

Self-disclosure and Privacy Calculus on Social Networking Sites: The Role of Culture

Intercultural Dynamics of Privacy Calculus

Social Networking Sites (SNSs) have become extremely popular around the world. They rely on user-generated content to offer engaging experience to its members. Cultural differences may influence the motivation of users to create and share content on SNS. This study adopts the privacy calculus perspective to examine the role of culture in individual self-disclosure decisions. The authors use structural equation modeling and multi-group analysis to investigate this dynamics. The findings reveal the importance of cultural dimensions of individualism and uncertainty avoidance in the cognitive processes of SNS users.

DOI 10.1007/s12599-012-0216-6

The Authors

Dr. Hanna Krasnova (✉)
Institute of Information Systems
Humboldt-Universität zu Berlin
Spandauer Straße 1
10178 Berlin
Germany
krasnovh@wiwi.hu-berlin.de

Natasha F. Veltri
Information and Technology
Management
The University of Tampa
401 W. Kennedy Blvd.
Tampa, FL 33606
USA
nveltri@ut.edu

Prof. Oliver Günther
Universität Potsdam
Am Neuen Palais 10, Haus 09
14469 Potsdam
Germany
oguenthe@uni-potsdam.de

Received: 2011-07-01
Accepted: 2012-02-15
Accepted after two revisions by
Prof. Leidner.
Published online: 2012-04-26

This article is also available in German in print and via <http://www.wirtschaftsinformatik.de>: Krasnova H, Veltri NF, Günther O (2012) Die Rolle der Kultur in der Selbstoffenbarung und Privatsphäre in sozialen Onlinenetzen. *Interkulturelle Dynamik des Privatsphäre kalküls. WIRTSCHAFTSINFORMATIK.* doi: 10.1007/s11576-012-0323-5.

Electronic Supplementary Material

The online version of this article (doi: 10.1007/s12599-012-0216-6) contains supplementary material, which is available to authorized users.

© Gabler Verlag 2012

1 Introduction

Millions of people worldwide have made Social Networking Sites (SNSs), such as Facebook (FB), VKontakte and Google+, a part of their daily routines. The reasons for this enormous popularity lie in the unprecedented convenience these platforms provide for keeping in touch, developing relationships and creating social capital – an important contribution to the modern society and a source of SNSs public value (Koroleva et al. 2011a). Businesses, public personas and government agencies have embraced SNSs for information dissemination and promotion by

encouraging users to share online content with their SNS contacts, thus generating an electronic word-of-mouth.

As SNSs rely on user-generated content, stimulating active user engagement is critical to sustaining the popularity and value of these platforms. Indeed, the SNS becomes outdated without ongoing content creation and sharing, leading to decreased user interest and immersion and, as a consequence, lost user loyalty. Beyond ensuring involvement, ongoing user information sharing is also critical for the financial viability of SNS providers. In contrast to traditional brick-and-mortar businesses, anecdotal evidence suggests that a commercial valuation of SNSs is based on the active user participation rather than actual financial performance figures: While advertisers display strong enthusiasm for exploiting user data, their interest is contingent on the user-generated content (Bonneau and Preibusch 2009, p. 29). As a result, SNS providers find themselves under constant pressure to encourage user self-disclosure, or see their market value dissipate quickly.

The fulfillment of this task is, however, complicated by the growing cultural diversity of SNS users. For instance, FB offers its site in over 70 languages and over 80 % of its monthly active users come from outside of the USA (Facebook 2012). Since national culture affects people's motivational patterns (Hofstede 2001, p. 180), user behavior on SNSs is likely to vary from country to

country as well. For example, Italian FB users have been reported to enjoy games and applications on the platform, while US users focus on status updates (Vasalou et al. 2010, p. 727). Similarly, considerable differences have been recorded in the patterns of self-expression, pursued goals and interaction behaviors of American, French, Chinese, and South Korean SNS users (Chapman and Lahav 2008, p. 3126). Given this diversity in usage and motivations, SNS providers need to identify, understand and bridge cultural differences as they adopt strategies to encourage user self-disclosure.

Considering significant benefits that individuals, society and organizations could reap from SNSs use and the crucial role of the user self-disclosure in sustainability of SNSs, this study builds on existing theories to derive a research model of SNS self-disclosure. Two cultural dimensions – individualism and uncertainty avoidance – are introduced as moderators into the model to examine their role in user self-disclosure decisions. The model is then empirically tested using the survey data from US and German respondents. By identifying cross-cultural differences in the motivation behind self-disclosure on SNS, our study provides important insights for SNS providers as they strive to encourage users to share information about themselves.

2 Towards a Research Model

2.1 Theoretical Background

Reflecting the scale of information a user reveals about *the self* on the platform (Wheless and Grotz 1976, p. 47), self-disclosure on SNSs takes place when a user shares her personal details, news, moods, opinions, ideas and beliefs directly on the profile page as well as in the process of public communications with others. Summarized on a user's personal SNS page, these pieces of content can be used to make conclusions about a user's personality, habits and performance (Kluemper and Rosen 2009, p. 574). Overall, individual *self-disclosure* is essential for supporting user involvement as well as advertisers' interest on SNSs. To promote this behavior, SNS platforms offer users an array of functional possibilities to share personal information across their social network and beyond. For example, in addition to such

basic data as a place of residence, gender, language and birthday, FB users are prompted to enter their religious and political views, favorite quotations, and preferences for movies, books and music. Gross and Acquisti (2005, p. 5) report that 87.8 % of FB users in their dataset reveal their birth date, 50.8 % share their current residence, and a majority disclose their relationship status, political views and other interests. Beyond these pre-specified fields, SNS users can also share their news, moods and beliefs via status-updates, comments or by uploading pictures. Considering its role in supporting the sustainability of SNS platforms, self-disclosure emerges as the key dependent variable in our research model. Identifying the major determinants of self-disclosure and interpreting their impact in light of cultural differences is a major goal of this section.

