Building Trust through Social Networking

Full Paper

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Abstract

Usage of social networking sites requires continuous trusting actions through the sharing of personal information. According to Social Cognitive Theory, such behavior and resulting experiences should have an impact on the beliefs that led to the behavior, namely trust. In this study, a model of how this process takes place and the results of a survey suggest that increasing usage of social networking sites increases disposition to trust, mediated by optimism, innovativeness, and trust in the social networking site. Implications of these findings are discussed.

Keywords

Social networking, trust, technology readiness

Introduction

Social networking site (SNS) usage continues to grow, with over 65% of adults now using a networking site, but especially young adults, with over 90% between ages 18-29 using it (Perrin 2015). The broad usage of SNS has changed the way we communicate, get our news, share life events, find employment, and even find a mate. Despite concerns for privacy, voluntary disclosure of information on SNS continues to rise. Motivations for voluntary disclosure on SNS include sharing information, attempting to entertain others, keeping up with trends, showing off, transcending temporal and geographic limitations, and expressing affection for others (Waters and Ackerman 2011; Xu et al. 2012). However, sharing information over SNS requires trust that the information will not be misused.

Trust, to some degree, is a fundamental element for reaping the benefits of a more connected world, where more and more social interaction is occurring through online transactions. Whether ordering an item through Ecommerce or exchanging personal information on a dating website, there must be some trust. Trust established and nurtured in face to face exchanges has been well researched (Barbalet 2009; Misztal 2011; Sorrentino et al. 1995; Webb et al. 2016). Furthermore, research has found that trust impacts the continuance intentions in social networking sites (Lankton and McKnight 2011; Meng-Hsiang et al. 2011) and technology in general (Lankton et al. 2015). However, usage of these technologies provides experiences that could impact beliefs. For example, usage of SNS provides exposure to relationships and interactions requiring trust. How do these continued uses of trusting behaviors impact the person performing the behaviors? In particular, how does increased usage of SNS impact the disposition to trust? We do not know how recent information technology innovations affect user trust levels.

Research into all facets of these phenomena is needed, but we address just one aspect of this problem by asking the research questions: What effect does SNS usage have on trusting disposition? If so, what pathways does it take? Two theories guide our research question – social cognitive theory and trust. Those theories suggest that increased usage of SNS is correlated with increased levels of trust. We hypothesize that increased levels of SNS usage will follow similar pathways to increased exposure in face to face human trust scenarios.

Literature Review

Social Cognitive Theory

Many traditional psychological theories explain intentions or behavior in a deterministic framework, suggesting that human behavior is explained in unidirectional terms from external influences or internal dispositions impacting behavior. Social cognitive theory suggests that environment, behavior, and cognition work in reciprocal and interacting ways (Wood and Bandura 1989). The most studied aspect of this theory is that people exert control over their environment in terms of self-efficacy. In other words, a network user's motivation influences their actions within the network or community. A less studied aspect of this theory is the impact of choice of environments and its impact on competencies, values, and interests long term. In essence, a user's actions may impact their dispositions (Wood and Bandura 1989). While this may not be instantaneous, the effect could become pronounced over time.

Social cognitive theory identifies three modes of agency: direct personal, proxy, and collective agency (Bandura 2002). Effective interaction in a network or community will require the exercise of all three modes and may vary across cultures. Inevitably, trust is necessary to volunteer one's resources on behalf of another party to in hopes of securing positive outcomes. Efficacy beliefs in the trustworthiness of the network become a group-level property based on the group dynamics (Bandura 2002). Thus, we see instances of users opting out of social network usage when the perceived behavior of the group diverges from personal expectations. However, research does indicate that perceived group efficacy can positively impact network functioning in a way that personal efficacy improves individual performance (Stajkovic et al. 2009). This finding would indicate that individuals would prefer to stay in a community or social network if their trust is "rewarded" while the converse is also true. Betrayal of trust may lead to disengagement as observed by Bandura:

