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SOCIAL CAPITAL AND ICT INTERVENTION: A SEARCH FOR CONTEXTUAL RELATION

Research paper

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Abstract

Social Capital is a relatively new and popular term in social science. It is being increasingly applied by researchers to tackle a broad range of phenomenon. Regardless of the wide applicability, the meaning of social capital is still hotly disputed, and its utility in scientific discourse is highly contested. Research findings contrary to social capitals theoretical prediction are key contributors for such dispute. Through a systematic review of social capital and ICT centric literature, combined with a grounded theory approach, this study aims to identify a contextual link or enablers of social capital in an ICT intervention. Current research identified three broader contexts acting as enablers for different dimensions of social capital during an ICT intervention which include: (1) functionalist context, (2) interactionist context, and (3) conflict context. Theoretically grounded links among context, social capital and ICT have also been discussed to show the significance of context.

Keywords: Social Capital, ICT intervention, Literature review

1 Introduction

Social Capital is a relatively new and popular term in social science. The current interpretation of the term is less than twenty years old, and yet it has become exceedingly popular in several disciplines of the social science (Castiglione, Van Deth & Wolleb, 2008). Researchers from the domains of sociology, economics, political science and organizational theories have been increasingly applying this concept to tackle a broad range of issues and phenomenon with an aim to attain higher predictability and to demonstrate greater explanatory power (Adler and Kwon 2002). Regardless of the vast applicability on multifarious dimensions of the social science research, the exact meaning of social capital is hotly disputed, and its utility in scientific discourse is highly contested (Castiglione et al. 2008). Several researchers have contributed to this ongoing dispute by taking a position in favor or against of social capital's efficacy. Regardless of the on-going debate surrounding the social capital, a sheer volume of empirical evidence has supported the utility of this concept in explaining diverse social outcomes and organizational phenomenon (Kwon & Adler, 2014; Lee, 2009; Portes & Vickstrom, 2011). Comprehensive reviews of social capital-centric literature from different domains as well as temporal period also affirm this positive link between social capital and favorable outcomes (Adler & Kwon, 2002; Yang, Lee & Kurnia, 2007; Lee, 2009). As a result, the social capital theory has been extensively used in management literature to investigate collective actions, value creation, knowledge sharing, team performance, research and development, and innovations (Zheng, 2010).

The significance of social capital and its role in the domain of information systems are also ostensive from the extensive application of this concept in ICT related research (Yang et al. 2007), yet, the relationship between ICT and social capital largely appears to be a ‘vague’ one. Although society and social changes are often associated with the development of technology (Buchanan 1995; Castells 2000; Westrum, 1991), there is little consensus on the role of ICT in building social capital (Yang et al. 2007) and *vice versa*. Despite an overwhelming evidence supporting the social capital theory’s central predictions, evidence of deviations from these predictions is not unsubstantiated. Aside from the extreme cases of negative consequences resulting from social capital (Pillai, Hodgkinson, Kalyanaram, & Nair, 2015), several studies have pointed out the unpredictability of this theoretical lens in particular circumstances by presenting evidence where a presence of sufficient social capital did not result in a successful ICT intervention (Yang et al. 2007; Urquhart, Liyanage, Kah, 2008). Such deviations are also argued by several researchers who envisioned social capital as a dependent variable. Some of the early researchers depicted a negative relationship between technology usage and social capital where the use of certain technology like television or the internet can lead to a decline in the level of social capital (Verba et al., 1995 in Norris 1996; Putnam, 2000). These contradictory results, regarding the relationship between different technologies and the social capital, were pointed out as a major concern in the work of Yang et al. (2007) through the use of phrase like “*inadequate knowledge*.”

Acknowledging this existing concern expressed by earlier Information Systems (IS) researchers, we decided to enhance our understanding of this increasingly popular domain of social capital and ICT through a systematic review. More specifically, we intend to explain the varied effectiveness of social capital and its influence on the outcome during an ICT intervention and *vice versa* by proposing a contextual link.