A variety of approaches have been used to explain an individual's willingness to share information online. In some studies, self-disclosure was investigated through the prism of user demographic characteristics (e.g., Fogel and Nehmad 2009, p. 159). Particularly the role of gender was emphasized for the SNS context, with most studies finding female users to disclose more than their male counterparts (e.g., Tufekci 2008, p. 27). Another stream of research has concentrated on modeling self-disclosure decisions as a function of individual beliefs. For example, Chiu et al. (2006, p. 1874) apply the Social Cognitive Theory and the Social Capital Theory to explore the determinants of knowledge sharing in a virtual community. Hsu and Lin (2008, p. 65) adopt the Theory of Reasoned Action to explain individual desire to share information in a blogging context. Despite the value of these approaches, the distinct nature of SNSs demands a more targeted theoretical framework. More often than not SNS users reveal their true identity and share personal details about themselves (Gross and Acquisti 2005, p. 6). Further, the longevity of information shared on a SNS and endless possibilities for its aggregation and decontextualization turn the sharing of even the most innocent details into a risky activity. Just recently, a medical insurance company stopped sick-leave payments for their depressed client based on the FB photos depicting her as "happy" (Beretsky 2009). As SNS users become aware of these threats, privacy concerns – a factor frequently

omitted from studies in other contexts – are likely to play an important role in self-disclosure decisions (Bulgurcu et al. 2010, p. 6).

Recognizing the importance of privacy considerations, Dinev and Hart (2006, p. 63) advocate the use of a privacy calculus (PC) perspective whenever platform participation involves some degree of privacy risk. Rooted in the Social Exchange Theory, the PC theory posits that online self-disclosure is a product of *three* countervailing influences. On the negative side, *privacy concerns*, reflecting "concerns about possible loss of privacy as a result of information disclosure" (Xu et al. 2008, p. 4), prevent users from disclosing information online. On the positive side, *anticipation of benefits*, such as enjoyment and social acceptance, motivates users to disclose information (e.g., Sledgianowski and Kulviwat 2008, p. 85). In addition, *trusting beliefs*, reflecting "the trustor perception that the trustee possesses characteristics that would benefit the trustor", were shown to facilitate information sharing online (McKnight et al. 2002, p. 303). By weighing those beliefs against each other, users are expected to consciously manage their self-disclosure behavior. Previous research provides rich evidence for the applicability of this theory to the SNS context. For example, based on interview data, Koroleva et al. (2011b, p. 4) show that while entertainment, self-presentation and social adjustment motivate teenage users to reveal information, privacy awareness and perceived information accessibility force them to curb their disclosures. Krasnova et al. (2010a, p. 121) empirically demonstrate the role of trusting beliefs, perceptions of privacy risks and an array of benefits in defining self-disclosure decisions on SNSs. Overall, by pinpointing the most critical determinants of self-disclosure online, the PC perspective provides a well-fitting framework to study privacy-sensitive behavior of SNS users.

Hence, we integrate *privacy concerns*, *anticipated benefits* and *trusting beliefs* as key predictors of self-disclosure into our model to explore the impact of these beliefs in a cross-cultural setting. Considering the salience of gender differences identified in the past research, we additionally account for this factor in our investigation.

2.2 The Role of Culture

While the PC perspective provides the rationale for the inclusion of *perceived benefits*, *privacy concerns* and *trusting beliefs* as direct predictors of self-disclosure decisions in the SNS context, culture is likely to moderate the influence of these factors. Rooted in values, beliefs and traditions, national culture defines the way users interpret their experiences as well as respond to them (Hofstede 2001). It is therefore natural to expect that cultural norms will influence such daily activities as social networking online (Lim et al. 2004, p. 547). For example, Veltri et al. (2011, pp. 4–9) report differences in privacy perceptions and disclosure patterns of US and Moroccan FB users. Similarly, Zhao and Jiang (2011, p. 3) show that the visual self-presentation of an online persona is contingent on the national culture with Chinese SNS users exhibiting higher proneness to customize their profile images than US users.

While a multitude of studies address the cultural differences, a framework by Hofstede (2001) has received the widest acceptance. Hofstede (2001, pp. 500–502) describes culture in terms of five major dimensions: power distance (PDI), individualism (IDV), masculinity (MAS), uncertainty avoidance (UAI) and long-term orientation (LTO). The combination of these five dimensions is expected to explain the differences in perceptions and practices across countries. However, when it comes to such risky behaviors, as, for example, online shopping, previous studies particularly stress the role of IDV and UAI (e.g., Lim et al. 2004, pp. 546–547; Sia et al. 2009, p. 494).

Recognizing the universal need of all cultures to define the individual vs. group relationship, Greenfield (2000, p. 229) refers to IDV as the “deep structure” behind the cultural differences. In her view, application of the individualism-collectivism dimension offers the “skeleton framework” for further theories of cultural differentiation. In the e-commerce setting, IDV was shown to play the central role in the formation of trusting beliefs about the website provider (Sia et al. 2009, p. 494; Lim et al. 2004, p. 552). Additionally, Triandis (2001, p. 909) argues that people with an IDV background prioritize their goals and act consistently to achieve them. As a result, IDV is likely to intensify the determination of SNS users to share information in order to obtain the anticipated

benefits. By applying these findings to the SNS context, we believe IDV plays the key role in determining the strength of the impact of two components of PC: *anticipated benefits* and *trusting beliefs*.

At the same time, we expect UAI – reflecting the extent to which members of a society feel threatened by uncertain conditions – to moderate the impact of *privacy concerns* in the SNS setting. Indeed, the role of privacy concerns in the individual decision to reveal information goes hand in hand with the attitudes towards uncertainty. Specifically, individuals from cultures with a high UAI have been found to be more risk averse, anxious and pessimistic about the outcomes of their actions, as well as perceive the world as more hostile (Hofstede 2001, p. 169). Additionally, Leidner and Kayworth (2006, p. 366) find UAI to be the most frequently used dimension in the studies examining the influence of culture on IT adoption and diffusion, thus indicating that UAI plays a critical role in user behavior around technology.

Building on these insights, in the following sections we discuss the potential impact of IDV and UAI dimensions on the specific relationships in our model.

