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A Model of User Distrust of Information Systems

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ABSTRACT

Distrust in information systems is an important phenomenon that has not been given adequate attention by researchers involved in trust research. The purpose of this paper is to apply existing theory to the phenomenon of distrust formation in an ongoing usage environment. The paper proposes that such key antecedents as distrusting beliefs and unmet expectations (toward information systems) affect levels of usage and help shape intentions to distrust the system. The paper also incorporates key technology acceptance model constructs to help capture additional user perceptions and intentions regarding use. Propositions put forth begin to examine distrust—the other side of the trust coin—of organizational information systems.

KEY WORDS

Distrust, Trust, TAM, perceived usefulness, behavioral intention, psychological breach of contract, distrusting beliefs

INTRODUCTION

The prevalence of distrust has become a reality for today's organizations (Lewicki, McAllister and Bies 1998). Practitioners believe fallout from corporate downsizings and events such as the Enron collapse have precipitated a general lack of trust within organizations (Von Bergen 2002). Given certain situations, the propensity to distrust might even be stronger than the inclination to trust (Triandis et al. 1975). Specific to information systems, users can distrust the systems artifact as well as the information produced by it. A general lack of trust in the artifact is possible because Reeves and Nass (1996) maintain that although information systems and computers themselves are not human, individuals tend to treat computers as social actors and apply social rules to them. Muir (1994) also finds the human-machine relationship has the ability to exhibit trusting behaviors. This is consistent with the framework set forth by Chopra and Wallace (2003), who posit trust in information and information systems is possible and both conform to the interpersonal (McAllister 1995) model of trust. Due to the possibility that: 1) information systems may be treated as social actors and 2) organizational actors indeed display distrusting behaviors quite regularly, the purpose of this paper is to introduce a theoretical framework for the phenomena of distrust in the context of information systems in organizations. Specifically the model will theorize a network of constructs related to distrust in information systems in an ongoing usage environment. The model also suggests that distrust of the system negatively impacts system usage. Therefore we suggest the following research question:

What factors are antecedent to distrusting intentions toward an information system and information systems usage?

The remainder of this paper is organized as follows: Section 2 will present the literature review; section 3 will present the research model and propositions and section 4 will present the discussion and conclusion.

LITERATURE REVIEW

IS Literature

Extant literature within information systems has focused primarily on theorizing the trust construct and its antecedents in the context of e-commerce. Particularly, Gefen, Karahanna and Straub (2003), McKnight, Choudhury and Kacmar (2002), McKnight and Chervany (2001) examine antecedents for consumers to trust in an e-commerce vendor. Gefen et al. (2003) also examine intentions to use an e-commerce website, incorporating constructs from the technology acceptance model. Furthermore, Komiak, Wang and Benbasat (2005) examine trust in virtual salespersons used on an e-commerce website.

However, with few exceptions (e.g., McKnight and Chervany 2001; Benamati, Fuller and Serva, 2006), the literature fails to use specific constructs to examine the almost equally likely scenario of distrust toward information systems.

Management Literature

The management literature examines the trust and distrust constructs in a number of ways, including: trust, distrust, and legalistic remedies (Sitkin and Roth 1993); the conceptual differences between trust versus distrust and how they relate (Lewicki, McAllister and Bies 1998); and an organizing framework for studies of trust and distrust (Bigley and Pearce 1998). The management literature has also explored distrust from other perspectives. For example Wicks, Berman and Jones (1999) maintain there is an optimal level of trust that lies on a continuum between full trust and full distrust. Kramer (1999) theorizes barriers to trust, such as suspicion and breach of psychological contract. Lewicki, et al (1998) view trust/distrust through particular instances of the social context as well as incorporate the possibility of suspicion. Social scientists have compared trust to suspicion as far back as Deutsch (1958).

Sociology/Psychology Literature

By examining the sociology and psychology literatures, distrust can be more clearly defined. A core component of mistrust is suspicion (Ross, Mirowsky and Pribesh 2001), akin to Kramer's (1999) composition of distrust. Another view is that distrust is not always considered to be negative. For example, from a sociological point of view, distrust is prudent because individuals cannot know fully the motives or intentions of many people encountered in a complex society (Gambetta 1988a, pg 218). The notion of distrust therefore is a sensible response to potential dangers (Larson 2004). Furthermore Baba (1999) finds distrust in machines is due to poor information quality. Wang and Benbasat (2005) support the notion that a human being can trust/distrust in an information artifact by finding that people trust in technological artifacts (i.e. online recommendation agents) as though they were social actors.