The term “intervention” has been defined by oxford dictionary as “*action taken to improve or help a situation*” and “ICT intervention” for the current research has been used to encompass a wide range of scenarios where benefits are derived through ICT including acts such as deployment, implementation, development, and adoption of ICT. Although intervention often implies a broader project containing a number of subprojects (Urquhart et al. 2008), the scope of this review also includes individual ICT related projects. In addition to an encompassing approach to include scenarios like ICT deployment, ICT implementation, ICT adoption and ICT development, we considered the possession of social capital both at individual level and at group level. A primary rationale for selecting articles containing individual and group social capital is that in both cases social capital interacts with the value or benefit drivers through consistent roles. Since our goal is to better understand and explain the “how and why” aspects related to the benefit experienced in different ICT intervention scenarios, aspiration for the current study can be manifested through a research question like: “*How does social capital relate to its context during an ICT intervention?*”

The primary contribution of the current research is two-folds as it extends the knowledge of social capital related IS research in two major ways. First is the establishment of distinct contexts associated with the social capital theory in IS literature. This proposed contextual link is hoped to reconcile conflicting views and contradictory findings surrounding the effectiveness of social capital in an ICT intervention. Second contribution of this review is the identification of different contextual factors which act as ‘enablers’ of different social capital dimensions. Being cognizant of these factors are essential for social capital researchers not only to understand the effectiveness of social capital but also to select the right form of ICT during an ICT intervention. We have resorted to a grounded theory approach to identify three distinct contexts – each possessing unique factors that influence the level of social capital. According to Gregor’s (2006) taxonomy, contribution from the development of this contextual link for social capital can be classified as theory for explanation and understanding.

In the next section of this article, we first present a brief summary of the methodology followed for this systematic review. A boundary is drawn that delineates what ICT intervention and social capital related studies are included and excluded in this review. In section three, we presented an overview of the social capital and the significance of its context. Section four shows the derivation process for the distinct contexts through the analysis of selected literature. Chapter five discusses each identified context and its relationship with social capital dimensions as well as the ICT. The final section of this article offers a conclusion emphasizing the significance of the current findings, limitations as well as future research directions.

2 Research Methodology

Our review process primarily consists of four stages which are very briefly described below:

Stage 1: Selection of Journals and Databases

As a first stage of the article selection process, we have targeted prominent IS and Management journals explicitly related to business and management as well as databases like SCOPUS, Web of Science, JSTOR.

Stage 2: Keyword Search for the duration of 2000 to 2016

To locate scholarly articles related to social capital and technology intervention, we have used keyword searches covering a large range of databases and journals identified on stage 1. Keyword included in the search are: Social capital, Social network, Social tie, ICT Intervention, ICT, Information and communications technology.

Stage 3: Articles filtered – Acceptance and Rejection

Execution of stage 2 keyword search resulted in a total of 127 articles which were further refined through the acceptance and rejection criteria.

(1) Inclusion criteria stipulated that citations should be: a scholarly publication across all countries, published between 2000 and 2016, article focus is on social capital and some form of ICT intervention such as information systems development, ICT adoption, ICT development, ICT deployment where social capital is not studied as dependent variable. Primary reason for selecting studies with social capital as an independent variable is to signify differing outcomes of ICT intervention as the context changes.

(2) Exclusion criteria stipulated that citations cannot be: industry extracts, or scholarly publications related to neural networks or IT infrastructure, role of social capital is insignificant as a construct.

Stage 4: Analysis

Analysis of the current systematic review is guided by the research question presented in the introductory section of the paper. In identifying the distinct context and contextual enablers of social capital, we utilized a grounded theory approach where primary coding, secondary coding and theoretical integration were performed.