> "Any factor that influences choice behavior can profoundly affect the direction of personal development because the social influences operating in the environments that are selected continue to promote certain competencies, values, and interests long after the decisional determinant has rendered its inaugurating effect." P. 178 (Bandura 1989)

Thus, it appears that previous research has established that the outcomes of uncertain interactions between the trustor and trustee can affect future behaviors, and the intentions of the trustor to risk resources in further interactions. Therefore, it seems possible that positive outcomes from using a social network system could lead to an increase in trusting behaviors in general. It is important to note that research has indicated that before applying interpersonal or system trust constructs, researchers should consider the "humanness" of the system (Åm 2011; Tripp et al. 2011).

Foundations of Trust

Trust, proper conceived, is a multidisciplinary concept composed of dispositions to trust, institutional-based trust, trusting beliefs, and trusting intentions (McKnight et al. 1998). The constructs of trusts and the definitions of those constructs are listed in Table 1.

Construct	Definitions
Disposition to Trust	The extent to which one displays a consistent tendency to be willing to depend on others across a broad spectrum of situations and persons.
Institution-based Trust	When one believes, the needed conditions are in place to enable one to anticipate a successful outcome in an endeavor or aspect of one's life.
Trusting Beliefs	When one believes (and feels confident in believing) that the other person has one or more traits desirable to one in a situation in which negative consequences are possible.
Trusting Intentions	When one is willing to depend on, or intends to depend on, the other person in a given task or situation with a feeling of relative security, even though negative consequences are possible.

Trust-related Internet Behaviors	The extent that one behaves in trusting

Table 1. Trust Constructs

Additional research has resulted in the identification of beliefs that trustors confer upon trustees when extending trust (Lankton et al. 2015; Mayer et al. 1995; McKnight et al. 2002; Wang et al. 2015) that include integrity, ability, competence, and benevolence. These "believed" characteristics of the trustee can vary over time and can change based on the outcome of situations where trust was extended. While trust is a complicated concept, ample research has attempted to define and conceptualize the important elements of trust in human to human or human to institution relationships.

Trust in information systems

Lankton et al. (2015) summarized much of the research into the human-to-technology trust relationship and found that technology, unlike a human trustee does not have volition or the ability to make ethical decisions. The results of this and related research (Meng-Hsiang et al. 2011; Nabi et al. 2013; Niazi et al. 2013; Vize et al. 2013; Wang et al. 2015) would suggest that the constructs and trusting beliefs constructs may be different for human to information system trust. For example, Meng-Hsiang et al. (2011) found in an investigation of factors affecting user's trust toward other members of a virtual community and in the information system that supported the virtual community that knowledge growth, perceived responsiveness, shared vision, and knowledge quality were important determinants of trust in the virtual community. In another study, Wang et al. (2015) found that technology readiness (TR) was an antecedent for trust disposition. Trust is essential in innovative uses of information systems where there are transactions of personal, financial, or social data (Gefen et al. 2003; Heirman et al. 2013; Jin 2013; Lankton and McKnight 2011; Lankton et al. 2015; McKnight et al. 2002). The extent that one is willing to depend on technology based on the belief that the technology itself possess desirable trust characteristics is called trust-in-technology (McKnight 2005). Tripp et al. (2011) compared interpersonal and system-like trusting beliefs and found similarities between competence and functionality, integrity and reliability, and benevolence and helpfulness.

Extending trust from information systems to humans

Van Lange (2015) argues that trust is influenced by personal social interaction experiences, close other's experiences, and societal experiences. Participation in networks or communities, real or virtual, requires a degree of trust, which other members participating will behave in a pro-social manner. So, while research supports the idea that increased experience in trusting relationships does affect trusting behaviors, it also appears that generalized trust may be undermined by the social cognitive filters that magnify negative social interactions, decreasing trust in the network (Van Lange 2015). Negative experiences could reduce the willingness of social network users to trust others, and decrease their trusting disposition.

