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THE EFFECT OF INDIVIDUAL'S CULTURAL VALUES AND SOCIAL CAPITAL

on knowledge sharing in web-based communication environment

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ABSTRACT

Knowledge sharing among project team members has been recognized as a critical determinant for the success of a project. Thus, understanding the factors that increase knowledge sharing is important academically and practically. This study focuses on the relationship between a team member's cultural values and their intention to share knowledge within a project team through social capital (SoC). SoC is formed in a social network of team members and may influence knowledge sharing within a group. We also investigate the role of web-based communication (WBC) media richness as a moderator for the relationship between cultural values and social capital. The results show that social capital is an important factor in knowledge sharing. Espoused collectivism and low power distance provide a positive influence to social capital formation. Furthermore, the WBC media richness positively moderates the relationship between collectivistic values and social capital. The results of the study can provide project managers with insightful suggestions on how to encourage project team members to share their knowledge.

1. Introduction

Information system (IS) projects involve knowledge-intensive work, requiring diverse expertise such as business knowledge and process as well as emerging information technology techniques or skills (Pee et al., 2010). Knowledge is an important resource for an IS project team. Knowledge sharing within a project team is also known as a critical factor for a project performance (Lee et al., 2014; Mitchell, 2006). However, encouraging knowledge sharing within a project team is problematic since a project team is a temporary organization with short-term goals that is required to produce outcomes under a tight schedule (De Nadae et al., 2015). Furthermore, a project team is composed of a variety of stakeholders with differing views, objectives, and cultural values. A meta-analysis conducted by Wang and Noe (2010) found that the effect of cultural characteristics on knowledge sharing is under researched. The analysis also suggested that the effect of individual's characteristics on knowledge sharing needs further investigating. Most research in the area focuses the relationship between individuals' personality and their knowledge sharing intention

(e.g., Gupta, 2008; Teh et al., 2011). Yet, whether or not individual's cultural values actually predict knowledge sharing in team contexts remains largely unexplored. In this study, we investigate the relationship between team members' cultural values as individual's characteristics and the intention to share knowledge.

Knowledge sharing within a project team is observed through the social relations of team members. Previous studies suggest that social relations and social capital in the relations are related to group cohesiveness, eventually supporting collective behavior (Adler and Kwon, 2002; Yli-Renko et al., 2001). Furthermore, web-based communication (WBC) is considered an important communication platform in almost every project environment. Thus, our goal is to understand the role of WBC in the formation of social capital in a project team in a Confucian culture and the impact of WBC on knowledge sharing among team members.

Furthermore, prior research has considered face-to-face contact as rich media and Information and Communication Technology (ICT) as lean media (Markus, 1994; Sornes et al., 2004; Wijayanayake and Higa, 1999). These studies have compared face-to-face and ICT in terms of media richness. Contrary to prior research, we focus

mainly on the different richness levels of diverse WBC available to organizational members. Recent trends of WBC introduced highly rich media that closely resembles face-to-face communications.

This paper is organized as follow. The second section reviews theoretical background including social capital, cultural values, and media richness in project environment. The third section introduces our research framework and six research hypotheses. The fourth section describes the study methodology. The analysis results are described at the fifth section. The last section concludes with a discussion, the study limitations and future research.

2. Theoretical Background

2.1 Social Capital in Project Environment

Several types of relationships exist within a project team. These relationships can be between users and team members, team members and a project manager, and business experts and technical experts, and relationships among team members (Randolph and Petter, 2008). Relationships within the team are termed bonding (Han and Hovav, 2013). Relationships with others can be one factor in the selection of team members, which are required to have relevant knowledge, skills, and expertise. More importantly, the capacity to share or integrate information is important for team members (Newell et al., 2004). However, knowledge sharing among team members does not guarantee financial gains for the team members. Project team members may lose their unique value (i.e. expert knowledge) by sharing information and knowledge with others. Thus, sharing may not be a rational action, but a collective action rooted in social relationships (Kankanhalli et al., 2005).

