



## Social Capital and ICT Intervention: A Holistic Model of Value

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### Abstract

**Background:** *Despite increasing popularity of Social capital, the relationship between social capital and ICT often appears to be an ambivalent one. Existing information systems (IS) literature presented various frameworks and theoretical foundations to facilitate the study of this concept, yet several contradictory findings have been reported indicating a significant knowledge gap in this domain. Current research adopts a holistic approach to address this knowledge gap by answering “How does social capital generate value or benefits in an ICT intervention?”*

**Method:** *Current research employs a systematic literature review coupled with a grounded theory method to investigate proposed research questions.*

**Results:** *Primary contributions of the current research include (1) the identification of contextual relationship between contextual factors and social capital dimensions, and (2) development of a holistic model of social capital driven benefits during ICT intervention where the ‘enablers’ and the ‘drivers’ of benefit have been identified.*

**Conclusions:** *Identification of distinct roles and value-drivers related to social capital will help IS researchers in explaining “how and why” benefits are achieved while employing a social capital lens.*

**Keywords:** Social Capital, ICT Intervention, Framework, Grounded theory research.

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## Introduction

The relationship between ICT and social capital often appears to be an indecisive one despite the wide applicability of social capital theory in the domain of information systems. The widespread popularity of the social capital is primarily motivated by a sizable research finding reporting a positive correlation between social capital and favorable outcomes (Adler & Kwon, 2002; Lee, 2009, Yang et al., 2009;). Despite overwhelming evidence supporting such a positive correlation in the context of collective actions, value creation, knowledge sharing, team performance, research and development, and innovations (Zheng, 2010), evidences of contrary results for similar context are not unfounded. Ranging from extreme cases of negative consequences resulting from social capital (Pillai et al., 2017), absence of a successful ICT intervention in presence of sufficient social capital has also been pointed out by several researchers (Urquhart et al., 2008, Yang et al., 2009). In addition to findings pointing out a negative correlation, some researchers pointed out significant inconsistencies between the research settings and findings (Liu et al., 2011).

Although prior research attempted to explain such contradictory finding argues on the basis of 'conceptualization' and 'research design' relating to independent or dependent status of social capital, a systematic explanation of such inconsistent behavior is largely missing. Prior efforts often extensively focused on defining, measuring and operationalizing social capital, including consideration of the social capital both from a dependent and independent perspective where technology or ICT intervention can increase the level of social capital within certain context or the level of social capital can influence the success-probability of an ICT intervention (Ahn & Ostrom, 2008). Yet from a theoretical viewpoint, none of the prevailing social capital research aspired to find a holistic model for this phenomenon, primarily motivated by how the presence social capital stems the benefit or creates value for organizations and society and what governs the effectiveness of this process in different actor-specific contexts. Indication of such knowledge gap and calls for a deeper examination of social capital related processes are long prevalent, yet overlooked, research directions indicated by earlier researchers of this domain. For example, investigating individual motivations leading to a knowledge sharing behavior, Liu et al. (2011) emphasized the necessity of identifying and understanding of all 'driving factors' influencing such behavior. Contradictory finding surrounding ICT-social capital relationship have also been described as "inadequate knowledge" (Yang et al., 2009) and have paved calls to deepen our understanding of the processes underpinning social capital's development (Jordan & Munasib, 2006).

The purpose of the present research is to begin to fill this existing knowledge gap and address concerns raised by earlier researchers by developing a suitable explanation of the social capital driven benefit generation process from a holistic point of view. Justification for developing a holistic model is ostensive from our current analysis of social capital literature where most of the earlier researchers in this domain focused on a subset of involved-components (i.e. social capital dimensions, single context, drivers or enablers) in an attempt to explain this complex phenomenon. As a result, contradictory findings have emerged within the knowledge domain. By adopting a systematic review approach to analyze the multifaceted concept of social capital, the current study synthesizes empirical findings from the existing literature on the relationship between social capital, ICT, and the surrounding context in an effort to verify, modify and enrich theoretical pursuits. As the goals here are to develop a stable explanation of the varied effectiveness of social capital and understand a generic benefit derivation process during an ICT intervention, the following questions can serve as the basis for analyzing the burgeoning literature on social capital and ICT.

- How does social capital relate to its context during an ICT intervention?
- How does social capital generate value or benefits in an ICT intervention?

Contributions of the current research can be seen as two-fold. **The first** is the identification of contextual relationship between contextual factors and social capital dimensions leading to a varied degree of effectiveness in ICT intervention scenarios. This proposed contextual link seeks to reconcile conflicting views and explain contradictory findings surrounding the effectiveness of social capital in an ICT intervention. **The second** contribution is the identification of a holistic model of social capital driven benefits in ICT intervention where the 'roles' and the 'drivers' of benefit are identified. In the face of existing debate regarding the value of social capital, such a holistic model clearly emphasizes and justifies the adoption of social capital theory in IS research by explaining "how and why" benefits are achieved. Being cognizant of such process is essential not only for researchers to better understand the effectiveness of social capital in different scenarios, but is also critical for practitioners to be able to select the correct form of ICT during an ICT intervention so as to favorably leverage the contextual enablers.

Inspired by the research questions presented earlier, Section 2 reviews the conceptual origin and manifestation of social capital. Section 3 outlines the current study's systematic review process. Next, in Section 4, the findings from a selected literature review are synthesized to identify distinct existing contexts. In Section 5 and 6, distinct roles of social capital and benefit drivers have been identified. Section 7 offers a critical discussion on the theoretical gaps is developed to delineate the influencing relationship between social capital, ICT, and context. Thus, an expanded theory of social capital-driven benefit, one that incorporates contextual influence on social capital dimensions, is proposed. Section 8 offers concluding remarks that summarize the significance of the current findings, its limitations, plus future research directions.

## Manifestation of Social Capital

'Social capital' is one of the most widely disseminated yet a highly-contested concepts of social science, both within and outside of the domain. This is simply due to a large verity 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 (Ahmed, 2018). This becomes obvious from Solow (2000) characterization of social capital research as plagued by 'vague ideas' and 'casual empiricism' (Ahn & Ostrom, 2008). Variations in the definition and in the conceptualization of the term 'social capital' can be traced to the seminal authors like Pierre Bourdieu, James Coleman and Robert Putnam. We attempted to summarize this existing discourse related to the conceptualization of social capital in Table 1 where each existing definition of social capital can be mapped into one of two categories: 1) linking or bridging social capital and 2) communal or bonding social capital.