3 Social Capital and Context

‘Social capital’ is one of the most widely disseminated concepts of social science, both within and outside of the domain. It is also a highly-contested concept due to the variety of definitions relating to the term itself (Castiglione, 2008). Over the past decade, several scholars have repeatedly pointed out the concept’s ambiguity and demanded further clarity. This becomes obvious from Solow (1999), Durlauf (1999) and Manski’s (2000) characterization of social capital research as plagued by ‘vague ideas’ and ‘casual empiricism’ (Ahn and Ostrom 2008). Variations in definition and in conceptualization of the term ‘social capital’ can be traced to the seminal authors like Pierre Bourdieu, James Coleman and Robert Putnam.

Despite additional efforts that are necessary to crystallize the concept, Nahapiet and Ghoshal (1998) have proposed a very useful conceptualization of social capital. Nahapiet and Ghoshal (1998), while exploring

the role of social capital in creation of intellectual capital, introduced three distinct dimensions of social capital: 1) structural, 2) relational, and 3) cognitive dimensions. They have also indicated few important facets of social capital relating to each of the proposed clusters. For example, network ties, network configuration and appropriable organization are used to represent structural dimension; share code and language, and shared narratives are used for cognitive dimension; and trust, norm, obligations, and identification are used to represent the relational dimension of social capital.

Aside from concerns surrounding the relationship between social capital and technology, an often-overlooked aspect is the relationship between social capital and its context. The role of context has been drawing increasing attention from information behavior scholars, and yet, it is largely unexplored in social capital related IS literature. Social capital, itself, is a complex concept when it comes to operationalizing as a construct due to the multifaceted nature of the term itself. Although Nahapiet and Ghoshal's (1998) representation of social capital through three conceptual dimensions (structural, relational, and cognitive) accounts for both individual and group as measuring units, as well as the context of the social capital, Schafft and Brown (2003) have taken a slightly different approach - primarily motivated by the operating environment. Schafft and Brown (2003) have classified social capital in terms of micro-level, meso-level and macro level where deployment of resources among social entities like individuals, teams and organizations constitute micro-level social capital, the role of existing social relationship among social entities for mobilising resources constructs meso-level social capital and contextual factors such as culture, policies and regulations influencing the social relationship among social entities are identified as macro level social capital. Schafft and Brown's (2003) conceptualization can be argued against on the basis that contextual factors do influence the existing social capital defined by Nahapiet and Ghoshal (1998) at all levels as social capital cannot be parted from its context.

The significance of context in relation to social capital and ICT has been established through numerous existing studies. Based on the findings of Xin and Pearce (1996), Chou, Chan and Pan (2006) demonstrated that quality could be assured in an IT outsourcing project through relationships where institutional oversight is missing. Technology implementations or developments usually have physical and social artifacts (Kawalek & Wood-Harper, 2002; Devadoss & Pan, 2007) where the social constructivism may play a role. This social constructivism, a manifestation of the cognitive social capital, has also been highlighted in earlier studies as a factor related to radically different IS implementation outcomes resulting from the implementation of the same technology (Orlikowski, 1993; Adler & Kwon, 2002). Teoh and Pan (2008), in developing social integration framework for enterprise system use, have identified similar concern by pointing out the relation between different levels of social artifacts management and organizational strategic capital as well as competitive advantages which can influence the IS utilization within an organization. In a separate stream of research conducted outside of the organizational context, Andrade (2009) focused on the issue of digital divide and technology intervention. The concept of the digital divide, identical to other pre-existing forms of economic and social divisions, is not an entirely new phenomenon. Andrade (2009) has pointed out that simply ensuring access to technology is not sufficient to bridge the gap or eliminate the digital divide in civic society. Provisioning of technology is only one aspect of the technology intervention but leveraging social capital influenced by the digital divide is the significant half to achieve success in such context. Warschauer (2003) has also stressed the importance of focusing on social structures, problems, organization, and social relations while investigating ICT intervention beyond organizational boundaries. Several researchers have indicated the lack of available avenues to stimulate and sustain social capital among people, an aspect that is separate from the mere existence of social capital, as a reason why developing countries fail to fully exploit the existing global technologies (Lim, 1999; Bhatnagar, 2000; Braa et al., 2001; Lee, 2001; Okunoye, 2003). Actor or organization related features such as 'low absorptive

capacity’ have also been identified as an inhibitor for social capital formation during an ICT intervention (Urquhart et al. 2008).