Social capital theory explains various pro-social behaviors such as collective actions and community involvement (Wasko and Faraj, 2005). In

the project context, the concept of social capital is needed to explain internal and external ties. Alder and Kwon (2002) proposed a conceptual framework that integrates the various streams of social capital research and defined social capital as “the goodwill available to individuals or groups. Its source lies in the structure and content of the actor’s social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor” (Alder and Kwon, 2002, p23). The definition of social capital encompasses internal and external interactions. Nahapiet and Ghoshal (1998) defined three dimensions of social capital; structural, relational, and cognitive, underlying both internal and external ties (Alder and Kwon, 2002; Nahapiet and Ghoshal, 1998). The structural dimension refers to the information channels that connect individuals and units. The structural dimension extends as social interaction increases (Coleman, 1988). The relational dimension refers to the resources embedded in relationships such as trust and reciprocity between members and focal actors (Woolcock, 1998). The cognitive dimension is defined as the shared meaning, interpretation, and understanding that develops among members of the network as they interact. Through interaction, a common frame of reference develops, providing a shared language for communication (Nahapiet and Ghoshal, 1998).

In this paper, we define social capital as the structural dimension of social capital (intensity of interaction inside a group), the cognitive dimension of social capital (shared goal), and the relational dimension of social capital (trust). We focus on the perceived social capital of the focal individual and investigate social capital within a project team.

2.2 Social Capital and Cultural Values

A project team is a temporary and relatively short-term organization. Teams are often global and encompass members with various cultural values. These cultural values could affect behavioral intentions (McCoy et al., 2005; Srite and Karahanna, 2006). In the context of social

capital theory, “network ties” are one of the major factors in the structural dimension as defined above (Nahapiet and Ghoshal, 1998). “Collectivity cohesiveness” increases “bonding” (Alder and Kwon 2002). In addition “hierarchy” (Nahapiet and Ghoshal, 1998) is an essential factor that shapes social relations and influences social capital (Alder and Kwon, 2002). In this study, we use two espoused cultural values: collectivism and power distance (PD) because these are related to social relations among individuals. Furthermore, these two cultural dimensions represent Confucian values dominant in Korea (for details see Hofstede and McCrae, 2004). The level of individualism (or collectivism) represents the level of the individual relations within the group. In a more individualistic society, the ties among the members are less structured than in collectivistic environments. Members of a collectivist society have more cohesive relationships and are more likely to cooperate (Dierdorff et al., 2011; Wagner, 1995). Espoused PD indicates the degree to which large differentials of power and inequality are accepted as normal by the individual (Srite and Karahanna, 2006). In low PD groups, people perceive their superiors as accessible. In high PD groups, employees perceive their superiors as inaccessible and “dif-

ferent kinds of people” (Hofstede, 1980; Srite and Karahanna, 2006). Thus, individuals with espoused collectivistic and high PD values are more likely to develop vertical bonding rather than horizontal bonding. That is, the social capital will lie in the ties among peers and not necessarily in ties with subordinates or supervisors.

2.3 Web-Based Communication Media Richness

Media richness theory (sometimes referred to as information richness theory) provides a framework to evaluate communications media within organizations. Media varied in their richness which is the ability to enable users to adequately communicate a complex message (Daft and Legel, 1986). The framework has been applied to investigate the alignment between the medium and task performance (Daft et al., 1987; Rice and Shook, 1990). Media capable of sending “rich” information are better suited to unclear tasks (Daft and Legel, 1986).

We categorized the type of WBC media based on media richness theory. Most classifications of media have their roots in media richness characteristics which integrate the level of interactivity, capacity to transmit a high variety of languages, and ability to personalize messages (Daft et al., 1987). As

the capacity to transmit language variety can be subsumed under channel capacity (Dennis, 1996), the most common classification of media builds on the three dimensions of media richness: interactivity, channel capacity, and adaptiveness (Te’eni, 2001). Interactivity refers to the potential for immediate feedback from the receiver. Channel capacity is defined as the capability to convey a high variety of cues and languages. Adaptiveness refers to the potential to personalize a message to a particular receiver (Te’eni, 2001).

Richness is the capacity of the medium to carry large volumes of data and convey meaning or information (Karim and Heckman, 2005). Face-to-face communication is generally assumed to be richer than written media. In the order of decreasing richness, media classifications are face-to-face, teleconferencing, telephone, e-mail, facsimile, and personal documents such as letters or memos (Wijayanayake and Higa, 1999). Following the above classification, we added one more characteristic to classify WBC media. The fourth criterion, communication model, is a structural feature relating to control of contact (Peters, 2006). WBC media follow different communication model which includes one-to-one, one-to-many, and many-to-many. For example, e-mail is traditionally used as a one-to-many communication medium. Instant messenger (IM) is a one-to-one communication medium, while bulletin board systems (BBS) or micro-blogs (e.g., Twitter) are one-to-many types of communication media. Table 1 shows the degree of media richness for the above WBC media. IM can be considered the richest WBC media because it is synchronous and allows text, images, and emoticons, and its message is personalized for the receiver.