2.3 Research Hypotheses

2.3.1 Expected Benefits: Enjoyment

Users can reap significant benefits from disclosing their information on SNSs. For example, improved connectedness (Hogben 2007, p. 6), self-enhancement (Boyd 2007, p. 11), emotional support and networking value (Koroleva et al. 2011a, p. 5) have been identified as positive outcomes of active participation on SNSs. While all these incentives are important, research evidence underlines the role of *enjoyment* in the individual self-disclosure decisions on SNSs. Indeed, Rosen and Sherman (2006, p. 1221) argue that participation on SNSs is hedonic in nature, with users seeking entertainment from online social interactions. Looking at a broader spectrum of Internet applications, Moon and Kim (2001, pp. 224–227) show that perceived playfulness exerts a stronger impact on system attitudes than perceived usefulness. This is in line with Van der Heijden (2004, p. 701) who empirically demonstrates that while perceived usefulness does play a role in the adoption of hedonically-oriented information systems, enjoyment exerts a stronger influ-

ence. Similarly, Sledgianowski and Kulviwat (2008, p. 8) identify playfulness – an enjoyment-related factor – as the strongest predictor of SNS intentional and actual use. Taken together, while an array of motives can be important, the benefit of *enjoyment* – reflecting the extent to which the activity is perceived to be pleasant and entertaining – emerges as a crucial factor behind information sharing on SNSs (Davis et al. 1992, p. 1113). We therefore integrate it as a positive antecedent of information disclosure into our model.

Overall, state-of-the-art research underlines the importance of hedonic motives for individualistic cultures (e.g., Hofstede 2001, p. 226). Indeed, with pleasure being one of the major life goals for individuals of this cultural background, enjoyment-seeking behavior is common for *individualistic* cultures. For example, exploring the sources of happiness for students with various cultural backgrounds, Chiasson et al. (1996, p. 673) found that North American respondents were more likely to mention hedonistic aspects as key means of achieving happiness. As individualists are also more likely to align their behavior with their own needs and priorities (Hofstede 2001, p. 226), users with an individualistic background may purposefully share information in the anticipation of subsequent pleasurable interaction (Hsu and Lin 2008, p. 67) or to derive enjoyment from impression management in public (Boyd 2007, p. 11). Considering these influences, we hypothesize that:

Hypothesis H1: The positive impact of Enjoyment on Self-disclosure is stronger in individualistic cultures than in collectivistic cultures.

2.3.2 Privacy Concerns

As SNSs are public platforms by design, information sharing on these platforms has significant privacy risks. Indeed, SNS providers as well as third parties such as advertising, human resources or state security agencies can engage in the collection and use of member information for commercial gain (Hogben 2007, p. 8). As cases of privacy abuse proliferate (Rizk et al. 2009, p. 5), SNS users become increasingly concerned about the safety of their information (Bulgurcu et al. 2010, p. 6). Fuelled by negative media coverage and frustrated about their inability to manage their identity and con-

text, users may start to restrict their self-disclosure on the platform – a scenario dreaded by every SNS provider (Bonneau and Preibusch 2009, p. 29). It is not clear, however, whether such behavior is likely in every country. On the one hand, using the data from a mainly German sample, Krasnova et al. (2010a, p. 121) show a significant negative link between privacy concerns and self-disclosure. At the same time, Acquisti and Gross (2006, p. 11) find no link in their study of American users. These inconsistencies indicate that the strength of the relationship between *privacy concerns* and *self-disclosure* still needs to be examined in an intercultural setting. We therefore integrate *privacy concerns* as a negative antecedent of self-disclosure into our model.

As mentioned above, the level of UAI present in the culture is likely to be the dominant factor in determining individual proneness to account for privacy concerns when self-disclosing online. Indeed, as people from countries with a high UAI feel more threatened by ambiguous situations and uncertainty, they are likely to be more apprehensive about the consequences of their actions (Hofstede 2001, pp. 160–161, p. 169). Supporting this proposition, Cao and Everard (2008, p. 47) report a strong positive link between UAI and privacy concerns for the users of instant messaging. Considering that the long-term consequences of sharing information on SNSs are unknown, risk-averse users may be less likely to self-disclose to minimize their uncertainty and avoid undesirable repercussions. Indeed, Park (1993, pp. 342–348) finds a positive link between UAI and insurance penetration on a country-level, hinting that risk-averse individuals prefer risk-reducing behavior. In contrast, individual autonomy and internal locus of control characteristic of cultures with a low UAI is conducive to risk-taking (Hofstede 2001, p. 161). Therefore, we hypothesize that:

Hypothesis H2: The negative impact of Privacy Concerns on Self-disclosure is stronger in uncertainty avoiding cultures than in uncertainty tolerant cultures.

2.3.3 Trusting Beliefs

Trust is a central construct whenever a relationship involves some degree of risk (McKnight et al. 2002, p. 300). Whereas trust may not necessarily eliminate risk

beliefs, Dinev and Hart (2006, p. 66) argue that it can overrule their negative impact. According to the threshold model, once the level of trust exceeds the level of perceived risk, the trustor will engage in a risky behavior (Gefen et al. 2003, p. 6).

Based on the focus groups with SNS users of mixed cultural background, Krasnova et al. (2010a, p. 114) find that the SNS provider and other SNS members are often pointed out as two major sources of privacy risks. As SNS providers have unlimited access to all user information, users fear they continuously aggregate, process and sell it to third parties. At the same time, other SNS members may engage in such privacy-adverse behaviors as stalking, bullying or secret sharing. Acknowledging these risks, the authors argue that both Trust in the SNS Provider and Trust in SNS members should be facilitated for the self-disclosure to take place. This, however, is a challenging task considering the great cultural and social diversity of parties involved. Moreover, even as trusting beliefs develop, users from different countries may weigh them differently in their self-disclosure decisions. To explore this dynamics, two constructs – *Trust in the SNS Provider* and *Trust in SNS Members* – are integrated into our model as positive predictors of self-disclosure.

Role of Trust in the SNS Provider Doney et al. (1998, p. 604, 609) argue that differences in the collectivism vs. individualism dimension may trigger distinct mechanisms in the trust-formation process. Whereas individualists primarily develop their trusting beliefs by *calculating* the costs and benefits of the defection behavior of the trustee, collectivists concentrate on the *predictability* of future actions of the trustee, look for cues signaling the *benevolence* of the SNS provider and *easily transfer* trust within their group.

Given the nature of the relationship between a provider and a user on a typical SNS, members with a collectivistic background may find it particularly hard to form trusting beliefs. Indeed, the *transference* process and the development of the *benevolence* perceptions are complicated by the negative image of SNS providers in most countries (Rizk et al. 2009, p. 5). For example, among over 240 private sector companies examined by the ForeSee (2011), Facebook's customer satisfaction score is one of the lowest – an inevitable consequence of its alleged privacy-related faux pas. Moreover,

considering significant social distance between parties, building sound *predictions* about the future behavior of an SNS provider is equally challenging.