Defining context for the relationship among social actors requires attention to external forces or boundary defining conditions, actor’s perception regarding who they are as well as forces that influence to shape the perception. Following the practices from community literature, we focused on the manner of cohesion formation among the actors, type of institutional control imposed to govern a group of actors, and the idea of “belonging” (Delanty, 2004) as the defining characteristics of the context. Analyzing various combinations of these factors, we attempted to identify the unique contexts pertinent to ICT intervention and how they enable different dimensions of social capital. Primarily justification for selected these three factors, as defining characteristics of a context, is not only because they are well established in community literature but also due to an absence of any other well-established factor in social capital literature that can explain the initial formation of social capital. For example, physical proximity can be argued as a factor influencing the formation of social capital. However, Davenport and Daellenbach (2011) showed that any effects of physical proximity or remoteness were insignificant relative to the key facets of social capital.

4 Identification of Contexts

Discussion from the preceding paragraph clearly highlights the role of context and its relation to the social capital. This relationship is also supported by most of the articles reviewed for this research. Despite a clear relationship between social capital and context, it is largely unexplored in IS literature. This lack of attention and an existing research gap could be attributed to the inherent difficulties in interconnecting the context to social capital during an ICT intervention scenario. Additionally, separating the technical artifact, social artifact and personality traits in an ICT intervention is also challenging which is why most scholarships to date have focused on scholarly and professional contexts only (Talja, Tuominen, and Savolainen, 2005). Free movement of labor, distributed work environment, and outsourcing decisions have loosened the organizational control and further blurred the context specific boundaries, even, for traditional organizations. The precise definition of context for ICT intervention in civic society or virtual community is even a more confounding task.

Although the concept of community, a manifestation of the context, has been gaining much emphasis in information studies research (Williams and Durrance, 2008, 2010), challenges pertaining to operationalize the concept of community are still prevalent (Veinot & Williams, 2012). Following the work of Veinot & Williams (2012) on community-oriented theory and adopting a grounded theory approach, we have identified three distinct contexts, relevant for social capital research in an ICT intervention: (1) interactionist context, (2) conflict context, and (3) functionalist context. For the current research, we have focused on the manner of cohesion formation among the actors, the type of institutional control imposed to govern a group of actors, and the idea of “belonging” (Delanty, 2004) as the distinguishing features of various types of communities with distinct context associated with them.

	Cohesion Formation	Institutional Control	Idea of belonging	Core Focus
Interactionist	Through interactions	Low	Implicit	Formation through interaction and communications, shared symbols
Conflict	Mutual need or social institutions, physical proximity	Moderate	Explicit	Power, domination and resources at the core of its analyses
Functionalist	Institutional processes	High	Explicit	Functions of institutions and Inclusion/exclusion based boundary maintenance

Table 1: Comparison of distinct contexts

4.1 Interactionist Context

Interactionist context is probably the most loosely defined context in terms of geographic colocation and institutional control which ranges from a ‘pure virtual’ to a ‘hybrid virtual’ community. The sociological paradigm of interactionism, rooted in Weber’s (1947, 1968) theory of social action, views actors as the creators of their social realities.

While the place or geographic boundaries can play a role in defining interactionist community context, symbolic interactionist perspective sees such community as a purely virtual with little or no significance of the geographic location in the formation or identification of the community (Gusfield, 1975). In such a purely virtual community context, the role of institutions and organizational controls in establishing cognitive boundaries are largely missing. This is compensated by establishing symbols which may include social objects like language, self, other people, and tools having common definitions and facilitating capabilities. The common definition of social objects usually results from the consistent use and consistent response by the social actors even though they are continuously constituted and reconstituted by actor’s interactions in such a context (Hewitt, 2003).