Example	Interactivity	Channel capacity	Adaptiveness	Communication model	Richness
IM	Synch	Text, Image, Emoticon	High	1:1	High
E-mail	Asynch	Text, Image, Emoticon	High	1:N	Medium
BBS, Blog	Asynch	Text, Image	Low	1:N	Low
Micro-Blog	Asynch	Short text	Low	1:N	Very low

TABLE 1. Media Richness of WBC

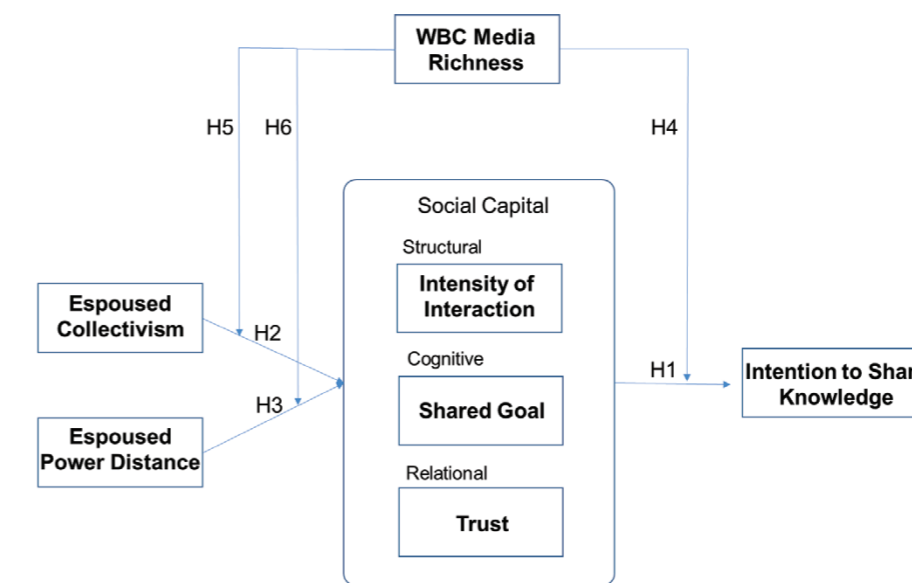


FIGURE 1. Research Model

2.4 WBC Media Richness and Cultural Values

In addition to task characteristics, cultural values could affect a medium selection (Lee, 2000; Markus, 1994; Sornes et al., 2004). For example, individuals with high PD values might select a medium that will reflect the formal milieu required to communicate with their supervisors.

Korea is one of the most influenced countries by Confucian values which emphasize social responsibility and order (Carl et al., 2004; Lee, 2000). Accordingly, Korean employees are aware of the need to show respect when communicating with supervisors or managers (Lee, 2000; Park et al., 2005). These cultural values can affect not only the choice of communication media but also communication within the social relationships. The influence of cultural values on media choice has been the subject of much research (Lee, 2000; Markus, 1994; Sornes et al., 2004). To date, the empirical findings on the influence of cultural values on media choice are mixed (Lee, 2000; Markus, 1994; Sornes et al., 2004). Contrary to traditional media richness theory, Markus (1994) reported that e-mail communication has become the medium of choice for managing organizations in many U.S. corporations despite its weakness in providing multiple cues. Lee (2000) conducted his research using data from Japan and South Korea, where espoused PD is relatively high. Lee (2000) found that employees avoid communicating with their supervisors via e-mail when they believed that using e-mail may not show the expected respect. Prior research shows the existence of cultural-based differences in media selection preferences due to a notable gap in PD (Sornes et al., 2004). These studies compared the effectiveness of face-to-face communications with lean media in various contexts. However, current studies have not investigated the media richness variance influence on knowledge sharing in the context of espoused cultural values.

Furthermore, several researchers have investigated how specific communications media features affect social capital (Ellison et al., 2007; Yang et al., 2009). Most of these studies focused on one WBC (e.g., groupware, e-mail, or Facebook) and investigated the relationship between the selected medium and social capital. However, these studies did not compare the differential effect of various WBC's richness on social capital.

3. Research Model

This study proposes a research model that provides an enhance understanding of the role of cultural values and WBC media richness in knowledge sharing among project team members from a social capital theory perspective (Figure 1).

