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Social Networks: Cultural Diversity, Trust, Reciprocity and Social Capital.

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ABSTRACT

Rapid growth of the Internet has led to the proliferation of various applications including use of social networks sites. Social networks sites facilitate communications between users with shared interests. Social networks sites are popular components of the Web 2.0 phenomenon where users share content. The rapid growth of social network sites usage necessitates a further analysis of factors affecting usage of these sites and creation of social networks. We propose a theoretical model on the effects of cultural diversity, trust, reciprocity, and social capital on users' willingness to participate in the activities of social network sites.

Keywords

Cultural diversity, trust, reciprocity, social network sites, social networks, social capital and willingness to participate.

INTRODUCTION

Social networks are popular components of the Web 2.0 phenomenon where members provide, share and consume content. Social networks on social network sites are rapidly emerging as robust modes of computer-mediated communication. In addition, pervasiveness of mobile devices has led to the proliferation of mobile apps including applications related to social networks (Manvi & Birje, 2010). Usage of mobile wireless devices has risen tremendously due to their miniature size, affordable cost and mobility (Manvi & Birje, 2010). In the past decade, use of portable wireless devices grew so rapidly, that experts project that Wi-Fi capable devices will outnumber mobile computers by the end of 2011 (Dargie & Schill, 2010). This unprecedented growth of wireless mobile telephony will most likely lead to increased usage of social networks. Correspondingly, sustained multiplication and growth of wireless applications should expand usage of social networks sites and creation of social networks.

Social networks sites (SNS) attract new entrants at a rapid rate, however, there are numerous drawbacks related to SNS usage. Inherent drawbacks of SNS include naivety of social network users freely divulging personal information, potential of exploitation by devious members and loss of privacy by jobseekers (Sledgianowski & Kulviwat, 2009). Employers and recruiting agencies routinely view and make decisions based on the information current and future employees display on their SNS pages. These drawbacks affect trust and use of SNS.

Online users from different regions and countries are increasingly forging relationships in internet-related social networks and communities. Participation in social networks sites is global by individuals from diverse social and cultural backgrounds. Cultural diversity among users may affect aspects of group interaction including trust and reciprocity (Lowry, Zhang, Zhou, & Xiaolan, 2007). Trust is an essential part collaboration and participation in social networks on SNS, where individuals from diverse national cultures, share knowledge, information and experiences. The correlation between user relationships and reciprocity in social networks plays a significant role in the activity of users of social networks sites (Lee, Antoniadis, & Salamatian, 2010). In addition, the levels of trust and reciprocity determine the willingness of participation by members of social networks. Ultimately, the social capital developed by users, determines the viability and continuity of social networks (Valenzuela, Park, & Kee, 2009).

Since trust is an essential prerequisite for effective collaboration of social networks, prevalence of cultural diversity in social networks makes the analysis of the effect of diversity on trust and development of social capital in social networks important. In this paper, we discuss the effect of cultural diversity on trust, reciprocity and the effect these facets have on the creation of social networks, development of social capital and willingness to users to participate in activities of social networks on SNS.

In this paper, we attempt to focus on the following research questions:

1. How does cultural diversity affect trust and reciprocity?
2. How do trust and reciprocity affect creation of social networks in social network sites?
3. How does the creation of social networks affect development of social capital and willing of users to participate in activities of social networks on SNS?

