivity in Connections*.

As postulated by the *Protection Motivation Theory*, these differences lead to differing *Coping Appraisals* (Figure 5.2). More specifically, *Misrepresentation* and *Refusal* are expected to have equal *Response Efficacies* but *Misrepresentation* has lower *Self-Efficacies* as well as higher *Response Costs*. Since *Self-Efficacy* increases *Coping Appraisal* and *Response Costs* decrease it (Floyd et al., 2000), *Misrepresentation* can consistently be expected to have a lower *Coping Appraisal* than *Refusal*. In a similar manner, the *Coping Appraisal* of *Removal* can be expected to be lower than of *Refusal* and the *Coping Appraisal* of *Termination of Connections* can be expected to be lower than of *Selectivity in Connections*.

In summary, SNS members can choose between different potential *Privacy Protecting Behaviors* to respond to their *Perceived Privacy Risk*. However, there are differences

with regards to the *Response Efficacies*, *Self-Efficacies* and *Response Costs* of these potential behaviors. As a result, SNS members consider some potential behaviors to be better (i.e., more effective, less challenging, and/or less costly) than others. According to the *Protection Motivation Theory*, SNS members prefer to use *Privacy Protecting Behaviors* that they consider superior to the alternatives, in order to respond to their *Perceived Privacy Risk*. Hence, it can be expected that *Perceived Privacy Risk* leads rather to *Refusal* than to *Misrepresentation* or *Removal*. Likewise, it will rather lead to *Selectivity in Connections* than to *Termination of Connections*. We hypothesize that:

H5.7: The influence of *Perceived Privacy Risk* on *Refusal* is higher than its influence on *Misrepresentation*.

H5.8: The influence of *Perceived Privacy Risk* on *Refusal* is higher than its influence on *Removal*.

H5.9: The influence of *Perceived Privacy Risk* on *Selectivity in Connections* is higher than its influence on *Termination of Connections*.

5.4 Empirical Study

5.4.1 Data Collection

To empirically evaluate our research model, we surveyed German-speaking users of Facebook, the most popular SNS (cf. Alexa, 2014). In order to accomplish this, we posted a call on the news board of a German university and promised a raffle of four 20 € gift certificates from *Amazon* for every completed questionnaire. The very first question asked whether the respondent was currently a Facebook member or not; only current members were allowed to answer the full questionnaire. By doing this, we obtained 50 complete online questionnaires. 27 respondents were male (54 percent) and 23 were female (46 percent). The average age was 25.82 years (standard deviation: 4.20). 1 respondent was a pupil (2 percent), 6 respondents were in employment (12 percent), 42 were students (84 percent), and 1 selected “other” as a description of themselves (2 percent).

5.4.2 Measurement

Our measurement model consisted of both reflective and formative measurement scales. In the following two subsections, we first present our reflective measurements and then present our formative ones.

Reflective Measurement Scales

For *Perceived Privacy Risk*, we adapted three reflective items from Chen (2013) (cf. Dinev and Hart, 2006), Featherman and Pavlou (2003), and Krasnova et al. (2010b) (cf. Malhotra et al., 2004). For *Misrepresentation*, *Refusal*, *Removal*, and *Strictness of Privacy Settings*, we developed our own reflective scales.[15] Table 5.6 presents the resulting reflective items with their corresponding sources. *Removal* was measured using three seven-point semantic differentials; all other items were measured using a seven-point Likert-type scale ranging from "strongly agree" to "strongly disagree".

Construct (Labels)	Items (Labels)		Source/adapted from
Misrepresentation (Misre)	I willfully misrepresent certain information on Facebook (Misre1)		created by ourselves
	Certain information on my Facebook profile is intentionally misrepresented by me (Misre2)		
	I intentionally misstate some information on my Facebook profile (Misre3)		
Perceived Privacy Risk (PPR)	Using SNSs causes me loss of control over the privacy of my personal data (PPR1)		Chen (2013)
	By using SNSs, others might misuse my personal data (PPR2)		Featherman and Pavlou (2003)
	Overall, I see a threat to my privacy due to my presence on SNSs (PPR3)		Krasnova et al. (2010b)
Refusal (Refus)	I deliberately choose to not give away certain personal information on Facebook (Refus1)		created by ourselves
	I consciously refrain from giving away certain information on my Facebook profile (Refus2)		
	Some personal information is not disclosed by me on Facebook (Refus3)		
Removal (Remov)	I ... remove personal information from Facebook	frequently/rarely (Remov1)	created by ourselves
		often/seldom (Remov2)	
		regularly/irregularly (Remov3)	
Strictness of Privacy Settings (Setting)	My privacy settings in Facebook are strict (Setting1)		created by ourselves
	I try to set my Facebook privacy settings in a way that only my contacts are able to see my activities on Facebook (Setting1)		
	My Privacy settings on Facebook ensure that not everybody is able to see what I do (Setting1)		

Table 5.6: Reflective Items of our Measurement Model

[15] Unfortunately, the existing measurements for *Misrepresentation*, *Refusal*, *Removal*, and *Strictness of Privacy Settings* that we are aware of could not be used for our study. For example, the items for *Refusal* and *Removal* of Son and Kim (2008) include explicit causality. More specifically, their items include formulations such as "because you think it is too personal" (Son and Kim, 2008, p. 526) and "when your personal information was not properly handled" (Son and Kim, 2008, p. 527). Also, the *Strictness of Privacy Settings* scales often consist of only one item (e.g., Wu et al., 2009; Lankton and Tripp, 2013). Hence, we chose to develop our own measurements by studying the literature and consulting five researchers from our department as well as ten Facebook users throughout the development process.

Formative Measurement Scales

To measure *Selectivity in Connections* and *Termination of Connections*, we built our two own formative scales as presented in Table 5.7.[16,17] The *Selectivity in Connections* items were measured using a seven-point Likert-type scale ranging from "very often" to "very rarely". For the *Termination of Connections* items, we used a seven-point semantic differential (frequently … rarely).

5.5 Results

Since our data was not distributed joint multivariate normal and since our measurement model included both reflective and formative indicators (cf. Hair et al., 2011), we used the *Partial-Least-Squares* approach via *SmartPLS 2.0* (Ringle et al., 2005). With 50 datasets, we met the larger suggested minimum sample size threshold of "ten times the largest number of formative indicators used to measure one construct" (Hair et al., 2011, p. 144). To test for significance, we used the integrated *Bootstrap* routine with 5,000 samples (Hair et al., 2011).

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[16] Unfortunately, no study that we are aware of provides a dedicated measurement for *Selectivity in Connections*. Indeed, only Lankton and Tripp (2013) implicitly included some aspects of *Selectivity in Connections* in their study by asking their participants (1) to give the number of friends they have in a specific SNS and (2) to indicate the quality of these SNS friendships on the basis of the number of interactions by choosing one of five statements like *my friend list consists only of people I have interacted with a lot*. Also, no study that we are aware of provides a dedicated measurement for *Termination of Connections*. Indeed, only Litt (2013) implicitly included some aspects of *Termination of Connections* in one item of her scale for the use of *Technological Privacy Tools* by asking her respondents whether they ever *delete people from their network/friend lists* in SNSs. Hence, we had to develop our own measurements for *Selectivity in Connections* and *Termination of Connections*.

[17] Instead of reflective scales, we choose formative ones to account for the multiple kinds of connections that Facebook enables its users to form. Indeed, SNS members might treat different kinds of connections in different ways. Consequently, our scales aim at completeness (cf. Diamantopoulos and Winklhofer, 2001) by identifying all the different kinds of connections that Facebook enables its users to form, i.e., *SNS-friendships*, *connections with company/product pages*, *connections with applications (e.g., Facebook games)*, *connections with third-party websites*. We determined these connections by using the literature and systematically examining the Facebook website, the Facebook *Help Center* and the Facebook *Developers* documentation; each item we developed reflected the *selectiveness* or *termination* with regards to one of these four different kinds of connections. For example, the *selectivity* and *termination* regarding "applications" was surveyed via "I carefully consider which applications I use on Facebook (e.g., Facebook games)" and "I [frequently … rarely] remove previously used applications (e.g., Facebook games) from my Facebook profile", respectively.

Construct (Labels)	Items (Labels)	Source/ adapted from
Selectivity in Connections (Selec)	I carefully consider whether or not I accept a friend request on Facebook (Selec1a)	created by ourselves
	I carefully consider to whom I send a friend request on Facebook (Selec1b)	
	I carefully consider with which company/product pages I connect with on Facebook (Selec2)	
	I carefully consider which applications I use on Facebook (e.g., Facebook games) (Selec3)	
	I carefully consider for which third-party websites I use my Facebook login for sign up (Selec 4)	
Termination of Connections (Termi)	I [frequently … rarely] remove people from my Friend List on Facebook (Termi1)	created by ourselves
	I [frequently … rarely] terminate connections to companies/products on Facebook (by clicking on "Unlike" on the corresponding company/product pages) (Termi2)	
	I [frequently … rarely] remove previously used applications (e.g., Facebook games) from my Facebook profile (Termi3)	
	I [frequently … rarely] delete my user account at third-party websites where I used my Facebook login for sign up (Termi4)	

Table 5.7: Formative Items of our Measurement Model

In the following, we will first evaluate our measurement model. Indeed, we will examine the *content validity*, *indicator reliability*, *construct reliability*, and *discriminant validity* of our reflective constructs. We will also assess the *content validity* of our formative *Selectivity in Connections* and *Termination of Connection* constructs as well as the *weights/loadings* of their indicators and will also check for *multicollinearity*. Finally, we will present the results of our structural model.

5.5.1 Measurement Model

Reflective Constructs

For *Perceived Privacy Risk*, we used proven items of former studies. For *Misrepresentation*, *Refusal*, *Removal*, and *Strictness of Privacy Settings*, we developed our own measurements by studying the literature and consulting five researchers from our department as well as ten Facebook users throughout the development process. Hence, we assume that the reflective measurements used here are both representative and comprehensive, thus suggesting their *content validity* (cf. Moon and Kim, 2001).

Tables 5.8 and 5.9 present the correlations between constructs together with the *Average-Variance-Extracted* (AVE) and *Composite-Reliability* (CR), and our reflective items' factor loadings, respectively: All reflective items loaded high (more than .77) and significant ($p<.01$) on their parent factor and, hence, met the suggested thresholds of *indicator reliability* of .70 (Hair et al., 2011); AVE and CR were higher than .73 and .89, respectively, meeting the suggested *construct reliability* thresholds of .50/.70 (Hair et al., 2009). The loadings from our reflective indicators were highest for each parent factor and the square root of the AVE of each construct was larger than the

absolute value of the construct's correlations with its counterparts, thus indicating *discriminant validity* (Fornell and Larcker, 1981; Hair et al., 2011).

	Misre	PPR	Refus	Remov	Setting	Selec	Termi
Misre	.889 (.960)						
PPR	.087	.771 (.910)					
Refus	.143	.424	.882 (.957)				
Remov	.334	.188	.266	.844 (.942)			
Setting	.113	.332	.701	.194	.732 (.891)		
Selec	.180	.430	.618	.263	.484	-	
Termi	.132	.245	.146	.015	.202	.047	-

Table 5.8: Correlations between Constructs (AVE (CR) on the Diagonal)

	Misre	PPR	Refus	Remov	Setting	Selec	Termi
Misre1	.820 (4.650)	.013	.110	.211	.062	.098	.011
Misre2	.998 (6.649)	.100	.143	.338	.115	.183	.147
Misre3	.999 (6.710)	.080	.144	.337	.114	.184	.129
PPR1	.023	.894 (8.729)	.346	.176	.360	.240	.377
PPR2	.063	.888 (8.770)	.349	.092	.259	.359	.184
PPR3	.135	.852 (8.859)	.413	.214	.257	.513	.096
Refus1	.132	.365	.939 (18.585)	.243	.662	.533	.161
Refus2	.130	.406	.962 (22.933)	.261	.662	.592	.103
Refus3	.140	.420	.916 (16.689)	.245	.650	.609	.150
Remov1	.339	.152	.243	.906 (6.476)	.232	.267	.136
Remov2	.318	.164	.246	.950 (7.040)	.179	.232	.017
Remov3	.271	.195	.244	.899 (6.424)	.135	.228	-.083
Setting1	.194	.258	.617	.307	.857 (7.970)	.384	.037
Setting2	.072	.350	.665	.177	.929 (9.430)	.488	.196
Setting3	.027	.223	.499	-.007	.773 (3.987)	.349	.300

Table 5.9: Reflective Items' Loadings (T-Values)

Formative Constructs

"[T]he items describe and define the [formative] construct" (Diamantopoulos and Winklhofer, 2001, p. 623). Hence, leaving out some relevant aspects would result in a mismatch of construct definition and measurement, and ultimately eliminate *content validity*. As described earlier, the completeness of our *Selectivity in Connections* and *Termination of Connections* scales is ensured since each one considers all of the four different kinds of connections that Facebook enables its users to form. Consequently, both our formative scales fulfill the requirements for *content validity* (cf. Diamantopoulos and Winklhofer, 2001).

Table 5.10 presents the *weights* and *loadings* of our formative items on their parent factors: Their examination shows that multiple formative items have no significant

weight and/or loading on their parent factor. However, in contrast to reflective scales, formative items must not be dropped from the analyses (cf. Diamantopoulos and Winklhofer, 2001), but rather be kept in the model in order to retain *content validity* (Bollen and Lennox, 1991).

Item Labels	Weights (t-values) Loadings (t-values)	Item Labels [cont'd]	Weights (t-values) Loadings (t-values) [cont'd]
Selec1a	-.128 (.433) .153 (.806)	Termi1	-.517 (1.694) -.040 (.168)
Selec1b	.136 (.406) .291 (1.388)		
Selec2	.047 (.202) .540 (2.327)	Termi2	1.335 (3.453) .500 (1.992)
Selec3	.088 (.360) .434 (2.038)	Termi3	-.588 (1.842) -.236 (1.026)
Selec4	.926 (3.229) .990 (6.630)	Termi4	-.576 (1.809) -.301 (1.250)

Table 5.10: Formative Items' Weights/Loadings on their Parent Factors (T-Values)

The Variance-Inflation-Factors (VIFs) of Selectivity in Connections and Termination of Connections indicate that the constructs do not suffer from multicollinearity: the highest VIFs of Selectivity in Connections and Termination of Connections (2.52 and 1.82, respectively) were both well below the suggested threshold of 5 (Hair et al., 2011).

5.5.2 Structural Model

Figure 5.4 presents the path coefficients of our structural model as well as the R^2s of each endogenous variable (** = p<.01, * = p<.05, ns = non-significant).