Table 1 - Diverging Definitions of Social Capital		
Authors	Definition of Social Capital	Focus of conceptualization
Bourdieu & Wacquant 1992	"Social capital is the sum of resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships..."	linking social capital
Burt, 1992	"Friends, colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital"	linking social capital
Coleman, 1988	"...they all consist of some aspect of social structures, and they facilitate certain actions of actors-whether persons or corporate actors-within the structure"	Communal social capital

Nahapiet & Ghoshal, 1998	"The sum of the actual and potential resources embedded within, available through, and Ghoshal derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network"	linking and communal social capital
Putnam, 1996	"by 'social capital' I mean features of social life – networks, norms and trust – that enable participants to act together more effectively to pursue shared objectives"	communal social capital
Woolcock, 1998	"the information, trust, and norms of reciprocity inhering in one's social networks"	linking and communal social capital
Inglehart, 1997	"a culture of trust and tolerance, in which extensive networks of voluntary associations emerge"	Communal social capital
French et al., 2017	"Social capital is the intangible benefits gained through social interaction within a community, and is embedded among relationships between actors within a group"	linking and communal social capital

Aside from the continuing debate surrounding the definition, social capital literature also points out the necessity for a solid demarcation, conceptualization and operationalization leading to an effective measure for this concept. Researchers in this domain pointed out several impediments in attaining this objective (Mouw, 2006; Van Deth, 2008) such as competing explanation for the outcomes caused by social capital such as social homophile, possibility of-random relationship formation, researchers who do not believe social capital to be a form of capital at all. Despite the challenges in operationalizing of social capital, Van Deth (2008) suggested a very useful approach towards measuring social capital by using a 'bottom-up' methods which consider common features across different conceptualizations rather than trying to find a single version of the truth or a common nominal definition of the concept.

Adler & Kwon (2002) pointed out that diversity in social capital's definition or conceptualization is largely due to the focus on scope which implies that the meaning of social capital depends on the context in which the concept was used. Regardless of the wide diversity, methods pertaining to the measurement of social capital demonstrate surprising likeness as they all can be mapped to two distinct dimensions of social capital: (1) structural and cultural aspect of social capital, and (2) individual or collective nature of the resource (Van Deth, 2008). Researchers have pointed out these striking similarities in terms of measurement of the concept by stating that 'A clear orthodox has emerged' (Halpern, 2005; Robert & Roche, 2001).

All seminal definitions of social capital include both structural and cultural aspects of the concept in one way or the other. Bourdieu emphasized both on 'connections', and norms, obligations which are indicative of structural and cultural aspects respectively (Bourdieu 1993). Subsequently, both Coleman (1988) and Putnam (1994) referred to social networks as a manifestation of the structural aspect and trust, civic norms, values etc. as the manifestation of the cultural aspects of social capital. Additionally, several researchers also explained the causal relationship between these two dimensions where social networks are crucial for establishing the trust and expectation of reciprocity (Fukuyama, 1995; Inglehart, 1997; Putnam, 1994) thus highlighting the interdependent characteristics which should be considered while operationalizing social capital. Whereas major indicators for measuring social capital may naturally appear from the conceptualization of structural and cultural aspects as well as individual versus collective properties, functional view of social capital allows researchers to use non-traditional indicators of measurement such as crime rate or low economic growth as indicator for the absence of social capital (OECD, 2001). Considering the wide variety of indicators available, whether they indicate the existence of a single latent construct is still a burning question with some researchers taking position in favor of a single construct (Paxton, 1999; Stone, 2001) and others against it (Durkin, 2000; Flap, 2002; Stolle & Hooghe, 2005; Van der Gaag & Snijders, 2005).

To bridge the gap between these two divergent views, Nahapiet & Ghoshal (1998), while exploring the role of social capital in the creation of intellectual capital, proposed a very useful way to operationalize social capital. This included three useful clusters attributes belonging to three distinct dimensions: 1) structural, 2) relational, and 3) cognitive. Additionally, Nahapiet & Ghoshal (1998) indicated a few important facets of social capital based on the three proposed clusters. For example, network ties, network configuration and appropriable organization were used for structural dimension; share code and language, and shared narratives were used for cognitive dimension; and trust, norm, obligations, and identification were used for relational dimension.

Variations in operationalization and conceptualization appear to be a necessity to study the complex nature of social life which is similar to several other social science constructs in existence. Considering the wide applicability of social capital within social science and beyond, rather than striving for an authoritative definition of social capital –empirical research should adapt this diversity and focus on the context and level of analysis while operationalizing the concept to increase the accuracy of the research findings.

## Research Methodology

Despite the call to produce valid and reliable knowledge that are of high academic quality and practitioner sensitive (Van Aken, 2001), relatively young nature of the field of management research is primarily responsible for its fragmented look (Tranfield, 2003). Besides the maturity level of management research, diversity is another salient cause of knowledge fragmentation.

Considering challenges posed by the diversity and the difficulty of applying other established scientific methods like meta-analysis for knowledge synthesis, we have opted for a systematic literature review approach. Research through literature review can be described as “*a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that frameworks and perspectives on the topic are generated* (Torraco, 2005)”. We have also been inspired to adopt a systematic literature review approach by two additional reasons which are: (1) in the event of widespread diversity, literature review is one of the most appropriate methods of research (Torraco, 2005), and (2) literature review allows the researcher to thoroughly examine the state of knowledge on a specific topic (Baumeister & Leary, 1997). Systematic review employed by the current research adopts a similar structure followed by Lee (2009) and Yang et al. (2009). Our review process primarily consists of four stages which are briefly described below:

### *Stage 1: Selection of Journals and Databases*

As a first stage of the article selection process, prominent IS and Management journals explicitly related to business and management were targeted, including, but not limited to: *Pacific Asia Journal of the Association for Information Systems (PAJAIS)*, *Information and Organization*, *British Journal of Management*, *Communications of the ACM*, *the Information Technology and Management*, *Decision Sciences*, *Information Technology and People*, *International Journal of Management Reviews*, *Information & Management Information Systems Research*, *Information and Management*, *Information Systems Management*, *International Journal of Information Management*, *Journal of Management Information Systems*, *Journal of International Management*, and *MIS Quarterly*.

In addition, the following databases were searched: SCOPUS, Web of Science, JSTOR, International Bibliography of the Social Sciences and Science Direct, which collectively include hundreds of journals from the domain of business/IS.



*Stage 2: Keyword Search for the duration of 2000 to 2018*

To locate scholarly articles related to social capital and ICT intervention, we used keyword searches covering a large range of databases and journals identified on stage 1. Considering the focus of our current review and to ensure an adequate coverage of the knowledge domain, we have selected a large set of frequently occurring keywords on social capital and ICT for development literature. Keyword sets and search configurations utilized to relocate article are presented on Table 2.

