MIS-CONCEPTUALIZATION OF TRUST AND TRUSTWORTHINESS IN IS RESEARCH

Research-in-Progress

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Abstract

Although there has been an impressive growth of trust studies in the IS field, there are critical conceptualization issues that demand a closer attention by researchers. In this research-in-progress, we demonstrate that, trust and trustworthiness, the two core constructs of trust research, have been poorly conceptualized in most IS studies. More specifically, this research aims to characterize the patterns of their mis-conceptualization, understand their ramifications on various validity dimensions of trust research, and finally offer remedies to ensure the growth of trust research in quality.

Keywords: Trust, trustworthiness, construct conceptualization

Introduction

We have witnessed that trust research took the center stage in the IS field during the past decade (Benbasat et al. 2010). However, behind the impressive growth of trust research, there are critical conceptualization issues that demand a closer attention by IS scholars. In this research, we demonstrate that, *trust* and *trustworthiness beliefs* (especially the *integrity belief* dimension), the core constructs of trust research, have been poorly conceptualized in most IS studies. Constructs are the building blocks of a theory and, therefore, poorly conceptualized constructs have damaging effects on the development of coherent theories and their empirical testing (MacKenzie 2003), and subsequent accumulation of domain knowledge. In the wake of growing trust studies in the IS field, therefore, revisiting our current practice especially in the conceptualization of trust-related constructs is critical to ensure the growth of trust research in quality (not just in quantity) and to sustain the convergence of relevancy of empirical findings.

The objectives of the research-in-progress are: (1) to systematically demonstrate that, *trust* and *trustworthiness*, the two core constructs in trust research, have been poorly conceptualized from the perspective of the universally accepted trust theory; (2) to frame the theoretical and empirical ramifications of construct misconceptualization in terms of four research validities (e.g., construct, internal, statistical, and external validities); and (3) to offer remedies to the methodical flaws to alter the current research practice and subsequently facilitate better alignment between IS research and the theory of trust.

Anchor Theory

In discussing the conceptualization of trust and trustworthiness constructs, we anchor our perspectives on the theoretical model of organizational trust introduced by Mayer et al. (1995). This is because their conceptualization is the most dominant theory accepted by numerous disciplines (e.g., management and general business, marketing, accounting, finance, economics, industrial engineering, political science, communication, ethics, law, psychology, sociology, health care, agribusiness, etc.) (Barki 2008; Schlosser et al. 2006; Schoorman et al. 2007; Cruz et al. 2010). It also has been heavily borrowed by IS researchers as the theoretical basis of trust research and the framing of study constructs and research models. Basing our discussions on the Mayer et al.'s (1995) seminal work, therefore, enables us to compare the universally agreed conceptualization of trust constructs with prevalent practice in IS.

Mayer et al. (1995, p. 712) defined trust as *the willingness of a party (trustor) to be vulnerable to the actions of another party (trustee) based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control the other party (trustee)*. They also suggested that, as an antecedent of trust, *trustworthiness* is defined as trustor's beliefs (perceptions) of trustee and offered its typology comprised of trustee's ability, benevolence, and integrity. Their definitions are:

- **Ability (or competence)**: the trustor's belief that group of skills, competencies, and characteristics that enable a party to have influence within some specific domain" (Mayer et al. 1995, p. 717).
- **Integrity**: the trustor's belief that the trustee adheres to a set of principles that the trustor finds acceptable (Mayer et al. 1995, p. 719).
- **Benevolence**: the trustor's belief that the trustee want to do good to the trustor, aside from an egocentric profit motive (Mayer et al. 1995, p. 718).

The three dimensions are conceptually distinct, and they collectively represent a comprehensive yet parsimonious dimension space of trustworthiness. Highlighting the theoretical stability of the typology, Schlosser et al. (2006) indicated that most constructs of trusting beliefs introduced by current studies can be conceptually reconciled within the three dimensions. Also, Colquitt et al.'s (2007) extensive meta-analysis based on 119 articles demonstrated the convergence of study variables relevant to trustworthiness into Mayer et al.'s (1995) three dimensions of ability, integrity, and benevolence.