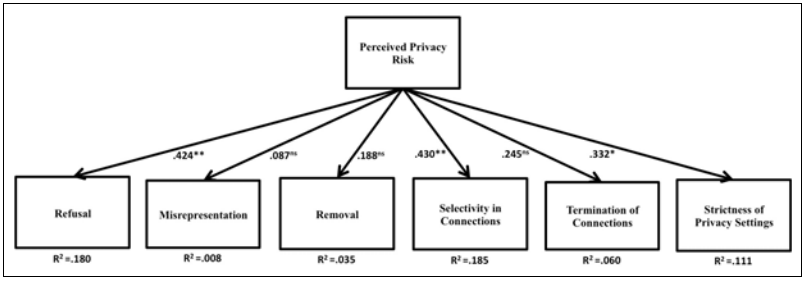

Figure 5.4: Findings

Perceived Privacy Risk was found to have a positive influence on *Refusal* (β=.424, p<.01), *Selectivity in Connections* (β=.430, p<.01), and *Strictness of Privacy Settings* (β=.332, p<.05), confirming hypotheses 5.1, 5.4, and 5.6. In contrast, hypotheses 5.2, 5.3, and 5.5 were not confirmed since *Perceived Privacy Risk* had no significant influence on *Misrepresentation* (β=.087, t=.981), *Removal* (β=.188, t=1.850), or *Termination of Connections* (β=.245, t=1.938). However, due to these insignificant relationships, hypotheses 5.7-5.9 are simultaneously confirmed: *Perceived Privacy Risk* has a greater influence on *Refusal* than on *Misrepresentation* and *Removal* and a greater influence on *Selectivity in Connections* than on *Termination of Connections*. Indeed, whereas the path coefficients between *Perceived Privacy Risk* and *Refusal* as well as *Selectivity in Connections* are significant, i.e. significantly greater than 0, the path coefficients between *Perceived Privacy Risk* and *Misrepresentation*, *Removal*, as well as *Termination of Connections* are insignificant, i.e., only randomly different from 0.

Overall, our findings suggest that, in order to address their *Perceived Privacy Risk*, SNS members prefer to *refuse* giving personal information, are *selective* when accepting or requesting connections in SNSs, and use *strict privacy settings* rather than *misrepresent* information, *remove* previously disclosed information, or *terminate connections*. Moreover, the insignificance of the *Misrepresentation*, *Removal*, and *Termination of Connections* relationships suggests that the *Coping Appraisals* regarding these behaviors are so relatively low that SNS members do not use them at all to respond to their *Perceived Privacy Risk* but rather choose to use their superior alternatives. This is further emphasized by the Privacy Protecting Behaviors' means (Table 11), which suggest that SNS members use Refusal, Selectivity in Connections, and Strictness of Privacy Settings generally more often than Misrepresentation, Removal, and Termination of Connections. Indeed, additionally conducted t-tests, which tested the means of each Privacy Protecting Behavior against the mean value of the Likert scale, 4, confirmed that the means of Refusal, Selectivity in Connections, and Strictness of Privacy Settings were significantly higher (p<.01) than 4 and that the means of Misrepresentation, Removal, and Termination of Connections were significantly lower (p<.01) than 4.

5.6 Conclusions

We drew from the *Protection Motivation Theory* (Rogers, 1975; Maddux and Rogers, 1983; Rogers, 1983) in order to postulate influences of *Perceived Privacy Risk* on six

Privacy Protecting Behaviors identified in the literature, and to build hypotheses concerning the extent of these influences. After surveying 50 German-speaking Facebook users and applying a structural equation modeling approach, we confirmed that *Perceived Privacy Risk* has a positive influence on *Refusal*, *Selectivity in Connections*, and *Strictness of Privacy Settings*. In contrast, we were not able to confirm a relationship between *Perceived Privacy Risk* and *Misrepresentation*, *Removal*, and *Termination of Connections*. However, these insignificant relationships simultaneously confirmed our expectation that *Perceived Privacy Risk* has a greater influence on *Refusal* than on *Misrepresentation* and *Removal,* and that it has greater influence on *Selectivity in Connections* than on *Termination of Connections*. Moreover, additional analyses regarding the constructs' means suggest that SNS members use *Refusal*, *Selectivity in Connections*, and *Strictness of Privacy Settings* generally more often than *Misrepresentation*, *Removal*, and *Termination of Connections*.

	Misre	Refus	Remov	Selec	Setting	Termi
Mean	3.29	6.45	2.97	5.90	5.99	3.22
Standard deviation	2.02	1.04	1.40	.94	1.00	1.37

Table 5.11: Means and Standard Deviations of our Privacy Protecting Behaviors

In summary, our study contributes to SNS research by (1) identifying within the literature the *Privacy Protecting Behaviors* that SNS members can use to address their *Perceived Privacy Risk*; (2) confirming that *Perceived Privacy Risk* leads rather to *Refusal*, *Selectivity in Connections*, and *Strictness of Privacy Settings* than to *Misrepresentation*, *Removal*, and *Termination of Connections*; and (3) finding that SNS members use *Refusal*, *Selectivity in Connections*, and *Strictness of Privacy Settings* generally more often than *Misrepresentation*, *Removal*, and *Termination of Connections*. Additionally, we (4) provide a reflective measurement model for *Refusal*, *Misrepresentation*, *Removal*, and *Strictness of Privacy Settings* as well as a Facebook-specific formative measurement model for *Selectivity in Connections* and *Termination of Connections*.

Our findings have practical implications: indeed, SNS service providers need to actively manage people's privacy risk perception since the providers regularly rely on selling personal advertisements to their customers (e.g., Krasnova et al., 2010b; Thambusamy et al., 2010), and since SNS members' *Refusal*, and *Strictness of Privacy Settings* hinders this process. Likewise, *Selectivity in Connections* hampers the

endeavors of companies that regularly seek to connect with their customers through *company/product pages*, software developers that provide *SNS applications* to be used within the networks, and *third-party websites* that enable members to register using their SNS login information. Moreover, our findings suggest that, once clearing the first hurdle of creating a connection with users, *company/product pages*, *SNS applications*, and *third-party websites* do not need to fear a *termination of their connections* nor do they need to fear the *removal* of previously revealed information. Indeed overall, both behaviors are applied only rarely. Thus, from an SNS provider's perspective, their greatest efforts should focus on getting users to connect and reveal information, since it is unlikely that users will undo these actions. This implication is also suggested by our finding that people use *Misrepresentation* only to a relatively small extent. Thus, advertisers can rely for the most part on the veracity of the information provided by SNS members', which means that they can truly target their intended audience within SNSs' networks.

Our study does, however, have some limitations. First, our empirical findings are only based on one specific SNS, Facebook. Hence, there might be differences between this particular SNS and others, especially those that are used for professional reasons, such as *LinkedIn*. Similarly, our formative measurements of *Selectivity in Connections* and *Termination of Connections* are also strictly Facebook-specific. Furthermore, multiple formative item weights and loadings were insignificant in our empirical study. However, items of formative constructs must not be dropped (cf. Diamantopoulos and Winklhofer, 2001), but rather be kept within the measurement model (Bollen and Lennox, 1991). Finally, our study might suffer from the general problems of using a student sample. Indeed, 84 percent of our respondents were German-speaking students. Hence, our results might not hold true for people from other countries, with different educational backgrounds, or from different age groups.

As a next step, we plan to expand our research and address its limitations. More specifically, we want to evaluate the *Privacy Protecting Behaviors* we identified, in order to see how they fit into the context of professional SNSs. Furthermore, we want to conduct *expert interviews* with representatives of SNS service providers, social advertisers, companies with an SNS company/product page, SNS application developers, and third-party websites that enable SNS members to register using their SNS login information, in order to gain insights into the impacts of the *Privacy Protecting Behavior* of SNS members on these businesses.

Bibliography

Alexa (2014): Top sites. http://www.alexa.com/topsites (Accessed 04-30-2014).

Bollen, K. and Lennox, R. (1991): Conventional wisdom on measurement: A structural equation perspective. Psychological Bulletin, 110 (2), pp. 305-314.

Boyd, D.M. and Ellison, N.B. (2007): Social network sites: Definition, history, and scholarship. Journal of Computer-Mediated Communication, 13 (1), pp. 210-230.

Bulgurcu, B., Cavusoglu, H. and Benbasat, I. (2010): Understanding emergence and outcomes of information privacy concerns: A case of facebook. ICIS 2010 Proceedings. Paper 230.

Chakraborty, R., Vishik, C. and Rao, H.R. (2013): Privacy preserving actions of older adults on social media: Exploring the behavior of opting out of information sharing. Decision Support Systems, 55 (4), pp. 948-956.

Chen, J., Ping, W., Xu, Y. and Tan, B.C.Y. (2009): Am i afraid of my peers? Understanding the antecedents of information privacy concerns in the online social context. ICIS 2009 Proceedings. Paper 174.

Chen, R. (2013): Member use of social networking sites - an empirical examination. Decision Support Systems, 54 (3), pp. 1219-1227.

Diamantopoulos, A. and Winklhofer, H.M. (2001): Index construction with formative indicators: An alternative to scale development. Journal of Marketing Research, 38 (2), pp. 269-277.

Dinev, T. and Hart, P. (2006): An extended privacy calculus model for e-commerce transactions. Information Systems Research, 17 (1), pp. 61-80.

Ernst, C.-P.H. (2014): Risk hurts fun: The influence of perceived privacy risk on social network site usage. AMCIS 2014 Proceedings.

Featherman, M.S. and Pavlou, P.A. (2003): Predicting e-services adoption: A perceived risk facets perspective. International Journal of Human-Computer Studies, 59 (4), pp. 451-474.

Floyd, D., Prentice-Dunn, S. and Rogers, R. (2000): A meta-analysis of research on protection motivation theory. Journal of Applied Social Psychology, 30 (2), pp. 407-429.

Fornell, C. and Larcker, D.F. (1981): Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18 (1), pp. 39-50.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2009): Multivariate data analysis. 7th ed., Upper Saddle River, NJ: Prentice Hall.

Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011): Pls-sem: Indeed a silver bullet. Journal of Marketing Theory and Practice, 19 (2), pp. 139-151.

Kim, D.J., Ferrin, D.L. and Rao, H.R. (2008): A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. Decision Support Systems, 44 (2), pp. 544-564.

Krasnova, H., Kolesnikova, E. and Guenther, O. (2009): ”it won’t happen to me!”: Self-disclosure in online social networks. AMCIS 2009 Proceedings. Paper 343.

Krasnova, H., Kolesnikova, E. and Guenther, O. (2010a): Leveraging trust and privacy concerns in online social networks: An empirical study. ECIS 2010 Proceedings. Paper 160.

Krasnova, H., Spiekermann, S., Koroleva, K. and Hildebrand, T. (2010b): Online social networks: Why we disclose. Journal of Information Technology, 25 (2), pp. 109-125.

Lankton, N. and Tripp, J. (2013): A quantitative and qualitative study of facebook privacy using the antecedent-privacy concern-outcome macro model. AMCIS 2013 Proceedings.

Litt, E. (2013): Understanding social network site users’ privacy tool use. Computers in Human Behavior, 29 (4), pp. 1649-1656.

Lo, J. (2010): Privacy concern, locus of control, and salience in a trust-risk model of information disclosure on social networking sites. AMCIS 2010 Proceedings. Paper 110.

Maddux, J. and Rogers, R. (1983): Protection motivation and self-efficacy: A revised theory of fear appeals and attitude change. Journal of Experimental Social Psychology, 19 (5), pp. 469-479.

Malhotra, N.K., Kim, S.S. and Agarwal, J. (2004): Internet users' information privacy concerns (iuipc): The construct, the scale, and a causal model. Information Systems Research, 15 (4), pp. 336-355.

Moon, J.-W. and Kim, Y.-G. (2001): Extending the tam for a world-wide-web context. Information & Management, 38 (4), pp. 217-230.

Peter, J.P. and Ryan, M.J. (1976): An investigation of perceived risk at the brand level. Journal of Marketing Research, 13 (2), pp. 184-188.

Ringle, C.M., Wende, S. and Will, A. (2005): SmartPLS 2.0 (beta). http://www.smartpls.de.

Rogers, R. (1975): A protection motivation theory of fear appeals and attitude change. The Journal of Psychology: Interdisciplinary and Applied, 91 (1), pp. 93-114.

Rogers, R. (1983): Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In: Cacioppo, J. & Petty, R. (eds.) Social psychophysiology: A sourcebook. New York, NY: Guilford Press, pp. 153-176.

Sitkin, S.B. and Pablo, A.L. (1992): Reconceptualizing the determinants of risk behavior. The Academy of Management Review, 17 (1), pp. 9-38.

Son, J.-Y. and Kim, S.S. (2008): Internet users' information privacy-protective responses: A taxonomy and a nomological model. MIS Quarterly, 32 (3), pp. 503-529.

Stutzman, F. and Kramer-Duffield, J. (2010): Friends only: Examining a privacy-enhancing behavior in facebook. CHI 2010 Proceedings.

Thambusamy, R., Church, M., Nemati, H. and Barrick, J. (2010): Socially exchanging privacy for pleasure: Hedonic use of computer-mediated social networks. ICIS 2010 Proceedings. Paper 253.

Westin, A.F. (1968): Privacy and freedom. New York, NY: Atheneum.

Wu, Y.A., Ryan, S. and Windsor, J. (2009): Influence of social context and affect on individuals' implementation of information security safeguards. ICIS 2009 Proceedings. Paper 70.

Yousafzai, S.Y., Foxall, G.R. and Pallister, J.G. (2007): Technology acceptance: A meta-analysis of the tam: Part 2. Journal of Modelling in Management, 2 (3), pp. 281-304.

What Drives Sharing and Receiving Usage in Social Network Sites?

Claus-Peter H. Ernst, Jella Pfeiffer, Franz Rothlauf

Abstract

Social Network Site (SNS) service providers have a strong interest in knowing which factors drive different kinds of usage in SNSs, in order to be able to foster behavior that is beneficial to their business models. Generally, SNSs possess numerous functionalities that allow their members to perform various actions. These actions can be separated into two categories, namely Receiving usage, where information is acquired, or Sharing usage, where information is shared with other members. But which factors drive Sharing and/or Receiving usage in SNSs? We present six potential factors that could be influencing Sharing and/or Receiving. After surveying Facebook users and applying a structural equation modeling approach, we confirmed that Extraversion and Personal Network Size are influence factors of Sharing usage and that Covert Social Curiosity, General Social Curiosity, and Perceived Informational Benefit are influence factors of Receiving usage. However, we were not able to confirm the influence of Curiosity and Personal Network Size on Receiving usage and present possible explanations for the insignificance of these relationships.

6.1 Introduction

Social Network Sites (SNSs) provide numerous functionalities that enable their members to perform various actions. These actions enable members to *receive* information or to *share* information with other members (cf. Benevenuto et al., 2009; Jiang et al., 2010; Backstrom et al., 2011). Drawing from the literature, we define *Receiving* usage as any SNS usage that enables a member to gain information without anyone in the SNS's network being aware of this process, with the exception of the SNS service provider (cf. Benevenuto et al., 2009; Jiang et al., 2010; Krasnova et al., 2010b; Backstrom et al., 2011). *Sharing* usage is any SNS usage where the information created can be noticed by other members within the SNS network (cf. Benevenuto et al., 2009; Jiang et al., 2010; Krasnova et al., 2010b; Backstrom et al., 2011).

