Using Online Identity as a Trust Indicator

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INTRODUCTION

A fundamental component towards measuring influence in social media includes understanding trust in online communities as it relates to identity. This paper describes research that explores identity-based antecedents of trust in online communities when trust relationships are established through the initial presence of calculus-based trust (CBT), followed by knowledge based trust (KBT) leading to trust between online participants.

THEORETICAL BACKGROUND

The theoretical basis for KBT and CBT has been widely studied in organizational settings (Lewicki and Bunker (1996), Rousseau, Sitkin, Burt, & Camerer (1998), McAllister, Lewicki, and Chaturvedi (2006)) and prior research demonstrated applicability to online communities (Piorkowski and Zhou 2011). KBT relies on knowledge exchange so prior work on tying social identity to knowledge contribution is leveraged in this research. Alternatively, CBT relies on commitment so common bond theory, serves as a mechanism to measure interpersonal commitment in online communities.

Several authors have studied knowledge contribution in online communities (Kankanhalli, Tan, & Wei (2005), Wasko and Faraj (2005), Lee, Cheung, Lim, & Sia (2006)) by leveraging the social capital theory of Nahapiet and Ghoshal (1998). In these studies the degree of participant anonymity played a role in knowledge contribution. Therefore, further research is needed to understand the influence of anonymity on knowledge contribution for online communities.

Early work on the role of identity in computer mediated communications (CMC) comes from Group Support Systems (GSS) research (Nunamaker, Briggs, Mittleman, Vogel, & Balthazard, 1996 and Diehl and Strobe, 1997). One of the common limitations of these studies as applied to an online community is that pure anonymity does not exist.

To address this limitation, Ma and Agarwal (2007) examined the concept of perceived identity verification and its contribution to knowledge sharing in online communities. The concept of perceived identity verification is defined as the perceived confirmation from other community members of a focal person's belief about his/her identities. They postulated a theoretical model of perceived identity verification based on four community IT artifacts, namely virtual co-presence, persistent labeling, self-presentation, and self-labeling.

Commitment between two online members provides the basis for CBT (Piorkowski and Zhou, 2011). Bond theory provides a theoretical basis for modeling the behavior of participants who make a commitment to establish a trust relationship in online communities (Ren, Kraut, and Kiesler, 2007). Bond theory applied to online communities addresses the attachment of individuals to other community members. Ren et al. (2007) identify three antecedents of bond: social interaction with others, personal knowledge of them, and interpersonal attraction toward them through similarity.

RESEARCH MODEL AND RESULTS

The identity-based research model for explaining trust relationships in online communities is shown in Figure 1. This model examines antecedents of KBT and CBT by leveraging the work of Ma and Agarwal (2007), which showed that virtual co-presence, self-presentation, and deep profiling as information technology (IT) artifacts led to knowledge contribution in online communities.

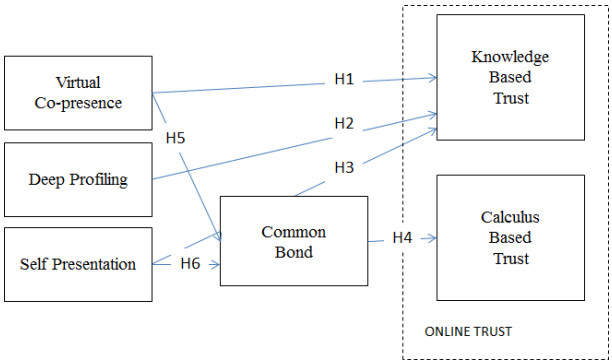

Figure 1. Identity-Based Trust Model

First, the linkages of these artifacts to KBT are explored. Second, common bond is included as a precursor to CBT. Third, the model investigates the impacts of virtual co-presence and self-presentation on common bond. The artifacts of virtual co-presence, self-presentation, and deep profiling serve as identity-based components for this model.
An empirical survey administered to a financial investing online community was used to test the research model. Table 1 summarizes support for each hypothesis as well as significant levels resulting from the PLS analysis. Hypotheses 1 and 2 were not supported by the study with significance levels $p > 0.05$.

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Table 1. Hypothesis Test Results

	Hypothesis	Results	Significance Level
H1	*A community member's virtual co-presence has a positive impact on KBT*	Not supported	$p > 0.05$
H2	*A community member's deep profiling has a positive impact on their KBT*	Not supported	$p > 0.05$
H3	*A community member's self-presentation has a positive impact on their KBT*	Supported	$p < 0.001$
H4	*Common bond has a positive impact on CBT.*	Supported	$p < 0.05$
H5	*A community members virtual co-presence has a positive impact on common bond*	Supported	$p < 0.01$
H6	*A community member's self-presentation has a positive impact on their level of common bond*	Supported	$p < 0.005$

SUMMARY

This research examines the existence of identity-based antecedents to interpersonal trust in online communities. A deeper understanding of online identity and trust can lead to new techniques of measuring trust and subsequently influence in online communities. Recent empirical research in online purchasing (Chin and Wafa, 2009) demonstrated a relationship between trust and social influence. The operationalization of the antecedents use the artifacts of virtual co-presence, self-presentation, and deep profiling. Because Ma and Agrawal, (2007) linked these artifacts to knowledge contribution an extension of their work examined the linkage of this work to KBT. Common bond theory was used to link these same artifacts to CBT. The results provided empirical evidence that these artifacts can be linked to CBT through common bond theory.

This shows consistency with the research by Ma and Agrawal (2007). The link between deep profiling and KBT was not supported. The artifact of deep profiling received mixed results in the empirical investigations by Ma and Agrawal (2007). The extension of this work to CBT and introducing common bond theory as an intermediate construct demonstrated that artifacts of virtual co-presence and self-profiling can be used to predict CBT. As previously stated, common bond indicates an individual attachment to online community members, whereas perceived identity verification is defined as the perceived confirmation from other community members of a focal person's belief about his/her identities. Since there has been limited empirical research on common bond theory in online communities, this examination of common bond provides a new contribution to the literature.

Future efforts will extend this work to other online communities as well as include improvements to the survey instrument to address the measurement of KBT.

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