Trust Conceptualization in IS Studies

To compare the conceptualization of trust-related constructs (i.e., trust and trustworthiness) between the mainstream trust studies that anchor their conceptualization on Mayer et al. (1995)'s work (e.g., Schoorman et al. 1996; Mayer and Davis 1999; Schoorman et al. 2007; Colquitt et al. 2007) and IS studies, empirical studies of trust and/or

trustworthiness published during the last 10 year-period in MIS Quarterly and ISR are reviewed. Nineteen empirical studies were identified and classified into seven types.

Type 1 and Type 2 represent studies with trustworthiness-related constructs. While Type 1 studies conceptualized the three beliefs (benevolence, integrity, ability) of trustworthiness distinctively, Type 2 studies combined the three belief dimensions (benevolence, integrity, ability) into one variable. Type 3 through Type 5 utilized the trust construct and conceptualized it in terms of trustworthiness's three beliefs. More specifically, Type 3 conceptualized trust as trustworthiness and mobilized its three beliefs as distinctive construct dimensions. Type 4 conceptualized trust as trustworthiness and combined the two or three beliefs of trustworthiness into a single variable. Type 5 conceptualized trust as trustworthiness and used only its integrity belief dimension among the three beliefs. Type 6 conceptualized trust as the degree of confidence the trustor has on the trustee in a directly measured concept. Lastly, Type 7 represents studies that conceptualized the trust construct from the theoretical perspective of willingness-to-be-vulnerable.

Table 1. Types of Trust-Related Constructs in MISQ and ISR							
Related Studies	Trustworthiness		Trust				
	Type1	Type2	Type3	Type4	Type5	Type6	Type7
Klein and Rai (2009, MISQ)	√						
Rai et al. (2009, MISQ)						√	
Sia et al. (2009, MISQ)		√					
Cyr et al. (2009, MISQ)						√	
Goo et al. (2009, MISQ)				√			
Iacovou et al. (2009, MISQ)				√			
Choudhury and Karahanna (2008, MISQ)				√			
Mithas et al. (2008, MISQ)				√			
Rustagi et al. (2008, ISR)				√			
Pavlou et al. (2007, MISQ)				√			
Pavlou and Fygenson (2006, MISQ)				√			
Nicolaou and McKnight (2006, ISR)		√					
Pavlou and Dimoka (2006, ISR)			√				
Povlou and Gefen (2005, ISR)				√			
Pavlou and Gefen (2004, ISR)				√			
Jarvenpaa et al. (2004, ISR)		√					√
Gefen et al. (2003, MISQ)				√			
Ba and Pavlou (2002, MISQ)					√		
McKnight et al. (2002, ISR)	√						√

Mis-conceptualization Issues

Judging the soundness of a conceptualized construct requires that we pay a close attention to two elements: (1) the specific agreed-upon meaning of a construct (Bisbe et al. 2007; Kim et al. 2010) and (2) the underlying theme of a construct (MacKenzie 2003). The former is about producing a specific and exact meaning of a construct capturing different aspects to explicitly manifest its conceptual domain. The conceptualization of a construct by being solely dependent on its aspects, however, is not sufficient because it is difficult to judge whether the included aspects represent a complete listing of the construct and/or whether any of them are extraneous and should be dropped from the construct domain. An adequate conceptualization of a construct, therefore, should be grounded on an underlying theme that ties the aspects together.

Based on the mapping of the conceptualization requirements to the seven types indentified in the conceptualization of trust and trustworthiness constructs, four different mis-conceptualization types that distant themselves from mainstream trust studies are identified. They are: (1)mis-conceptualization of integrity belief, (2) redundancy of three trustworthiness belief dimensions, (3) redundancy of trust and trustworthiness beliefs, and (4) direct conceptualization of the trust construct.

Mis-conceptualization of Integrity Belief—Type 1 and 3

Reviewing IS studies of trust from the two perspectives (a construct's agreed-upon meaning and underlying theme) reveals a consistent but considerable gap between the conceptualization of *integrity belief* by Mayer et al. (1995) and that by IS studies. Mayer et al. (1995) suggest that the meaning of the *integrity beliefs* construct includes *consistency* or *reliability*, *justice* or *fairness*, and *promise fulfillment* aspects. Its underlying theme is the trustor's acceptability of trustee's principles (e.g., rules, policies, values, etc.).