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This distinction between *Sharing* and *Receiving* is of importance for SNS service providers' business models. Most SNS service providers rely on selling personalized advertisements (e.g., Krasnova et al., 2010b; Thambusamy et al., 2010). As a result, their revenue is not only determined by the total number of registered members but also by members' *specific* usage behavior (Katz and Shapiro, 1985; Gangadharbatla, 2008). On the one hand, *Sharing* is crucial for both the amount of ads displayed (through increased site traffic) and for the revenue generated per ad (since more personal information enables a better targeting of users through personalization) (Cavusoglu et al., 2013). On the other hand, *Receiving* usage is important to give *Sharing* a purpose. More specifically, in order to be able to *share* something, a SNS member needs to have *receivers* that he/she can potentially reach with his/her actions. Consequently, SNS service providers have a strong interest in knowing which factors drive the *Sharing* and *Receiving* usage in SNSs.

Current studies that investigate the influence factors of SNS usage limit themselves to the factors driving *Actual System Use*, i.e., how often SNSs are generally used (e.g., Chen, 2013). They also limit themselves to the factors driving SNS members' self-disclosing behavior regarding the core data on their profile, such as age, address, or name of employer (e.g., Lo, 2010). Hence, these studies do not consider *Receiving* actions, such as *looking at other's profiles* and *reading other's posts*, nor do they consider such *Sharing* actions that do not necessarily disclose core data, such as *sending private messages* and "*commenting" on things*.

Drawing from the literature, we argue that the following six factors influence *Sharing* and/or *Receiving*: *Extraversion*, *Curiosity*, *General Social Curiosity*, *Covert Social Curiosity*, *Perceived Informational Benefit*, and *Personal Network Size*. *Extraversion* is a character trait that "implies an *energetic approach* [emphasis in original] to the social and material world …" (John and Srivastava, 1999, p. 121). *Curiosity* is a human being's desire to acquire information and knowledge (Renner, 2006) and *General Social Curiosity* "describes a broad interest in the acquisition of new information about how other people behave, act and feel" (Renner, 2006, p. 314). *Covert Social Curiosity* describes "an interest in interpersonal information that is obtained primarily by unobtrusive or covert exploratory behaviors" (Renner, 2006, p. 314). *Perceived Informational Benefit* describes the degree to which a person believes that using an SNS provides him/her with useful information, and *Personal Network*

Size represents a member's actual number of contacts within the SNS's network (cf. Killworth et al., 1990).

After surveying 188 *Facebook* users via an online questionnaire and applying a structural equation modeling approach, we were able to confirm that *Extraversion* and *Personal Network Size* are influence factors of *Sharing* usage and that *Covert Social Curiosity*, *General Social Curiosity*, and *Perceived Informational Benefit* are influence factors of *Receiving* usage. In contrast, we were not able to confirm the influence of *Curiosity* and *Personal Network Size* on *Receiving* usage and present possible explanations for the insignificance of these relationships.

Several practical implications can be drawn from this study. First, our findings suggest that a SNS service provider should encourage its members to have many SNS contacts in order to increase their *Sharing* behavior. This in turn, would support its business model, the advertisers using the SNS to perform *viral marketing*, and the liveliness of the network. Also, SNS service providers need to focus on acquiring *Extroverts* and individuals that are curious about people as new members in order to increase the *Sharing* and *Receiving* usage within their networks, respectively. Furthermore, since SNS service providers have the ability to analyze the usage behavior of their current members, our findings might also be applied to tailor advertisements to the deducible personality traits of the targeted members, i.e., to the *Extraversion* of the *Sharers* or the *Social Curiosity* of the *Receivers*. Likewise, SNS service providers could also adjust the information that is automatically shown to their members based on their traits and/or interests. This could increase the members' perception of *informational benefit* and, as a result, their *Receiving* usage.

In the next section, we define *Sharing* and *Receiving* usage. Following this, we present our research model and research design. 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.

6.2 Sharing and Receiving Usage

Multiple studies suggest various classifications of SNS usage. Benevenuto et al. (2009) describe SNS usage to be either *visible* for others or *silent*; Jiang et al. (2010) differentiate between *visible* and *latent* interactions; Backstrom et al. (2011) distinguish between *communication* and *viewing* modalities, describing *communication* as a "directed interaction … [with] … the target … [being] aware of

the user's actions (since they receive the communication)" and *viewing* as a "viewing behavior [which] is derived from users visiting pages on … [SNSs]" with the targets being unaware of the user's action. Although only Backstrom et al. (2011) explicitly provide definitions of their categories, we believe that all three studies classify SNS usage similarly, into two different types.

Since we need to operationalize both kinds of postulated usage to empirically validate their potential influence factors later on, we specified the definitions of Backstrom et al. (2011) and also proposed new labels for the two different types of usage.[18,19] On a more abstract level, SNS actions enable members to *receive* or *share* something: We define *Receiving* usage as any SNS usage that enables a member to gain information without anyone in the SNS's network being aware of this process, with the exception of the SNS service provider (cf. Benevenuto et al., 2009; Jiang et al., 2010; Krasnova et al., 2010b; Backstrom et al., 2011). For example, when a user looks at information on other members' SNS profiles, he/she is able to 'receive' personal information about them (such as their actions, behaviors, feelings, thoughts, attitudes, and core data). Commonly, nobody but the SNS service provider is aware of his/her visit. This is considered to be *Receiving* usage.

In contrast, *Sharing* usage is any SNS usage where the information created can be noticed by other members within the SNS network (cf. Benevenuto et al., 2009; Jiang et al., 2010; Krasnova et al., 2010b; Backstrom et al., 2011). For example, when a

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[18] For example, Facebook provides a feature called *News Feed* that presents the recent actions of a user's Facebook contacts after login. Hence, in contrast to the definitions of Backstrom et al. (2011), SNS users do not necessarily have to visit any dedicated pages within Facebook to *view* other members' actions. Consequently, we have adapted their definitions to avoid any ambiguity.

[19] Benevenuto et al. (2009) and Jiang et al. (2010) named their proposed categories according to specific characteristics of SNS usage, i.e., how *visible/silent* or *visible/latent* it is. However, neither of the categories proposed are directly related to actions. In contrast, the labels of Backstrom et al. (2011) are more specific and have a direct relation to actions. Indeed, they describe what the SNS actions enable their members to do (*communicate/view*). However, the work of Watzlawick et al. (1967, p. 51) states that "*one cannot* not *communicate* [emphasis in original]". The idea is that an actor communicates something about him/herself (such as his/her attitudes or feelings), even when that actor is doing nothing at all. This means that each and every behavior is considered to be a form of communication. Consequently, we propose different labels for the two kinds of behaviors observed on SNSs, in order to avoid any ambiguity: *Sharing* and *Receiving*.

member updates the core data of his/her SNS profile, that member makes this information available to others. This is considered to be *Sharing* usage.

6.3 Research Model

In the following section, we will present our research model in Figure 6.1 and then outline our corresponding hypotheses.

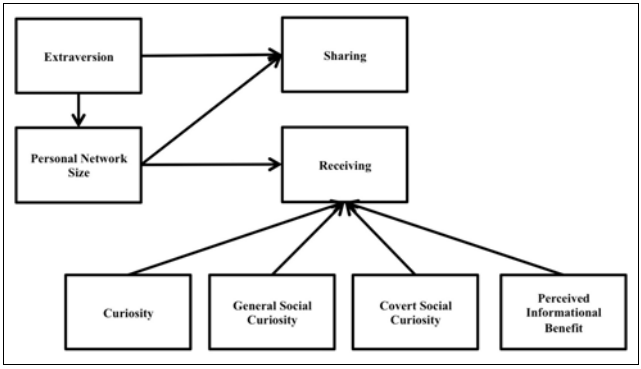

Figure 6.1: Research Model

6.3.1 Extraversion

There is a long tradition of studies that investigate personality traits (cf. John and Srivastava, 1999), which can be described as "basic, endogenous, stable, hierarchically structured basic dispositions governed by biological factors such as genes and brain structures" (Romero et al., 2009, p. 535). *Extraversion* is a personality trait that "implies an *energetic approach* [emphasis in original] to the social and material world and includes traits such as sociability, activity, assertiveness, and positive emotionality" (John and Srivastava, 1999, p. 121).

In this sense, people that score high on the *Extraversion* scale, i.e., *Extroverts*, behave more socially (Eaton and Funder, 2003) and participate more often than others in social activities, such as group activities (Costa and McCrae, 1992). They are found to be highly motivated to engage in interpersonal contact (King and Broyles, 1997; Olson and Weber, 2004), talk more often to people and spend more time with them in general (Mehl et al., 2006). In line with these general findings, Ross et al. (2009) discovered that *Extraversion* positively influences the number of Facebook group memberships

and Wang and Stefanone (2013) as well as Hollenbaugh and Ferris (2014) found that it positively influences self-disclosing behavior.

In general, sociability, the participation in social activities, and the engagement in interpersonal contact, involve interaction with others (Mehl et al., 2006). Hence, by nature, *Extroverts* like to have more conversations than their counterparts, i.e., *Introverts*, and can thus also be expected to *share* more within an SNS. Moreover, due to their high amount of activity in general and to their high amount of social activity in particular, *Extroverts* can be expected to have potentially more to tell than *Introverts*. In other words, *Extroverts* like to communicate with others and have simultaneously much to tell. We hypothesize that:

H6.1: *Extraversion* positively influences *Sharing* usage.

6.3.2 Personal Network Size

Personal Network Size represents a member's actual number of contacts within the SNS's network (cf. Killworth et al., 1990). Multiple studies have confirmed that *Extraversion* positively influences a member's number of SNS contacts, i.e., their *Personal Network Size* (Acar, 2008; Tong et al., 2008; Ong et al., 2011). The rationale behind this is that SNS contacts are regularly added based on real-life contacts (Ross et al., 2009). Due to *Extraverts* "greater tendency to be sociable" (Ross et al., 2009, p. 580), they are likely to have many offline contacts that can be added as SNSs contacts. We hypothesize that:

H6.2: *Extraversion* positively influences *Personal Network Size*.

Furthermore, *Personal Network Size* has been used as an antecedent and/or consequence of various other constructs. For example, Tong et al. (2008) found a curvilinear relationship between a member's *Personal Network Size* and other members' perception of that person's social attractiveness. In another study, Young and Quan-Haase (2009) showed that *Personal Network Size* exerts a positive influence on information revelation and Pollet et al. (2011) confirmed that the amount of time spent using social media was positively related to a member's *Personal Network Size*. Moreover, Kanai et al. (2012) showed that an individual's *Personal Network Size* predicts "grey matter density in the right superior temporal sulcus, left middle temporal gyrus and entorhinal cortex … [of the brain and has a significant correlation] with the size of more intimate real-world social groups" (Kanai et al., 2012, p. 1327).

Skues et al. (2012) researched the relationships between different personality traits and *Personal Network Size* but did not find any significant influences.

By definition, the S*haring* of an SNS member stimulates another member's *Receiving*. In other words, in order to be able to *share* something, a SNS member needs to have *receivers* that he/she can potentially reach with his/her actions. Indeed, like with telephones, having more contacts, i.e., potential *receivers*, increases the number of people a SNS member can *share* with, making the *Sharing* more useful with every additional contact. Hence, having more SNS contacts could increase the frequency of *Sharing*. Similarly, having more SNS contacts potentially increases the amount of information that can be *received*. Indeed, a SNS member with only one contact will potentially not be able to *receive* as much information as a member with 1,000 contacts. We hypothesize that:

H6.3: *Personal Network Size* positively influences *Sharing* usage.

H6.4: *Personal Network Size* positively influences *Receiving* usage.

6.3.3 Curiosity

Curiosity is a human being's intrinsic "desire for [acquiring] new information and knowledge" (Renner, 2006, p. 305). SNSs provide users with multiple possibilities to *receive* information and knowledge (cf. Renner, 2006) and are, hence, able to satisfy individuals' *Curiosity*. Indeed, *Curiosity* has been shown to be a main driver of an SNS's frequency of use in general (Pai and Arnott, 2013). We hypothesize that:

H6.5: *Curiosity* positively influences *Receiving* usage.

In addition to its generic conceptualization, studies regularly distinguish between various facets of *Curiosity* (Renner, 2006). One such facet of *Curiosity* that has recently piqued researcher's interest is *Social Curiosity*: "an interest in how other people behave, think, and feel" (Renner, 2006, p. 305). It is essential for human beings to extract information from their social environment in order to better integrate it (Baumeister et al., 2004; Foster, 2004) and to build interpersonal relationships (Renner, 2006), thus ultimately satisfying their *Need to Belong*[20] (cf. Baumeister and

[20] According to the Need to Belong theory (e.g., Watson and Johnson, 1972; Baumeister and Leary, 1995), every person has, to some extent, a fundamental need to connect to other people and be accepted by them.

Leary, 1995; Hartung and Renner, 2013). Hence, *Social Curiosity* is an essential personality trait that facilitates a person's sense of belonging to a community.

Like *Curiosity*, *Social Curiosity* has been conceptualized as a multifaceted construct with two distinct facets: *General Social Curiosity* and *Covert Social Curiosity* (Renner, 2006). The first facet "describes a broad interest in the acquisition of new information about how other people behave, act and feel" (Renner, 2006, p. 314); the second one describes "an interest in interpersonal information that is obtained primarily by unobtrusive or covert exploratory behaviors" (Renner, 2006, p. 314). However, research on *Social Curiosity* has so far been limited to just a few studies; however, none were related to SNS contexts. Renner (2006) introduced the concept of *Social Curiosity* and developed a measurement for both *General Social Curiosity* and *Covert Social Curiosity*. In another study, Hartung and Renner (2011) found that *Social Curiosity* positively influenced people's capacity to judge others people's personalities in terms of *Extraversion*. Finally, Hartung and Renner (2013) examined the interrelations between *Social Curiosity* and *Gossip*, the "conversation about social and personal topics" (Hartung and Renner, 2013, p. 1), and found that both these constructs were related yet distinct: indeed, *Social Curiosity* is driven more by the *Need to Belong* and "by a general interest in gathering information about how other people feel, think, and behave" (Hartung and Renner, 2013, p. 1) than *Gossip* is.

SNSs regularly provide specific *information about other individuals*, such as their actions, behaviors, feelings, thoughts, attitudes, and core data. In other words, they provide information that can satisfy an individual's *General Social Curiosity*. Furthermore, people do not have to disclose anything about themselves while *Receiving* something about others since their actions are concealed. Indeed, the information source is not aware of them, which means that *Receiving* is an unobtrusive, covert behavior (cf. Renner, 2006). We hypothesize that:

H6.6: *General Social Curiosity* positively influences *Receiving* usage.