The concept of social capital has been applied in a number of knowledge management studies as summarized in (Jarvenpas and Leidner study, 1999). Several prior studies found a positive relationship between social capital, knowledge activities and knowledge acquisition (Yli-Renko et al., 2001), contribution (Wasko and Faraj, 2005), and integration and transfer (Robert, Jr. et al., 2008). As the level of interactions among team members increases, team members may become familiar with one another and develop trust (Jarvenpaa and Leidner, 1999). Trust within the team entails the sharing of team goals and common understanding of these goals (van den Hooff et al., 2004). The three dimensions of social capital (i.e. interaction, trust, and shared-goal) lead to cohesive actions such as sharing or exchanging knowledge (Law and Chang, 2008). Based on prior research, we propose the following hypothesis:

H1. Social capital has a positive effect on the intention to share knowledge within a project team.

People who hold individualistic ideals are more interested in their own goals or values than in the shared

goal of the team (Triandis, 1989). In addition, team members may avoid what they perceive to be unnecessary communication with other team members if such communication does not further their own objectives (Earley and Gibson, 1998). In contrast, individuals with espoused collectivism values are likely to show an inclination toward cooperation (Wagner, 1995) and are encouraged to engage in more communication within the group (Moorman and Blakely, 1995). Furthermore, team members with collectivistic cultural values are more responsive to and comply with in-group norms (Marcus and Kitayama, 1991). Such members are also more likely to share the team's goals. This is likely to result in higher levels of trust and shared norms and consequently, higher level of social capital. Therefore, we propose the following hypothesis:

H2. Espoused collectivism has a positive effect on social capital within a project team.

Espoused PD refers to the degree to which large differential of power is accepted as normal by the individual (Srite and Karahanna, 2006). Supervisors in an organization often have more access to important information and knowledge from external resources than their subordinates (Bhagat et al., 2002). For example, employees with less power in the organization tend to provide information to those with more power. Conversely, people with more power tend to share information with their peers rather than with those in a lower power position (Ipe, 2003). Thus, the direction of knowledge flow is likely to be restricted between individuals with high PD. These restrictions in knowledge flow and expression could cause infrequent communication among team members of varied perceived power. Furthermore, imposing a hierarchical structure discourages horizontal relationships among people and the formation of trust (La Porta et al., 1997). Thus, we propose that social capital of team members with high power distance values will decrease.

H3. Espoused PD has a negative effect on social capital within a project team.

Prior studies suggest that the positive relationship between social capital (e.g., frequency of interaction and shared mental model) and knowledge integration increases when teams communicate through web-based communication networks (Robert et al., 2008). WBC plays a crucial role in knowledge-sharing processes (Sproull and Kiesler, 1992). WBC contributes to more efficient communication by removing spatial or temporal barriers (Ou et al., 2013). We expect that the frequency of interaction will increase with the use of synchronous media compare with asynchronous media. WBC also enables team members to distribute information efficiently. The frequent usage of WBC also positively influences the willingness to share knowledge (Hinds and Pfeffer, 2003). Social capital increases individuals' collective behavior (van den Hooff and Ridder, 2004). The collective behavior can be promoted by various communication channels, communication model and personalized communication. For example, a team member who knows information about project stakeholders can share the information with other team members more effectively by using instant message with various emoticons than by using text base e-mail. Thus, we propose the following hypothesis:

H4. The relationship between social capital and the intention to share knowledge within a team project is moderated by WBC media richness.

As hypothesized above, collectivistic values are likely to increase SoC. This is because, individuals with collectivistic values are more likely to engage in communication within the group (Moorman and Blakely, 1995) and comply with in-group norms (Marcus and Kitayama, 1991). We proposed that this inclination could be strengthened by various channels of communication media and personalized messages. Furthermore, espoused collectivistic values are associated with interaction, trust, and shared goal among team members (van den Hooff and Ridder, 2004). Theses associations could be advanced by the use of rich WBC media. For example, team members are more likely to trust information conveyed by an IM conversation than information posted on a blog. Therefore, we propose the following hypothesis:

H5. The relationship between espoused collectivism and social capital is moderated by WBC media richness within a team project.

Team members with high PD values are more likely to process information according to hierarchical order (Hofstede, 2001; Ipe, 2003). The direction of knowledge flow can be restricted among individuals with the same social level (Ipe, 2003). These restrictions in knowledge flow could cause infrequent communication among team members. However, electronic media weakens the differences imposed by hierarchical position and reduces social inhibitions and barriers to

communication (Sproull and Kiesler, 1992). The interactivity and cues variety of WBC media also allow team members to express their thoughts and share their knowledge with less consideration to hierarchical positions (van den Hooff and Ridder, 2004). For example, emoticons or images which are provided by IM or are witty (Rezabeck and Cochenour, 1995), and so diminish the formality of messages. Thus, the negative effect of espoused PD on SoC could be mitigated by WBC media richness. Based on the above premise, we propose the following hypothesis:

H6. The relationship between espoused PD and social capital is moderated by WBC media richness within a team project.