In contrast, users with an individualistic background may readily apply a calculative-based cognitive framework and assume that an SNS provider has more to lose than to gain by violating their privacy. For example, a recent overhaul of privacy settings on FB was costly for the provider as international privacy authorities initiated a sweeping wave of legal investigations (Phillips 2010). Since it is easier for users with an individualistic background to develop trust in an SNS environment, they also are expected to be quicker in integrating these beliefs into their behavior. For example, Dinev et al. (2006, p. 396) find that trust constitutes a much stronger predictor of the e-commerce use in the strongly individualistic USA as opposed to a less individualistic Italy. Therefore, we hypothesize that:

Hypothesis H3: The positive impact of Trust in the SNS Provider on Self-disclosure is stronger in individualistic cultures than in collectivistic cultures.

Role of Trust in SNS Members In the context of our study, Trust in SNS Members reflects individual beliefs about the trustworthiness of others with regard to the personal information a person provides (McKnight et al. 2002, p. 303). When developing interpersonal trust, people from collectivistic cultures are expected to strongly differentiate between in- and out-group members. While collectivists enjoy communing with members of their “trusted” in-group, they treat the representatives of the out-group with suspicion and caution (Hofstede 2001, pp. 211–225). From the collectivists' perspective, the multi-million membership of Facebook should, by definition, be perceived as an out-group. Moreover, as users readily send and accept friend requests from distant acquaintances, colleagues, teachers, and even strangers (Krasnova et al. 2010b, p. 5), their friend lists also increasingly exhibit “out-group” qualities. Providing evidence for this argument, Veltri et al. (2011, p. 8) show that collectivistic Moroccan users report a high level of distrust towards other FB members. Suspicious of those from the “out-group”, users with a collectivistic background should be less likely to develop trusting attitudes and integrate those beliefs into their behavior.

Individualists, on the other hand, are less likely to see a difference between in-group and out-group members (Triandis 2001, p. 914). As they form trust on the basis of calculative thinking (Doney et al. 1998, p. 610), they may appreciate a wide range of retaliation measures currently available on the network. Specifically, FB members are now able to block, delete and even report a misbehaving user in just a few clicks. For individualistic users this functionality provides a sound foundation for the development of trusting beliefs and serves as a basis for the subsequent integration of these beliefs into the decision-making process. Therefore, we hypothesize that:

Hypothesis H4: The positive impact of Trust in SNS Members on Self-disclosure is stronger in individualistic cultures than in collectivistic cultures.

Beyond individual beliefs, self-disclosure on SNSs is likely to be a function of user personal characteristics. Emphasizing the role of gender, in particular, existing research indicates that women are more prone to disclose information about themselves and communicate with others on the SNS. For example, female college students were found to be more likely to post on their friends' Wall (Fogel and Nehmad 2009, p. 159) as well as reveal their favorite music, books and even religious attitudes (Tufekci 2008, p. 27). These differences can be attributed to the distinct roles and innate motivational patterns inherent in both groups. While the fulfillment of task-oriented activities has traditionally been regarded as the male domain, women concentrate more on the relational and group processes which imply communication and sharing (Jackson et al. 2001, p. 368). Therefore, we hypothesize that:

Hypothesis H5: Female SNS users self-disclose more than male users.

Figure 1 summarizes the relationships in our model.

3 Empirical Study

3.1 Country Choice

To test our hypotheses, FB users from Germany and USA were invited to participate in our study. The choice of these

countries was motivated by two major reasons.

First and foremost, while German and US cultures exhibit strong similarities across PDI, LTO and MAS dimensions, they differ significantly on the IDV and UAI – two cultural dimensions central to our study (Hofstede 2001, pp. 500–502). The US culture has a notably higher IDV score (91 in the US vs. 67 in Germany), indicating stronger self-orientation, emphasis on hedonism and self-reliance. Collectivism in Germany, on the other hand, “takes the form of a legal-bureaucratic orientation combining low economic individualism, low affective collectivism, and an emphasis on formal rules and categories” (Morris and Leung 2000, p. 112). Further, the German culture exhibits a much higher level of UAI (65 in Germany vs. 46 in the US), signaling higher anxiety about the future, lower level of subjective well-being and willingness to take only the known risks (Hofstede 2001, pp. 161–227). These differences across IDV and UAI dimensions allow us to make systematic conclusions about the moderating role of culture in the relationships in our model. As explained above, we attribute differences in the impact of trusting beliefs and anticipated enjoyment solely to the differences in the IDV dimension between the US and German cultures. The impact of privacy concerns is assumed to be moderated by the differences in the UAI dimension.

Second, both countries are key markets for SNS providers. US FB audience is the largest in the world and currently accounts for 22.7 % of FB users. Germany, the biggest economy in Europe, boasts the third largest share of FB audience at 4.3 % (Alexa.com 2012). Hence, understanding users from these two prominent countries promises significant practical value.

3.2 Survey Instrument

While we tried to rely on the pre-tested scales where possible, a significant portion of scales had to be modified or self-developed to reflect the unique SNS context. Specifically, some items for *Self-Disclosure* were adapted from Krasnova et al. (2010a, p. 117) and others were self-developed. Items suggested by Nambisan and Baron (2007, p. 61) and Krasnova et al. 2010a (p. 117) were used as the basis for operationalization of the *Enjoyment* construct. Items to measure *Privacy*

Table 1 Demographic Characteristics

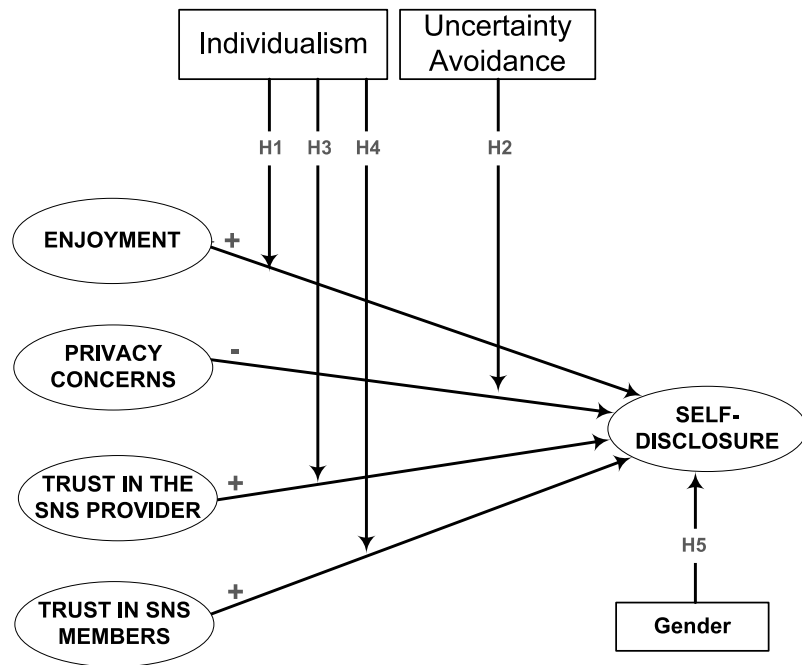
	USA	Germany
Gender		
Female	65.3 %	40.6 %
Male	34.2 %	57.2 %
Age		
18–19	51.83 %	11.6 %
20–29	42.41 %	84.1 %
30+	5.76 %	4.3 %