H6.7: *Covert Social Curiosity* positively influences *Receiving* usage.

6.3.4 Perceived Informational Benefit

Whereas *Curiosity* and its various facets are intrinsic motivations (Moon and Kim, 2001), *Receiving* can also be externally motivated (cf. Ernst et al., 2013a). Indeed, *receiving information* in SNSs can lead to *informational benefits*, which can be useful *in real-life* (cf. Brief and Aldag, 1977; Van der Heijden, 2004; Pai and Arnott, 2013).

In this sense, *Perceived Informational Benefit*, which we describe as the degree to which a person believes that using an SNS provides him/her with useful information, is a specific conceptualization of *Perceived Usefulness*.

Perceived Usefulness is one of the central constructs of the *Technology Acceptance Model* (Davis et al., 1989) and centers on motivations that are external to the system-user interaction (cf. Brief and Aldag, 1977; Van der Heijden, 2004; Pai and Arnott, 2013). It is defined as "the degree to which a person believes that using a particular system would enhance his or her job [and task] performance" (Davis, 1989, p. 320). In various contexts, *Perceived Usefulness* has been confirmed to be an (indirect) influence factor of technology usage, i.e., it influences how often technologies are used in general (e.g., Davis et al., 1989; Van der Heijden, 2004). Indeed, multiple studies have confirmed an (indirect) positive influence of *Perceived Usefulness* on general SNS usage (e.g., Sledgianowski and Kulviwat, 2008; Von Stetten et al., 2011; Alarcón-del-Amo et al., 2012; Ernst et al., 2013b).

An SNS member who believes that the information offered by an SNS is useful will likely perform behaviors that provide him/her with this information (cf. Krikelas, 1983). Likewise, a member who does not see any usefulness at all in the information within a SNS's network, will not take any actions to *receive* it. Indeed, this argumentation is what the *Technology Acceptance Model* postulates, i.e., that an individual will use SNSs and perform specific kinds of usage behaviors if he/she believes this to be useful. We hypothesize that:

H6.8: *Perceived Informational Benefit* positively influences *Receiving* usage.

6.4 Research Design

6.4.1 Data Collection

To empirically evaluate our research model, we surveyed German-speaking users of Facebook, the most popular SNS (cf. Alexa, 2014). In this manner, we obtained 188 complete online questionnaires. 94 respondents were male (50 percent) and 94 were female (50 percent). The average age was 24.75 years (standard deviation: 6.81). 4 respondents were unemployed (2 percent), 6 were apprentices (3 percent), 31 were pupils (16 percent), 50 were in employment (27 percent), 94 were students (50 percent), and 3 selected "other" as a description of themselves (2 percent).

6.4.2 Measurement

Sharing and Receiving

To measure *Sharing* and *Receiving*, we first sought to build a list including all the things members can do on Facebook. In order to do this, we constructed an initial list of possible Facebook actions using the literature (e.g., Ross et al., 2009) and our own systematic examination of the Facebook website, the Facebook *Help Center* and the Facebook *Developers* documentation. Following this, we asked three Facebook members to check our list and, if necessary, add other actions to the list. Finally, we asked 292 students to name up to six behaviors they performed most often on Facebook. All of their answers were covered by the list we compiled, which contained 36 actions.

Next, we used the definitions of *Sharing* and *Receiving* usage we presented above, to classify these actions according to the *Sharing* or *Receiving* behaviors and asked three colleagues to do the same. Their classification supported ours: the 36 actions were divided into two categories, *Sharing* and *Receiving*, with each category containing 18 actions (Table 6.1).

Finally, we built two 18-item formative scales as presented in Tables 6.2 and 6.3 whose completeness is ensured: indeed, each item we developed reflected the extent of usage of one of the Facebook actions identified earlier (for example, the action "send private messages" was surveyed via "I send private messages on Facebook"). All items were measured using a five-point Likert-type scale ranging from "very often" to "very rarely"; in our sample, the mean (standard deviation) was 2.19 (.52) for *Sharing* and 2.79 (.59) for *Receiving* (based on the item average of each construct).

Potential Influence Factors

For *Covert Social Curiosity*, *Curiosity*, *Extraversion*, and *General Social Curiosity*, we used existing reflective items and scales (Naylor, 1981; John et al., 1991; Renner, 2006); for *Perceived Informational Benefit*, we developed three own reflective items. *Personal Network Size* was measured directly by the number of Facebook friends. Table 6.4 presents the resulting reflective items with their corresponding sources.

Covert Social Curiosity, *Curiosity*, *Extraversion*, *General Social Curiosity*, and *Perceived Informational Benefit* items were measured using a seven-point Likert-type scale ranging from "strongly agree" to "strongly disagree" and the *Personal Network*

Size question was open. In our sample, the mean (standard deviation) was 3.36 (1.47) for Covert Social Curiosity, 5.69 (.99) for Curiosity, 4.69 (1.19) for Extraversion, 5.02 (1.04) for General Social Curiosity, 4.07 (1.35) for Perceived Informational Benefit, and 268.07 (244.16) for Personal Network Size (based on the item average of each construct).

Sharing	Receiving
Facebook enables you to …	
"like" things	observe/read/look at other people's "likes"
"post" information (e.g., status updates, on the Facebook profile of others, within groups)	observe/read/look at other people's "posts"
"share" information	observe/read/look at others people's "shared" information
"comment" on things (e.g., posts, photos, etc.)	observe/read/look at other people's "comments"
update your Facebook profile	observe/read/look at information on Facebook profiles, company pages, product pages, etc.
upload photos/videos	look at photos/videos others have uploaded
send private messages	get/read private messages
poke someone	be poked
use apps (e.g., games)	observe/read/look at information depicting the apps used by others (e.g., games played)
tag yourself/someone (e.g., on photos)	observe/read/look at other people's tags
create events	observe/read/look at events created by others
invite others to events	be invited to events
signal your event participation	observe/read/look at the participation of other people at an event
send friend requests	receive friend requests
confirm friend requests	observe/read/look at information about new Facebook friendships being formed
create groups	observe/read/look at information related to the creation of groups by other members
invite others to join groups	be invited to join groups
join groups	observe/read/look at information related to other people's memberships to groups

Table 6.1: Facebook's Sharing and Receiving Actions

6.5 Results

Since our data was not distributed joint multivariate normal and since our measurement model included both reflective and formative indicators (cf. Hair et al., 2011), we used the *Partial-Least-Squares* approach via *SmartPLS 2.0* (Ringle et al., 2005). With 188 datasets, we met the larger suggested minimum sample size threshold of "ten times the largest number of formative indicators used to measure one construct" (Hair et al., 2011, p. 144). To test for significance, we used the integrated *Bootstrap* routine with 5,000 samples (Hair et al., 2011).

Labels	Items
S1	I "like" things on Facebook
S2	I "post" information on Facebook (e.g., status updates, on the Facebook profile of others, within groups)
S3	I "share" information on Facebook
S4	I "comment" on things on Facebook
S5	I update my Facebook profile
S6	I upload photos/videos to Facebook
S7	I send private messages on Facebook
S8	I poke someone on Facebook
S9	I use apps on Facebook (e.g., games)
S10	I tag myself/someone (e.g., on photos) on Facebook
S11	I create events (e.g., birthday parties, festivals) on Facebook
S12	I invite others to events (e.g., birthday parties, festivals) on Facebook
S13	I signal my participation (through "going" or "maybe") in events (e.g., birthday parties, festivals) on Facebook
S14	I send friend requests on Facebook
S15	I confirm friend requests on Facebook
S16	I create groups on Facebook
S17	I invite others into groups on Facebook
S18	I join groups on Facebook

Table 6.2: Formative Items of Sharing

Labels	Items
R1	I observe/read/look at other people‘s “likes” on Facebook (e.g., in my News Feed)
R2	I observe/read/look at other people’s “posts” on Facebook (e.g., in my News Feed)
R3	I observe/read/look at other people’s “shared” information on Facebook (e.g., in my News Feed)
R4	I observe/read/look at other people’s “comments” on Facebook (e.g., in my News Feed)
R5	I observe/read/look at information on Facebook profiles, company pages, product pages, etc.
R6	I look at photos/videos that others uploaded to Facebook (e.g., in my News Feed)
R7	I get/read private messages that others send me on Facebook
R8	I am poked on Facebook
R9	I observe/read/look at information depicting the app usage of others on Facebook (e.g., information in my News Feed about the Facebook games other people have played)
R10	I observe/read/look at other people’s tags on Facebook (e.g., "Friend A was tagged by Friend B on a photo")
R11	I observe/read/look at events created by others on Facebook (e.g., birthday parties, festivals)
R12	I am invited to events on Facebook (e.g., birthday parties, festivals)
R13	I observe/read/look at the signaled participation of others ("Going", "Maybe", "Invited") in events (e.g., birthday parties, festivals) on Facebook
R14	I receive friend requests on Facebook
R15	I observe/read/look at information about new Facebook friendships being formed (e.g., in my News Feed)
R16	I observe/read/look at information related to the creation of groups by other members on Facebook (e.g., in my News Feed)
R17	I am invited to join groups on Facebook
R18	I observe/read/look at information related to other people’s memberships to groups on Facebook (e.g., in my News Feed)

Table 6.3: Formative Items of Receiving

In the following, we will first evaluate our measurement model. Indeed, we will examine the *content validity*, *indicator reliability*, *construct reliability*, and

discriminant validity of our reflective constructs. We will also assess the *content validity* of our formative *Sharing* and *Receiving* constructs as well as the *weights/loadings* of their indicators and will also check for *multicollinearity*. Finally, we will present the results of our structural model.

Construct	Items (Labels)	Source/adapted from
Covert Social Curiosity	When on the train, I like listening to other people's conversations (CSC1)	Renner (2006)
	Every so often, I like to stand at the window and watch what my neighbors are doing (CSC2)	
	I like to look into other people's lit windows (CSC3)	
Curiosity	I am curious about things (C1)	Naylor (1981)
	I feel inquisitive (C2)	
	I feel like seeking things out (C3) [dropped due to weak loadings]	
Extraversion	I see myself as someone who tends to be quiet (E1) [reversed]	John et al. (1991) cf. Gerlitz and Schupp (2005)
	I see myself as someone who is talkative (E2)	
	I see myself as someone who is outgoing, sociable (E3)	
General Social Curiosity	When I meet a new person, I am interested in learning more about him/her (GSC1)	Renner (2006)
	I like to learn about the habits of others (GSC2)	
	I'm interested in other people's thoughts and feelings (GSC3)	
Perceived Informational Benefit	I benefit from the information that is available on Facebook (PIB1)	created by ourselves
	The information that I can find on Facebook is beneficial for me (PIB2)	
	The things I learn on Facebook are advantageous for me (PIB3)	
Personal Network Size	Approximately how many Facebook friends do you have? (PNS1)	direct measurement

Table 6.4: Reflective Items of our Measurement Model

6.5.1 Measurement Model

Reflective Constructs

Personal Network Size was measured directly. For *Covert Social Curiosity*, *Curiosity*, *Extraversion*, and *General Social Curiosity*, we used common construct definitions and proven items of former studies. We developed our own definition and measurement of *Perceived Informational Benefit* by consulting five researchers from our department as well as ten Facebook users throughout the development process. Hence, we assume that all the reflective constructs and measurements used here are both representative and comprehensive, thus suggesting their *content validity* (cf. Moon and Kim, 2001).

Tables 6.5 and 6.6 present the correlations between constructs together with the *Average Variance Extracted* (AVE) and *Composite Reliability* (CR), and our reflective items' factor loadings, respectively: All reflective items loaded high (.71 or more) and significant ($p<.01$) on their parent factor and, hence, met the suggested threshold of

indicator reliability of .70 (Hair et al., 2011);[21] AVE and CR were higher than .65 and .84, respectively, meeting the suggested *construct reliability* thresholds of .50/.70 (Hair et al., 2009). The loadings from our reflective indicators were highest for each parent factor and the square root of the AVE of each construct was larger than the absolute value of the construct's correlations with its counterparts, thus indicating *discriminant validity* (Fornell and Larcker, 1981; Hair et al., 2011).

	C	CSC	E	GSC	PIB	PNS	R	S
Curiosity (C)	.827 (.905)							
Covert Social Curiosity (CSC)	-.069	.672 (.860)						
Extraversion (E)	.299	-.130	.673 (.860)					
General Social Curiosity (GSC)	.329	.273	.049	.652 (.848)				
Perceived Informational Benefit (PIB)	.163	.164	.040	.293	.856 (.947)			
Personal Network Size (PNS)	-.006	-.103	.282	.046	.162	-		
Receiving (R)	.120	.392	-.159	.485	.440	.001	-	
Sharing (S)	.157	.003	.427	.179	.282	.384	.060	-

Table 6.5: Correlations between Constructs (AVE (CR) on the Diagonal)

	C	CSC	E	GSC	PIB	PNS	R	S
C1	.843 (4.1)	-.101	.223	.194	.030	-.078	.060	.100
C2	.971 (7.2)	-.048	.304	.356	.206	.027	.135	.167
CSC1	-.022	.779 (11.3)	-.077	.317	.119	-.045	.301	-.005
CSC2	-.104	.843 (12.3)	-.150	.195	.146	-.128	.381	-.014
CSC3	-.027	.836 (12.5)	-.078	.157	.135	-.065	.257	.036
E1 (reversed)	.224	-.165	.851 (15.7)	-.096	.009	.275	-.165	.414
E2	.325	-.057	.750 (10.5)	.146	.042	.098	-.077	.243
E3	.233	-.073	.855 (22.3)	.133	.056	.267	-.128	.353
GSC1	.374	.035	.126	.710 (8.8)	.232	-.006	.294	.105
GSC2	.146	.368	-.060	.855 (18.0)	.290	.072	.471	.160
GSC3	.337	.187	.097	.848 (20.6)	.182	.028	.382	.160
PIB1	.128	.154	.027	.253	.924 (45.1)	.094	.432	.252
PIB2	.142	.145	.027	.241	.923 (50.2)	.181	.379	.277
PIB3	.182	.155	.058	.319	.928 (48.8)	.181	.407	.255
PNS1	-.006	-.103	.282	.046	.162	1 (0)	.001	.384

Table 6.6: Reflective Items' Loadings (T-Values)

[21] Due to weak loadings, one item of *Curiosity*, i.e., "I feel like seeking things out", was dropped from our analyses.

Formative Constructs

Formative constructs are described and defined by their items (Diamantopoulos and Winklhofer, 2001). Hence, leaving out some relevant aspects would result in a mismatch of construct definition and measurement, and ultimately eliminate *content validity*. As described earlier, our *Sharing* and *Receiving* items were developed based on a carefully crafted classification of Facebook actions with each item measuring the usage extent of one action. Assuming that the classification is complete and unambiguous, both our formative scales fulfill the requirements for *content validity* (cf. Diamantopoulos and Winklhofer, 2001).