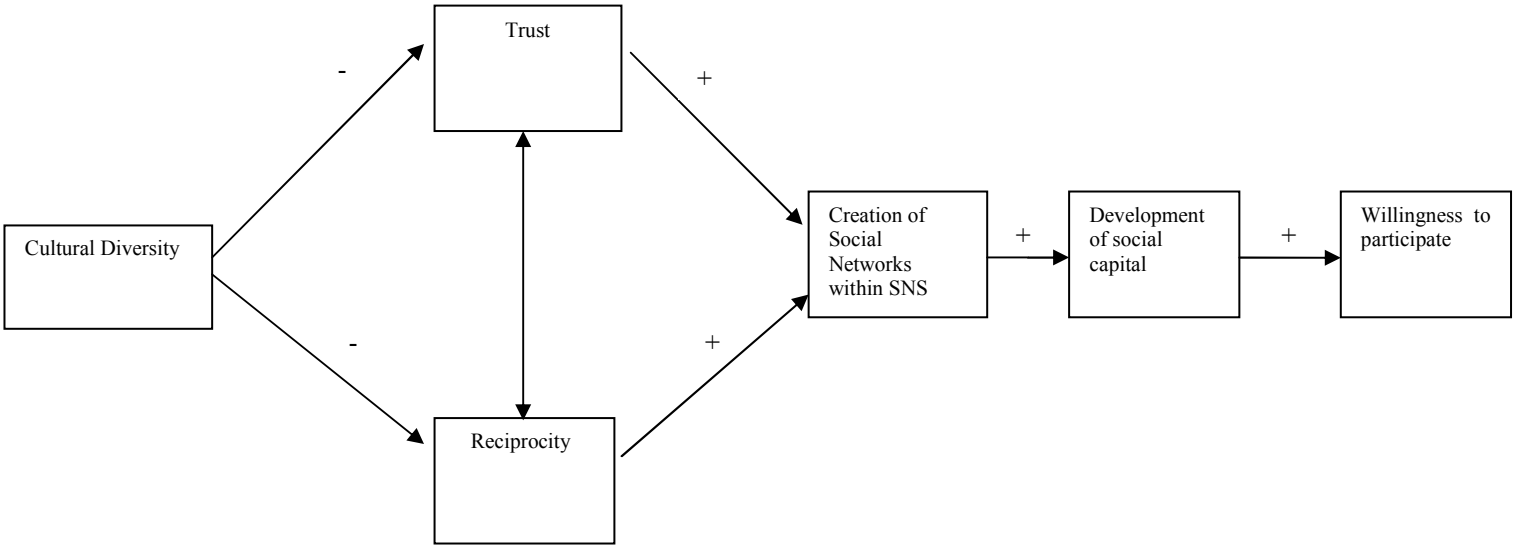

Figure1. Diversity and Trust Model

LITERATURE REVIEW

The theoretical model that we propose in this paper is presented in figure 1. The constructs included in this model are discussed in the section. We start with our discussion on social networks, which is the focus of the paper.

Social Networks

Global participation in social networks continues to grow with rapid speed and complexity. This growth has created a virtual internet landscape where users share and exchange knowledge and ideas (Trier & Bobrik, 2009). Typically, membership in social networks is open to all interested parties and users have the option of joining various social networks simultaneously. Social network sites (SNS) facilitate exchange of digital information in social networks, including text, data, pictures, videos, and hyperlinks between users with shared interests, in a readily accessible public forum (Sledgianowski & Kulviwat, 2009).

Social network sites represent virtual communities that have grown rapidly in recent years (Dwyer, Hiltz, & Passerini, 2007). Social network sites are web-based services that enable users to create profiles, select other users with whom they share a connection and search the site for direct and indirect connections (Boyd & Ellison, 2007). Use of SNS can strengthen existing social ties by keeping users up to date on the activities of their contacts. Additionally, social network sites are unique in that they enable members to make their network of connections visible to other members (Boyd & Ellison, 2007). The key motivation of SNS use is communication and maintaining relationships.

Users of social networks sites create virtual networks by developing contacts, followers or friends (Lee et al., 2010). Thereafter, other users show approval by faving or liking uploaded content and expanding lists of their 'favorites' contacts (Lee et al., 2010). The favoring element is a key aspect of content sharing in that it disseminates content and facilitates user participation (Lee et al., 2010). Favoring or "faving" engenders approval by content consumers, who at times reciprocate to

show their gratitude and stimulate further communications (Lee et al., 2010). Additionally, social network sites such as Facebook enable members to create and join groups based on common interests by integrating their profiles into the ''Facebook Groups'' application (Boyd & Ellison, 2007). The ''Groups'' application in Facebook shows each member's groups and the groups their ''friends'' have joined (Boyd & Ellison, 2007). Consequently, interaction between members of SNS and the compounding effect of new connections leads to the evolution and proliferation of social networks.