Table 2 - Search configurations				
Keyword set A: Social Capital	Keyword set B: ICT Intervention	Timespan	Target Fields	Notes
Social capital, Social network, Social tie, Social relationship, Social resources	ICT Intervention, Technology, Information and communications technology/ICT, Information technology/IT, Information systems/IS, ICT Implementation, Information Systems/ ICT Development, ICT adoption	2000 to 2018	Title, Abstract, Keyword, Full Text	Partial match of keywords were allowed for title, abstract and keywords. For example, "Social capital" <b>AND</b> (ICT <b>OR</b> Technology <b>OR</b> intervention <b>OR</b> development) was acceptable for title or abstract search.  Explicit match was used for full text search.

*Stage 3: Articles filtered – Acceptance and Rejection*

The execution of stage 2 keyword search resulted in a total of 127 articles which were further refined through acceptance and rejection criteria to establish a more focused and manageable set of articles. This resulted in a total of 56 articles. Our acceptance and rejection criteria are outlined below:

(1) Inclusion criteria stipulated that citations should be: from a scholarly international publication; published between 2000 and 2018; and focused on social capital and some form of ICT intervention, such as information systems development, ICT adoption, ICT development, or ICT deployment where social capital is not studied as a dependent variable.

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

We also included well-known seminal and theoretical research published before 2000 that focused on social capital and ICT. After duplicate articles were removed, the search results were further narrowed according to the inclusion and exclusion criteria.

*Stage 4: Analysis*

Analysis for the current systematic review is guided by two research questions presented on the introductory section. Although determining the holistic benefit model through social capital roles required a synthesis of empirical findings from existing literature, identifying the distinct

context and contextual enablers of social capital utilized a grounded theory approach where code selection and saturation are performed. We primarily adopted the theoretical coding method used by Gregory et al. (2013). Our coding process primarily comprises open coding and axial coding leading to selective coding and theoretical integration phases. Development of different code categories and theoretical integration process has been partially captured by tables 4, 5, 6, and 7.

## Social Capital and Context

Social Capital is a complex concept when it comes to operationalizing as a construct due to the multifaceted nature of the term itself. Such multifaceted nature primarily results from the observance of diverging outcomes given a similar application of the concept. As a result, a careful examination of the context engulfing a social capital-ICT intervention scenario becomes indispensable to derive a sound conclusion regarding differing roles of social capital in similar situation. Earlier researchers including Nahapiet & Ghoshal (1998) and Schafft & Brown (2003) have pointed this aspect of context in very distinct ways.

Influence of context on the effects of social capital is abundant on existing literature. Leveraging the findings of Chou et al. (2006), and Xin & Pearce (1996), it is possible to demonstrate the quality assurance of an IT outsourcing project through relationships where institutional oversight is largely missing. ICT implementations usually have physical as well as social artifacts (Devadoss & Pan, 2007; Kawalek & Wood-Harper, 2002) where the social constructivism may play a role. This social constructivism is also 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 & Pan (2008) 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. The concept of digital divide, identical to other pre-existing forms of economic and social divisions, is not a completely new phenomenon. 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 (Chen, 2013). Warschauer (2003) has also stressed the importance of focusing on social structures, problems, organization, and social relations while investigating ICT intervention beyond organizational boundaries.

Although a subset of finding presented in the preceding paragraph clearly highlight the role of context and its relation to the social capital, most of the articles reviewed for the current research also supported this relationship. Despite an obvious relationship between social capital and context, it is largely unexplored in IS literature. This phenomenon could be attributed to a complex interconnection between context and social capital during an ICT intervention. Precise definition of context for ICT intervention in civic society or virtual community is even more confounding task.

Although the concept of community, a manifestation of the context, has been gaining much emphasis in information studies research (Williams & Durrance, 2008, 2010), challenges pertaining to operationalize this concept 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 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 idea of “belonging” (Delanty, 2003) as the distinguishing features of various types of communities with

distinct context associated with them. We have provided a summarized comparison of these three contexts in Table 3 below.

Table 3 - Comparison of distinct contexts				
Context	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

Out of the three distinct contexts, **Interactionist context** is the most loosely defined context in terms of geographic co-location and institutional control. Such context is typically manifested through a “pure virtual” to a “hybrid virtual” community where actors create their own reality, often through interactions with other members through some form of ICT. For example, Chen (2007) indicated the influence of social interaction tie on potential knowledge contribution in a professional virtual community (PVC) where visible institutional or social regulations as well as identity attributes are completely missing.

**Conflict context** is a long-existing concept in community research which originates from the work of Marx (1857/1973) and Weber (1925/1968). This context is the most encompassing and significantly different from other two contexts as it places elements related to power, domination, and resources at the core of its analyses (Veinot & Williams, 2012). In comparison to interactionist and functionalist, conflict context demonstrates higher institutional control and cohesiveness, as it is often associated with stratified geographic territories. James (2009) reported an increased level of trust and norm corresponding to relational and cognitive social capital facilitating a technology sharing behavior for low income groups of specific urban section in developing countries. In more recent findings, Ganju et al. (2016) also pointed out the role of socio-economic status combined with geographic proximity influencing several social capital dimensions.

The third contextual influence on social capital is **functionalist context** which is the most structured and well understood context. A distinguishing feature of this context is its active and persistent boundary maintenance through an enforced set of institutional rules and processes. Such active institutional control leads to group cohesion (i.e. member of a department or team within an organization) and explicit notion of belonging (i.e. employee or member of an organization). For example, Yuan et al. (2013) analyzed the effects of media-multiplexity in a functionalist context where different synchronous and asynchronous technologies supporting formal and informal communications are found to be related to various relational and structural social capital dimensions.

## Roles of Social Capital

A dominant and more frequently appearing concern in social capital literature revolves around the role played by social capital during ICT intervention and this concern is often associated with the question – “*What influences to the benefit drivers in a social capital driven benefit or value attainment?*” Analyzing the selected set of ICT related social capital literature from a “roles played” perspective, two major roles consistently appears to be salient: (1) social capital as a motivator, and (2) social capital as a facilitator.