4. Research Methodology

4.1 Development of Measures

The unit of analysis is an individual who is working or had worked on a team project. We used a survey questionnaire to validate our research model. Existing measures for cognitive social capital (Tsai and Ghoshal, 1998), relational social capital (Jarvenpaa et al., 2004), espoused collectivism (Srite and Karahanna, 2006), espoused PD (Srite and Karahanna, 2006), and knowledge sharing (Bock et al., 2005) were adapted and modified based on the research context. We use espoused cultural values to avoid ecological fallacy (Tams, 2013). We developed new items for perceived frequency of interaction. For media richness, we used the rank of richness as defined in Table 1. All constructs were measured on a seven-point Likert-type scale from "strongly disagree" to "strongly agree." An initial version of the survey instrument was pre-tested by a panel of academics with significant expertise in the study area. The survey was refined based on the panel's comments. The survey items are detailed in Appendix.

4.2 Sample and Data Collection

We collected data from 156 working adults in South Korea. All respondents had more than five years industry experience and are or have worked in a team environment. Table 2 describes the sample demographics and Table 3 describes the projects' characteristics.

Table 4 includes the percentage of the used WBC media within a project team. Each respondent belonged to various types of projects. The sample also represents a wide range of company size and working periods. Out of the 156 responses, five questionnaires had partially missing values and were discarded resulting in a sample size of 151 surveys.

5. Analysis and Results

	Frequency	Percentage
Service/Product development	44	29.14
Process Innovation	29	19.21
Consulting	27	17.88
Information technology communications	21	13.91
Policy/Strategy development	21	13.91
Other	7	4.64
missing value	2	1.32
Total	151	100.00

TABLE 2. Characteristics of the Sample – Project Type

	Frequency	Percentage
Gender		
Male	101	66.89
Female	50	33.11
Age		
20-25	2	1.32
26-30	44	29.14
31-35	41	27.15
36-40	36	23.84
41-45	21	13.91
46-50	7	4.64
Working period (Year)		
Less than 1	6	3.97
1-5	50	33.11
6-10	45	29.80
11-15	36	23.84
16-20	13	8.61
21 and above	1	0.66
Total	151	100.00

TABLE 3. Characteristics of the Sample – Gender, Age, and Working Period

Digital communication media	Frequency	Percentage
Email	80	52.98
IM (MSN, Nate, etc.)	50	33.11
BBS in a company	15	9.93
Blogs (Cyworld, Facebook, etc.)	1	0.66
Micro-blogs (Twitter, me2day, etc.)	1	0.66
Others	4	2.65
Total	151	100.00

TABLE 4. WBC Media Usage within a Project Team

Partial Least Squares (PLS) was chosen to examine the proposed model and study hypotheses. As in the case of this study, PLS is suitable for assessing theories in the early stages of development (Chin et al., 2003). PLS also requires minimal demands on sample size in order to validate a model in comparison to other SEM techniques (Chin et al., 2003). These conditions infer that PLS is an appropriate statistical tool for testing the proposed model. We used Visual PLS version 1.04bl to establish construct validity and to measure the correlation between variables and associated measurement items (Gefen and Straub, 2005).

5.1 Measurement model

We analyzed the validity of our data based on three types of validity: content validity, convergent validity, and discriminant validity of the instrument. Content validity refers to how well the items cover the characteristics they are intended to measure. It is assessed by examining the process by which scale items are generated (Straub, 1989). Content validity of the instrument was established by ensuring that the measurement items were consistent with the extant literature, pre-testing the instrument, and taking professional advice from a panel of experts. Convergent validity was assessed by extracting composite reliability and the average variance value (Hair Jr et al., 1995). A score of 0.5 is commonly regarded as an acceptable level and a score of 0.7 is recommended for a reliable construct (Fornell and Larcker, 1981).

Table 5 shows that the composite reliability values for all constructs are between 0.81 and 0.92, which exceeds the recommended value.

Finally, the discriminant validity of the instrument was verified by examining the square root of the average variance extracted (Fornell and Larcker, 1981). Table 6 shows that the square root of the average variance extracted for each construct was larger than the correlations between the average variance and all the other constructs. Furthermore, the results of the inter-construct correlations showed that each construct shared greater variance with its own measures than with other measures.

