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# Investigating individual trust in semi-virtual collaboration of multicultural and unicultural teams



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#### ABSTRACT

This study aims to investigate individual's trust development for semi-virtual collaboration teams with multicultural and unicultural background. We aim to explore whether the trust levels in multicultural and unicultural semi-virtual groups will be the same, how trust develops over time and what the corresponding factors to the trust development are. In order to answer the questions, a longitudinal case study was conducted in unicultural and multicultural teams. We have taken survey for 144 participants over three stages, as well as interviewed 64 participants. Results of the analysis of the survey data firstly show that no significant difference exists between multicultural and unicultural groups. Then, two factors, collaboration process and clear task help explain this phenomenon. However, the trust development of multicultural groups shows instability and keeps decreasing over time, while unicultural groups behave differently. We found that language, values and habitual behavior lead to the differences in these two types of groups.

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#### 1. Introduction

The development of economic globalization and world integration has led to an increase in the popularity of semi-virtual team collaboration in modern organizations, schools, and companies (Krishna, Sahay, & Walsham, 2004; Lee-Kelley & Sankey, 2008). The organizations involved increasingly coordinate activities that span geographical, cultural, and organizational boundaries (Mukherjee, Lahiri, & Billing, 2012).

Nowadays, many organizations use collaborative work practices to maximize their success. The use of information technology in communication and collaboration has witnessed remarkable development during recent years (Hatem, Kwan, & Miles, 2012). To date, research in computer mediated collaboration has investigated various factors influencing the effectiveness of collaboration experienced in online settings (Weinel, Bannert, Zumbach, Hoppe, & Malzahn, 2011). Among the factors affecting the collaboration,

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trust plays a critical role, especially in computer mediated groups (Wilson, Straus, & McEvily, 2006). If members of a team do not trust each other, they are likely to expend additional time and effort monitoring one another, backing up or duplicating each other's work, and documenting problems (Wilson et al., 2006). Since most group work involves interdependence, what really matters is individual trust within the group (Clelland & Zarankin, 2012). As a consequence, improvement in collaboration effectiveness can be directly affected by improving individual trust. To improve the individual trust in a team, the first thing we need to know is what an individual's trust level is and how a member's individual trust develops. In the recent years, some scholars mainly focus on the factors affecting the trust level (Cheng & Macaulay, 2014) and the trust development in the online collaboration (Cheng, Nolan & Macaulay, 2013). The established theories of trust encompass how trust succeeds for face-to-face communication or pre-meeting face-to-face (i.e. with the condition of a future meeting) communication (Ashleigh & Prichard, 2012; De Jong & Dirks, 2012). Therefore, it is necessary to have further discussion on trust development in the semi-virtual context.

According to existing research, we know that different culture, history, and political system are the main factors that influence the

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development of collaboration (Sanchez-Burks et al., 2003). Cultural distinctions are also important in the context of online community research as they provide the most commonly utilized frameworks to understanding how cultures exhibit different behaviors (Gallagher & Savage, 2012). Thus, it's vital to compare the multicultural groups and unicultural groups on the issue of individual trust. Furthermore the different context of the experiment may yield a different result (Rhoads, 2010; Ryen, 2008; Yuki, Maddux, Brewer, & Takemura, 2005).

Therefore, we can find that there is a lack of research in the development of individual trust in the background of multicultural semi-virtual collaboration. It will be interesting to fill this gap by investigating the individual trust development of multicultural and unicultural groups with undertaking the same project. These issues that this research intends to explore are summarized in the following questions:

**Question 1:** Does trust develop differently in the multicultural groups than in the unicultural groups in the semi-virtual environment?

**Question 2:** How does individual trust in multicultural groups and unicultural groups develop over time in the semi-virtual environment?

**Question 3:** What are the factors that lead to the development of individual trust in semi-virtual multicultural and unicultural teams?

This paper reports an exploratory study that examined the individual trust in semi-virtual teams relying on face-to-face interaction and virtual interaction. Initially, the paper gives an extensive introduction of prior literature in the field of cultural diversity, trust in team collaboration, and trust development. We then describe our longitudinal case study followed by the analysis of results. Next, a summary of the findings is provided whilst the contribution and implications are discussed. Lastly, we also identify the limitations and list some future works.