However, establishing trust in social network relationships has become necessary in both business and personal interactions (Meng-Hsiang et al. 2011). Given the global nature of life in the Information Age, the best supplier for a company may be foreign, and a person's best friend maybe someone only interacted with online. In an exploratory study to determine factors for establishing trust in offshore software outsourcing, face-to-face meetings were found to be crucial, along with improved communications, and better definition of expectations between parties (Niazi et al. 2013).

To summarize, our hypotheses are as follows: Increased SNS usage leads to more positive feelings toward technology resulting in higher levels of SNS Readiness. Higher levels of SNS Readiness leads to increased levels of SNS Trust, and finally, increased levels of SNS Trust leads to an increased disposition to trust others with our private information. A representation of the theoretical framework is presented in Figure 1 below.
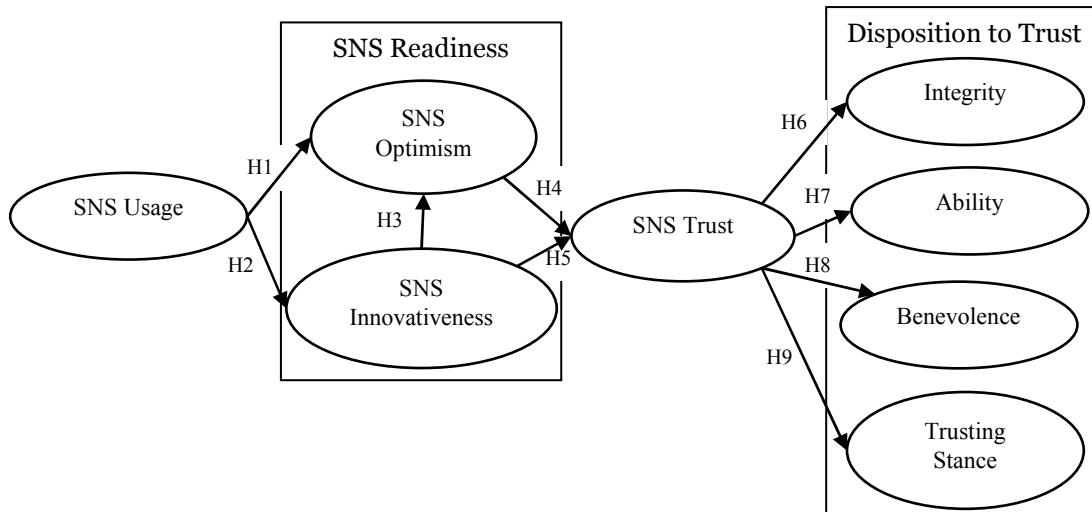
Figure 1. Model of SNS usage pathways to disposition to trust

Social networking usage and SNS Optimism and SNS Innovativeness

Technology readiness (TR) refers to people's propensity to adopt and use new technologies (Parasuraman 2000). TR theory builds on Technology Acceptance Model and Theory of Reasoned Action (Lin et al. 2007) that incorporates concepts from both the TAM and TR theory. TR identifies four sub-dimensions: optimism, innovativeness, discomfort, and insecurity.

Liljander et al. (2006) found that only the optimism and innovativeness constructs explained adoption behavior of a self-service technology. The reverse process is also true, the more usage of a technology, the more optimism and innovativeness will emerge. This manifests itself in increased optimism that the user will get what they need from the relationship with the social network, or an increased readiness to adopt the technology. For example, Nabi et al. (2013) found that the number of Facebook friends, but not Facebook usage *per se*, benefits psychological well-being, and Shin (2013) has identified perceived trust as a factor affecting social commerce (s-commerce) behavior. Also, the two inhibiting dimensions, discomfort and insecurity are complex, as they represent multiple aspects of real-life issues and are difficult to measure (Parasuraman and Colby 2015). Furthermore, as usage increases, users discover new innovative ways to incorporate SNS into their lives and work. For this research, we only considered the positive technology readiness dimensions of optimism and innovativeness.