Table 6.7 presents the *weights* and *loadings* of our formative items on their parent factors: Their examination shows that multiple formative items have no significant weight and/or loading on their parent factor. However, in contrast to reflective scales, formative items must not be dropped from analyses (cf. Diamantopoulos and Winklhofer, 2001), but rather be kept in the model to retain *content validity* (Bollen and Lennox, 1991). Also, as discussed by Hair et al. (2011), a formative scale consisting of many items likely presents multiple non-significant weights.

Item Labels	Weights (t-values) Loadings (t-values)	Item Labels [cont'd]	Weights (t-values) Loadings (t-values) [cont'd]	Item Labels [cont'd]	Weights (t-values) Loadings (t-values) [cont'd]	Item Labels [cont'd]	Weights (t-values) Loadings (t-values) [cont'd]
R1	-.050 (.430) .475 (3.602)	R10	.108 (1.097) .583 (4.228)	S1	.318 (1.876) .456 (3.932)	S10	.316 (1.739) .382 (2.863)
R2	-.070 (.558) .606 (5.246)	R11	.140 (1.359) .510 (3.706)	S2	.040 (.365) .518 (3.441)	S11	.027 (.187) .370 (3.019)
R3	-.142 (.967) .565 (4.672)	R12	.001 (.006) .212 (1.496)	S3	.271 (1.774) .518 (3.234)	S12	.073 (.528) .390 (3.202)
R4	.392 (2.200) .670 (5.679)	R13	-.056 (.484) .447 (3.127)	S4	.065 (.668) .425 (3.267)	S13	.2341 (1.765) .358 (2.997)
R5	.431 (2.971) .7611 (6.336)	R14	-.130 (1.10) .121 (1.165)	S5	-.180 (1.177) .171 (1.683)	S14	-.102 (.954) .060 (.590)
R6	-.017 (.145) .606 (4.807)	R15	.580 (3.530) .777 (6.489)	S6	.197 (1.3328) .477 (3.948)	S15	.227 (1.656) .138 (1.066)
R7	.075 (.857) .351 (2.896)	R16	-.075 (.747) .457 (3.909)	S7	-.278 (2.119) -.037 (.384)	S16	.192 (1.092) .374 (2.969)
R8	-.044 (.428) .1466 (1.3186)	R17	.181 (1.483) .172 (1.547)	S8	-.041 (.446) -.083 (.910)	S17	-.056 (.370) .332 (2.757)
R9	.198 (1.650) .472 (3.513)	R18	-.254 (1.629) .349 (2.865)	S9	-.622 (5.001) -.456 (3.847)	S18	-.335 (2.230) .045 (.562)

Table 6.7: Formative Items' Weights/Loadings on their Parent Factors (T-Values)

The *Variance-Inflation-Factors* (VIFs) of *Sharing* and *Receiving* indicate that the constructs do not suffer from *multicollinearity*: the highest VIFs of *Sharing* and *Receiving* (3.68 and 3.34, respectively) were both well below the suggested threshold of 5 (Hair et al., 2011).

6.5.2 Structural Model

Figure 6.2 presents the path coefficients of the previously hypothesized relationships as well as the R^2s of each endogenous variable (** = p<.01, * = p<.05, ns = non-significant).

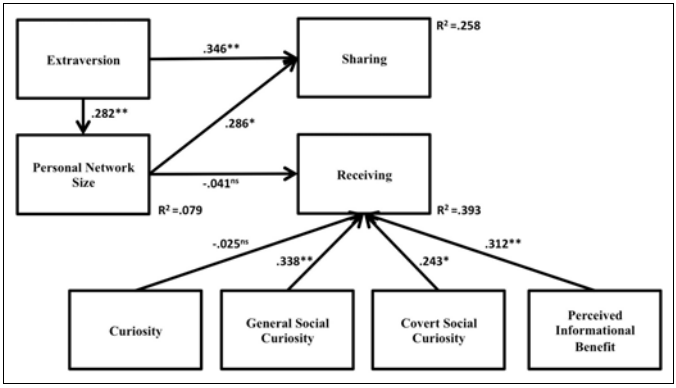

Figure 6.2: Findings

Extraversion (β=.346, p<.01) and *Personal Network Size* (β=.286, p<.05) were both found to have a positive influence on *Sharing* usage, confirming hypotheses 6.1 and 6.3; *Extraversion* (β=.282, p<.01) was found to have a positive influence on *Personal Network Size*, confirming hypothesis 6.2; *General Social Curiosity* (β=.338, p<.01), *Covert Social Curiosity* (β=.243, p<.05), and *Perceived Informational Benefit* (β=.312, p<.01) were found to have a positive influence on *Receiving* usage, confirming hypotheses 6.6, 6.7, and 6.8.

In contrast, hypotheses 6.4 and 6.5 were not confirmed since *Personal Network Size* (β=-.041, t=.394) and generic *Curiosity* (β=-.025, t=.238) had no significant influence on *Receiving* usage: Whereas generic *Curiosity* has no significant relationship with *Receiving*, its social-related facets, *General Social Curiosity* and *Covert Social Curiosity*, exert a significant influence on *Receiving*. These findings suggest that just

being curious in a general sense is not enough. In fact, people need to have a *Curiosity for people* in order to be attracted to the *Receiving* usage, which is consistent with the social aspect of SNSs. Furthermore, people's limited cognitive resources and available time might explain the insignificant relationship between *Personal Network Size* and *Receiving*. Indeed, it seems reasonable that when a specific number of SNS contacts has been reached, a member cannot continue to *Receive* any additional information, since they cannot conjure up additional cognitive resources or time.

Overall, the explanatory power of our structural model is good since explaining 25.8 percent and 39.3 percent of the variances of *Sharing* and *Receiving*, respectively.

6.6 Conclusions

In this article, we studied the influence factors of *Sharing* and/or *Receiving* usage in SNSs. In order to accomplish this, we presented six potential influence factors that could be influencing *Sharing* and/or *Receiving*. After surveying 188 German-speaking Facebook users and applying a structural equation modeling approach, we confirmed that *Extraversion* and *Personal Network Size* are influence factors of *Sharing* usage. We also found that *Covert Social Curiosity*, *General Social Curiosity*, and *Perceived Informational Benefit* are influence factors of *Receiving* usage. In contrast, we are not able to confirm the influence of *Curiosity* or *Personal Network Size* on *Receiving* usage and present possible explanations for the insignificance of these relationships.

In summary, our study contributes to SNS research by confirming that (1) *Extraversion* and *Personal Network Size* are influence factors of *Sharing* usage, and that (2) *Covert Social Curiosity*, *General Social Curiosity*, and *Perceived Informational Benefit* are influence factors of *Receiving* usage. Additionally, we provide a Facebook-specific formative measurement model of *Sharing* and *Receiving*. Moreover, our findings have important practical implications. First, our findings suggest that a SNS service provider should encourage its members to have many SNS contacts in order to increase their *Sharing* behavior. This in turn, would support its business model, the advertisers using the SNS to perform *viral marketing*, and the liveliness of the network. Also, SNS service providers need to focus on acquiring *Extroverts* and individuals that are curious about people as new members in order to increase the *Sharing* and *Receiving* usage within their networks, respectively. Furthermore, since SNS service providers have the ability to analyze the usage behavior of their current members, our findings might also be applied to tailor

advertisements to the deducible personality traits of the targeted members, i.e., to the *Extraversion* of the *Sharers* or the *Social Curiosity* of the *Receivers*. Likewise, SNS service providers could also adjust the information that is automatically shown to their members based on their traits and/or interests. This could increase the members' perception of *informational benefit* and, as a result, their *Receiving* usage.

Our study has some limitations. First, our empirical findings are only based on one specific SNS: Facebook. Hence, there might be differences between this particular SNS and others, especially those with a professional context such as *LinkedIn*. Moreover, our formative measurement of *Sharing* and *Receiving* is strictly Facebook-specific. Finally, multiple formative item weights and loadings were insignificant in our empirical study. However, items of formative constructs must not be dropped (cf. Diamantopoulos and Winklhofer, 2001), but rather be kept in the measurement model (Bollen and Lennox, 1991).

As a next step, we plan to expand our research and address its limitations. More specifically, we want to evaluate our classification of SNS usage as well as the influence factors we identified in order to see how they fit into the context of professional SNSs. We also wish to add additional, context-specific influence factors. Indeed, the use of professional SNSs present alternative usage motivations: for example, one natural extrinsic motivation for using a professional SNS would be to further a personal career. We would like to take a closer look at these kinds of motivations and other context-specific stimuli. In doing so, we can identify and develop additional constructs that could be influencing *Sharing* and *Receiving* usage in professional SNSs.

Bibliography

Acar, A. (2008): Antecedents and consequences of online social networking behavior: The case of facebook. Journal of Website Promotion, 3 (1/2), pp. 62-83.

Alarcón-Del-Amo, M.-D.-C., Lorenzo-Romero, C. and Gómez-Borja, M.-A. (2012): Analysis of acceptance of social networking sites. African Journal of Business Management, 6 (29), pp. 8609-8619.

Alexa (2014): Top sites. http://www.alexa.com/topsites (Accessed 04-30-2014).

Backstrom, L., Bakshy, E., Kleinberg, J., Lento, T. and Rosenn, I. (2011): Center of attention: How facebook users allocate attention across friends. ICWSM 2011 Proceedings.

Baumeister, R.F. and Leary, M.R. (1995): The need to belong: Desire for interpersonal attachements as a fundamental human motivation. Psychological Bulletin, 117 (3), pp. 497-529.

Baumeister, R.F., Zhang, L. and Vohs, K. (2004): Gossip as cultural learning. Review of General Psychology, 8 (2), pp. 111-121.

Benevenuto, F., Rodrigues, T., Cha, M. and Almeida, V. (2009): Characterizing user behavior in online social networks. IMC 2009 Proceedings.

Bollen, K. and Lennox, R. (1991): Conventional wisdom on measurement: A structural equation perspective. Psychological Bulletin, 110 (2), pp. 305-314.

Brief, A.P. and Aldag, R.J. (1977): The intrinsic-extrinsic dichotomy: Toward conceptual clarity. Academy of Management Review, 2 (3), pp. 496-500.

Cavusoglu, H., Phan, T. and Cavusoglu, H. (2013): Privacy controls and content sharing patterns of online social network users: A natural experiment. ICIS 2013 Proceedings.

Chen, R. (2013): Member use of social networking sites - an empirical examination. Decision Support Systems, 54 (3), pp. 1219-1227.

Costa, P. and Mccrae, R. (1992): Normal personality assessment in clinical practice: The neo personality inventory. Psychological Assessment, 4 (1), pp. 5-13.

Davis, F.D. (1989): Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13 (2), pp. 319-340.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989): User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35 (8), pp. 982-1003.

Diamantopoulos, A. and Winklhofer, H.M. (2001): Index construction with formative indicators: An alternative to scale development. Journal of Marketing Research, 38 (2), pp. 269-277.

Eaton, L. and Funder, D. (2003): The creation and consequences of the social world: An interactional analysis of extraversion. European Journal of Personality, 17 (5), pp. 375-395.

Ernst, C.-P.H., Pfeiffer, J. and Rothlauf, F. (2013a): Hedonic and utilitarian motivations of social network site adoption. Johannes Gutenberg University Mainz: Working Papers in Information Systems and Business Administration.

Ernst, C.-P.H., Pfeiffer, J. and Rothlauf, F. (2013b): The influence of perceived belonging on social network site adoption. AMCIS 2013 Proceedings.

Fornell, C. and Larcker, D.F. (1981): Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18 (1), pp. 39-50.

Foster, E. (2004): Research on gossip: Taxonomy, methods, and future directions. Review of General Psychology, 8 (2), pp. 78-99.

Gangadharbatla, H. (2008): Facebook me: Collective self-esteem, need to belong, and internet self-efficacy as predictors of the igeneration's attitudes toward social networking sites. Journal of Interactive Advertising, 8 (2), pp. 5-15.

Gerlitz, J.-Y. and Schupp, J. (2005): Zur Erhebung der Big-Five-basierten Persönlichkeitsmerkmale im SOEP: Dokumentation der Instrumententwicklung BFI-S auf Basis des SOEP-Pretests 2005. DIW, Berlin, Germany: Research Notes 2005 (4).

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2009): Multivariate data analysis. 7th ed., Upper Saddle River, NJ: Prentice Hall.

Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011): Pls-sem: Indeed a silver bullet. Journal of Marketing Theory and Practice, 19 (2), pp. 139-151.

Hartung, F.-M. and Renner, B. (2011): Social curiosity and interpersonal perception: A judge × trait interaction. Personality and Social Psychology Bulletin, 37 (6), pp. 796-814.

Hartung, F.-M. and Renner, B. (2013): Social curiosity and gossip: Related but different drives of social functioning. PLoS ONE, 8 (7), pp. 1-9.

Hollenbaugh, E. and Ferris, A. (2014): Facebook self-disclosure: Examining the role of traits, social cohesion, and motives. Computers in Human Behavior, 30, pp. 50-58.

Jiang, J., Wilson, C., Wang, X., Huang, P., Sha, W., Dai, Y. and Zhao, B. (2010): Understanding latent interactions in online social networks. IMC 2010 Proceedings. pp. 369-382.

John, O.P., Donahue, E.M. and Kentle, R.L. (1991): The big five inventory - versions 4a and 54. Institute of Personality and Social Research, University of California, Berkeley, CA.

John, O.P. and Srivastava, S. (1999): The big five trait taxonomy: History, measurement, and theoretical perspectives. In: Pervin, L. A. & John, O. P. (eds.) Handbook of personality: Theory and research. 2nd ed., New York, NY: Guilford Press, pp. 102-138.

Kanai, R., Bahrami, B., Roylance, R. and Rees, G. (2012): Online social network size is reflected in human brain structure. Proceedings of the Royal Society B: Biological Sciences, 279 (1732), pp. 1327-1334.

Katz, M.L. and Shapiro, C. (1985): Network externalities, competition, and compatibility. The American Economic Review, 75 (3), pp. 424-440.

Killworth, P., Johnsen, E., Bernard, H., Shelley, G. and Mccarty, C. (1990): Estimating the size of personal networks. Social Networks, 12 (4), pp. 289-312.

King, L. and Broyles, S. (1997): Wishes, gender, personality, and well-being. Journal of Personality, 65 (1), pp. 49-76.

Krasnova, H., Spiekermann, S., Koroleva, K. and Hildebrand, T. (2010b): Online social networks: Why we disclose. Journal of Information Technology, 25 (2), pp. 109-125.

Krikelas, J. (1983): Information-seeking behavior: Patterns and concepts. Drexel Library Quarterly, 19 (2), pp. 5-20.