We measured social capital as a second-order factor. All the other constructs were measured as first-order factors. To estimate the hypothesized second-order model, we calculated the coefficients of each first-order factor against the second-order factor using Principal Components Analysis (PCA). We followed the procedure in Diamantopoulos and Winklhofer (2001) rather than measure the higher-order constructs with the measurement items of the first-order factors. The assessment of the model as second-order factors includes the examination of the correlations among the first-order factors. Tanaka and Huba (1984) argue for the possible validity of a second-order factor if the first-order factors are highly correlated. Figure 2 shows statistically significant correlations between all pairs of the first-order factors, suggesting a second-order factor structure and validating their expected relationships. All of the correlations between the pairs are positive, and thus a high value on one does not preclude a high value on another. In addition, the correla-

tions among the first-order constructs were below the suggested cut-off value of 0.90 (Bagozzi et al., 1991), demonstrating that the content captured by the first-order is distinct from one another and is indicative of discriminant validity. Based on these results, we could confirm that the measurement model was supported by the data and was ready for further analysis.

5.2 Structural Model

Figure 3 shows the analysis result of the model with path loadings, t-values of the paths, and R-square value. Significance tests for all the paths in the model were conducted using the bootstrap resampling procedure. Among the seven hypothesized paths, three were found to be significant at the level of 0.01, and one was significant at the level of 0.05. As expected, social capital was closely related to the intention to share knowledge (β=0.477; t=6.692; p<0.01). Therefore, Hypothesis 1 is supported. Social capital explained more

than 23 percentage of the variance in the intention to share knowledge.

Espoused collectivism was significantly related to social capital (β=0.430; t=5.792; p<0.01), and Espoused PD was also significantly related to social capital (β=-0.232; t=-2.415; p<0.05). Thus, Hypotheses 2 and 3 are supported. The two constructs account for more than twenty-five percentage of the variance in the social capital construct. Contrary to our prediction in Hypothesis 4, there was no moderating effect of media richness on the relationship between social capital and intention to share knowledge. So, Hypothesis 4 is not supported. However, as expected in Hypothesis 5, WBC media richness moderated the relationship between espoused collectivism and social capital (β=0.180; t=2.656; p<0.01). This indicates that a project team member who has a high degree of espoused collectivism is more likely to increase social capital among team members when WBC media richness is higher. On the other hand, media richness had no moderating effect on the

Hypothesis	Results
H1	Supported
H2	Supported
H3	Supported
H4	Not Supported
H5	Supported
H6	Not Supported