The majority of IS studies, however, employ the meaning of integrity beliefs considerably different from that of Mayer et al. (1995). These studies explicitly or implicitly equate integrity beliefs with being "honest (not lying)" (e.g., Gefen 2002, McKnight et al. 2002). Examining the measures utilized by IS studies reveals the dominating theme that ties together the aspects of integrity beliefs (Bisbe et al. 2007). The measures commonly used by IS studies include:

- Trustee is truthful in its dealings with Trustor.
- Trustor does not doubt the honesty of Trustee.
- Trustee would keep its promises.
- Trustee is sincere and genuine.

These measures represent the aspects of being *truthful*, *honest*, *sincere/genuine*, and *resolute to (*or *sticking to) promises* respectively. The underlying theme that encompasses the aspects is the trustor's perception of trustee's *honesty (*or *not lying)*. These aspects are remotely associated with the theme that reflects the acceptability of trustee's principles.

Additionally, comparing the measures of integrity beliefs (Mayer and Davis, 1999) that have been widely utilized in various academic disciplines with those populated in the IS field allows us observe the gap. Below are the measures of integrity beliefs Mayer and Davis (1999) developed based on the Mayer et al.'s (1995) framework.

- [The trustee] has a strong sense of justice.
- I never have to wonder whether [the trustee] will stick to [the trustee's] word.
- [The trustee] tries hard to be fair in dealing with others.
- [The trustee's] actions and behaviors are not very consistent.
- I like [the trustee's] values.
- Sound principles seem to guide [the trustee's] behavior.

The measures clearly point to the objective assessment and acceptability of trustee's principles as the underlying theme of integrity beliefs. The judged aspects, therefore, include *justice, promise fulfillment, fairness, consistent action, values*, and *principles*. These aspects fundamentally differ from the aspects (e.g., *truthful, honest, sincere, genuine,* and *sticking to promises*) employed by IS studies.

Redundancy Assumption of Trust and Trustworthiness—Type 3, 4 and 5

A major conceptualization problem stems from the fact that the majority of IS studies treat *trust* and *trustworthiness* as redundant notions. Unlike early studies (e.g., Mayer et al. 1995; McKnight et al. 2002) that recognized trustworthiness as an antecedent of trust, trustworthiness beliefs (ability, integrity, and benevolence) have been

employed as conceptual meanings of trust by IS studies (Gefen 2004; Gefen et al. 2008; Bhattacherjee 2002; Pavlou 2003). In addition, IS studies define the underlying theme of trust as a willingness to be vulnerable, but adopt its indicators that manifest trustee's ability, benevolence, and integrity, an indication of clear gap between theoretical definition and it operationalization. This means that the underlying theme of trustworthiness beliefs (i.e., beliefs in trustee) is used in place of the trust's underlying theme. A reason for such confusion is that trust and trustworthiness are regarded as conceptual siblings and also they are difficult to separate statistically (Gefen 2004; Gefen et al. 2008). Many studies presume that trust is driven by trustworthiness beliefs and therefore using them to define and measure the level of trust is justified (McKnight et al. 2002; Schlosser et al. 2006). For example, Morgan and Hunt (1994) argued that trustworthiness beliefs are sufficient indicators of trust because of their close tie.

The indiscrimination approach, however, is not consistent with the mainstream trust studies that distinguished trustworthiness from trust (Colquitt et al. 2007). The conceptual meaning of trust among mainstream trust studies is composed of risk-taking aspects whose underlying theme is "willingness to be vulnerable." The four survey items of trust initially developed by Schoorman et al. (1996) and subsequent 7 trust measures (Schoorman and Ballinger, 2006) improved upon the original 4 items (e.g., higher Cronbach alphas) clearly differ in their theoretical orientation from those the conceptual meanings and underlying themes of IS measures. The 7 trust measures designed to reflect the relationship between the supervisor (trustee) and the subordinator (trustor) are:

- My supervisor keeps my interests in mind when making decisions.
- I would be willing to let my supervisor have complete control over my future in this company.
- If my supervisor asked why a problem occurred, I would speak freely even if I were partly to blame.
- I feel comfortable being creative because my supervisor understands that sometimes creative solutions do not work.
- It is important for me to have a good way to keep an eye on my supervisor.
- Increasing my vulnerability to criticism by my supervisor would be a mistake.
- If I had my way, I wouldn't let my supervisor have any influence over decisions that are important to me.