Concerns were initially taken from Dinev and Hart (2006, p. 77) and then significantly modified and expanded to fit SNS setting. The scales for *Trust in the SNS Provider* were adapted from McKnight et al. (2002, pp. 318–319). Some items for *Trust in SNS Members* were adapted from Chiu et al. (2006, p. 1879) and Malhotra et al. (2004, p. 352), but most items were self-developed. The validity of our scales was ensured via a pre-test. Initially developed in English, the survey instrument was then carefully translated into German. English and German versions of the survey were offered to German residents. Each construct was measured on a 7-point scale and modeled as reflective. Survey items and the descriptive statistics are presented in Tables A.1 and A.2 in Appendix A of the online version of this paper.

3.3 Sample Characteristics

Participants from Germany and the USA were recruited by posting announcements on university mailing lists, campus bulletin boards and on FB groups. German and US respondents were offered a reward of € 5 or \$ 5 respectively. 193 subjects took part in the survey in the US and indicated to be American. In Germany the total of 237 subjects participated: 138 were German and 99 were foreigners. Only responses from the 138 German subjects were used in the subsequent analysis. To confirm the face validity of the German translation we compared responses from native Germans to those from international respondents, who claimed to have resided for a significant amount of time in Germany but have chosen an English version of the survey. Mann-Whitney U test comparing the means of the responses for these two groups revealed no significant differences, indicating adequacy of the translation. Overall, both samples were dominated by students – an important group

Fig. 1 Research Model



of FB audience. Recognizing some demographic differences as summarized in **Table 1**, we consider both samples to be comparable.

3.4 Evaluation of the Model

Because of the non-normality of our data, limited size of the German sample and the exploratory nature of our study, we have chosen the Partial Least Squares (PLS) methodology. All constructs were included as multi-item latent variables into our model. *Gender* was included as a one-item dummy variable (male = 0; female = 1) (Malhotra et al. 2004, p. 347). The resulting research model was estimated separately for US and Germany using the SmartPLS 2.0.M3 software (Ringle et al. 2005).

Measurement Model (MM) was evaluated first. Parameters for Indicator Reliability (IR), Composite Reliability (CR) and Average Variance Extracted (AVE) were assessed to ensure Convergent Validity, as summarized in **Table B.1** of Appendix B of the online version of this paper. To ensure IR, item loadings should preferably exceed the level of 0.7. Items with values below 0.4 should be eliminated (Hulland 1999, p. 198). Only 2 items in the US model had loadings of 0.467 (PC2) and 0.482 (PC4), with all other items in both samples exceeding the 0.7 threshold, which provides evidence of IR. Further, CR values for all constructs in both models exceeded the required level of 0.7 (Hulland 1999, p. 199). The

AVE values for all measured constructs by far surpassed the threshold level of 0.5 (Fornell and Larcker 1981, p. 46). Finally, Cronbach's Alpha (CA) – a measure of Internal Consistency – was higher than the required threshold of 0.7 for all constructs in both models (Hulland 1999, p. 199). In the next step, Discriminant Validity was assessed by ensuring that the square root of AVE for each construct was higher than the correlation between this construct and any other construct in the model (Hulland 1999, p. 200). This requirement was fulfilled for all constructs in both models, as summarized in **Tables B.2** and **B.3** of Appendix B. Taken together, the MMs for both countries are well-specified.

Next, the Structural Model (SM) was evaluated. We find that four determinants explain 29.5 % and 17.4 % of variance in *Self-disclosure* in the USA and Germany respectively. As we only accounted for the factors relevant to the PC – possibly omitting other influential variables – this level of explanatory power is adequate. Size and significance of path coefficients were evaluated based on PLS algorithm and a bootstrapping procedure as summarized in **Table 2** as well as in **Figs. C.1** and **C.2** of Appendix C. Finally, Multi-Group Analysis (MGA) comparing path coefficients across two models was conducted using a spreadsheet implementation of the PLS-MGA procedure (Henseler et al. 2009, pp. 308–309). Presented in **Table 2**, significant p-values obtained through this analysis provide evi-

dence for the presence of the differences in the strength of path coefficients between two countries. As our investigation is exploratory in nature, a significance level of 10 % was considered acceptable throughout the study.

Enjoyment emerges as an equally relevant determinant of *Self-disclosure* for both German and US users, which rejects the moderating role of IDV in the relationship between these variables. Next, we confirm the salience of trusting beliefs for users with an individualistic background: While *Trust in the SNS provider* and *Trust in SNS members* influence *Self-disclosure* levels of highly individualistic US subjects, their influence is non-existent in Germany. Finally, UAI is found to be critical for the weight SNS users attach to *Privacy Concerns*: While *Privacy Concerns* have a significant effect for risk-averse German users, their impact is insignificant for risk-tolerant US subjects. Additionally, we find no effect of *Gender* on *Self-disclosure* across both samples.

4 Theoretical and Managerial Implications

SNSs are a global phenomenon that offers many benefits for individuals, organizations and society at large. As communication technologies proliferate around the world, more and more people join SNSs and the global online conversation.