#### 2. Literature review

#### 2.1. Cultural diversity within team collaboration

Team collaboration is exchanging information, altering activities, sharing resources, and enhancing the capacity of another organization for mutual benefits and common purposes (Boughzala & De Vreede, 2015; Rico, Sánchez-Manzanares, Gil, & Gibson, 2008). A significant number of organizations, especially task-oriented groups, use collaborative work practices to help achieve success (Stahl, Cress, Ludvigsen, & Law, 2014). With the ongoing globalization process, the use of cross-cultural teams in group collaboration is becoming increasingly common (Zhang, Lowry, Zhou, & Fu, 2007). However, many factors, such as team performance, members' trust, teamwork efficiency were proposed to be differently in cultural diversified team collaborations (Jarvenpaa & Leidner, 1999; Pieterse, Van Knippenberg, & Van Dierendonck, 2013; Schneid, Isidor, Li, & Kabst, 2015).

According to the definition of Hofstede, Hofstede, and Minkov (1991), five independent dimensions were generally perceived as the criterion to investigate cultural diversity which could be referred as multicultural and unicultural. These dimensions respectively are power distance, individualism and collectivism, masculinity and femininity, uncertainty avoidance, and long-term versus short-term orientation.

Based on the aforementioned criterion, we have divided our research as both unicultual studies and multicultural studies from the cultural diversity. Specifically, unicultural groups refer to those have no cultural differences among five dimensions. For example, some researchers used data of China and Russia, two collectivism

countries (Michailova & Hutchings, 2006). But we can not account it as a unicultural study because the differences of power distance. In this sense, unicultural studies mostly exist within one country background.

On the other hand, team collaborations within multicultural background were widely investigated (Ess & Sudweeks, 2005; Klitmøller & Lauring, 2013; Zhang et al., 2007). Some researchers investigated the issue of culture in global outsourcing relationships (Gefen, Wyss, & Lichtenstein, 2008). Some focused on the team collaboration of software production (Daniel, Agarwal, & Stewart, 2013; Walsham, 2002). Others were conducted in the educational collaboration environment (Kim & Bonk, 2002), business organizational cooperation (Hoch & Kozlowski, 2014), military context (Fisher & Hutchings, 2013), etc. Among these literature, language was frequently mentioned as a negative impact on community engagement (Daniel et al., 2013). In a group decision-making research, shared values and attitude were conceived as antecedents of social grouping and good team performance (Walsham, 2002). Moreover, a variety of norms, customs, traditions, habits in cross-cultural collaborations influence individuals' behaviors, and serve as antecedents of cultural diversity in team collaboration (Shiraev & Levy, 2015).

According to the review above, we find that culture was not generally investigated in the unicultural environment, while multicultural research was diversified in different research context. Nevertheless, little research was proposed from the perspective of unicultural and multicultural in the literature. Therefore, we aim to conduct research to compare unicultural team collaboration and multicultural team collaboration respectively.

#### 2.2. Trust in teamwork

There are various kinds of team collaboration, such as pure virtual collaboration (Brown, Poole, & Rodgers, 2004), semi-virtual/hybrid collaboration (Cheng, Yin, Azadegan, & Kolfschoten, 2016), global virtual collaboration (Jarvenpaa, Knoll, & Leidner, 1998), and face-to-face collaboration (Liu & Kao, 2007). However, trust is an important part in building relationships, no matter online or offline (Altschuller & Benbunan-Fich, 2010; Child, 2001; Engelmann, Kolodziej, & Hesse, 2014; Henri, Jacques, & Alina, 2015; Shi, Sia, & Chen, 2013).

Virtual team is comprised of a group of members working in different locations and interacting primarily by telephone or computer (Berry, 2011; Robert, Denis, & Hung, 2009). Compared with face to face collaboration, virtual collaboration reduces "social context cue." With lower level of social control, participants exhibit a lower incidence of behaviors associated with individual trust (Paul & McDaniel, 2004; Wilson et al., 2006; Zaheer, McEvily, & Perrone, 1998). While in global virtual teams, cultural issues should be considered because of the global trait. Trust is even more complex in this research setting, and is influenced by larger numbers of factors (Barki, Robert & Dulipovici, 2015; Jarvenpaa & Leidner, 1999; Pinjani & Palvia, 2013; Sarker, Ahuja, Sarker, & Kirkeby, 2011).

Semi-virtual groups allow an individual to work independently of time and location (Briggs, De Vreede, & Nunamaker, 2003; Hertel, Konradt, & Orlikowski, 2004). Under some circumstances, team members also communicate with each other face-to-face when necessary (Citera, 1998). This form of teamwork combines the feature of both face-to-face collaboration and virtual collaboration, which also calls for a higher level of trust to keep the team work efficiently (Cheng et al., 2016; Lee-Kelley & Sankey, 2008). However, little research was conducted on the basis of semi-virtual collaboration, especially from the perspective of trust to measure relationship development. At the meanwhile, cultural diversity

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