Social networks are self-forming, self-maintaining and flexible. Typically, members of social networks have similar characteristics and beliefs (Rodic´ & Engelbrecht, 2008). Accordingly, formation of social networks based on connections and trust naturally occurs. Correspondingly, social networks emerge based on the growth of social structures amongst individuals with similar interests. Culture shapes the collective belief of individuals in a nation, society, and organizations. Social networks involve individuals of diverse culture. Thus, cultural diversity is an important construct in our research.

Cultural Diversity

According to Aggarwal (2010), diversity represents aspects such as ethnicity, gender, culture, sexuality and more that differentiate individuals. Culture is shared social norms and values in a collective society such as a nation or organization. Hofstede's model of culture outlined five cultural dimensions, individualism-collectivism (I-C), masculinity-femininity, uncertainty avoidance and Confucian dynamism or long-term / short-term orientation (Hofstede, 1980). Social ties among individuals in individualistic cultures are loose, while ties in collectivist cultures are strong (Hofstede, 1980). GLOBE (Global Leadership and Organizational Behavior Effectiveness) is a more recent research program centering on culture and leadership in more than sixty nations (House, Javidan, Hanges, & Dorfman, 2002). GLOBE defines culture as shared values, beliefs and interpretations of important events that result in common experiences transferred from generation to generation (House et al., 2002). The program utilizes two categories of cultural manifestations: (a) the commonality agreement among members of a societal group based on shared psychological attributes; and (b) the commonality of observations and stated practices of units such as families, governments, political organizations and schools (House et al., 2002). GLOBE assesses national cultures based on nine dimensions: performance orientation, future orientation, assertiveness, power distance, humane orientation, institutional collectivism, in-group collectivism, uncertainty avoidance, and gender egalitarianism. The GLOBE is an alternative cultural framework that specifies the most current cultural dimensions (Tang & Koveos, 2008).

Uncertainty Avoidance represents the extent to which individuals in a societal group avoid uncertainty by depending on social norms and practices to lessen the notion of unpredictability (Housea et al., 2002). Power distance entails the extent to which a society accepts power sharing (House et al., 2002). Societal collectivism signifies the extent to which societies encourage collective action and collective allocation of resources (House et al., 2002). In-Group collectivism denotes the degree to which individuals in a culture express pride, loyalty and cohesiveness in their core societal units of belonging (House et al., 2002). Gender egalitarianism indicates the degree societies lessen gender role differences and embrace gender equality (House et al., 2002). Assertiveness is the extent to which individuals in a society are emphatic and insistent during social interaction (House et al., 2002). Future orientation indicates the extent to which individuals in societies embrace forward-thinking actions such as delayed gratification, saving, planning and investment (House et al., 2002). Performance orientation signifies the extent to which societies foster advancement through high-level performance and excellence (House et al., 2002). Humane orientation is the extent to which societies inspire people to be friendly, selfless, philanthropic and noble (House et al., 2002).

The first six culture dimensions of the GLOBE program originated from Hofstede's cultural model (Hofstede, 1980). GLOBE replaced Hofstede's masculinity dimension, with gender egalitarianism and assertiveness (House et al., 2002). Hofstede's study comprised only one organization in one industry, while the GLOBE entailed various organizations in varied industries (Tang & Koveos, 2008). Accordingly, GLOBE and other frameworks update Hofstede's cultural dimensions based on the evolving cultural and economic environments in countries worldwide (Tang & Koveos, 2008).

GLOBE emphasizes culture as shared values amongst individuals with common experiences (Housea et al., 2002). Users that join social network sites initially seek out other SNS familiar members with similar cultures that share similar values (Gefen et al., 2003). Researchers have found that interpersonal trust is higher in homogeneous, low individualistic and culturally similar people (Lowry, Zhang, Zhou, & F, 2007). New members of SNS may not initially 'friend' individuals with dissimilar cultures as the initial trust. Accordingly, we propose that cultural diversity has an inverse relationship with trust, because, trust is most probably higher in social networks where members are culturally similar and less when members that are culturally diverse. Additionally, we propose that cultural diversity has a negative effect on trust, which in turn negatively

affects the willingness of SNS members to participate in social networks with dissimilar individuals. Consequently, it is possible that new members of a social network site can gradually develop trust relationships with existing members once all parties become familiar and comfortable with each other and form social networks.