As the role of context in enabling social capital is a vital focus of current research, we have analyzed existing literature on social capital and technology intervention to identify the salient factors related to interactionist context. Contextual factors have been predominantly identified and selected based on their ‘enabler role’ of different social capital dimensions. Table 2 provides a summary of the contextual enablers identified for the interactionist context and their relationship with social capital.

Contextual Enablers	Social Capital Dimensions affected	Indicators
Actor homogeneity	Structural and Cognitive	With an absence of immediate benefit for the knowledge contributor in a PVC (processional virtual community) and with the possibility of free riders, social capital in the form of a <i>social interaction tie</i> plays the key role which tends to develop between <i>individuals with the same interest and similar resources</i> rather than between dissimilar individuals (Chen, 2007)
Complementary aspects of community	Relational and Cognitive	In a Hybrid Virtual Community (HVC), encompassing interpersonal knowledge in the form of high level of detailed information about others <i>enables bonding relationship to take place</i> (Ryan, 2010) and the key elements of encompassing interpersonal knowledge are not always simultaneously supported by either face to face or virtual community. Ryan (2010) has also identified the community memory aspect in relation to <i>recalling of shared moments and history</i> enables relationship building
Level of Cohesion	Structural, Relational and Cognitive	Singh, Tan and Mookerjee (2011), in an affiliation network, indicated that the level of internal cohesion for the focal group influences the trust, reciprocity norms, and shared identity .
Modes of Privacy & Modes of Interaction (Lu,	Structural and Relational	Using exploratory and confirmatory factor analyses of data from online MIS classes, Lu, Yang and Yu (2013) found that online learning facilitates social capital formation mostly in terms of the trust, collective action and cooperation .

Yang and Yu (2013)		Findings indicated the synchronous and asynchronous nature of the communication technology are related to the development and facilitation of trust and bonding in online student community in addition to the public and private nature of the interactions supported by the technology
Benefit expectation	Structural and Relational	Several studies including Gao, Guo, Chen, and Li (2016) indicated In benefit expectation in a virtual community as a key driving force that influence the social capital dimensions. Gao et al. (2016) pointed out factors such as team’s network characteristics, collaborative culture, and individual collaborative intention affecting the knowledge sharing in a virtual community.

Table 2: Enablers in Interactionist Context

4.2 Conflict Context

Conflict paradigm of the community concept differentiates itself from the interactionist context in terms of cohesion and control. Conflict context places elements related to power, domination and resources at the core of its analyses (Veinot and Williams 2012). Conflict context demonstrates higher institutional control and cohesiveness as it is often associated to stratified geographic territories. Another complementary stream of research, which examines the collective well-being and civic engagements, has operationalized the place of residence and civic infrastructures through the local administrative entities like villages, cities or countries (Goldschmidt, 1946; Young & Lyson, 1993) or a community boundary delineated by local governments. Community segregation through such institutional boundaries has a profound impact on the resource and power availability as existing research focusing on this context indicated a relationship between a group’s inclusion in information networks and acquisition of power (Castells, 2011), and between exclusion from global information flows and increase of social inequality (Lash, 2002).

In the presence of institutional control, active segregations, power division and local elites, social capital exhibit a different relationship configuration with its context compared to that observed in an interactionist context. Our analysis, through categorization and coding of selected literature on social capital and ICT intervention, has identified a salient set of contextual factors that act as enablers of different social capital dimensions in a conflict context (Summarized in Table 3).