According to Merriam-Webster dictionary, motivator is “*a factor or situation that causes people to feel motivated to do something*”. A closer look at the construct indicates an inner state of the social actor associated with end-goals representing some form of tangible or intangible benefit (Bhandar et al., 2007). While exploring the concept of ‘benefit expectations’ in a social capital mediated transaction, Portes (1998) pointed out the significance of motivation where the return of benefit is uncertain or at least not instantaneous. From a casual observation perspective, ties or network connection often appear to be the significant sway behind social capital’s effects. Putnam (1994) asserted that sources of social capital lie not only in actor networks but also in existing norms and trust. In a similar line of reasoning, trust and associability were pointed out by Leana & Van Buren (1999) as the motivational sources of social capital. Adler & Kwon (2002) have also favoured an explicit inclusion of motivation in their social capital driven transaction model despite the existing criticism on paying attention to motivation. One group of critics, grounded on the rational actor model, argue that the motivations emerging from the self-interest of the individual actors do not require explicit consideration. The second line of criticism argues that motivation is the effect of a network structure which does not require separate consideration. However, these criticisms are not well established and accepted in social theory which leaves room to investigate the role of motivation in this domain.

Whereas the analysis of motivation indicates a significant impact on the behavioral dimension of actors, facilitation is another dominant role through which social capital influences different benefit drivers.

According to Merriam-Webster dictionary, a facilitator is “*someone or something that helps to bring about an outcome (such as learning, productivity, or communication) by providing indirect or unobtrusive assistance, guidance, or supervision*”. Therefore, facilitation manifest quite differently from motivation as the former often exists as a form of external entity independent of the social actor. Facilitation has largely been found to affect the actions of actors or processes within institutions rather than impacting belief or behavioral aspect of the actor. This connection between facilitation and actions is supported by Coleman’s definition of social capital who defined social capital (1988, pp. 98–101) by its function: “*...it is not a single entity but a variety of different entities, with two elements in common: they all consist of some aspect of social structures, and they facilitate certain actions of actors—whether persons or corporate actors—within the structure*”.

Research conducted outside of IS domain like sociology, economics, and political science has used social capital to explain collective actions in cross boundary governances (Coleman, 1988; Fukuyama, 1995; Putnam, 1994) as facilitator of cooperation and coordination through trust, networks, and norms. Structural social capital, which comprises of both bonding and bridging characteristics, also has been shown to play a facilitation role in different contexts. Starting from Granovetter’s thesis in 1977 till present time, social capital research has identified two primary types of network: (1) network of weak ties – usually composed of acquaintances and non-relatives, and (2) network of strong ties which typically composed of good friends and relatives. Both weak ties and strong ties are also referred to as bridging and bonding characteristics (Burt, 1995) of social capital with each playing distinct facilitation role. Beside the relational and structural aspects, Nahapiet & Ghoshal (1998) proposed a third dimension of social capital called “cognitive dimension” which also plays a facilitation role in all three contexts. Embodied by attributes like ‘shared code’ and ‘shared language’, cognitive dimension helps develop a common understanding of the collective goal which in turn facilitates individual and group actions benefitting an entire organization or community (Tsai & Ghoshal, 1998).

From the current comprehensive review of social capital driven benefits in ICT intervention, all analyzed articles support either a motivational or a facilitation or both roles of social capital as influencing factors relating to the actor's belief or actions. Table 4 presents a summary of the role identification process from the literature review.

Table 4 - Identification of Social Capital Roles		
Context	Roles Played	Salient Social Capital Dimensions
<b>Interactionist Context</b>	<b>Motivation [M], Facilitation [F]</b>	Structural and Cognitive
<p><b>Indicators:</b></p> <p>Chen (2007), through a longitudinal study of <b>professional virtual community (PVC)</b>, has found that social interaction tie confirmation, formulated through continuous interaction and a combination of <b>relational and cognitive</b> social capital, has a very strong influence on the post-usage social <b>interaction ties and satisfaction [M]</b> which in turn <b>positively affect members' continuance intentions</b> (Hua et al. 2017) <b>[M]</b> in relation with the virtual community and the knowledge quality.</p> <p>Ryan (2010) considering social capital mediation in a hybrid virtual community (HVC) found that technology mediated communication increases <b>trust and relationship</b> above and beyond that of face-to-face meetings and operates through <b>community building/protection, emotional, and instrumental support [F]</b> in a HVC.</p> <p>Singh et al. (2011) investigated the impact of a specific type of social capital- <i>network social capital</i> - on the open source project success. Considering the presence of network closure and structural hole – creates opportunity to access new knowledge [F] and internal cohesion encourages sharing behavior [M]. In contrary, Wang et al. (2009) found that the field can make strides in building networks that enable combining diverse ideas into new ideas indicating an absence of 'structural hole'.</p>		
<b>Conflict Context</b>	<b>Motivation [M], Facilitation [F]</b>	Relational, Structural and Cognitive
<p><b>Indicators:</b></p> <p>Humphreys (2008), in an empirical research in a urban settings, found that idea of belonging to a social group and ability of real-time communication <b>[F]</b> using a mobile social networking system allows collective and coordinated actions give birth to a positive social molecularization - leading to a <b>better social life and experience [M]</b> of urban public space.</p> <p>Shim &amp; Eom (2009) reported that in the absence of proper institutional enforcement to prevent corruptions in civic society, level of [<i>networking and trust</i>] social capital <b>facilitates coordination and cooperation [F]</b> for mutual benefits. They also found that citizens living in a society with a high stack of social capital [<i>structural</i>] are more <b>likely to become involved [M]</b> in the political decision-making process, and as a result, public employees' corrupt behaviors are more likely to be exposed in a densely connected society.</p> <p>Thapa et al. (2012), studying an ICT intervention in a remote mountain region of Nepal, have found the <b>strong mediation role [F]</b> by [<i>structural social capital</i>] ties among distant friends, ties between people in homogenous groups, ties among unlike people in dissimilar situations in <b>building collective capabilities [M]</b> which also have a positive impact on individual capabilities on a technology intervention.</p> <p>Drawing on a two-wave national panel data set, Chen (2013) demonstrated that social capital <b>facilitates [F]</b> Internet access and use. In particular resource-rich bonding social capital helps overcome the digital divides in access, general use, and online communication.</p>		
<b>Functionalist Context</b>	<b>Motivation [M], Facilitation [F]</b>	Relational, Structural and Cognitive
<p><b>Indicators:</b></p> <p>Effective knowledge integration requires <b>strong social bonding [M]</b> within the <b>ERP project</b> team which in turn can <b>facilitate the integration [F]</b> process of acquired external or novel knowledge through bridging social capital (Newell et al., 2004).</p>		

Chou et al. (2006) indicated both structural dimension and relational dimension perform the role of **motivator [M]** and **facilitator** of organization's IT outsourcing decisions in IT project.