We propose that:

P1: Cultural diversity has a negative effect on trust amongst users of social network sites.

Trust

Typically, users join social network sites, if they have a level of interest in the activities of the site. In addition, users join SNS if they have trustworthiness in the SNS. Users of social network sites are probably more likely to engage in interactions if they are comfortable with and have trustworthiness in the site (Sledgianowski & Kulviwat, 2009). Trustworthiness in the SNS will depend on various factors, including perceptions of trust and privacy of the SNS (Dwyer, Hiltz, & Passerini, 2007). Trust develops in social network sites if users believe in the safety mechanisms embedded in the social network site (Gefen, Karahanna, & Straub, 2003). Gefen et al. (2003) argued that the higher the trust levels in a social network site, the greater the likelihood that new users will join the site.

Perceptions of trust and privacy affect SNS users' willingness to share personal information and foster new relationships. (Dwyer et al., 2007). Once they have joined the site, users create a profile, make connections with existing contacts and new friends (Dwyer et al., 2007). Thereafter, SNS members connect to their preferred contacts by sending "friend" messages, which have to be accepted by each recipient to create a link (Dwyer et al., 2007). "Friending" gives the recipients access to the sender's profile and adds them to the sender's social network as well asa dding the sender to the recipient's social network. Social network sites offer an approval capability where members permit or preclude other members from accessing their personal site. Additonally, in order to facilitate perception of trust on Facebook, a feature called the Circle of Trust, allows users to rate the credibility of other users and post the results on their web page (Sledgianowski & Kulviwat, 2009). Because millions of people join social networking sites, revealing personal information in their profiles, each connection has a multiple compounding effect on social network expansion. Once users join a SNS, they interact with their friends and other new friends on the site, thereby forming a rapport with their friends and eventually develop a level of trust with other members in their network circle (Valenzuela et al., 2009). In our model, we focus on trust among individuals and not trust in social network sites. It is possible for a user of a SNS to trust an individual but not have trust in the SNS. In that case, the likelihood of the user revisiting the SNS is lower if the user does not have trust in the SNS. Accordingly, we plan to examine trust in SNS in the future.

According to Valenzuela et al. (2009) the possibility that individuals develop enduring, trusting relationship is unlikely if individuals do not to get to know each other. Valenzuela et al. (2009) stated that it is beneficial to consider trust as an attitude that evolves over time as users interact and become familiar with other members. Since, online social networks enable members to share detailed information about their friends, this information can reduce uncertainty about others' intentions, which is a necessary condition for developing norms of trust and reciprocity (Valenzuela et al., 2009). Moreover, studies of interpersonal interactions substantiate that trust is a precondition for self-disclosure, since it lessens perceived risks involved in disclosing private information (Metzger, 2004). Consequently, social networks emerge in SNS because member interact, resulting in information sharing, trust creation and reciprocity.

Trust determines the inclination of members of a social network to depend on the information presented by other members (Sledgianowski & Kulviwat, 2009). Trust determines the actions members take based on the knowledge, information and actions of others. Trust plays a vital role in communications within social networks, because trust is necessary in enabling interactions in social networks (Sledgianowski & Kulviwat, 2009). Accordingly, trust among members of social networks increases the willingness to depend on other members' information, data and knowledge (Lowry & Zhang, 2007). Moreover, trust can be enhanced by the concept of social presence. Social presence in a social network is the extent to which members are aware of their social relationships with other members during the interactions. Accordingly, social media that facilitate social presence are more suitable for communication that requires trust and reciprocity (Miranda & Saunders, 2003). Social presence presents a communication medium where information relayed by a sender impacts recipients' perception of the message (Roberts, Lowry, & Sweeney, 2006). Consequently, members in a social network with similar social cues, tend to generate higher levels of social presence, resulting in deeper social influence on group members (Roberts, Lowry, & Sweeney, 2006).