Hypothesis 1: Higher levels of social network system usage will result in higher levels of social network system optimism.

Hypothesis 2: Higher levels of social network system usage will result in higher levels of social network technological innovativeness.

As it relates to technology readiness, optimism is a positive view of technology, that the technology is beneficial to people's lives. While innovativeness, in the context of technology readiness denotes the tendency to be an early adopter of technology. It is possible that higher levels of innovativeness could result in higher levels of system trust, based on the optimistic view of the user that technology is good. To test this relationship, we consider a mediating effect of optimism on the relationship between innovativeness and trust.

Hypothesis 3: Higher levels of social network system technological innovation will result in higher levels of social network trust, mediated by social network optimism.

Technology readiness and institutional trust

Next, Wang et al. (2015) connects TR to trust constructs. Prior research (Jin 2013; Lu et al. 2012; Vize et al. 2013) found a connection between a user's technological readiness and risk perceptions, reducing the potential risk. Thus, we propose the following two hypotheses:

Hypothesis 4: Higher levels of SNS optimism will result in higher levels of higher levels of SNS trust.

Hypothesis 5: Higher levels of SNS innovativeness will result in higher levels of higher levels of SNS trust.

Disposition to trust

McKnight et al. (1998) identified two types of institutional based trust, situational normality (SN) and structural assurances (SA), which was further refined by research that found that institutional-based trust was comprised of up to five components: SN-General, SN-Benevolence, SN-Integrity, SN-Competence, and SA (McKnight et al. 2002). Situational normality is the belief that success is likely because the trustor is in a normal situation, and expects little risk (e.g. paying for a purchase at the cash register). Structural assurances promote trust through the shared knowledge of regulations, guarantees, or access to legal recourse. Structural assurances may play a bigger role in establishing trust earlier in a relationship when the trustee has not had the opportunity to establish trust based on situational normality, as they do not know what is normal yet. Also, the trustor's general level of trust in others may moderate their trust in institutions (Barbalet 2009). In a study of underage Internet users, Heirman et al. (2013) found that the user's decision to disclose different categories of personal information to a commercial website was influenced by their trust in the specific website, the perceived level of risk, their general level of trust in others, and familiarity with the website, a finding supported by similar research on other populations. In other words, a user who regularly conducts transactions on an Ecommerce website trusts the transaction as it is normal, they are familiar with the website, and have recourse if there is something wrong with the transaction, indicating a flow of trust from the trustor to the trustee. Further, it is not only the direct behavioral information obtained by the direct relationship between the trustor and trustee, but also indirect behavioral information gathered by the trustor from third parties that can influence trust (Zarolia et al. 2017).

Hypothesis 6: Higher levels of social network trust will result in higher levels of disposition to trust – integrity.

Hypothesis 7: Higher levels of social network trust will result in higher levels of disposition to trust – ability.

Hypothesis 8: Higher levels of social network trust will result in higher levels of disposition to trust – benevolence.

Hypothesis 9: Higher levels of social network trust will result in higher levels of disposition to trust – trusting stance.

Method

Data Collection

With the focus of our study on social networking, we focused our target population on younger participants in their 20s and 30s. We contacted graduate and upper-level undergraduate students from three public U.S. universities and offered them extra credit for participation. Study participants took part in this study through an online survey, solicited through email invitations.

We collected 285 responses, of which 250 were usable. Thirty-five responses were omitted due to incompleteness, trivial responses (e.g. selecting all 1s for every response), no experience with SNS, or duplicate responses (as identified by IP address). Table 2 highlights the demographic information.