TABLE 7. Summary of Results

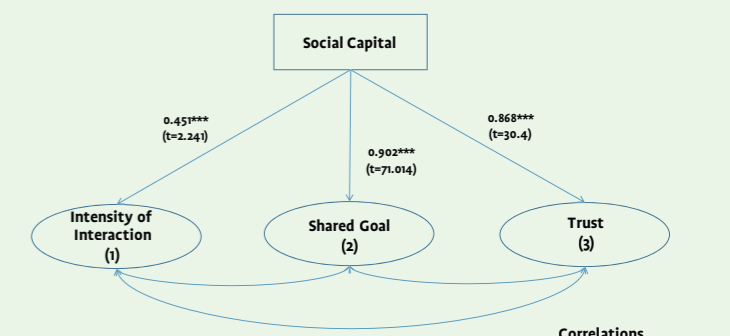


FIGURE 2. Second-order Construct Results

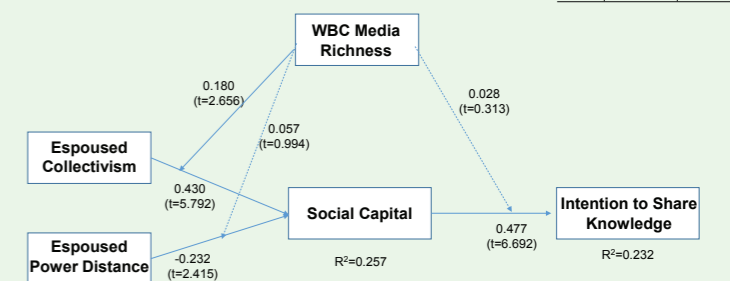


FIGURE 3. Path Diagram of Research Model

Construct	Item	CR	AVE	Loading	t-value
SC	SC_1	0.81	0.59	0.49	4.37
	SC_2			0.90	44.61
	SC_3			0.86	23.53
ISK	ISK_1	0.95	0.74	0.85	38.97
	ISK_2			0.88	43.25
	ISK_3			0.90	49.64
	ISK_4			0.88	37.36
	ISK_5			0.85	36.43
	ISK_6			0.78	18.83
	ISK_7			0.87	36.58
COL	COL_1	0.92	0.70	0.82	15.78
	COL_2			0.86	17.55
	COL_3			0.87	30.11
	COL_4			0.81	16.31
	COL_5			0.84	29.20
PD	PD_1	0.86	0.61	0.87	3.78
	PD_2			0.90	5.02
	PD_4			0.56	2.66
	PD_7			0.73	3.29
PDMR	PDMR_1	0.88	0.65	0.85	6.95
	PDMR_2			0.83	6.34
	PDMR_3			0.69	3.84
COLMR	COLMR_1	0.92	0.70	0.89	6.59
	COLMR_2			0.92	7.29
	COLMR_3			0.79	5.12
	COLMR_4			0.75	4.61
	COLMR_5			0.82	5.28

CR: Composite Reliability / AVE: Average Variance Extracted
 SC: Social capital; ISK: Intention to share knowledge; MR: Media richness; COL: Collectivism;
 PD: Power distance; PDMR: Power distance * Media richness;
 COLMR: Collectivism*Media richness

TABLE 5. Results of PLS Confirmatory Factor Analysis

	1	2	3	4	5	6	7
SC	0.77						
ISK	0.48	0.85					
MR	-0.05	-0.10	1.00				
COL	0.43	0.41	-0.19	0.83			
PD	-0.12	-0.07	0.08	0.16	0.77		
PD*MR	0.17	0.14	0.03	0.19	-0.08	0.81	
COL*MR	0.22	0.14	-0.02	0.17	-0.20	0.26	0.83

The bold numbers on the diagonal are the square roots of the AVE
 SC: Social capital; ISK: Intention to share knowledge;
 MR: Media richness; COL: Collectivism; PD: Power distance

TABLE 6. Correlations between Constructs

relationship between espoused PD and social capital. Likewise, WBC media richness was not a moderator in the relationship between social capital and the intention to share knowledge. A summary of the findings is shown in Table 7.

6. Discussion and Conclusions

6.1 Discussion

We proposed seven hypotheses and tested them in the context of project teams. The results of PLS supported four out of seven hypotheses and confirmed as expected that espoused collectivism and PD are key determinants of social capital, which influence knowledge sharing among team members. The results show that team members' intention to share knowledge is significantly affected by social capital. In addition, social capital varies depending on their cultural values.

For social capital formation, a second-order factor was introduced instead of using three independent first-order factors. If we conceptualized it as three first-order factors, the relationship between each first-order factor and knowledge sharing would be different (Robert et al., 2008). However, according to the assessment of the second-order factor used in this study, a high value of one dimension (e.g., trust) does not preclude a high value of another dimension (e.g., shared goals). With respect to WBC media richness, two out of three related hypotheses were not supported. These results imply that WBC media richness does not moderate the relationship neither between espoused PD and social capital nor between social capital and knowledge sharing. A possible reason is that since most WBC media used in this study are IM and e-mail, the lack of variation could exist at media richness. Thus, the impact of WBC media richness is less significant than expected.

6.2 Contributions

From a theoretical perspective, most prior research on the relationship between knowledge sharing and social capital dealt with the consequences of social capital. Only a few studies focused on the determinants of social capital. We examined the relationship between individual cultural values and social capital and showed significant results. In addition, empirical research on the relationships between knowledge sharing, social capital, cultural values, and WBC media richness is scarce. Finding these relationships suggests that this study contributes theoretical value to the current body of knowledge. Previous research has compared face-to-face communication with other media (e.g., e-mail, fax, and memo). Due to the relatively superior richness of face-to-face interaction, other media were not discussed

in detail. In pervasive WBC environments, it is a meaningful step to categorize the criteria of media richness and to classify WBC as a communications medium although one hypothesis relating to WBC media richness is supported.

From a managerial perspective, the role of knowledge sharing is significant in determining the success of a project. Thus, project managers should have an interest in promoting an environment of knowledge sharing. The results show that social capital can facilitate the intention to share information, skills, and expertise. Social capital is also affected by cultural values. This has two implications. First, project managers of global teams often manage members from various cultural backgrounds. Second, occasionally project managers are able to select some of their team members. Project managers should exploit cultural traits of team members to enhance social capital and knowledge sharing. A manager should select rich media as the main communication medium if most of the team members espouse individualistic values. On the other hand, a manager can select lean media for efficiency if the team members have sufficient social capital.