Lo, J. (2010): Privacy concern, locus of control, and salience in a trust-risk model of information disclosure on social networking sites. AMCIS 2010 Proceedings. Paper 110.

Mehl, M., Gosling, S. and Pennebaker, J. (2006): Personality in its natural habitat: Manifestations and implicit folk theories of personality in daily life. Journal of Personality and Social Psychology, 90 (5), pp. 862-877.

Moon, J.-W. and Kim, Y.-G. (2001): Extending the tam for a world-wide-web context. Information & Management, 38 (4), pp. 217-230.

Naylor, F.D. (1981): A state-trait curiosity inventory. Australian Psychologist, 16 (2), pp. 172-183.

Olson, K. and Weber, D. (2004): Relations between big five traits and fundamental motives. Psychological Reports, 95 (3), pp. 795-802.

Ong, E., Ang, R., Ho, J., Lim, J., Goh, D., Lee, C. and Chua, A. (2011): Narcissism, extraversion and adolescents' self-presentation on facebook. Personality and Individual Differences, 50 (2), pp. 180-185.

Pai, P. and Arnott, D. (2013): User adoption of social networking sites: Eliciting uses and gratifications through a means–end approach. Computers in Human Behavior, 29 (3), pp. 1039-1053.

Pollet, T., Roberts, S. and Dunbar, R. (2011): Use of social network sites and instant messaging does not lead to increased offline social network size, or to emotionally closer relationships with offline network members. Cyberpsychology, Behavior, and Social Networking, 14 (4), pp. 253-258.

Renner, B. (2006): Curiosity about people: The development of a social curiosity measure in adults. Journal of Personality Assessment, 83 (3), pp. 305-316.

Ringle, C.M., Wende, S. and Will, A. (2005): SmartPLS 2.0 (beta). http://www.smartpls.de.

Romero, E., Villar, P., Luengo, M. and Gómez-Fraguela, J. (2009): Traits, personal strivings and well-being. Journal of Research in Personality, 43 (4), pp. 535-546.

Ross, C., Orr, E.S., Sisic, M., Arseneault, J.M., Simmering, M.G. and Orr, R.R. (2009): Personality and motivations associated with facebook use. Computers in Human Behavior, 25 (2), pp. 578-586.

Skues, J., Williams, B. and Wise, L. (2012): The effects of personality traits, self-esteem, loneliness, and narcissism on facebook use among university students. Computers in Human Behavior, 28 (6), pp. 2414-2419.

Sledgianowski, D. and Kulviwat, S. (2008): Social network sites: Antecedents of user adoption and usage. AMCIS 2008 Proceedings. Paper 83.

Thambusamy, R., Church, M., Nemati, H. and Barrick, J. (2010): Socially exchanging privacy for pleasure: Hedonic use of computer-mediated social networks. ICIS 2010 Proceedings. Paper 253.

Tong, S., Van Der Heide, B., Langwell, L. and Walther, J. (2008): Too much of a good thing? The relationship between number of friends and interpersonal impressions on facebook. Journal of Computer-Mediated Communication, 13 (3), pp. 531-549.

Van Der Heijden, H. (2004): User acceptance of hedonic information systems. MIS Quarterly, 28 (4), pp. 695-704.

Von Stetten, A., Wild, U. and Chrennikow, W. (2011): Adopting social network sites – the role of individual it culture and privacy concerns. AMCIS 2011 Proceedings. Paper 290.

Wang, S. and Stefanone, M. (2013): Showing off? Human mobility and the interplay of traits, self-disclosure, and facebook check-ins. Social Science Computer Review, 31 (4), pp. 437-457.

Watson, G.B. and Johnson, D. (1972): Social psychology; issues and insights. 2nd ed., Philadelphia, PA: Lippincott.

Watzlawick, P., Beavin, J.H. and Jackson, D.D. (1967): Pragmatics of human communication. A study of interactional patterns, pathologies, and paradoxes. New York, NY, London, UK: W. W. Norton & Company.

Young, A. and Quan-Haase, A. (2009): Information revelation and internet privacy concerns on social network sites: A case study of facebook. C&T 2009 Proceedings.

Summary and Conclusions

This chapter consists of a summary of the thesis and a list of its major contributions to the literature.

7.1 Summary

The total number of registered members and their usage behavior determines the value of a *Social Network Site* (SNS) for its members and service providers alike (Katz and Shapiro, 1985; Gangadharbatla, 2008). Yet, there is only limited knowledge regarding SNS usage behavior. More specifically, researchers still do not know whether hedonic and/or utilitarian motivations drive members' frequency of use of SNSs. In other words, the question of whether *Perceived Enjoyment* and/or *Perceived Usefulness* determine SNSs' *Actual System Use* remains open. Likewise, current SNS studies neglect the potential antecedents of *Perceived Enjoyment* and *Perceived Usefulness* and, hence, the potential *indirect* drivers of *Actual System Use*. Moreover, there is only a limited understanding of SNS members' *specific usage behavior*. More specifically, it is still unclear which specific *Protecting Behaviors* result from *Perceived Privacy Risk* in SNSs. Likewise, the drivers of the two central kinds of SNS usage, *Sharing* and *Receiving* usage, remain undetermined. This thesis contributes to these research gaps.

The *Technology Acceptance Model* (TAM; Davis et al., 1989) postulates that the *Actual System Use* of technologies is determined by their *Perceived Ease of Use*, *Perceived Usefulness*, and *Perceived Enjoyment* (Van der Heijden, 2004). More specifically, hedonic technologies (e.g., video games) "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). Hence, the *Actual System Use* of hedonic technologies is primarily determined by their *Perceived Enjoyment* (Van der Heijden, 2004). Similarly, the *Actual System Use* of utilitarian technologies, which "aim to provide instrumental value to the user" (Van der Heijden, 2004, p. 696), is primarily determined by their *Perceived Usefulness*. Finally, the usage of *dual* technologies such as shopping websites, which are enjoyable to use and provide instrumental value, is influenced by both *Perceived Usefulness* and *Perceived Enjoyment* (e.g., Childers et al., 2001; Chesney, 2006).

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When using SNSs, users experience *enjoyment* (e.g., Thambusamy et al., 2010). Consistently with this, multiple studies have confirmed a positive influence of *Perceived Enjoyment* on SNS usage (e.g., Hu et al., 2011), thus confirming the hedonic nature of SNSs. In contrast, although SNSs' functionalities provide users with external benefits, such as the ability to organize events or to locate old friends (Raacke and Bonds-Raacke, 2008; Subrahmanyam et al., 2008; Bonds-Raacke and Raacke, 2010), the findings concerning the influence of *Perceived Usefulness* on SNS usage substantially differ from one study to the next. Whereas Alarcón-del-Amo et al. (2012) identified a strong influence of *Perceived Usefulness* on SNS usage, Sledgianowski and Kulviwat (2008) only found a weak influence, and Hu et al. (2011) found none influence at all.

In chapter 2, it was argued that SNSs are *dual* technologies. Thus, both *Perceived Enjoyment* and *Perceived Usefulness* were postulated to exert a positive influence on the *Actual System Use* of SNSs (cf. Childers et al., 2001). The literature's inconsistent findings regarding the influence of *Perceived Usefulness'* on *Actual System Use* were attributed to the differing measurements used in the various studies. Consequently, chapter 2 first identified an appropriate operationalization of *Perceived Usefulness* from the literature and then built on it to develop a four-item reflective scale that fits the SNS context. Using a paper-and-pencil survey of 415 students from a German university attending an *Introduction to information systems* course and applying a structural equation modeling approach via *AMOS 21.0.0.0* to test the research model, it was confirmed that both *Perceived Enjoyment* and *Perceived Usefulness* exert a positive influence on the *Actual System Use* of SNSs. This result underlines the *dual* nature of *Perceived Enjoyment* and *Perceived Usefulness*.

These findings laid the groundwork for chapter 3, which studied the influence of *Perceived Belonging* on general SNS usage through *Perceived Usefulness* and *Perceived Enjoyment*: Whereas the findings that *Perceived Enjoyment* and *Perceived Usefulness* influence *Actual System Use* alone do not provide SNS service providers with specific guidance in terms of their business practices, knowing *why* SNSs are perceived to be *useful* and *fun* provides important practical implications. To this end, in chapter 3 *Perceived Belonging* was introduced as a potential antecedent of both *Perceived Enjoyment* and *Perceived Usefulness* and, thus, as an indirect antecedent of *Actual System Use*.

Indeed, 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 (Watson and Johnson, 1972; Cobb, 1976; Eaton, 1978; Sandler, 1980; Cohen and Wills, 1985; Barrera, 1986; Baumeister and Leary, 1995). Furthermore, the feeling of belonging is positively linked to *hedonic well-being*, which is represented by the presence of positive hedonic feelings such as fun, enjoyment, happiness and pleasure (e.g., Berkman and Syme, 1978; Rook, 1984; Baumeister and Leary, 1995; LaVeist et al., 1997). Hence, chapter 3 argued that if people believe SNSs can help them feel like part of a larger group, they perceive SNSs to be useful and fun. Using the same sample and methodology as in chapter 2, it was confirmed that *Perceived Belonging* positively influences both *Perceived Enjoyment* and *Perceived Usefulness*, making it an indirect influence factor of *Actual System Use*.

Building also on the findings of chapter 2, in chapter 4 another potential indirect influence factor of general SNS usage was introduced: *Perceived Privacy Risk*. Indeed, SNSs provide many opportunities to disclose personal information; hence, using them carries privacy risks. In general, *Perceived Risk* can alter an individual's feelings (Yüksel and Yüksel, 2007). More specifically, the perceived negative consequences associated with *Perceived Risk* cause negative feelings such as anxiety, discomfort and uncertainty (Dowling and Staelin, 1994; Featherman, 2001). In this sense, *Perceived Privacy Risk* can also be expected to cause negative feelings, i.e., to negatively influence an individual's *Perceived Enjoyment*. Using the same sample and methodology as in chapters 2 and 3, it was confirmed that *Perceived Privacy Risk* has a negative influence on *Perceived Enjoyment;* hence, *Perceived Privacy Risk* has an indirect influence on *Actual System Use*.

In chapter 5, it was drawn on the *Protection Motivation Theory* to examine which of the six *Privacy Protecting Behaviors* identified in the literature are used by SNS members to address their *Perceived Privacy Risk*. The six *Privacy Protecting Behaviors* are: *Refusal*, *Misrepresentation*, *Removal*, *Selectivity in Connections*, *Termination of Connections*, and *Strictness of Privacy Settings* (cf. Son and Kim, 2008; Bulgurcu et al., 2010; Krasnova et al., 2010b). It was also argued that differences between SNS members' *Coping Appraisals* lead to differences in the extent of the influence of *Perceived Privacy Risk* on the six identified *Privacy Protecting Behaviors*. More specifically, it was argued that *Misrepresentation* and *Removal* have a lower *Coping Appraisal* than *Refusal* has*,* and that the *Termination of*

Connections has a lower *Coping Appraisal* than *Selectivity in Connections* has. Consequently, the hypothesis that *Perceived Privacy Risk* would lead rather to *Refusal* than to *Misrepresentation* or *Removal*, and that it would lead rather to *Selectivity in Connections* than to *Termination of Connections* was put forward.

Using an online survey of 50 German-speaking Facebook users and applying a structural equation modeling approach via *SmartPLS 2.0* (Ringle et al., 2005) to test the research model, it was confirmed that SNS members address their *Perceived Privacy Risk* by *refusing* to provide specific personal information, being *selective* when accepting or requesting connections in SNSs, and using *privacy settings* with strict information access control. In contrast, a relationship between *Perceived Privacy Risk* and *Misrepresentation*, *Removal*, or *Termination of Connections* could not be confirmed. However, these insignificant relationships confirmed the expectation that *Perceived Privacy Risk* would have a greater influence on *Refusal* than on *Misrepresentation* and *Removal,* and that it would have a greater influence on *Selectivity in Connections* than on *Termination of Connections*.

In chapter 6, SNS usage as a whole was classified into two distinct kinds of usage: *Receiving* usage, where information is acquired (such as looking at other's profiles), and *Sharing* usage, where information is shared with other members (such as sending private messages) (cf. Benevenuto et al., 2009; Jiang et al., 2010; Backstrom et al., 2011). By combining findings and concepts from multiple streams of literature, six potential influence factors of these two kinds of SNS usage were introduced: *Extraversion*, *Curiosity*, *General Social Curiosity*, *Covert Social Curiosity*, *Perceived Informational Benefit*, and *Personal Network Size*. Using an online survey of 188 German-speaking Facebook users and applying a structural equation modeling approach via *SmartPLS 2.0* to test the research model, it was confirmed that *Extraversion* and *Personal Network Size* are influence factors of *Sharing* usage and that *Covert Social Curiosity*, *General Social Curiosity*, and *Perceived Informational Benefit* are influence factors of *Receiving* usage.

7.2 Conclusions

The following paragraphs summarize the main contributions of this work to the current state-of-the-art:

Both Perceived Usefulness and Perceived Enjoyment influence general SNS usage behavior, confirming that SNSs are dual technologies. This thesis attributed the

literature's inconsistent findings regarding *Perceived Usefulness's* influence on *Actual System Use* to the use of greatly differing measurements across studies. By using an appropriate four-item reflective scale for *Perceived Usefulness*, it empirically confirmed that SNSs are *dual* technologies whose *Actual System Use* is influenced by both *Perceived Usefulness* and *Perceived Enjoyment*. Hence, SNS service providers should not focus on providing solely utilitarian or hedonic functionalities, but rather they must focus on providing both kinds of functionalities simultaneously. Likewise, future studies on SNS usage should consider both the utilitarian and hedonic aspects of SNSs.

Perceived Belonging and Perceived Privacy Risk indirectly influence general SNS usage behavior. This thesis introduced *Perceived Belonging* and *Perceived Privacy Risk* as potential indirect influence factors of SNS usage. It confirmed that *Perceived Belonging* is a positive influence factor of both *Perceived Enjoyment* and *Perceived Usefulness*. It also confirmed that *Perceived Privacy Risk* is a negative influence factor of *Perceived Enjoyment*. Thus, both *Perceived Belonging* and *Perceived Privacy Risk* are indirect influence factors of *Actual System Use*. These results suggest that SNS service providers have to strongly focus on providing functionalities that enable users to connect and interact with each other, and that they also need to actively manage people's privacy risk perception. This would allow them to achieve an even greater market penetration and maintain a strong growth trajectory.