Contextual Enablers	Social Capital Dimensions affected	Indicators
Socio-Economic Status	Relational and Cognitive	In developing countries, lower average income limits the ownership of technology to a small group of people - typically living in urban sectors. Such economic and technology divide promotes sharing behavior for rest of the inhabitants of these countries which eventually promotes strong bonding or structural social capital, trust and norm of sharing corresponding to relational and cognitive social capital (James 2009). This contextual factors is also supported by Ganju, Pavlou, and Banker (2016) where different forms of ICT are more effective in different countries due to the socio-economic status.
Self-efficacy; Individual Capability	Relational, Structural	Focusing on African Blackwood (“ebony”) carvings business of Tanzania, Molony (2009) found a continuance of trust and business network connections resulting from the key actor’s knowledge of ICT to maintain communications, ability to communicate in a common language and financial means to travel to international tradeshows Andreade and Urquhart (2009) in a study of ICT intervention in rural Peru have identified individual attitude , in terms of “recognizable character”,

		“communal leadership”, “urban exposure”, “degree of initiative” and “attitude towards change”, is a central attribute for enabling a successful brokerage role .
Institutional Support	Structural, relational and cognitive	Thapa, Sein and Sæbø al (2012), while studying the collective capability building during an ICT initiative in a remote mountain region of Nepal, have found that lack of support from the government and geo-political exclusion caused the emergence of strong ties within homogeneous groups in their own and nearby villages Political instability and lack of faith in politicians are major challenges for maintaining and developing collective capabilities in developing countries. In addition, lack of social inclusion has also found to be an inhibitor in building collective capabilities in such context (Ibrahim 2006; Oxoby 2009) Steinfeld, LaRose and Chew (2012) found the presence of a strong business cluster acts as a motivating force for the rural business community to integrate and build relationship with the cluster.
Task fragmentation	Structural	Chen (2009) found that innovation activities are a collective achievement which should not be completed by a single business. Thus, recognition of distributed nature of the task leads to the improvement of intra-business and business to business linkage which corresponds to bridging and bonding social capital at the business level.

Table 3: Enablers in Conflict Context

4.3 Functionalist Context

Functionalism explains behaviour of the social units by analyzing the functions of institutions and their interrelations. Dominated in community sociology between 1950s and 1970s (Warren 1971), functionalist perspective investigates the aspects of differentiation, solidarity and stability promoted through institutions whereas a closely related ‘community functionalist’ perspective analyzes formal institutions (Bernard, 1973).

Functionalist perspective proposes that the development of group cohesion occurs through boundary maintenance where institutions dictate the difference between a member and non-member. Such boundary maintenance feature based on “inclusion/exclusion” are primarily targeted at the aspect of communication (Luhmann and Connell, 2004) which dictates the development of shared meaning and practices, confirmation of identity, norms, trust and relationship in an institutional setting. This is a significant difference between the functionalist and conflict context where power difference and dominations are not the deciding elements of the social units. Functionalist context also exhibits the tightest cohesion and control among the actors through well-defined policies, procedures, culture and enforcement capabilities. Table 4 provides a summary of the contextual enablers identified for the functionalist context and their relationship with social capital dimensions.

Contextual Enablers	Social Capital Dimensions affected	Indicators
Technological Divide; Media Multiplexity	Structural, relational and cognitive	In an earlier research relating media multiplexity to social capital, Haythornthwaite and Wellman (1998) have found a high correlation between strength of network relationship and the number of ICTs used for communication.