Age	18-25	13.7%
	26-30	36.1%
	31-35	24.1%
	35-40	17.7%
	41-50	6.0%
	51-60	1.6%
	61+	0.0%
Education	High school	1.2%
	Some undergraduate	25.8%
	Bachelor's degree	13.3%
	Some graduate work	42.7%
	Master's degree	14.9%
	Doctorate's degree	2.0%
Gender	Male	55.4%
	Female	43.8%

Table 2. Demographic information

Measurement

Constructs were adapted from existing measures. SNS Optimism and SNS Innovativeness came from two dimensions of technology readiness construct (Jin 2013), modified to focus on SNS. Integrity, benevolence, ability, and trusting stance are dimensions of disposition to trust, modified from McKnight's 12-item measure to fit our research context (McKnight et al. 2002). SNS trust was modified from Institutional trust construct (Setterstrom et al. 2013). Social networking usage was a formative construct that captured the intensity (how long per visit), duration (length of time since first using), and frequency (how often did they post) of social network usage. A pilot study of 65 participants evaluated the measures and provided feedback on the wording of questions.

Analysis and Results

We performed partial least squares analysis using SmartPLS version 3.0. We chose component-based SEM rather than covariance-based SEM because our study is an initial examination into building trust through social networking usage and the factors that most readily predict these responses. Most constructs were measured reflectively, requiring traditional means of assessing construct reliability and validity (Chin 2010; Gefen and Straub 2005). We calculated internal consistencies with composite reliability for each latent construct and found all constructs were greater than 0.70, indicating sufficient internal consistencies (table 3). Convergent validity was established by calculating t-values of the outer model loading of all items (Gefen and Straub 2005), which also extended beyond the 0.70 heuristic.

Discriminant validity was established by comparing the inter-construct correlations with the square root of the average variance extracted (AVE) scores of each construct considered in the correlations (Fornell and Larcker 1981; Gefen and Straub 2005). All correlations were less than the square root of AVE for each construct, thereby indicating sufficient discriminant validity. We also found that all AVEs were above 0.50 heuristic, suggesting that the principle components capture construct related variance rather than error variance.

To check for common method bias, we performed two tests - Harman's single-factor test (Podsakoff et al. 2003) and examined the correlation matrix of the constructs to determine if any correlations were above 0.90 (Pavlou et al. 2007). In the first test, the model fit was not significant, suggesting that there was not

a single factor that explained the results. In the second test, the highest correlation was 0.58, whereas results >0.90 suggest a common bias in the data. Because we did not find those high correlations, common method bias is unlikely.

	Mean (St. Dev.)	Composite Reliability	Benevolence	Competence	Innovativeness	Institutional Trust	Integrity	Optimism	SNS Usage	Trusting Stance
Benevolence	3.840 (1.66)	0.925	0.898							
Competence	4.583 (1.46)	0.905	0.286	0.873						
Innovativeness	4.817 (1.64)	0.898	0.115	0.219	0.864					
Institutional Trust	3.558 (1.51)	0.916	0.352	0.436	0.186	0.855				
Integrity	4.002 (1.46)	0.933	0.547	0.485	0.103	0.495	0.908			
Optimism	4.561 (1.45)	0.831	0.266	0.359	0.484	0.490	0.251	0.790		
SNS Usage	N/A	N/A	0.109	0.092	0.338	0.187	0.111	0.275	N/A	
Trusting Stance	3.716 (1.63)	0.899	0.434	0.484	0.168	0.584	0.550	0.444	0.083	0.865

Square root of the AVEs on diagonal.