Teoh & Pan (2008) have also identified six **social integration processes** that systematically connect with the three social capital dimensions and the significance of **these processes [F]** in achieving organizational performance.

Wagner et al. (2014) argued that the development of the IT staff's business understanding through **knowledge exchange [F]**, avoidance of misunderstanding through shared visions and facilitation of information flows are significant ways in which social capital contributes. They have also found **that structural dimension of social capital** between business and IT is the enabler of the cognitive and relational dimensions – both of which in turn contributes towards better business process performance through **enhancing the business's understanding of IT[F]**.

Zimmermann & Ravishankar (2014) expanded the focus from social capital to other closely related factors and argued that such knowledge transfer processes can be better understood by considering social capital in conjunction with other drivers like **knowledge senders' efficacy and outcome expectations [M]**

Our analysis of primary data indicates two distinct roles of social capital – motivator and facilitator - across all three contexts. Although social capital can perform both roles simultaneously for each context, our findings highlights a context specific dominance of one role over the other. Delving deeper into this particular aspect further reveals certain patterns of relationships between contextual factors of a given context and specific dimensions of social capital as the underlying root cause for such role dominance. For example, in an interactionist context – facilitation is often well supported by the ICT due to the virtual nature of the context. However, motivational factors are primarily influence by contextual aspects such as actor homogeneity (Chen, 2007), complementary aspects of community (Ryan, 2010), level of cohesion (Singh et al., 2011), benefit expectation (Jin et al., 2013) etc. In a conflict context however, both facilitator and motivators are equally dominant as neither ICT nor institutional forces are an integral part of such context. In context like this, socio-economic status (Ganju et al., 2016), self-efficacy (Molony, 2009), institutional support (Shim & Eom, 2009) often influence the relational and cognitive aspect of social capital. In a functionalist context, often the facilitation of resources is well managed by the institutional processes and ICT yet, negative ICT intervention scenarios appear due to a lack of motivation on the actor's side. Additionally, absence of motivation in such context often indicates a lack of 'trust' between actors or a weak relational dimension of social capital.

Another interesting aspect concerning social capital's role and its relationship with the context concerns the actual process leading to certain social capital role. This is a distinct aspect compared to the 'salient social capital dimensions' indicated on Table 4 which primarily focused on the influence of social capital dimensions on the role of social capital. In Table 5, we capture the influence of context on social capital dimensions. For example, current analysis indicates social capital as a 'motivator' in both interactionist and functionalist contexts. However, in an interactionist context the contextual factors primary influenced the structural and cognitive aspects of social capital whereas in a functionalist context the social capital dimension influenced was only the relational aspect.

**Table 5 - Relationship between Social Capital Roles and Contexts**

Context	Salient Social Capital Roles	Salient ICT-Context characters	Impacted Social Capital Dimensions
Interactionist	Motivator	actor homogeneity; complementary aspects of community; level of cohesion; benefit expectation	Structural & Cognitive
Conflict	Facilitator & Motivator	socio-economic status; self-efficacy; institutional support	Structural, Relational & Cognitive
Functionalist	Motivator	Leadership behavior (Lee et al., 2013); Industry factors (Sozen et al., 2016); Organizational factors (Omotayo & Babalola, 2016); Media multiplexity (Yuan et al., 2013)	Relational

## Benefit Drivers

### *Sharing and Integration of Knowledge*

Much of the social capital research on ICT intervention has largely focused on the knowledge sharing and integration. Despite a substantial difference between the concept of sharing and integration, synonymous usage of these concepts is not a sporadic occurrence in literature. This lack of understanding around the distinction between integration and sharing can be explained by a couple of observations. First, ambiguity and disparities in defining the concept of knowledge integration in academic literature. This has prevented researchers from reaching a consensus (Grant, 1996; Okhuysen & Eisenhardt 2002) regarding the concept. Second, the absence of effective and efficient procedure or guidance is also introducing difficulties in implementing proper knowledge integration in practice (De Boer et al., 1999; Hansen et al., 1999).

In all three contexts, both knowledge sharing and knowledge integration have been found to be key benefit drivers. Integrating diverse forms of knowledge from difference sources is an act of strategic significance for most organizations. Prominent theories of knowledge creation and learning have identified two primary forms of knowledge which are: tacit and explicit (Nonaka & Takeuchi, 1995). Understanding the distinction between tacit and explicit knowledge is critical for understanding knowledge integration as they complement each other in a closed-loop cycle (Robert, 2006). This is apparent from the recent perspectives on knowledge integration where information and know-how/skills have been discussed as separate entities (Grant, 1996a). This dividing nature of the knowledge creates integration challenges within organization and outside of the organizational context. In addition, a lack of theoretical consensus has allowed a wide range of conceptualization of knowledge integration ranging from a simple 'blending' or 'absorbing' (Balaji & Ahuja, 2005) to a collection of activities like knowledge creation, acquisition, transfer, storage, utilization and even maintenance of knowledge (Yang, 2005). From a high-level categorization, diversity in the definition is usually related to either - acquiring, assembling and / or usage of knowledge. Both comprise distinct processes that include the aspects of sharing and integration of knowledge. However, knowledge integration process is superior to acquisition and combination as integration allows an actor or organization to accomplish tasks that would not have been possible by relying on existing knowledge of the organization (Robert, 2006). Knowledge acquisition and integration in a course of problem solving typically include the processes of transfer, share and application

but effectiveness of the application resulting from the knowledge integration can significantly be influenced by the presence or absence of a common knowledge base or syntactic or semantic similarities (Cohen & Levinthal, 1990; Carlile, 2002). This syntactic or semantic similarities can be considered as the level of cognitive social capital between the source and the recipient in a knowledge sharing process (Zhao et al., 2016). Additionally, the positive impact of social capital over knowledge sharing and integration process is largely influenced by the context and ICT characteristics. In an online virtual community of shoppers, Huang et al. (2012) identified that “Information browsers” mostly browse through information and consider both relational and social factors as the main contributors for decision making. As the influencing factors related to the decision making are different for information browsers, information consumers, and information providers, ICT capabilities must support factors beyond traditional social capital dimensions in order to be effective in a given context.