Distrust defined – distinct from trust

Distrust in its most rudimentary form has been defined simply as the opposite of trust (Baba 1999, Lewicki et al 1998). Gambetta (1998) frames distrust as symmetric to trust. Distrust (as well as trust) allows organizational actors to manage social complexity and uncertainty (Lewis and Weigert 1985) as well as to simplify the social world concerning expectations and associated fears (Lewicki et al 1998; Luhmann 1979). Those expectations in a distrusting stance become confident and negative regarding another's conduct (Lewicki et al 1998). Further, Hardin (2004) defines distrust as a matter of degree, like trust. Similarly, Wicks et al (1999) posit there is an optimal level of trust. Lewicki et al (1998) view distrust/trust as separate constructs that do not lie on the same continuum but are linked. Lewicki et al (1998) oppose those, who, like Omodei and McLennan (2000), view trust/distrust on a single continuum. Lewicki et al (1998) assert there is no midpoint on a single continuum between the positive (trust) and the negative (distrust). Rather, both exist simultaneously and operate in tandem with each other. Sitkin and Roth (1993) as well as Luhmann (1979) also believe trust and distrust are distinct constructs. Luhmann (1979) describes how they operate in a different manner, but said they are functional equivalents because they often serve the same end. For purposes of this paper, the distrust/trust relationship will be viewed as in Lewicki et al (1998), as two distinct, bipolar constructs.

From an information systems point of view, McKnight and Chervany's (2001) conceptualization of distrust is consistent with those authors in the management literature. Distrust incorporates the concept of suspicion and doubt and is indeed different from that of trust. Also, McKnight, Kacmar and Choudhury (2002) define distrust as not being willing to become vulnerable to the trustee having taken into consideration the characteristics of the trustee. We adopt their definition.

Theoretical Underpinnings

As trust is an interaction that occurs between two or more parties (Zand 1972), trust is necessary to interpersonal relationships to minimize risk, uncertainty as well as facilitate interdependence (Mayer et al 1995). Within the trusting relationship, the element of exchange is present. There is an expectation on the part of the trustor, that the trustee will deliver on a specific promise. As such, the distrust phenomena may be framed in the context of social exchange theory (Thibaut and Kelley 1959). Interactions between parties in social exchange theory view the trustor as receiving a reward or benefit while the trustee pays a cost. A satisfactory outcome to the social exchange is a reward received by the trustor that meets their expectations. In a distrusting situation, the social exchange will not meet the trustor's expectations, leading to subsequent distrust in the trustee. Future exchanges between the parties will lead the trustor to have an unwillingness to depend on the trustee. Therefore, future interactions between the trustee and trustor will force the trustee to minimize their vulnerability in dealings with the trustee, especially in situations that are perceived to be high risk (McKnight, Kacmar and Choudhury 2002).

Figure 1 below depicts the model of distrust in an ongoing usage environment. The purpose of the model is to capture the effects of distrusting intentions on information systems usage in a captive use situation for users engaged in decision-making activities that must rely on computerized information. Exemplar situations include: finance managers participating in make or buy type decisions with system input and supply chain managers making decisions on inventory replenishment, informed by a system. The research to be undertaken goes beyond the previous literature in that unmet expectations and breach of psychological contract are incorporated into the model. Both of these constructs specifically address the distrust phenomenon. Trust is not included in the model because it does not relate to unmet expectations and contract breach.

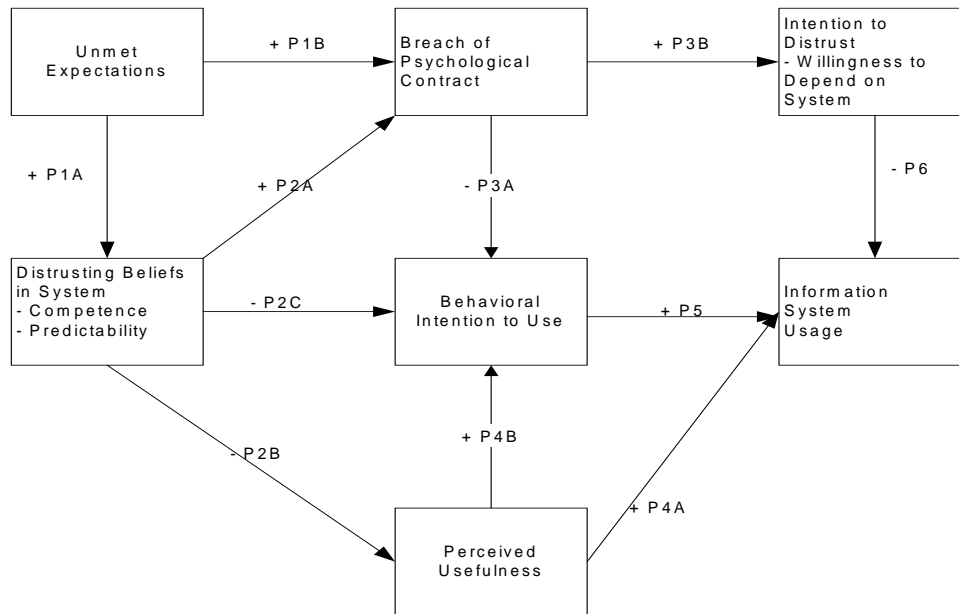


Figure 1. Research Model

PROPOSITIONS

Distrusting Beliefs

Trustors hold distrusting beliefs to the extent they have relative feelings of certainty that the other party does not have beneficial characteristics (McKnight and Chervany 2001). Specific distrusting beliefs that apply to the artifact include competence and predictability. Distrusting belief-competence means the trustor believes and feels the artifact does not have the capability or functionality to do what needs to be done (McKnight and Chervany 2001). Distrusting belief-predictability means the trustor believes and fears the artifact’s operations or output are not consistent enough that a given situation can be properly forecast (McKnight and Chervany 2001). As users gain experience through system use, patterns of activity from the information system allow the user to gauge the competence and predictability of the information system or its output. The user forms (or solidifies) distrusting beliefs when the social exchange between the user and artifact does not meet the user’s expectations.