Trust is both a precursor and result of effective collaboration, because collaborating parties that have accumulated knowledge about each other's capabilities generate trust (Newell, David, & Chand, 2007). Accordingly, trust is socially derived, because accumulated knowledge sets behavioral expectations and infuses shared social values in scoial interactions (Newell et al., 2007). Correspondingly, by satisfying interactional requirements of communication through trust, members of a social networks increase their proclivity towards each other (Newell et al., 2007). Consequently, trust developed by users of SNS leads to the creation of social networks based on relationships developed over time with other members.

Therefore, we propose that:

P2 Trust has a positive effect on the creation of social networks.

Reciprocity

Reciprocity refers to the approaches and mechanisms people use to return favors of a similar nature to each other (Lee et al., 2010). In essence, members of social networks counter action from others with similar positive or negative actions (Lee et al., 2010). Reciprocity is a central aspect of the psychology and online behavior in social networks (Lee et al., 2010). Accordingly, attainment of reciprocity exhibits a shared orientation between interacting members of a social network.

Social networks thrive on a foundation of reciprocity as members of networks build and expand their connections by performing reciprocal actions. Users of SNS use reciprocal behavior to create social links and networks through contact and relationships building. Trust, interaction and reciprocity are mutually reinforcing, in that trust facilitates knowledge sharing and encourages reciprocal actions. Consequently, the global nature of social networks makes the ability to achieve reciprocity essential to building social networks in SNS. Without reciprocity, social networks in SNS would not proliferate at the current rate.

Therefore, we propose that:

P3: Trust has a positive effect on reciprocity amongst users of social networks and vice versa.

Social Capital

Social capital refers to the resources accessible to people through their social interactions (Valenzuela et al., 2009). People with large networks of contacts are perceived to hold high levels of social capital (Valenzuela et al., 2009). Individuals preserve and build their social networks by using SNS. Moreover, by investing in social networks, people develop norms of trust and reciprocity, which are essential for successful social interaction. Essentially, trust facilitates working with others on common issues and social capital enables people to access information and opportunities that would otherwise be unattainable (Valenzuela et al., 2009).

Social capital entails social norms, social ties, trust, and resources in social structures that enable collective actions (Abdelaal, Ali, & Khazanchi, 2009). Resnick (2001), describe social capital as an input-output paradigm consisting of inputs such as, trust, shared values, roles and norms, and communication paths. The outputs include resource exchange, information sharing, coordination, and collective action (Resnick, 2001). Access to social resources such as information, ideas, knowledge and connections can generate positive socio-economic outcomes and create social capital (Moran, 2005).

In regards to social network sites, social capital represents the resources available to members and the 'friends' in their social network. Social capital develops and grows exponentially when members of a social network connect with other individuals in other related networks. Group connections establish networks of interdependent social exchanges where group members develop into trusted exchange partners (Oh, Chung, & Labianca, 2004). The group social capital concept is relevant to social networks due its grouping nature. Members of social networks establish circles of friends based on social ties and similarities.

Accordingly, as stated above trust among members of social networks increases the willingness to depend on other members' information, data and knowledge (Lowry & Zhang, 2007). As users become more comfortable with other users on their social network, they are more apt to reciprocate and counter the action of others with similar positive actions. Consequently, this reciprocity and trust builds social capital and increases the likelihood of users' willingness participate in activities of social networks in which they have friends with similar social ties.

Therefore, we propose that:

P4: Creation of social networks has a positive effect on development of social capital.

Willingness to Participate

Social networking sites offer a medium that facilitates conversations and information gathering, as well as a forum for users to express their opinions (Gangadharbatla, 2008). Membership on social network sites is determined by the relevance of the site to the user, topical significance and the strength and nature of the user's relationship with other site members (Gangadharbatla, 2008). Sledgianowski & Kulviwat (2009) contend that the perception of trust in a social network service provider's ability to perform their fiduciary duties will significantly influence members' willingness to use that site. This theory is similar to the contention that trust of internet service providers has a significant effect on customer loyalty (Chiou, 2004). Consequently, once the user joins the SNS, their willingness to participate in activities of social networks depends on existing relationships and newly created relationships.