Redundancy Assumption of Trustworthiness Belief Dimensions—Type 2 and 4

Type 2 and Type 4 IS studies combine three trustworthiness beliefs into one variable. Although this consolidation may represent a parsimonious solution when the focus of a study is not on the detailed understanding of trust signals (Cyr et al. 2009), it is not different from presuming that the dimensions of trustworthiness beliefs are redundant concepts (Colquitt et al. 2007). This assumption, however, contradicts the mainstream research in which the aspects of trustworthiness beliefs (i.e., ability, benevolence, and integrity) are considered related, yet highly distinct (Mayer et al. 1995). It is not difficult to relate that a trustor's trustworthiness belief dimensions toward a trustee (e.g., person, firm) do not have to move in the same direction. For instance, consumers can believe that an online firm is benevolent and truly serious about delivering business transactions in a manner to reward customers. However, they may also think that the online company simply lacks ability to realize the customer caring effectively. Likewise, consumers may believe that an online store sticks to a professional code of conduct (e.g., high integrity) in customer relationship, but they may have considerable reservation if asked about the firm's genuine care about its clients (e.g., its benevolence) (Gefen et al. 2008). This overlooking of the possible discordance between the theoretical dimensions of trustworthiness belief could result in the ambiguity of a construct's underlying theme.

To further support the uniqueness each aspect exerts on the formation of trust, Colquitt et al. (2007) revealed the existence of marked relationships between each of the three trustworthiness dimensions and trust in the extensive meta-analysis. The unique relationship stems partly from the fact that the three dimensions of trustworthiness reflect differing theoretical roots (McAllister 1995). Above all, the dimensions are complementary. While benevolence represents the affective aspect of trustworthiness beliefs, ability and integrity embody more cognitive side of trustworthiness beliefs (McAllister 1995; Rousseau et al. 1998; Colquitt et al. 2007). In other words, trustor's perception of trustee's benevolence (e.g., caring, openness, and supportiveness) may develop the former's emotional attachment to the latter. Meanwhile, trustor's positive perception of trustee's ability and integrity gives the former a rational reason to trust the latter (Ibrahim and Ribbers 2009).

Direct Questioning of Trust —Type 6

Unlike the majority that misconceptualizes the trust construct with trustworthiness beliefs, there are two other types of trust studies. One of them is Type 7 that maintains theoretical consistency with mainstream studies by conceptualizing the aspects of trust based on the common theme of willingness-to-be-vulnerable (e.g., Jarvenpaa et

al. 2004; McKnight et al. 2002). These studies utilize such measures as 'I am comfortable letting other team members take responsibility for tasks which are critical to the project, even when I cannot monitor them.' These measures represent risk-taking aspects that share 'willingness to be vulnerable' as their underlying theme of trust, thereby maintaining theoretical consistency with mainstream trust studies (e.g., Mayer and Davis, 1999, Schoorman et al., 1996; Schoorman and Ballinger 2006). Studies of Type 7 are consistent with the mainstream trust research.

The second type takes the approach of direct questioning of a trustor's level of trust toward a trustee based on such questioning as "I trust [the trustee]" (e.g., Rai et al. 2009; Cyr et al. 2009). This mode of trust conceptualization also distances itself from the mainstream trust studies. The direct questioning does not specify the trust aspects in a specific context and, therefore, leaves room for arbitrary interpretations of aspects by respondents. Furthermore, the direct questioning does not carry or imply the theoretical theme (willingness to be vulnerable) of trust. By measuring only the trustor's trust level, therefore, it fails to effectively capture the trustor's willingness to expose herself/himself to the perceived risks.

Closing Remarks

With the continued expansion of trust research, revisiting our practice especially in the conceptualization of trust-related constructs is deemed critical to ensure the growth of trust research in quality. Our research-in-progress reveals that there has been a widespread misalignment between the dominant theories and their appropriation by the IS community. The mis-conceptualization of trust constructs and corresponding measures needs to be rectified to sustain the convergence and relevancy of research findings. This requires the re-evaluation of current research practices from different theoretical and methodical angles including the re-conceptualization of integrity beliefs and the development of relevant measures, the distinction of trustworthiness beliefs and trust, the distinction among trustworthiness beliefs, and avoiding direct questioning trust measures. Through such efforts, future IS trust research will meet the validity requirements better and become more synergistic.

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