Table 2 Standardized path coefficients, significance levels and *p*-values for MGA

Hypothesis	Construct/variable → self-disclosure	Path coefficient		<i>p</i> -Value from MGA USA/GER	Hypothesis outcome
		Germany	USA		
H1	Enjoyment	0.282^{***}	0.220^{***}	0.270	Rejected
H2	Privacy Concerns	-0.207^{**}	0.065	0.019^{**}	Supported
H3	Trust in the SNS Provider	0.052	0.247^{***}	0.025^{**}	Supported
H4	Trust in SNS Members	0.094	0.259^{***}	0.079[*]	Supported
H5	Gender (male = 0; female = 1)	-0.027	-0.089	0.260	Rejected

Significance: * at 10 %; ** at 5 %; *** at 1 % or lower

Results of our study deliver a set of insights into the cross-cultural dynamics of self-disclosure on these platforms. As such, our findings help to deepen the understanding of how culture may determine the outcomes of privacy-relevant individual decision-making.

First, we find the motivational strength of *enjoyment* to be independent of the level of IDV in a given culture. While previous research mainly attributes pleasure motives to IDV (Hofstede 2001, p. 226), our study shows that users with higher and lower IDV equally strive to gain hedonic benefits by self-disclosing on SNSs. Apparently, people from collectivistic cultures value in-group interaction and, thus, also enjoy disclosing their information as part of the group communication process. These findings contribute to the growing body of research that seeks to identify the differences and commonalities in the intercultural motivational patterns (e.g., Chiasson et al. 1996).

Considering the motivational power of *enjoyment* across cultures, SNS providers should emphasize pleasant experiences in their marketing strategy worldwide. So far, FB has made significant progress in integrating fun features into its platform. For example, by timely introducing News Feed and opening its system to third party developers – innovations primarily designed to satisfy users' desire for entertainment – FB was able to beat its major competitors in many countries. However, recent findings suggest that many users find existing News Feed filtering mechanisms inadequate, leading to boredom and unwillingness to share on the platform (Koroleva et al. 2010, p. 4). Hence, improving the social content selection based on available user data and preferences should be a priority. For example, Google+ has recently introduced a "What's Hot" feature, giving users a glimpse into the most popular, and often entertaining, content shared on its network – a perfect example of how enjoyment motive can be exploited.

Second, our results show that while users from countries with a high UAI reduce their self-disclosure in response to *privacy concerns*, users with a low UAI do not. Since internal locus of control is typical for cultures with a low UAI (Hofstede 2001, p. 161), these users are more likely to fall prey to the "optimistic bias" by adhering to the "it won't happen to me" attitude (Hoorens and Buunk 1993, p. 298). Hence, they may ignore their *privacy concerns*, even when they have ones. From the theoretical perspective, our study provides corroboration of the "attitude-behavior" dichotomy observed in some countries, but not in others (e.g., Krasnova et al. 2010a, p. 121; Acquisti and Gross 2006, p. 11).

Even though the effect of *privacy concerns* on self-disclosure is not universal, we find that users in both countries report moderately high privacy concerns, which need to be managed by the SNS providers. Multiple studies underline the importance of control mechanisms as means to mitigate privacy concerns of SNS users (e.g., Xu et al. 2008, p. 10). For example, Bulgurcu et al. (2010, p. 9) advocate the minimization of "trigger conditions" as they induce the formation of privacy concerns. As examples the authors mention imposed changes to privacy settings or perceived inadequacy of privacy controls. To address these issues, US Federal Trade Commission has recently forced FB to make all future changes to privacy settings subject to opt-in choice, thereby insuring users against unwanted surprises (Constone 2011). Particularly in countries with a high UAI, enhancing usability of privacy protection tools and refining their level of protection should be a priority for SNS providers (Bulgurcu et al. 2010, p. 9). To fight user uncertainty SNS providers could use educational campaigns to increase awareness of the privacy protection methods (Malhotra et al. 2004, p. 339). Finally, legal remedies could help to mitigate privacy concerns of SNS users (Krasnova and Veltri 2011,

p. 8). Users with a high UAI are likely to welcome those efforts as they strongly rely on institutional assurances (Doney et al. 1998, p. 609). Hence, we urge SNS providers to hail legislative efforts and even lobby for more legalistic safeguards in countries with a high UAI.

Third, we confirm that users with collectivistic background are unlikely to take a "leap of faith" and actually *act* on the basis of trust (Hofstede 2001, p. 160, 169). At the same time, high level of IDV facilitates trust in the fellow SNS users and the provider and, thereby, leads to higher self-disclosure on the platform. Considering that users from the US – the country with the world's highest IDV level (Hofstede 2001, pp. 500–502) – currently form the largest segment of the FB audience (Alexa.com 2012), addressing trusting beliefs of this audience should be a priority. Overall, past literature offers rich insights on how online trust can be facilitated. Belanger et al. (2002, p. 265) show that convenience, ease of use and cosmetics of the website have a strong influence on the purchasing intention – a consequence of trusting attitudes. Investigating the context of mobile SNSs, Zhou et al. (2010, p. 930) find that both information quality as well as system quality significantly affect users' trust. Building on these insights, Bonneau and Preibusch (2009, p. 30) recommend SNS providers to invest into improving the quality and professionalism of a site, viewing these measures as effective for trust-building. Furthermore, Hassanein and Head (2007, p. 702) empirically show that social presence has a "warming effect" on online media, making the platform appear more trustworthy. In the SNS setting this could be done by introducing human-like electronic agents to advise users on their privacy management activities. In fact, simply posting the photos of customer service representatives in conspicuous locations on the SNS may already communicate a human touch and enhance trusting beliefs.

Abstract

Hanna Krasnova, Natasha F. Veltri,
Oliver Günther

Self-disclosure and Privacy Calculus on Social Networking Sites: The Role of Culture

Intercultural Dynamics of Privacy Calculus

Social Network Sites (SNSs) rely exclusively on user-generated content to offer engaging and rewarding experience to its members. As a result, stimulating user communication and self-disclosure is vital for the sustainability of SNSs. However, considering that the SNS users are increasingly culturally diverse, motivating this audience to self-disclose requires understanding of their cultural intricacies. Yet existing research offers only limited insights into the role of culture behind the motivation of SNS users to self-disclose. Building on the privacy calculus framework, this study explores the role of two cultural dimensions – individualism and uncertainty avoidance – in self-disclosure decisions of SNS users. Survey responses of US and German Facebook members are used as the basis for our analysis. Structural equation modeling and multi-group analysis results reveal the distinct role of culture in the cognitive patterns of SNS users. The authors find that trusting beliefs play a key role in the self-disclosure decisions of users from individualistic cultures. At the same time, uncertainty avoidance determines the impact of privacy concerns. This paper contributes to the theory by rejecting the universal nature of privacy calculus processes. The findings provide for an array of managerial implications for SNS providers as they strive to encourage content creation and sharing by their heterogeneous members.