6.3 Limitations and Future research

There are some limitations that should be considered. First, the variance of media was not evident because most of the WBC media used by the respondents were IM and e-mail. There may be a difference between the perceived media richness and our coding as media richness was ranked based on the investigators criteria. WBC media richness can be measured as a latent variable in future research. Second, the sample size was relatively small and restricted to users in South Korea. The results should be interpreted and generalized with caution. Specifically, applying the study across country level may lead to more distinct results. The level of analysis was at the individual level in accordance with the study by Zaheer et al. (2010), which covers three levels of network analysis (i.e., dyad, ego, and whole network). Exchanging knowledge can be considered a bi-directional behavior. Thus, analysis can be extended to the dyad or the entire network or group. Finally, our study excludes the bridging aspect of social capital since we focused on knowledge sharing among team members in a project. Future research can broaden the source of shared knowledge to areas outside of the project and may reconsider which WBC medium is appropriate for such communication.

For example, social network services (i.e., Facebook or Twitter) are more open and enable team members to expand their external social network, which may be an additional source of social capital. Thus, project managers may find it productive to allow the use of blogs and other social networks during working hours. Future research can study the effect of social networks on user's productivity in the context of social capital.

6.4 Conclusions

We explored the sources of the intention to share knowledge by examining its antecedents from a social capital perspective. Individual cultural values and WBC media richness are dealt with as the determinants of social capital. The results show that social capital is affected by espoused collectivism and espoused PD. Knowledge sharing is positively affected by the interaction of team members, shared goals, and trust, which are variables from the three dimensions of social capital. Social capital among team members can facilitate active sharing of knowledge and information. The findings suggest that project managers in South Korea may be able to improve social capital among team members using appropriate communication media based on the espoused collectivistic values of the members.



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APPENDIX: SURVEY ITEMS SURVEY QUESTIONNAIRES

A. Communication types

1. Select the most frequently used online communication media in your project.

1. e-mail
2. IM (MSN, Nate, etc.)
3. BBS in your company
4. Blogs (Cyworld, Facebook, etc.)
5. micro-blogs (Twitter, me2day, etc.)
6. Other ()

2. I communicate with _____ by using the on-line media that I choose.

1. my bosses
 2. my co-workers
 3. my subordinates
 4. people who are related to the project
3. I communicate with _____ by off-line.
1. my bosses
 2. my co-workers
 3. my subordinates
 4. people who are related to the project

B. Cognitive social capital (Degree to share goal)

1. Our team members share the same vision with each other.
2. Our team members share the same objective with each other.
3. People in our team are enthusiastic about pursuing the missions of the whole organization.
4. People in our team are enthusiastic about pursuing the collective goals of the whole organization.

5. Our team members identify with project objective.

C. Relational social capital (Trust)

1. I feel comfortable depending on my team members for the completion of the project.
2. I feel that I will not be able to count on my team members to help me.
3. I am comfortable letting other team members take responsibility for tasks which are critical to the project, even when I cannot monitor them.
4. I feel that I can trust my team members completely.

D. Intention to share knowledge

1. I will share my work reports and official documents with members of my organization more frequently in the future.
2. I will always provide my manuals, methodologies and models for members of my organization.
3. I intend to share my experience from work with my other organizational members more frequently in the future.
4. I will always provide my know-where or know-whom at the request of other organization members.
5. I will try to share my expertise from my education or training with other members.
6. In my team, it is general to share my skill
7. I always try to share my knowledge with team members.

E. Level of Collectivism (versus Individualism)

1. Being accepted as a member of a group is more important than having autonomy.
2. Being accepted as a member of a group is more important than independence.
3. Group success is more important than individual success.
4. Being royal to a group is more important than individual gain.
5. Individual rewards are not as important as group welfare.
6. It is more important for manager to encourage loyalty and a sense of duty in subordinates than it is to encourage individual initiative.

F. Level of Power distance

1. Managers should make decisions without consulting subordinates.
2. Managers should not ask subordinates for advice, because they might appear less powerful.
3. Decision making power should stay with top management in the organization and not be delegated to lower level employees.
4. Employees should not question their manager's decision.
5. A manager should perform work which is difficult and important and delegate task which are repetitive and mundane to subordinate.
6. Higher level managers should receive more benefits and privileges than lower level managers and professional staff.
7. Managers should be careful not to ask the opinions of subordinates too frequently, otherwise the manager might appear to be weak and incompetent.

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