### ***Sharing and Integration of Resources***

Resource sharing and integration are the second group of benefit drivers found in a social capital related ICT intervention literature. Although “knowledge”, discussed in the preceding section, can be perceived as a form of intangible resource, ICT intervention literature largely focuses on a large category of tangible and non-knowledge related resources. This category requires a distinct sharing and integration techniques to effectively achieve the desired outcome from an ICT intervention. Benefits emerging from resources are usually dictated by the limited quantity and availability of the resource (Constantin & Lusch, 1994) which are typically considered tangible in nature. Resources can be different on different paradigm of an ICT intervention. Both tangible resources like hardware, funds, personnel and intangible resources like bandwidth, dedicated channels, dedicated change windows, software are seen to be depended upon by the actors as a source of support for the task completion (Vargo & Lusch, 2004). Resources can be further classified based on the ownership and control properties related to the actors like internal and external. The concept of service dominated (S-D) logic proposes a useful distinction between the resources using terminologies of ‘operand’ and ‘operant’ resources. Operand resources, which are tangible, static and transferable in nature, typically facilitate or enable the actors to obtain support, for example natural resources. Operant resources, usually intangible, dynamic and non-transferable in nature, are resources used by actors to operate on other resources to achieve desired effect or results for example human skills including physical and cognitive abilities (Lusch & Nambisan, 2015). This tangibility and transferability aspects of resources also dictate the successful sharing and integration of resources in varied contexts similar to the knowledge sharing and integration. This is apparent from the role of operant resources which are often a source of competitive advantage in functionalist context and difficult to share and transfer due to their intangibility.

Necessity of resource sharing results from the fact that each resource offers different affordance and the existing resources are incapable of sustaining the immediate need or resolving the problem at hand regardless of the context. Taking operant resources as an example, each person has different physical skills and mental skills which are not sufficient for his or her survival or accomplishment of every task they need to perform. Similar imbalances are also observed for operand resources where one group has more of something that another group requires. Now, very similar to the knowledge sharing and integration activities, sharing and exchanging resources are not sufficient to attain the desired benefit or value if they are not integrated properly. Therefore, bundling or combining the exchanged resource with existing resources is an essential condition for deriving usefulness or value (Lusch & Nambisan, 2015). Analysis of existing literature indicates that one or more of the social capital dimensions are directly influencing both resource sharing and resource integration in all identified contexts. This influence on the resource related benefit drivers is usually through either motivation or facilitation or both roles. Regardless of the benefit driver, influence of context and ICT is often a deciding factor for an effective resource integration. In a conflict



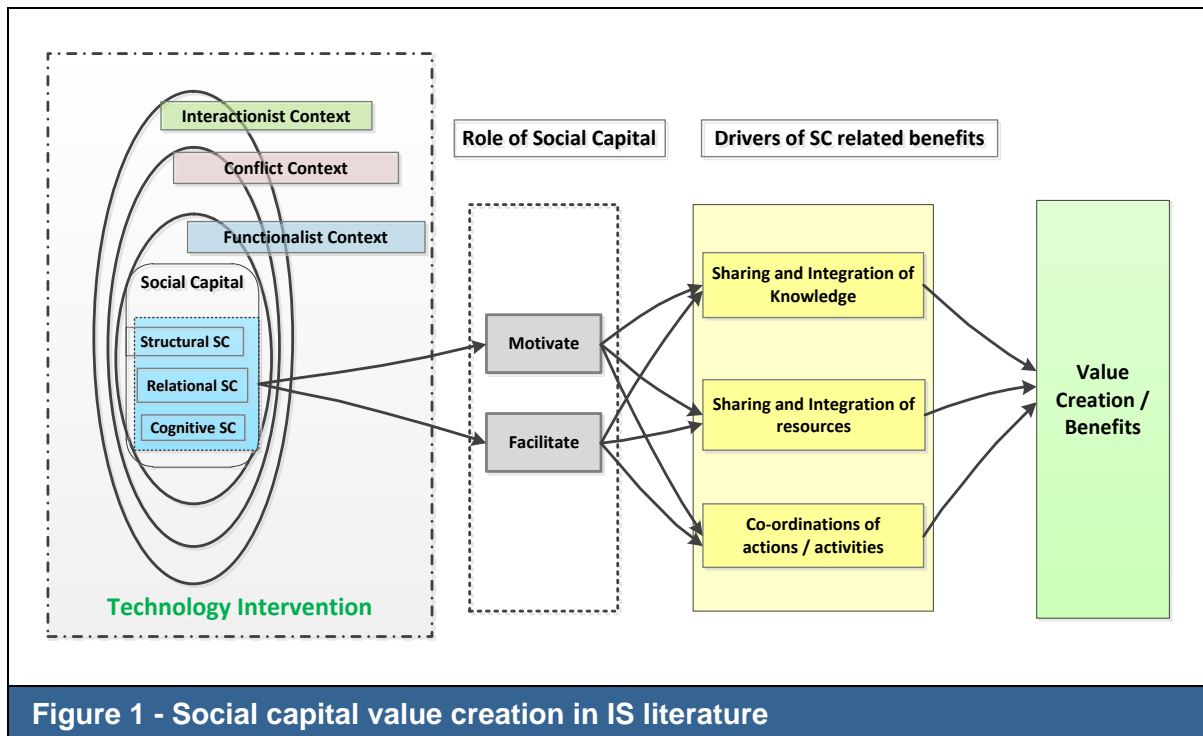
context of the South Pacific region, Prasad et al. (2013) indicated IT integration challenges arising from unequitable IT development in the region, lack of market liberalization of the ICT sector and poor political support for ICT initiatives despite a strong stakeholder support for the initiative.

### **Co-ordinations of Actions or Activities**

Motivating and facilitating 'collective actions' or 'coordinated actions' among the actors, through leveraging social capital in ICT intervention, is another major dimension found in the literature associated with the benefit or value creation. Although both the knowledge sharing and resource sharing can be coordinated from an execution perspective, the concept of 'coordinated actions' largely relates to the social actors themselves and their physical movement. This facet of social capital has been emphasized since very early days of social capital research through civic engagements or enforcement of certain behavior or norms through possibilities of sanctions. In illustrating several different forms of social capital, Coleman (1988) presented a few scenarios such as the wholesale diamond market of New York City where hundreds of thousands of dollars' worth of diamonds are exchanged freely for inspection without any formal contract or insurance which supports the efficient operation of the diamond market. In depth investigation to identify the reasons for such behavior indicates certain attributes of the social structure like strong family ties are responsible for the trust between the merchants of the diamond market where a breach of trust would result in a loss of family, religious, and community ties. In more recent research, coordinated actions or collective actions facilitated by the social capital in the form of cooperative practices are cited (Arrighetti et al., 2008). Recent studies have also found similar underlying factors facilitating the cooperative behavior where institutional enforcement is not present. In an interactionist context and conflict context, social capital is constructed on the basis of civic engagement and personal interactions which works through increasing interpersonal trust and reducing the opportunistic behavior. Increase in cooperation and reduction in opportunism are observed in the presence of the personal relationship and social network where the fear of sanction by other members are found to be a key driving force (Arrighetti et al., 2008). Several other studies have confirmed this link between individual's propensity to cooperate and the level of social capital through empirical investigations (Arrighetti et al., 2008). This role of coordination of actions is very different in functionalist context as firms are not subject to the similar sanctions as individuals and time horizon governing interfirm cooperation are very different compared to individual relationships. Pointing out these differences, Arrighetti et al. (2008) have argued that in addition to the social capital, historical tradition of collective actions and the activism of institutional actors are also responsible for the inter-firm collective actions in functionalist paradigm. Nonetheless, existing literature analysis indicates that coordinated actions or collective actions have found to be a significant driver of benefit or value in interactionist, conflict and functionalist contexts.