Keywords: Social networking sites, Self-disclosure, Privacy, Trust, Culture

Finally, our study suggests that men enjoy sharing their personal details on SNSs as much as women. This is in sharp contrast to the face-to-face context, in which women were found to disclose more – the consequence of the traditional separation of roles, prescribing men to be less emotional and unsentimental in communication with others (Jourard and Lasakow 1958, p. 98; Jourard 1971, p. 35). On SNSs, however, lack of social presence, concentration on the imagined audience, geographical distance from conversation partners can all work to liberate male users to disclose without the typical societal backlash of men showing emotions in public. By studying the unique SNS context, our study contributes to the theoretical discourse on the role of gender in self-disclosure. Future research could concentrate on investigating the differences in self-disclosure motives of both genders.

5 Concluding Remarks

Our study applies the PC perspective to examine the factors influencing self-disclosure on SNSs. Recognizing the cultural diversity of SNS users, we find that IDV and UAI moderate the impact of privacy concerns and trusting beliefs respectively. Higher level of IDV facilitates the development of trusting beliefs, thereby stimulating users to reveal information. On the other hand, low level of UAI leads users to ignore their privacy concerns, even when they have ones. By rejecting the universal nature of PC on SNSs, our findings call for greater cultural sensitivity when investigating and influencing behavior of users on SNSs.

The study is subject to several limitations, which offer exciting venues for future research. Specifically, we consider IDV and UAI to be the sole cultural determinants behind the impact of trusting beliefs/ anticipated benefits and privacy concerns respectively. Even though this assumption is based on the in-depth review of previous work, it needs to be empirically validated in future SNS-related studies. Further, other demographics groups, besides students, should be examined to obtain a complete picture of intercultural dynamics on SNSs.

References

Acquisti A, Gross R (2006) Imagined communities: awareness, information sharing

- and privacy on the Facebook. In: Proc 6th workshop on PETS, Cambridge, pp 1–22
- Alexa.com (2012) Visitors by country for Facebook.com. <http://www.alexa.com/siteinfo/facebook.com>. Accessed 2012-01-25
- Belanger F, Hiller JS, Smith WJ (2002) Trustworthiness in electronic commerce: the role of privacy, security, and site attributes. *The Journal of Strategic Information Systems* 11(3–4):245–270
- Beretsky S (2009) Woman loses sick-leave benefits for depression thanks to Facebook pics. <http://psychcentral.com/blog/archives/2009/11/20/woman-loses-sick-leave-benefits-for-depression-thanks-to-FB-pics>. Accessed 2012-01-25
- Bonneau J, Preibusch S (2009) The privacy jungle: on the market for data protection in social networks. In: Proc 8th WEIS, London
- Boyd D (2007) Why Youth (Heart) Social network sites: the role of networked publics in teenage social life. In: Buckingham D (ed) *Youth, identity, and digital media*. MIT Press, Cambridge, pp 119–142
- Bulgurcu B, Cavusoglu H, Benbasat I (2010) Understanding emergence and outcomes of information privacy concerns: a case of Facebook. In: Proc ICIS 2010, St Louis
- Cao J, Everard A (2008) User attitude towards instant messaging: the effect of espoused national cultural values on awareness and privacy. *Journal of Global Information Technology Management* 11(2):30–57
- Chapman CN, Lahav M (2008) International ethnographic observation of social networking sites. In: Proc CHI EA '08 (CHI '08). ACM, New York, pp 3123–3128. doi:10.1145/1358628.1358818
- Chiasson N, Dube L, Blondin JP (1996) Happiness: a look into the folk psychology of four cultural groups. *Journal of Cross-Cultural Psychology* 27(6):673–691
- Chiu CM, Hsu MH, Wang ETG (2006) Understanding knowledge sharing in virtual communities: an integration of social capital and social cognitive theories. *Decision Support Systems* 42(3):1872–1888
- Constine J (2011) Facebook settles with FTC to make new privacy changes opt-in. http://techcrunch.com/2011/11/10/facebook-opt-in/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+Techcrunch+%28TechCrunch%29. Accessed 2012-01-25
- Davis FD, Bagozzi RP, Warshaw PR (1992) Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology* 22(14):1111–1132
- Dinev T, Hart P (2006) An extended privacy calculus model for e-commerce transactions. *European Journal of Information Systems* 17(1):61–80
- Dinev T, Bellotto M, Hart P, Russo V, Serra I, Colautti C (2006) Privacy calculus model in e-commerce—a study of Italy and the United States. *European Journal of Information Systems* 15:389–402
- Doney PM, Cannon JP, Mullen MR (1998) Understanding the influence of national culture on the development of trust. *The Academy of Management Review* 23(3):601–620
- Facebook (2012) Newsroom. <http://newsroom.fb.com/>. Accessed 2012-02-03
- Fogel J, Nehmad E (2009) Internet social network communities: risk taking, trust, and privacy concerns. *Computers in Human Behavior* 25(1):153–160. doi:10.1016/j.chb.2008.08.006