SNS members use Refusal, Selectivity in Connections, and Strictness of Privacy Settings to address their Perceived Privacy Risk, but they do not use Misrepresentation, Removal, and Termination of Connections to address it. This thesis confirmed that *Perceived Privacy Risk* leads rather to *Refusal*, *Selectivity in Connections*, and *Strictness of Privacy Settings* than to *Misrepresentation*, *Removal*, and *Termination of Connections*. Furthermore, the results showed that SNS members use *Refusal*, *Selectivity in Connections*, and *Strictness of Privacy Settings* generally more often than *Misrepresentation*, *Removal*, and *Termination of Connections*. Overall, the results hold multiple practical implications: First, the findings suggest that SNS service providers need to actively manage people's privacy risk perception since the providers regularly rely on selling personal advertisements to their customers (e.g., Krasnova et al., 2010b; Thambusamy et al., 2010), and since SNS members' *Refusal*, and *Strictness of Privacy Settings* hinders this process. Likewise, *Selectivity in Connections* hampers the endeavors of companies that seek to connect with their

customers through *company/product pages*, those of software developers that provide *SNS applications* to be used within the networks, and those of *third-party websites* that enable members to register using their SNS login information. Moreover, the findings suggest that, once the first hurdle of creating a connection with users is overcome, *company/product pages*, *SNS applications*, and *third-party websites* do not need to fear a *termination of their connections* nor do they need to fear the *removal* of previously revealed information. Indeed, both behaviors are applied only rarely. Thus, from an SNS provider's perspective, their greatest efforts should focus on getting users to connect and reveal information, since it is unlikely that users will undo these actions. This implication is also suggested by the finding that people use *Misrepresentation* only to a relatively small extent. Thus, advertisers can rely for the most part on the veracity of the information provided by SNS members, which means that they can truly target their intended audience within SNS networks.

Extraversion and Personal Network Size drive Sharing usage; Covert Social Curiosity, General Social Curiosity, and Perceived Informational Benefit drive Receiving usage. This thesis developed Facebook-specific formative measurements for *Sharing* and *Receiving*. It then confirmed that *Extraversion* and *Personal Network Size* are influence factors of *Sharing* usage and that *Covert Social Curiosity*, *General Social Curiosity*, and *Perceived Informational Benefit* are influence factors of *Receiving* usage. These findings have multiple practical implications. First, the findings suggest that a SNS service provider should encourage its members to have many SNS contacts in order to increase their *Sharing* behavior. This, in turn, would support the business model of the service provider, as well as the advertisers using the SNS for *viral marketing*, and the liveliness of the network. SNS service providers also need to focus on acquiring *Extroverts* and individuals that are curious about people as new members in order to increase the *Sharing* and *Receiving* usage within their networks, respectively. Furthermore, since SNS service providers can analyze the usage behavior of their current members, the findings might also be applied to tailor advertisements to the deducible personality traits of the targeted members, i.e., to the *Extraversion* of the *Sharers* or the *Social Curiosity* of the *Receivers*. Likewise, SNS service providers could also adjust the information that is shown to their members based on their traits and/or interests. This could increase the members' perception of *informational benefit* and, as a result, their *Receiving* usage.

Bibliography

Alarcón-Del-Amo, M.-D.-C., Lorenzo-Romero, C. and Gómez-Borja, M.-A. (2012): Analysis of acceptance of social networking sites. African Journal of Business Management, 6 (29), pp. 8609-8619.

Backstrom, L., Bakshy, E., Kleinberg, J., Lento, T. and Rosenn, I. (2011): Center of attention: How facebook users allocate attention across friends. ICWSM 2011 Proceedings.

Barrera, M. (1986): Distinctions between social support concepts, measures, and models. American Journal of Community Psychology, 14 (4), pp. 413-445.

Baumeister, R.F. and Leary, M.R. (1995): The need to belong: Desire for interpersonal attachements as a fundamental human motivation. Psychological Bulletin, 117 (3), pp. 497-529.

Benevenuto, F., Rodrigues, T., Cha, M. and Almeida, V. (2009): Characterizing user behavior in online social networks. IMC 2009 Proceedings.

Berkman, L.F. and Syme, S.L. (1978): Social networks, host resistance, and mortality: A nine-year follow-up study of alameda county residents. American Journal of Epidemiology, 109 (2), pp. 186-204.

Bonds-Raacke, J. and Raacke, J. (2010): Myspace and facebook: Identifying dimensions of uses and gratifications for friend networking sites. Individual Differences Research, 8 (1), pp. 27-33.

Bulgurcu, B., Cavusoglu, H. and Benbasat, I. (2010): Understanding emergence and outcomes of information privacy concerns: A case of facebook. ICIS 2010 Proceedings. Paper 230.

Chesney, T. (2006): An acceptance model for useful and fun information systems. Human Technology, 2 (2), pp. 225-235.

Childers, T.L., Carr, C.L., Peck, J. and Carson, S. (2001): Hedonic and utilitarian motivations for online retail shopping behavior. Journal of Retailing, 77 (4), pp. 511-535.

Cobb, S. (1976): Social support as a moderator of life stress. Psychomatic Medicine, 38 (5), pp. 300-314.

Cohen, S. and Wills, T.A. (1985): Stress, social support, and the buffering hypothesis. Psychological Bulletin, 98 (2), pp. 310-357.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989): User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35 (8), pp. 982-1003.

Dowling, G.R. and Staelin, R. (1994): A model of perceived risk and intended risk-handling activity. Journal of Consumer Research, 21 (1), pp. 119-134.

Eaton, W.W. (1978): Life events, social supports, and psychiatric symptoms: A re-analysis of the new haven data. Journal of Health and Social Behavior, 19 (2), pp. 230-234.

Featherman, M. (2001): Extending the technology acceptance model by inclusion of perceived risk. AMCIS 2001 Proceedings. Paper 148.

Gangadharbatla, H. (2008): Facebook me: Collective self-esteem, need to belong, and internet self-efficacy as predictors of the igeneration's attitudes toward social networking sites. Journal of Interactive Advertising, 8 (2), pp. 5-15.

Hu, T., Poston, R.S. and Kettinger, W.J. (2011): Nonadopters of online social network services: Is it easy to have fun yet? Communications of the Association for Information Systems, 29 (1), pp. 441-458.

Jiang, J., Wilson, C., Wang, X., Huang, P., Sha, W., Dai, Y. and Zhao, B. (2010): Understanding latent interactions in online social networks. IMC 2010 Proceedings. pp. 369-382.

Katz, M.L. and Shapiro, C. (1985): Network externalities, competition, and compatibility. The American Economic Review, 75 (3), pp. 424-440.

Krasnova, H., Spiekermann, S., Koroleva, K. and Hildebrand, T. (2010b): Online social networks: Why we disclose. Journal of Information Technology, 25 (2), pp. 109-125.

Laveist, T.A., Sellers, R.M., Elliot Brown, K.A. and Nickerson, K.J. (1997): Extreme social isolation, use of community-based senior support services, and mortality among african american elderly women. American Journal of Community Psychology, 25 (5), pp. 721-732.

Raacke, J. and Bonds-Raacke, J. (2008): Myspace and facebook: Applying the uses and gratifications theory to exploring friend-networking sites. CyberPsychology & Behavior, 11 (2), pp. 169-174.

Ringle, C.M., Wende, S. and Will, A. (2005): SmartPLS 2.0 (beta). http://www.smartpls.de.

Rook, K.S. (1984): The negative side of social interactions: Impact on psychological well-being. Journal of Personality and Social Psychology, 46 (5), pp. 1097-1108.

Sandler, I.N. (1980): Social support resources, stress and maladjustment of poor children. American Journal of Community Psychology, 8 (1), pp. 41-52.

Son, J.-Y. and Kim, S.S. (2008): Internet users' information privacy-protective responses: A taxonomy and a nomological model. MIS Quarterly, 32 (3), pp. 503-529.

Subrahmanyam, K., Reich, S.M., Waechter, M. and Espinoza, G. (2008): Online and offline social networks: Use of social networking sites by emerging adults. Journal of Applied Developmental Psychology 29 (6), pp. 420-433.

Thambusamy, R., Church, M., Nemati, H. and Barrick, J. (2010): Socially exchanging privacy for pleasure: Hedonic use of computer-mediated social networks. ICIS 2010 Proceedings. Paper 253.

Van Der Heijden, H. (2004): User acceptance of hedonic information systems. MIS Quarterly, 28 (4), pp. 695-704.

Watson, G.B. and Johnson, D. (1972): Social psychology; issues and insights. 2nd ed., Philadelphia, PA: Lippincott.

Yüksel, A. and Yüksel, F. (2007): Shopping risk perceptions: Effects on tourists' emotions, satisfaction and expressed loyalty intentions. Tourism Management, 28 (3), pp. 703-713.

Bibliography

Acar, A. (2008): Antecedents and consequences of online social networking behavior: The case of facebook. Journal of Website Promotion, 3 (1/2), pp. 62-83.

Ajzen, I. and Fishbein, M. (1980): Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I. (1991): The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50 (2), pp. 179-211.

Alarcón-Del-Amo, M.-D.-C., Lorenzo-Romero, C. and Gómez-Borja, M.-A. (2012): Analysis of acceptance of social networking sites. African Journal of Business Management, 6 (29), pp. 8609-8619.

Alexa (2014): Top sites. http://www.alexa.com/topsites (Accessed 04-30-2014).

Backstrom, L., Bakshy, E., Kleinberg, J., Lento, T. and Rosenn, I. (2011): Center of attention: How facebook users allocate attention across friends. ICWSM 2011 Proceedings.

Bagozzi, R.P. and Yi, Y. (1988): On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 16 (1), pp. 74-94.

Baron, R. and Kenny, D. (1986): The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51 (6), pp. 1173-1182.

Barrera, M. (1986): Distinctions between social support concepts, measures, and models. American Journal of Community Psychology, 14 (4), pp. 413-445.

Baumeister, R.F. and Leary, M.R. (1995): The need to belong: Desire for interpersonal attachements as a fundamental human motivation. Psychological Bulletin, 117 (3), pp. 497-529.

Baumeister, R.F., Zhang, L. and Vohs, K. (2004): Gossip as cultural learning. Review of General Psychology, 8 (2), pp. 111-121.

Benevenuto, F., Rodrigues, T., Cha, M. and Almeida, V. (2009): Characterizing user behavior in online social networks. IMC 2009 Proceedings.

Berkman, L.F. and Syme, S.L. (1978): Social networks, host resistance, and mortality: A nine-year follow-up study of alameda county residents. American Journal of Epidemiology, 109 (2), pp. 186-204.

Bollen, K. and Lennox, R. (1991): Conventional wisdom on measurement: A structural equation perspective. Psychological Bulletin, 110 (2), pp. 305-314.

Bonds-Raacke, J. and Raacke, J. (2010): Myspace and facebook: Identifying dimensions of uses and gratifications for friend networking sites. Individual Differences Research, 8 (1), pp. 27-33.

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Boyd, D.M. and Ellison, N.B. (2007): Social network sites: Definition, history, and scholarship. Journal of Computer-Mediated Communication, 13 (1), pp. 210-230.

Brief, A.P. and Aldag, R.J. (1977): The intrinsic-extrinsic dichotomy: Toward conceptual clarity. Academy of Management Review, 2 (3), pp. 496-500.

Bulgurcu, B., Cavusoglu, H. and Benbasat, I. (2010): Understanding emergence and outcomes of information privacy concerns: A case of facebook. ICIS 2010 Proceedings. Paper 230.

Byrne, B.M. (2001): Structural equation modeling with amos: Basic concepts, applications, and programming. Mahwah, NJ: Lawrence Erlbaum Associates.

Cavusoglu, H., Phan, T. and Cavusoglu, H. (2013): Privacy controls and content sharing patterns of online social network users: A natural experiment. ICIS 2013 Proceedings.

Chakraborty, R., Vishik, C. and Rao, H.R. (2013): Privacy preserving actions of older adults on social media: Exploring the behavior of opting out of information sharing. Decision Support Systems, 55 (4), pp. 948-956.

Chang, S.-H., Chou, C.-H. and Yang, J.-M. (2010): The literature review of technology acceptance model: A study of the bibliometric distributions. PACIS 2010 Proceedings. Paper 158.

Chen, J., Ping, W., Xu, Y. and Tan, B.C.Y. (2009): Am i afraid of my peers? Understanding the antecedents of information privacy concerns in the online social context. ICIS 2009 Proceedings. Paper 174.

Chen, R. (2013): Member use of social networking sites - an empirical examination. Decision Support Systems, 54 (3), pp. 1219-1227.

Chesney, T. (2006): An acceptance model for useful and fun information systems. Human Technology, 2 (2), pp. 225-235.

Childers, T.L., Carr, C.L., Peck, J. and Carson, S. (2001): Hedonic and utilitarian motivations for online retail shopping behavior. Journal of Retailing, 77 (4), pp. 511-535.

Cobb, S. (1976): Social support as a moderator of life stress. Psychomatic Medicine, 38 (5), pp. 300-314.

Cohen, S. and Wills, T.A. (1985): Stress, social support, and the buffering hypothesis. Psychological Bulletin, 98 (2), pp. 310-357.

Costa, P. and Mccrae, R. (1992): Normal personality assessment in clinical practice: The neo personality inventory. Psychological Assessment, 4 (1), pp. 5-13.

Davis, F.D. (1989): Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13 (2), pp. 319-340.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989): User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35 (8), pp. 982-1003.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1992): Extrinsic and intrinsic motivation to use computers in the workplace. Journal of Applied Social Psychology, 22 (14), pp. 1111-1132.

Davis, F.D. and Venkatesh, V. (1996): A critical assessment of potential measurement biases in the technology acceptance model: Three experiments. International Journal of Human-Computer Studies, 45 (1), pp. 19-45.

Diamantopoulos, A. and Winklhofer, H.M. (2001): Index construction with formative indicators: An alternative to scale development. Journal of Marketing Research, 38 (2), pp. 269-277.

Dinev, T. and Hart, P. (2006): An extended privacy calculus model for e-commerce transactions. Information Systems Research, 17 (1), pp. 61-80.

Dowling, G.R. and Staelin, R. (1994): A model of perceived risk and intended risk-handling activity. Journal of Consumer Research, 21 (1), pp. 119-134.

Eaton, L. and Funder, D. (2003): The creation and consequences of the social world: An interactional analysis of extraversion. European Journal of Personality, 17 (5), pp. 375-395.

Eaton, W.W. (1978): Life events, social supports, and psychiatric symptoms: A re-analysis of the new haven data. Journal of Health and Social Behavior, 19 (2), pp. 230-234.

Ernst, C.-P.H., Pfeiffer, J. and Rothlauf, F. (2013a): Hedonic and utilitarian motivations of social network site adoption. Johannes Gutenberg University Mainz: Working Papers in Information Systems and Business Administration.

Ernst, C.-P.H., Pfeiffer, J. and Rothlauf, F. (2013b): The influence of perceived belonging on social network site adoption. AMCIS 2013 Proceedings.

Ernst, C.-P.H. (2014): Risk hurts fun: The influence of perceived privacy risk on social network site usage. AMCIS 2014 Proceedings.

Featherman, M. (2001): Extending the technology acceptance model by inclusion of perceived risk. AMCIS 2001 Proceedings. Paper 148.