P1A - Unmet expectations will positively influence distrusting beliefs about the system

Breach of the Psychological Contract

The psychological contract is defined as an individual’s beliefs about the terms and conditions of a reciprocal exchange agreement between parties (Rousseau 1989). Antecedent to a perceived breach in the psychological contract are unmet expectations on the part of the trustor (Robinson 1996). Information systems viewed as possessing human-like properties generate expectations regarding informational output. If the informational output necessary for decision-making violates user

expectations, then the user will believe the information system has breached the unwritten psychological contract between the user and the system.

P1B - Unmet expectations will positively influence breach of the psychological contract

The more a user has distrusting beliefs towards the system, the more likely the user will feel the system is not living up to its contract to be of service to user needs. This means the more the level of distrusting belief grows, the more likely the user will feel a contract breach has occurred.

P2A - Distrusting beliefs about the system will positively influence breach of the psychological contract

Distrusting beliefs involves attributes of the system (competence and predictability) that are important to the user. Because distrusting beliefs call into question the competence and predictability of the system, it seems likely the user will believe the system to be less useful.

P2B - Distrusting beliefs about the system will negatively influence perceived usefulness of the system.

To the user with distrusting beliefs, the system seems to have less-than-desirable characteristics that are important for usage. Therefore, these distrusting beliefs should produce lower intention to use the system.

P2C - Distrusting beliefs about the system will negatively influence behavioral intention to use the system.

Breach of psychological contract should also negatively influence intention to use the system. Thus, the trustee's understanding of the contract is not shared by the trustor (Robinson 1996). Feelings of breach make one resent the other party and encourage one to dissolve the relationship. Once psychological contract breach occurs, the user assumes the system will not live up to its part of the contract (i.e. providing timely and reliable information). The user therefore has less desire to use the system.

P3A - Breach of the psychological contract will negatively affect behavioral intention to use an information system.

Distrusting intention (unwillingness to depend) is defined as a trustor that is unwilling to make oneself vulnerable to the system by relying on it (McKnight and Chervany 2001). Psychological breach should positively influence distrusting intention. One who has experienced contract breach wants to get out of that contract. Thus, a user experiencing psychological breach would probably not be willing to depend on the system unless use was mandatory.

P3B - Breach in the psychological contract will positively affect distrusting intention toward an information system.

Perceived Usefulness, Behavioral Intention and Usage

The Technology Acceptance Model (TAM) is widely known to predict usage in a voluntary usage situation. Use of artifacts in organizational settings however is more akin to "captive use" (Adams, Nelson and Todd 1992) situations in which the user has no other alternative but to use the system to complete the job. Previous research shows that perceived usefulness directly impacts usage (Adams et al 1992) as well as impacting usage through the mediating variable of behavioral intention (Taylor and Todd 1995). Furthermore, Taylor and Todd show experienced users exhibit stronger behavioral intentions with respect to usage behavior. Our model assumes these relationships hold.

P4A - Higher levels of perceived usefulness will lead to higher levels of information systems usage

P4B - Higher levels of perceived usefulness will lead to higher levels of behavioral intention to use

P5 - Higher levels of behavioral intention to use will lead to higher levels of information systems usage

Computer usage has been shown as a key dependent variable when measuring general computer adoption (Compeau, Higgins & Huff (1999). Key determinants of usage have been found to affect performance outcome expectations (Compeau, Higgins & Huff (1999). For the purposes of this study, the usage construct will be specific to a particular information system and its informational output or more simply the users' intention to use a particular system. Distrusting

intention should affect system usage because it involves not being willing to depend on the system. If one is not willing to depend on the system, one is less likely to use the system.

P6 - Distrusting intention will negatively influence information systems usage

DISCUSSION AND CONCLUSION

This paper has attempted to put forth a theoretical model that examines the phenomenon of distrust in an organizational setting. The model is limited to predicting information systems usage for users that potentially distrust information systems and question system usefulness. Furthermore, those users have gained some previous experience with making decisions utilizing information that comes from the information system artifact. Other limitations of the model are that it does not capture initial distrust formation nor predicts future intentions to use the system. Nevertheless this paper is the first to begin to examine the phenomenon of distrust in organizational settings where the trustee is an information systems artifact. The paper contributes by relating distrust concepts to the TAM model and to the concept of psychological contract breach. We believe research in organizational distrust needs further attention by researchers to fully understand that organizational relationships are a mix of distrust and trust that are situational in context. Future directions include a pilot study consisting of a sample of working professionals. The study will examine how individuals in organizational settings distrust the artifacts they work with on an ongoing basis in the context of the research model we put forth.

***A complete bibliography is available from the corresponding author.**