- ForeSee (2011) ForeSee results annual e-business report 2011. <http://www.foreseeresults.com/research-white-papers/thankyou-acsii-e-business-report-2011-foresee.shtml>. Accessed 2012-02-08
- Fornell C, Larcker DF (1981) Structural equation models with unobservable variables and measurement errors. *Journal of Marketing Research* 18(1):39–50
- Gefen D, Rao VS, Tractinsky N (2003) The conceptualization of trust, risk, and their relationship, electronic commerce: the need for clarifications. In: Proc HICSS 36th, Hawaii
- Greenfield P (2000) Three approaches to the psychology of culture: where do they come from? where can they go? *Asian Journal of Social Psychology* 3(3):223–240
- Gross R, Acquisti A (2005) Information revelation and privacy in online social networks (the Facebook case). In: ACM workshop on privacy in the electronic society, Alexandria
- Hassanein K, Head M (2007) Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies* 65(8):689–708
- Henseler J, Ringle CM, Sinkovics RR (2009) The use of partial least squares path modeling in international marketing. In: Sinkovics RR, Ghauri PN (eds) *Advances in international marketing (AIM)*, Bingley, pp 277–320
- Hofstede G (2001) *Culture's consequences: comparing values, behaviors, institutions, and organizations across nations*. Sage, Thousand Oaks
- Hogben G (2007) Security issues and recommendations for online social networks. ENISA position paper
- Hoorens V, Buunk BP (1993) Social comparison of health risks: locus of control, the person-positivity bias, and unrealistic optimism. *Journal of Applied Social Psychology* 23:291–302. doi:10.1111/j.1559-1816.1993.tb01088.x
- Hsu C, Lin J (2008) Acceptance of blog usage: the roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management* 45(1):65–74
- Hulland J (1999) Use of partial least-squares (pls) in strategic management research: a review of four recent studies. *Strategic Management Journal* 20(2):195–204
- Jackson LA, Ervin KS, Gardner PD, Schmitt N (2001) Gender and the Internet: women communicating and men searching. *Sex Roles* 44(5/6):363–379. doi:10.1023/A:1010937901821
- Jourard SM (1971) *The transparent self*. Van Nostrand, Princeton
- Jourard SM, Lasakow P (1958) Some factors in self-disclosure. *Journal of Abnormal and Social Psychology* 56(1):91–98. doi:10.1037/h0043357
- Kluemper DH, Rosen PA (2009) Future employment selection methods: evaluating social networking web sites. *Journal of Managerial Psychology* 24(6):567–580. doi:10.1108/02683940910974134
- Koroleva K, Krasnova H, Veltri N, Günther O (2011a) It's all about networking! empirical investigation of social capital formation on social network sites. In: Proc ICIS 2011, Shanghai
- Koroleva K, Brecht F, Goebel L, Malinova M (2011b) 'Generation Facebook' – a cognitive calculus model of teenage user behavior on social network sites. In: Proc AMCIS 2011, Detroit
- Koroleva K, Krasnova H, Guenther O (2010) 'Stop spamming me!' – exploring information overload on Facebook. In: Proc 16th AMCIS, Lima
- Krasnova H, Veltri N (2011) Behind the curtains of privacy calculus on social networking sites: the study of Germany and the USA. In: Proc WI 2011, Zürich
- Krasnova H, Spiekermann S, Koroleva K, Hildebrand T (2010a) Online social networks: why we disclose. *Journal of Information Technology* 25(2):109–125
- Krasnova H, Koroleva K, Veltri NF (2010b) Investigation of the network construction behavior on social networking sites. In: Proc ICIS 2010, St Louis
- Leidner DE, Kayworth T (2006) Review: a review of culture in information systems research: toward a theory of information technology culture conflict. *Management Information Systems Quarterly* 30(2):357–399
- Lim KH, Leung K, Sia CL, Lee MKO (2004) Is eCommerce boundary-less? effects of individualism-collectivism and uncertainty avoidance on Internet shopping. *Journal of International Business Studies* 35(6):545–559
- Malhotra NK, Kim SS, Agarwal J (2004) Internet users' information privacy concerns (IUIPC): the construct, the scale, and a causal model. *Information Systems Research* 15(4):336–355
- McKnight DH, Choudhury V, Kacmar C (2002) The impact of initial consumer trust on intentions to transact with a web site: a trust building model. *Journal of Strategic Information Systems* 11:297–323
- Moon JW, Kim YG (2001) Extending the TAM for a world-wide-web context. *Information & Management* 38:217–230
- Morris MW, Leung K (2000) Justice for all? Progress in research on cultural variation in the psychology of distributive and procedural justice. *Applied Psychology* 49(1):100–132. doi:10.1111/1464-0597.00007
- Nambisan S, Baron RA (2007) Interactions in virtual customer environments: implications for product support and customer relationship management. *Journal of Interactive Marketing* 21(2):42–62. doi:10.1002/dir.20077
- Park H (1993) Cultural impact on life insurance penetration: a cross-national analysis. *International Journal of Management* 10(3):342–350
- Phillips L (2010) New EU privacy laws could hit Facebook. Bloomberg businessweek. http://www.businessweek.com/globalbiz/content/jan2010/gb20100129_437053.htm. Accessed 2012-01-25
- Ringle CM, Wende S, Will A (2005) SmartPLS. Release 2.0.M3
- Rizk R, Marx D, Schrepfer M, Zimmermann J, Guenther O (2009) Media coverage of online social network privacy issues in Germany—a thematic analysis. In: Proc 15th AMCIS, San Francisco
- Rosen P, Sherman P (2006) Hedonic information systems: acceptance of social networking websites. In: Proc 12th AMCIS, Acapulco
- Sia C, Lim K, Leung K, Lee M, Huang W, Benbasat I (2009) Web strategies to promote Internet shopping: is cultural-customization needed? *Management Information Systems Quarterly* 33(3):491–512. Retrieved from: <http://aisel.aisnet.org/misq/vol33/iss3/6>
- Sledgianowski D, Kulviwat S (2008) Social network sites: antecedents of user adoption and usage. In: Proc AMCIS, Toronto
- Triandis HC (2001) Individualism—collectivism and personality. *Journal of Personality* 69(6):907–924
- Tufekci Z (2008) Can you see me now? Audience and disclosure regulation in online social network sites. *Bulletin of the American Society for Information Science and Technology* 28(1):20–36. doi:10.1177/0270467607311484
- Van der Heijden H (2004) User acceptance of hedonic information systems. *Management Information Systems Quarterly* 28(4):8
- Vasalou A, Joinson AN, Courvoisier D (2010) Cultural differences, experience with social networks and the nature of “true commitment” in Facebook. *International Journal of Human-Computer Studies* 68(10):719–728. doi:10.1016/j.ijhcs.2010.06.002
- Veltri NF, Krasnova H, Elgarah W (2011) Online disclosure and privacy concerns: a study of Moroccan and American Facebook users. In: Proc AMCIS 2011, Detroit
- Wheless LR, Grotz J (1976) Conceptualization and measurement of reported self-disclosure. *Human Communication Research* 2(4):338–346
- Xu X, Dinev T, Smith HJ, Hart P (2008) Examining the formation of individual's privacy concerns: toward an integrative view. In: Proc ICIS 2008, Paris
- Zhao C, Jiang G (2011) Cultural differences on visual self-presentation through social networking site profile images. In: Proc CHI '11. ACM, New York, pp 1129–1132
- Zhou T, Li H, Liu Y (2010) The effect of flow experience on mobile SNS users' loyalty. *Industrial Management & Data Systems* 110(6):930–946