		Analyzing competing and complementing behaviour of technologies, Yuan, Zhao, Liao and Chi (2013) found that different synchronous and asynchronous technologies supporting formal and informal communications are related to relational and structural social capital within organizations.
Leadership behaviour	Structural, relational and cognitive	Lee et al. (2013) have found that social intelligence competencies of a project manager affect the project performance only via team social capital regardless of team size and project length and cognitive intelligence competencies of the project manager. Chua et al. (2012) have found that formal authority's role in establishing integrity in socialization process and acceptable behavior enhanced relational (trust) social capital and cognitive (norms) social capital.
Industry factors	Structural and relational	Nature of the industry sector, a firm is located in, also has been found to be a significant enabler of social capital during technology intervention. Lee, Cho and Hwang (2013) studied impact of social capital on tourism technology adoption and argued that imprecise market conditions encourage destination marketing organization to adopt web 2.0 technology to enhance their client credibility whereas Adam (2009) has found competition in the tourism industry creates barriers for relationship building and knowledge sharing thus inhibiting the relational dimension of the social capital.
Organizational factors	Structural, relational and cognitive	Various organizational factors have been found to be significant enablers of social capital during technology intervention. Several different themes appearing on the literature can be grouped together under this category like organizational culture (Yuan, Zhao, Liao and Chi 2013), organizational maturity level (Xiong 2011), absorptive capacity (Xiong 2011), consistent organizational practices (Teoh and Pan, 2008), reporting structure and team colocation (Chua 2012), lack of internal control over technology (Chang 2011), clan formation (Chua 2012), S-D logic orientation (Hsu et al. 2013) and scattered working conditions (He 2009).
Complexity of the situation	Relational and cognitive	Aligned with an earlier argument, presented by Bendapudi and Berry (1997), that complexity and dynamicity of an environment increase partner dependence, Park (2014) has found that complexity of the situation during IS implementation can increase partner dependence in various ways which can increase trust, cooperation, shared understanding and strengthen relationships . On a very similar theme of research, Lee, Park and Lee (2015) have focused on the issue of task heterogeneity and social capital for ISD (Information System Development) team where task heterogeneity can divide the knowledge and expertise which in turn enables social capital dimensions through dependence on each other
Knowledge coproduction	Structural, relational and cognitive	"Knowledge coproduction" processes, a relatively new perspective in the area of technology intervention, has been investigated in several studies of project management domain through various forms of operationalization like "co-construct" between user and technology (Yates, 2006) and "collaboration" among different stakeholders (Chiocchio, Forgues, Paradis, and Iordanova 2011).

Table 4: Enablers in Functionalist Context

5 Discussion

Analysis in the preceding section identified three distinct contexts during an ICT intervention. In this section, we attempt to identify the theoretical grounding for these contextual links of social capital dimensions and the role ICT.

5.1 Social Capital in Interactionist context and relation to ICT

Although sensemaking, the process of making retrospective sense, occurs through social construction (Berger & Luckmann, 1967), social roles and relationships are essential to avoid confusion (Weick, 1993). As this allow the actors to comprehend the world and act collectively (Isabella, 1990; Sackman, 1991; Sandelands & Stablein, 1987; Starbuck & Milliken, 1988; Weick & Roberts, 1993), effects of this process are largely on the cognitive side. As share code, language, and shared narratives are used to indicate the cognitive dimension of social capital (Nahapiet & Ghoshal, 1998), sensemaking through interactions plays a vital role in enacting the cognitive aspect of the social capital. Although a very high structural resemblance between this context and a virtual team or a virtual organization can be used to argue against the merit of a distinct context, two prevalent views in the literature regarding virtual organizations help us to set them apart.

Due to a minimal formal structure and a lack of rigid governance mechanism, ICT's role in enabling a flexible cooperation is essential in an interactionist context. The relationships between ICT and social capital have been identified in literature where people with similar interest and experience (Kim, Lee, & Hiemstra, 2004) often exchange information, knowledge, and resources via various types electronic means including chat rooms, online forums, bulletin boards, mobile phone, and e-mail (Asvanund, Clay, Krishnan, & Smith, 2004).

Due to the interaction-centric behaviour and motivated by comparable interests, ICT intervention research employing the relationship between social capital and ICT as an instrument, indicates certain contextual factors such as actor homogeneity, complementary aspects of community, level of cohesion, modes of privacy, modes of interaction etc. to be more salient than others. In addition, the empirical nature of the existing research can also be leveraged to argue that these context-specific factors are essential for an effective ICT intervention in an interactionist context.

5.2 Social capital in conflict context and relation to ICT

Coleman (1988) also emphasized that effectiveness of such social capital is contingent upon the trustworthiness of the social environment which directly points to the context where a credit-slip has been issued by an actor. Considering the nature of the conflict context, it demonstrates an integral relationship with the notion of social capital. As Coleman (1988) defines "social capital" as a resource available to actors that is a part of social structure and underlying conception behind "social capital" is derivation of benefits through one's membership in social networks (Field, 2003), the theoretical lens of social capital is widely used in ICT related and non-ICT related investigation in a conflict context.