Table 3. Construct means, reliability, and correlations

Given our validity checks, we tested the path model. Significance of the path estimates was calculated using a bootstrap with 200 re-samples. Figure 2 summarizes the test of hypotheses and variance explained as reported by R^2 values. Hypotheses 1-4 and 6-9 were supported.
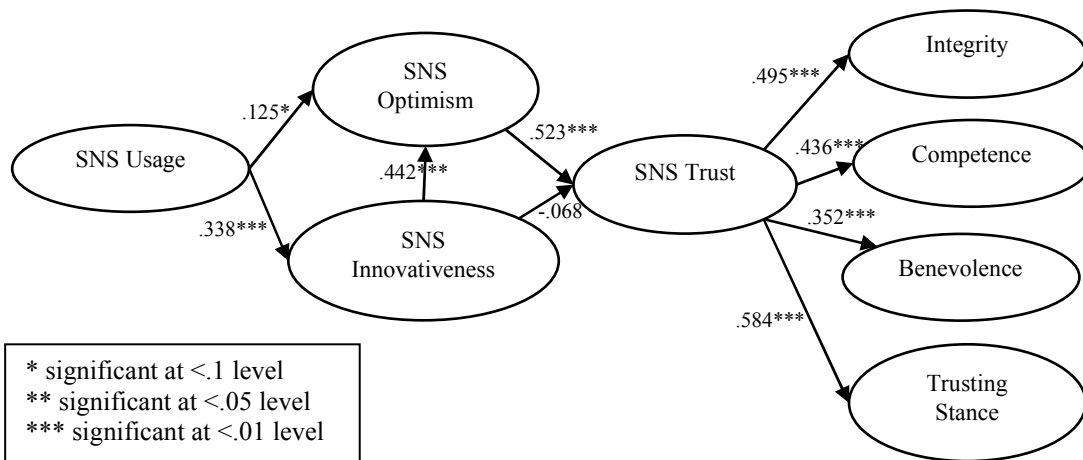

Figure 2. Path analysis and hypothesis testing.

Discussion

The findings from this research have important implications for e-commerce, security, and SNS. While a plethora of research explores trust's impact behavior, this research demonstrates how the reverse is also true, where technological behavior impacts trusting beliefs. This impact occurs through an increase in optimism and innovativeness with SNS, which leads to increased trust in SNS; which likewise impacts trusting disposition. While our model does not show a direct impact, the mediating variables suggest that increased usage of SNS can, over time develop the beliefs that impact the disposition to trust.

According to social cognitive theory, this relationship between beliefs, environment, and behavior interrelates. Behaviors create experiences. Observations about those experiences lead to beliefs, which in turn impact later behaviors. Previous research has shown that trust leads to more SNS usage (Zhou and Li 2014) and online engagement (Warren et al. 2014). Our findings suggest that SNS usage creates a positive feedback effect leading to more trust, which in turn leads to more SNS usage. That is not to say that privacy violations or increased privacy concerns may derail this effect. However, the overall tendency appears to be cyclical towards more SNS usage and greater dispositions to trust.

With the usage of SNS increasing worldwide (eMarketer 2013), this has the potential for both good and bad consequences. Trust has been found to be an instrumental characteristic of successful e-commerce transactions (Ba and Pavlou 2002; Gefen et al. 2003; McKnight et al. 2002). Increasing usage of SNS suggests that the disposition to trust will also increase, leading to a greater potential for positive e-commerce relationships. Similarly, trust is a major component of virtual group work (Jarvenpaa and Leidner 1999; Paul et al. 2016). While much virtual group work may occur without SNS usage, our findings suggest it could play an important role in impacting trust, which could positively increase team cohesion and performance. Further research could explore trust development within teams using SNS for communication.

Increasing levels of trust, however, may have negative impacts as well. Too much trust may lead to more vulnerabilities to social engineering attacks or identity theft. For example, Facebook's friend suggestions is vulnerable to reverse social engineering attacks, a technique where the victim is not contacted directly, but tricked into contacting the attacker (Irani et al. 2011). This technique works because the victim has developed trust in the SNS.

Conclusion

In this study, the effects of usage of SNS on trusting disposition was theorized and measured. In particular, SNS usage was predicted to influence SNS optimism and SNS innovativeness. Furthermore, SNS optimism and SNS innovativeness were predicted to influence SNS institutional trust. Last, SNS institutional trust was predicted to influence disposition to trust others. The results from an empirical survey suggest these relationships hold true. These findings suggest that increased usage of SNS will have an impact on trusting disposition, with potential societal implications. Research should further assess how usage of SNS impacts individual beliefs, motivations, and dispositions.

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