### **Discussion**

For the analyzed literature, we primarily explored the underlying process of benefit realization. In each empirical scenario, we were able to identify that value or benefit was derived by activating certain benefit-drivers assisted by two enablers. This activation process occurred through two distinct roles played by the social capital which acted as enablers of the benefit drivers. Resorting to a grounded theory approach to identify distinct elements and processes of a social capital influenced ICT intervention, we captured three salient aspects of such relationship: 1) influence of context on social capital dimensions, 2) roles of social capital as benefit enablers, and 3) three distinct activities as benefit drivers. According to Gregor (2006) taxonomy, the contribution of our holistic framework for IS research can be classified as a theory for explanation and understanding.



The holistic model of benefit presented in Figure 1, which comprises contextual relations of social capital dimensions, roles of social capital and drivers of benefits, provide a rich explanation of the process of achieving business benefit or value resulting from the influence of social capital. In preceding sections, we discussed each segment of the identified model, their grounding in existing social capital literature, and how they interrelate with each other while generating value. We developed the holistic model (Figure 1) progressively as we analyzed selected literature for each segment of the model and identify distinct elements. None of the existing studies on social capital and ICT demonstrate the existence of all the elements identified in our final model. Our proposal for different segments of the model are primarily driven by three distinct aspects of social capital research: inconsistent outcome in the presence of social capital, why social capital generates value and how social capital generates value. This led us to the identification of a contextual link for social capital dimensions, the roles social capital plays in an ICT intervention, and the drivers of social capital mediated benefit during an ICT intervention.

Despite an overwhelming evidence supporting the social capital theory's central predictions, evidence of deviations from these predictions is not unfounded. Aside from the extreme cases of negative consequences resulting from social capital (Pillai et al., 2017), 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 (Urquhart et al., 2008; Yang et al., 2009). Such deviations motivated us to investigate a contextual link for social capital dimensions which resulted in the identification of three distinct contexts: interactionist, conflict and functionalist. Analysis of the selected literature reveals existence of distinct factors that are responsible for formation of the different dimensions of social capital.

For example, due to an interaction centric behavior and comparable interests in an interactionist context, ICT intervention research 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 other contextual factors. In a conflict context, power, domination and resource centric motivation are at play in securing benefit and attaining common goals. In this context, a presence of moderate institutional forces and explicit idea of

belonging require a distinct set of contextual factors to enable and augment existing social capital. Our analysis of 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. For example, Urquhart et al. (2008) found that the fear of authority and lack of encouragement by government officials severely hampered the development of information systems in an ICT intervention case in Indonesia. In Sri Lanka, they have found a case where lack of support for rice breeding by technical authorities inhibited the villagers from leveraging their knowledge of new varieties (Urquhart et al., 2008). Both of the cases support the significance of institutional role in enabling localized social capital. 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.

While identification of the contextual connection for social capital's dimensions help explain the varied effectiveness of social capital in attaining benefits, it still leaves us to answer the questions how and why benefits are derived. Our analysis of ICT related social capital literature indicate the existence of three distinct process how benefit or value is attained during an ICT intervention which include: sharing and integration of knowledge, sharing and integration of resources and coordination of actions. These three processes are identified as the drives of benefit in the holistic model presented in Figure 1. Further investigating these processes in an ICT intervention, we identified two distinct roles of social capital that are responsible for their effectiveness. Existence of these roles are also evident from the empirical research addressing the challenges of sharing and integration. Therefore, the why aspect surrounding the effectiveness of benefit drives can be explained by the motivational and facilitation roles of social capital during an ICT intervention. Table 6 and 7 below summarizes the findings of this research and how they answer both of our research questions presented in Section 1.

**Table 6 - How does social capital relate to its context during an ICT intervention?**

Desired ICT Characteristics	Context	Dominant Contextual Attributes	Social Capital attributes Impacted	Nature of Integration
Synchronous and asynchronous communication support; Supports both network closure and structural hole;	Interactionist	Significant ICT influence; Low Institutional Control; implicit contextual association	Trust, Norm; Obligation; Identifications; shared code and language; shared narratives	Lack of institutional control and missing explicit membership or identity is complemented through multiform communications capabilities helping to develop a closed network and trusting relationship
Synchronous and asynchronous communication support; Supports both capability synthesis; shallow learning curve	Conflict	Moderate ICT influence; Moderate Institutional Control; Hybrid contextual association	Trust; Network ties; shared code and language; shared narratives	Multiform communications, ease of knowledge codification and intuitive features helps develop a trusting relationship and meaningful symbols for a loosely connected group identified by a geographic boundary

Policy based configuration capabilities; Explicit contextual reference; persistent memory	Functionalist	Moderate ICT influence; High Institutional Control; Explicit contextual association	Network ties; Network configurations; Appropriable organizations; Obligations	In the presence of an explicit identifiers and well-defined acceptable behavior, policy based configuration features and persistent memory help form different types of networks and enables movement of social capital attributes to a different context.
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**Table 7 - How does social capital generate value or benefits in an ICT intervention?**

Social Capital Influence	Context	Enabler	Drivers	Observable/Measurable Indicators
Trust, Norm; Obligation; Identifications; shared code and language; shared narratives	Interactionist	Motivator (motivates human actors)  Facilitator (facilitate processes)	Sharing and Integration of Knowledge	Increased intention of membership continuance; Community building; increased sharing behavior; enhanced resource quality
Trust; Network ties; shared code and language; shared narratives	Conflict		Sharing and Integration of Resources	positive social molecularization; complementing institutional enforcement and poor institutional forces; reduced misbehavior and improved quality of life; building collective capabilities
Network ties; Network configurations; Appropriable organizations; Obligations	Functionalist		Coordination of actions	Social Integration; Collaborative Decisions; Process effectiveness; Intra and inter-organizational process effectiveness; improving individual efficacy and innovation

## 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 of time, the concept of social capital only appeared in 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 technology often appears to be an ambivalent one. This is not surprising as we have indicated earlier that the meaning and conceptual distinctiveness of the very idea of social capital are giving raise to many controversial questions. Systematic review of literatures for the current research also indicated this controversy. Social capital appeared both as an independent and dependent variable in relation to ICT intervention. Additionally, it has also been measured at 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 researches, to date, have connected 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. Current systematic review and a grounded theory approach to the analysis have found that different dimensions of social capital have different level of salience depending of the research context. Therefore, relationships between social capital and three broader contexts have been identified through this research.