Featherman, M.S. and Pavlou, P.A. (2003): Predicting e-services adoption: A perceived risk facets perspective. International Journal of Human-Computer Studies, 59 (4), pp. 451-474.

Fishbein, M. and Ajzen, I. (1975): Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley.

Floyd, D., Prentice-Dunn, S. and Rogers, R. (2000): A meta-analysis of research on protection motivation theory. Journal of Applied Social Psychology, 30 (2), pp. 407-429.

Fornell, C. and Larcker, D.F. (1981): Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18 (1), pp. 39-50.

Foster, E. (2004): Research on gossip: Taxonomy, methods, and future directions. Review of General Psychology, 8 (2), pp. 78-99.

Gangadharbatla, H. (2008): Facebook me: Collective self-esteem, need to belong, and internet self-efficacy as predictors of the igeneration's attitudes toward social networking sites. Journal of Interactive Advertising, 8 (2), pp. 5-15.

Gerlitz, J.-Y. and Schupp, J. (2005): Zur Erhebung der Big-Five-basierten Persönlichkeitsmerkmale im SOEP: Dokumentation der Instrumententwicklung BFI-S auf Basis des SOEP-Pretests 2005. DIW, Berlin, Germany: Research Notes 2005 (4).

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2009): Multivariate data analysis. 7th ed., Upper Saddle River, NJ: Prentice Hall.

Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011): Pls-sem: Indeed a silver bullet. Journal of Marketing Theory and Practice, 19 (2), pp. 139-151.

Hartung, F.-M. and Renner, B. (2011): Social curiosity and interpersonal perception: A judge × trait interaction. Personality and Social Psychology Bulletin, 37 (6), pp. 796-814.

Hartung, F.-M. and Renner, B. (2013): Social curiosity and gossip: Related but different drives of social functioning. PLoS ONE, 8 (7), pp. 1-9.

Hofstede, G. (1983): The cultural relativity of organizational practices and theories. Journal of International Business Studies, 14 (2), pp. 75-89.

Hollenbaugh, E. and Ferris, A. (2014): Facebook self-disclosure: Examining the role of traits, social cohesion, and motives. Computers in Human Behavior, 30, pp. 50-58.

Hu, L.-T. and Bentler, P.M. (1999): Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling, 6 (1), pp. 1-55.

Hu, T., Poston, R.S. and Kettinger, W.J. (2011): Nonadopters of online social network services: Is it easy to have fun yet? Communications of the Association for Information Systems, 29 (1), pp. 441-458.

Jarvenpaa, S.L., Tractinsky, N. and Vitale, M. (2000): Consumer trust in an internet store. Information Technology and Management, 1 (1/2), pp. 45-71.

Jiang, J., Wilson, C., Wang, X., Huang, P., Sha, W., Dai, Y. and Zhao, B. (2010): Understanding latent interactions in online social networks. IMC 2010 Proceedings. pp. 369-382.

John, O.P., Donahue, E.M. and Kentle, R.L. (1991): The big five inventory - versions 4a and 54. Institute of Personality and Social Research, University of California, Berkeley, CA.

John, O.P. and Srivastava, S. (1999): The big five trait taxonomy: History, measurement, and theoretical perspectives. In: Pervin, L. A. & John, O. P. (eds.) Handbook of personality: Theory and research. 2nd ed., New York, NY: Guilford Press, pp. 102-138.

Jöreskog, K. and Sörbom, D. (1989): Lisrel 7: User's reference guide. Mooresville, IN: Scientific Software International.

Kanai, R., Bahrami, B., Roylance, R. and Rees, G. (2012): Online social network size is reflected in human brain structure. Proceedings of the Royal Society B: Biological Sciences, 279 (1732), pp. 1327-1334.

Karahanna, E., Straub, D.W. and Chervany, N.L. (1999): Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs. MIS Quarterly, 23 (2), pp. 183-213.

Katz, M.L. and Shapiro, C. (1985): Network externalities, competition, and compatibility. The American Economic Review, 75 (3), pp. 424-440.

Killworth, P., Johnsen, E., Bernard, H., Shelley, G. and Mccarty, C. (1990): Estimating the size of personal networks. Social Networks, 12 (4), pp. 289-312.

Kim, D.J., Ferrin, D.L. and Rao, H.R. (2008): A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. Decision Support Systems, 44 (2), pp. 544-564.

King, L. and Broyles, S. (1997): Wishes, gender, personality, and well-being. Journal of Personality, 65 (1), pp. 49-76.

Krasnova, H., Kolesnikova, E. and Guenther, O. (2009): ”it won’t happen to me!”: Self-disclosure in online social networks. AMCIS 2009 Proceedings. Paper 343.

Krasnova, H., Kolesnikova, E. and Guenther, O. (2010a): Leveraging trust and privacy concerns in online social networks: An empirical study. ECIS 2010 Proceedings. Paper 160.

Krasnova, H., Spiekermann, S., Koroleva, K. and Hildebrand, T. (2010b): Online social networks: Why we disclose. Journal of Information Technology, 25 (2), pp. 109-125.

Krikelas, J. (1983): Information-seeking behavior: Patterns and concepts. Drexel Library Quarterly, 19 (2), pp. 5-20.

Lankton, N. and Tripp, J. (2013): A quantitative and qualitative study of facebook privacy using the antecedent-privacy concern-outcome macro model. AMCIS 2013 Proceedings.

Laveist, T.A., Sellers, R.M., Elliot Brown, K.A. and Nickerson, K.J. (1997): Extreme social isolation, use of community-based senior support services, and mortality among african american elderly women. American Journal of Community Psychology, 25 (5), pp. 721-732.

Leary, M.R., Kelly, K.M., Cottrell, C.A. and Schreindorfer, L.S. (2007): Individual differences in the need to belong: Mapping the nomological network. Duke University: Unpublished manuscript.

Litt, E. (2013): Understanding social network site users’ privacy tool use. Computers in Human Behavior, 29 (4), pp. 1649-1656.

Lo, J. (2010): Privacy concern, locus of control, and salience in a trust-risk model of information disclosure on social networking sites. AMCIS 2010 Proceedings. Paper 110.

Maddux, J. and Rogers, R. (1983): Protection motivation and self-efficacy: A revised theory of fear appeals and attitude change. Journal of Experimental Social Psychology, 19 (5), pp. 469-479.

Malhotra, N.K., Kim, S.S. and Agarwal, J. (2004): Internet users' information privacy concerns (iuipc): The construct, the scale, and a causal model. Information Systems Research, 15 (4), pp. 336-355.

Maslow, A.H. (1943): A theory of human motivation. Psychological Review, 50 (4), pp. 370-396.

Mehl, M., Gosling, S. and Pennebaker, J. (2006): Personality in its natural habitat: Manifestations and implicit folk theories of personality in daily life. Journal of Personality and Social Psychology, 90 (5), pp. 862-877.

Moon, J.-W. and Kim, Y.-G. (2001): Extending the tam for a world-wide-web context. Information & Management, 38 (4), pp. 217-230.

Naylor, F.D. (1981): A state-trait curiosity inventory. Australian Psychologist, 16 (2), pp. 172-183.

Nunnally, J. (1978): Psychometric theory. 2nd ed., New York, NY: McGraw-Hill.

Olson, K. and Weber, D. (2004): Relations between big five traits and fundamental motives. Psychological Reports, 95 (3), pp. 795-802.

Ong, E., Ang, R., Ho, J., Lim, J., Goh, D., Lee, C. and Chua, A. (2011): Narcissism, extraversion and adolescents' self-presentation on facebook. Personality and Individual Differences, 50 (2), pp. 180-185.

Pai, P. and Arnott, D. (2013): User adoption of social networking sites: Eliciting uses and gratifications through a means–end approach. Computers in Human Behavior, 29 (3), pp. 1039-1053.

Pavlou, P.A. (2001): Integrating trust in electronic commerce with the technology acceptance model: Model development and validation. AMCIS 2001 Proceedings. Paper 159.

Pavlou, P.A. (2003): Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. International Journal of Electronic Commerce, 7 (3), pp. 69-103.

Peter, J.P. and Ryan, M.J. (1976): An investigation of perceived risk at the brand level. Journal of Marketing Research, 13 (2), pp. 184-188.

Pollet, T., Roberts, S. and Dunbar, R. (2011): Use of social network sites and instant messaging does not lead to increased offline social network size, or to emotionally closer relationships with offline network members. Cyberpsychology, Behavior, and Social Networking, 14 (4), pp. 253-258.

Raacke, J. and Bonds-Raacke, J. (2008): Myspace and facebook: Applying the uses and gratifications theory to exploring friend-networking sites. CyberPsychology & Behavior, 11 (2), pp. 169-174.

Renner, B. (2006): Curiosity about people: The development of a social curiosity measure in adults. Journal of Personality Assessment, 83 (3), pp. 305-316.

Ringle, C.M., Wende, S. and Will, A. (2005): SmartPLS 2.0 (beta). http://www.smartpls.de.

Rogers, R. (1975): A protection motivation theory of fear appeals and attitude change. The Journal of Psychology: Interdisciplinary and Applied, 91 (1), pp. 93-114.

Rogers, R. (1983): Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In: Cacioppo, J. & Petty, R. (eds.) Social psychophysiology: A sourcebook. New York, NY: Guilford Press, pp. 153-176.

Romero, E., Villar, P., Luengo, M. and Gómez-Fraguela, J. (2009): Traits, personal strivings and well-being. Journal of Research in Personality, 43 (4), pp. 535-546.

Rook, K.S. (1984): The negative side of social interactions: Impact on psychological well-being. Journal of Personality and Social Psychology, 46 (5), pp. 1097-1108.

Ross, C., Orr, E.S., Sisic, M., Arseneault, J.M., Simmering, M.G. and Orr, R.R. (2009): Personality and motivations associated with facebook use. Computers in Human Behavior, 25 (2), pp. 578-586.

Sandler, I.N. (1980): Social support resources, stress and maladjustment of poor children. American Journal of Community Psychology, 8 (1), pp. 41-52.

Sheldon, K.M., Abad, N. and Hinsch, C. (2011): A two-process view of facebook use and relatedness need-satisfaction: Disconnection drives use, and connection rewards it. Journal of Personality and Social Psychology, 100 (4), pp. 766-775.

Sitkin, S.B. and Pablo, A.L. (1992): Reconceptualizing the determinants of risk behavior. The Academy of Management Review, 17 (1), pp. 9-38.

Skues, J., Williams, B. and Wise, L. (2012): The effects of personality traits, self-esteem, loneliness, and narcissism on facebook use among university students. Computers in Human Behavior, 28 (6), pp. 2414-2419.

Sledgianowski, D. and Kulviwat, S. (2008): Social network sites: Antecedents of user adoption and usage. AMCIS 2008 Proceedings. Paper 83.

Son, J.-Y. and Kim, S.S. (2008): Internet users' information privacy-protective responses: A taxonomy and a nomological model. MIS Quarterly, 32 (3), pp. 503-529.

Straub, D., Limayem, M. and Karahanna-Evaristo, E. (1995): Measuring system usage: Implications for is theory testing. Management Science, 41 (8), pp. 1328-1342.

Stutzman, F. and Kramer-Duffield, J. (2010): Friends only: Examining a privacy-enhancing behavior in facebook. CHI 2010 Proceedings.

Subrahmanyam, K., Reich, S.M., Waechter, M. and Espinoza, G. (2008): Online and offline social networks: Use of social networking sites by emerging adults. Journal of Applied Developmental Psychology 29 (6), pp. 420-433.

Sun, H. and Zhang, P. (2006): Causal relationships between perceived enjoyment and perceived ease of use: An alternative approach. Journal of the Association for Information Systems, 7 (9), pp. 618-645.

Tan, S.J. (1999): Strategies for reducing consumers' risk aversion in internet shopping. Journal of Consumer Marketing, 16 (2), pp. 163-180.

Thambusamy, R., Church, M., Nemati, H. and Barrick, J. (2010): Socially exchanging privacy for pleasure: Hedonic use of computer-mediated social networks. ICIS 2010 Proceedings. Paper 253.

Tong, S., Van Der Heide, B., Langwell, L. and Walther, J. (2008): Too much of a good thing? The relationship between number of friends and interpersonal impressions on facebook. Journal of Computer-Mediated Communication, 13 (3), pp. 531-549.

Van Der Heijden, H. (2004): User acceptance of hedonic information systems. MIS Quarterly, 28 (4), pp. 695-704.

Venkatesh, V. (2000): Determinants of perceived ease of use: Integrating perceived behavioral control, computer anxiety and enjoyment into the technology acceptance model. Information Systems Research, 11 (4), pp. 342-365.

Venkatesh, V. and Davis, F.D. (2000): A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management Science, 46 (2), pp. 186-204.

Venkatesh, V., Speier, C. and Morris, M.G. (2002): User acceptance enablers in individual decision making about technology: Toward an integrated model. Decision Sciences, 33 (2), pp. 297-316.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003): User acceptance of information technology: Toward a unified view. MIS Quarterly, 27 (3), pp. 425-478.

Venkatesh, V. and Bala, H. (2008): Technology acceptance model 3 and a research agenda on interventions. Decision Sciences, 39 (2), pp. 273-315.

Venkatesh, V., Thong, J.Y.L. and Xu, X. (2012): Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 36 (1), pp. 157-178.

Von Stetten, A., Wild, U. and Chrennikow, W. (2011): Adopting social network sites – the role of individual it culture and privacy concerns. AMCIS 2011 Proceedings. Paper 290.

Wang, S. and Stefanone, M. (2013): Showing off? Human mobility and the interplay of traits, self-disclosure, and facebook check-ins. Social Science Computer Review, 31 (4), pp. 437-457.

Watson, G.B. and Johnson, D. (1972): Social psychology; issues and insights. 2nd ed., Philadelphia, PA: Lippincott.

Watzlawick, P., Beavin, J.H. and Jackson, D.D. (1967): Pragmatics of human communication. A study of interactional patterns, pathologies, and paradoxes. New York, NY, London, UK: W. W. Norton & Company.

Westin, A.F. (1968): Privacy and freedom. New York, NY: Atheneum.

Wu, Y.A., Ryan, S. and Windsor, J. (2009): Influence of social context and affect on individuals' implementation of information security safeguards. ICIS 2009 Proceedings. Paper 70.

Young, A. and Quan-Haase, A. (2009): Information revelation and internet privacy concerns on social network sites: A case study of facebook. C&T 2009 Proceedings.

Yousafzai, S.Y., Foxall, G.R. and Pallister, J.G. (2007): Technology acceptance: A meta-analysis of the tam: Part 2. Journal of Modelling in Management, 2 (3), pp. 281-304.

Yüksel, A. and Yüksel, F. (2007): Shopping risk perceptions: Effects on tourists' emotions, satisfaction and expressed loyalty intentions. Tourism Management, 28 (3), pp. 703-713.