Reciprocity is a key component the foundation of social networks as members of networks expand their connections by through reciprocal actions (Lee et al., 2010). Reciprocity in social networks is attributable to the proliferation and growth of social networks on SNS (Lee et al., 2010).Trust and reciprocity are mutually reinforcing facets in that trust facilitates reciprocal actions. Consequently, the ability of members of social networks to achieve reciprocity is essential to building social networks and development of social capital.

Attainment of reciprocity exhibits a shared orientation between two interacting members of a group. Consequently, reciprocity strengths social networks, which leads to the development of social capital (Valenzuela et al., 2009). Social capital is found to be an important determinant of the willingness to adopt a new agricultural scheme by the farmers of a village in European Union (Mathijs, 2003). Leana and van Buren (1999) suggest that organizational social capital "can provide the individual with a rationale for deferring his or her immediate individual interests in favor of longer-term group and organizational goals" (page 547)**.** We expect that team members' willingness to participate increases with the increase in social capital attained by members of social networks. Thus, we propose:

P5: Development of social capital has a positive effect on willingness to participate in social network activities.

Propositions	**Description**
Proposition 1	Cultural diversity has a negative effect on trust amongst users of social network sites.
Proposition 2	Trust has a positive effect on the creation of social networks.
Proposition 3	Trust has a positive effect on reciprocity amongst users of social networks and vice versa.
Proposition 4	Creation of social networks has a positive effect on development of social capital.
Proposition 5	Development of social capital has a positive effect on willingness to participate in social network activities.

Table 1. Propositions

CONCLUSION

Increasingly, participation in social network sites is becoming global, with users from diverse social and cultural backgrounds. User relationships developed in social networks on SNS play a significant role in the activity of users in social network sites. Trust is an essential component of user relationships and participation in social networks. The level of trust determines the likelihood of members creating social networks on SNS. Consequently, social networks emerge based on the growth of social structures amongst individuals with similar interests.

We have examined the relationships among cultural diversity, trust, reciprocity, social networks, social capital and willing to participate in social network activities and have proposed a theoretical model that links these constructs. Our model emphasizes that trust and reciprocity influences the creation of social networks in SNS and shapes the development of social capital. We plan to validate our model by collecting data from the users of SNS.

REFERENCES

1. Abdelaal, A., Ali, H., & Khazanchi, D. (2009). The Role of Social Capital in the Creation of Community Wireless Networks. *Proceedings of the 42nd Hawaii International Conference on System Sciences (HICSS 09*), 5-8 January, Waikoloa, Big Island, HI, USA, IEEE Computer Society, 1-10.
2. Aggarwal, A. (2010) Diversity in Distributed Decision Making: An Exploratory Study. *43rd Hawaii International Conference on System Sciences (HICSS 10)*, 5-8 January, Koloa, Kauai, HI, USA. IEEE Computer Society, 1-11.
3. Boyd, D., & Ellison, N. (2007) Social Network Sites: Definition, History, and Scholarship. *Journal of Computer Mediated Communication,* 13, 1, 210-230.
4. Chiou, J. (2004) The Antecedents of Consumers' Loyalty Toward Internet Service Providers. *Information & Management*, 41, 685-695.
5. Dargie, W., & Schill, A. (2010) Stability and performance analysis of randomly deployed wireless networks. *Journal of Computer and System Science,* 8,3, 1-9
6. Dwyer, C., Hiltz, S. R., & Passerini, K. (2007). Trust and privacy concern within social networking sites: A comparison of Facebook and MySpace. *Proceedings of AMCIS 2007*, 9-12 August, Keystone, CO, USA, Association for Information Systems,
7. Gangadharbatla, H. (2008). Facebook Me: Collective Self-Esteem, Need to Belong, and Internet Self-Efficacy as Predictors of the iGeneration's Attitudes toward Social Networking Sites. *Journal of Interactive Advertising*, 8, 2, 1-28.
8. Gefen, D., Karahanna, E., & Straub, D. (2003) Trust and TAM in Online Shopping: An Integrated Model. *MIS Quarterly*, 27, 1, 51-90.
9. Grootaert, C., Narayan, D., Jones V, N., & Woolcock, M. (2008). Retrieved from Measuring Social Capital: an Integrated Questionnaire,# accessed January 5th, 2008,: from: http://povlibrary.worldbank.org/files/11998_WP18-Web.pdf
10. Hofstede, G. (1980) In Culture's Consequences: International Differences in Work-Related Values, Sage, Newbury Park.
11. House, R., Javidan, M., Hanges, P., & Dorfman, P. (2002). Understanding cultures and implicit leadership theories across the globe: an introduction to project GLOBE. *Journal of World Business*, 37, 3-10.
12. Leana, C.R. and Van Buren, H.J. (1999). Organizational Social Capital and Employment Practices. *Academy of Management Review*, 24(3), 538-555.
13. Lee, J. G., Antoniadis, P., & Salamatian, K. (2010) Faving Reciprocity in Content Sharing Communities: A Comparative Analysis of Flickr and Twitter. *Proceedings of the International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, 9-11 August, Odense, Denmark, IEEE Computer Society, 136-143.
14. Lowry, P., Zhang, Zhou, L., & F, X. (2007) The Impact of National Culture and Social Presence on Trust and Communication Quality within Collaborative Groups. *Proceedings of the 40th Hawaii International Conference on System Sciences (HICSS 07)*, 3-6 January, Waikoloa, Big Island, HI, USA, IEEE Computer Society, 1-10.
15. Manvi, S., & Birje, M. N. (2010) A review on wireless grid computing. *International Journal of Computer and Electrical Engineering*, 2, 3, 1793-8163.
16. Mathijs, E. (2003). Social capital and farmers' willingness to adopt countryside stewardship schemes, *Outlook on AGRICULTURE*, 32(1), 13-16.
17. Metzger, M. (2004). "Privacy, Trust, and Disclosure: Exploring Barriers to Electronic Commerce. *Journal of Computer-Mediated Communication*, 9, 4.
18. Miranda, S., & Saunders, C. (2003) The social construction of meaning: An alternative perspective on information sharing. *Information Systems Research*, 14, 87-106.
19. Moran, P. (2005) Structural vs. Relational Embeddedness: Social Capital and Managerial Performance. *Strategic Management Journal*, 26, 1129-1151.

20. Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review,* 23, 2, 242-266.
21. Newell, S., David, G., & Chand, D. (2007) Exploring Trust among Globally Distributed Work Teams. *Proceedings of the 40th Annual Hawaii International Conference on System Sciences (HICSS 07),* 3-6 January, Waikoloa, Big Island, HI, USA, IEEE Computer Society, 246.
22. Oh, H., Chung, M., & Labianca, G. (2004) Group Social Capital and Group Effectiveness: The Role of Informal Socializing Ties. *The Academy of Management Journal*, 47, 6, 860-875.
23. Resnick, P. (2001) Beyond bowling together: Sociotechnical capital. In J. Carroll (Ed.), HCI in the New Millennium. Addison-Wesley, Boston.
24. Roberts, T., Lowry, P., & Sweeney, P. (2006) An evaluation of the impact of social presence through group size and the use of collaborative software on group member "voice" in face-to-face and computer mediated task groups. *IEEE Transactions on Professional Communication*, 49, 28-43.
25. Rodic´, D., & Engelbrecht, A. (2008) Social networks in simulated multi-robot environment. *International Journal of Intelligent Computing and Cybernetics*, 1, 1, 110-127.
26. Sledgianowski, D., & Kulviwat, S. (2009) Using Social network sites the effect of playfulness critical mass and trust in a hedonic context. *The Journal of Computer Information Systems*, 49, 4, 74-83
27. Tang, L., & Koveos, P. E. (2008). A framework to update Hofstede's cultural value indices: economic dynamics and institutional stability. *Journal of International Business Studies*, 39, 1045–1063.
28. Taylor, S., & Todd, P. (1995). Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*, 6, 2, 144-176.
29. Trier, M., & Bobrik, A. (2009) Social Search: Exploring and Searching Social Architectures in Digital Networks. *IEEE Internet Computing*, 13, 51-59.
30. Valenzuela, S., Park, N., & Kee, K. F. (2009). Is there social capital in a social network site? Facebook use, and college students' life satisfaction, trust, and participation. *Journal of Computer-Mediated Communication,* 14, 4, 875–901.