Strong support for such role played by social capital is also found in the discipline of community informatics where promoting social capital can positively influence an ICT intervention aiming to achieve the social, economic, political and cultural goals of communities (Warschauer, 2003). From a negative relationship perspective, absence of sustained social capital in networks and among people often prevent developing

countries to fully exploit the existing global technologies (Lim, 1999; Bhatnagar, 2000; Braa et al., 2001; Lee, 2001; Okunoye, 2003). Several other social researchers have also attempted to explain the impact of ICT intervention on civic processes where social capital often acts as a mediator (Han 2002; Putnam 2002). Current analysis of the empirical research conducted in a conflict context indicates that certain contextual factors such as socio-economic status, self-efficacy, institutional support, task fragmentation etc. to be more salient than others.

5.3 Social capital in functionalist context and relation to ICT

Although functionalism in community sociology concerns with the functions of large-scale social units, it does so by examining the functions of institutions and their interrelations. From the perspective of context to study social capital, this context strictly refers to formal organizations – both virtual and non-virtual. As a result, a very high level of institutional control and an explicit ‘idea of belonging’ are observed for this context.

Social capital theory has been widely used to examine diverse ICT related phenomenon within an organizational or a functionalist context. Existing research indicates that social capital can play a significant role in advancing technology adoption, diffusion, and use during an ICT intervention. The concept of individual social capital is discussed in some technology acceptance studies (Yang et al. 2007). As the functionalist context possess strong institutional forces and well-defined governance process, contextual factors that will be influencing the social capital dimensions are found to be different from those in an interactionist context and a conflict context. The current analysis, therefore, of the ICT focused empirical research conducted in a functionalist context indicates that certain contextual factors such as technological divide, media multiplexity, leadership behavior, industry factors, organizational factors, complexity of the situation, knowledge coproduction etc. to be more salient than others.

6 Conclusion

Although social capital has been gaining an increasing visibility in academic literature over last two decades, the actual concept has been around much longer than that (Hanifan, 1916). For a prolonged period, social capital only appeared in the social, political, economic or organizational literature. More recently, social capital has been gaining attention from the IS scholars, although the relationship among social capital, context, and ICT often appears to be an ambivalent one. This uncertain relationship is not surprising as we have indicated earlier that the meaning and conceptual distinctiveness of the very idea of social capital are giving rise to many controversial questions.

A systematic review of literature offered through this article also indicates this controversy. Social capital appeared both as an independent and dependent variable in relation to ICT intervention. Additionally, it has also been measured at an individual level and collective level. Although the differences in research approach are justifiable for a multifaceted concept such as social capital, our interest for the current research was primarily motivated by the missing contextual relationship of social capital and benefit fabrication process through the actor’s possession of social capital in the domain of IS literature. Most researchers, to date, have connected the social capital to organizational benefit, civic benefit or value creation through various organizational activities, yet the relationship between context and social capital as well the underlying drivers of benefits are largely identified in a superficial manner or deficient.

We laid out common consensus, discordance, and gaps in researchers’ answers to the questions of Why Social capital behaves differently during an ICT intervention and *How does social capital relate to its context during an ICT intervention*. As existing research agreed, social capital plays a significant part in swaying the outcome of an ICT intervention. Social capital’s context has also demonstrated its significance

and calls for further exploration to determine the nature of its influence on various dimensions of social capital. Current systematic review, combined with a grounded theory approach, have found that different dimensions of social capital have a different level of salience depending on the context of the ICT intervention. Our analysis, therefore, has identified three broader contexts acting as enablers for different dimensions of social capital during an ICT intervention which includes: (1) functionalist context, (2) interactionist context, and (3) conflict context.

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