The aspect of benefit or value creation has been presented in different manners by different researchers without any solidified conceptual categories that can be consistently applied for future research on this domain. Synthesizing the existing literature, current research proposed the concept of “value drivers” through which social capital triggered benefit are realized in different contexts and distinct roles (motivation and/or facilitation) influencing the value drivers. Identified social capital related benefit drivers are either action related or belief/concept related, manifested through (1) sharing and integration of knowledge, (2) sharing and integration of resources, and (3) coordinated actions.

Identification of distinct roles and value drivers facilitated the construction of a holistic model of social capital driven benefit in ICT intervention. In the face of existing debate regarding the value of social capital, such a holistic model clearly emphasizes and justifies the adoption of social capital theory in IS research by explaining “how and why” value or benefits are achieved. In addition, it also provides further motivation for the IS practitioners to explicitly consider the aspects of social capital in an ICT intervention regardless of the context.

### **Limitations**

Akin to all other literature review and grounded theory research, our study also has its limitations which can be addressed through future research on this area. Limitations of the current research pertain to selection of article for review for a restricted time frame. This, most likely, has a direct correlation to the contextual factors identified through current research. Broadening the scope might influence the context related factor. In addition, group social capital and individual social capital might demonstrate different relationship with the value drivers. These limitations can be addressed through a future study in the domain.

Additionally, the set of keywords utilized to locate candidate articles is a factor which had significant influence on the final set of articles analyzed by the current review. We have searched several databases including SCOPUS, Web of Science, JSTOR, International Bibliography of the Social Sciences and Science Direct which collectively contain most of the IS and management journals. However, it is a possibility that our keyword search failed to select all suitable candidate articles from certain IS & management journal due to the absence of a match with our keywords set.

### **Future Research**

The role of social capital in ICT intervention and other IS related context is an exciting as well needed research area for the future. Therefore, our proposed holistic model of social capital driven benefit generation is hoped to act as a frame of reference for both micro and macro level research in this domain. The results of our study open up several interesting micro-level research questions for the future research. This study used Nahapiet & Ghoshal’s (1998) definition of relational capital. Future research may examine the precursors to the dimensions of social capital. For example, what factors impact the dimensions or sub-dimensions of social capital? Additionally, the strength of the correlation between enablers and drivers would be an interesting finding which will influence policy decisions for practitioners. At the macro-level, both longitudinal research and case studies can be conducted to examine and measure the level of benefit derived from a context specific ICT intervention. Constructs from our framework can be used to develop scale for such measurement.



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- Zhang, L., & Jones, M. C. (2011). A social capital perspective on IT professionals' work behavior and attitude. *Journal of Organizational and End User Computing (JOEUC)*, 23(1), 64-78.
- Zhang, W. (2010). A Social Capital Perspective of Innovation from Individuals to Nations: Where is Empirical Literature Directing Us?. *International Journal of Management Reviews*.
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- Zheng, W. (2010). A social capital perspective of innovation from individuals to nations: where is empirical literature directing us?. *International Journal of Management Reviews*, 12(2), 151-183.

## Appendix A:

### Distribution of the journal articles analyzed by the current research

Journal Name	Journal Ranking (According to ABDC 2018 Ranking) <a href="http://www.abdc.edu">http://www.abdc.edu</a>	Number of Articles Selected
Information and Organization <ul style="list-style-type: none"> <li>Adam, M. S., &amp; Urquhart, C. (2009). No man is an island: Social and human capital in IT capacity building in the Maldives. <i>Information and Organization</i>, 19(1), 1-21.</li> </ul>	A+	1
The Academy of Management Review <ul style="list-style-type: none"> <li>Cowan, R., &amp; Jonard, N. (2009). Knowledge portfolios and the organization of innovation networks. <i>Academy of Management Review</i>, 34(2), 320-342.</li> <li>Fisher, G. (2019). Online communities and firm advantages. <i>Academy of Management Review</i>, 44(2), 279-298.</li> <li>Kuwabara, K., Hildebrand, C. A., &amp; Zou, X. (2018). Lay theories of networking: How laypeople's beliefs about networks affect their attitudes toward and engagement in instrumental networking. <i>Academy of Management Review</i>, 43(1), 50-64.</li> </ul>	A+	3
Journal of Management Studies <ul style="list-style-type: none"> <li>Reiche, B. S. (2012). Knowledge benefits of social capital upon repatriation: A longitudinal study of international assignees. <i>Journal of Management Studies</i>, 49(6), 1052-1077.</li> </ul>	A+	1
MIS Quarterly <ul style="list-style-type: none"> <li>Chua, C. E. H., Lim, W. K., Soh, C., &amp; Sia, S. K. (2012). Enacting clan control in complex IT projects: A social capital perspective. <i>MIS Quarterly</i>, 36(2), 577-600.</li> <li>Ganju, K. K., Pavlou, P. A., &amp; Banker, R. D. (2016). Does information and communication technology lead to the well-being of nations? A country-level empirical investigation. <i>MIS Quarterly</i>, 40(2), 417-430.</li> <li>Oestreicher-Singer, G., &amp; Zalmanson, L. (2013). Content or community? A digital business strategy for content providers in the social age. <i>MIS quarterly</i>, 37(2), 591-616.</li> <li>Singh, P. V., Tan, Y., &amp; Mookerjee, V. (2011). Network effects: The influence of structural capital on open source project success. <i>Mis Quarterly</i>, 35(4), 813-829.</li> </ul>	A+	4
European Journal of Information Systems <ul style="list-style-type: none"> <li>Van Den Hooff, B., &amp; De Winter, M. (2011). Us and them: a social capital perspective on the relationship between the business and IT departments. <i>European Journal of Information Systems</i>, 20(3), 255-266.</li> </ul>	A+	1
Information Systems Journal <ul style="list-style-type: none"> <li>Zimmermann, A., &amp; Ravishankar, M. N. (2014). Knowledge transfer in IT offshoring relationships: the roles of social capital, efficacy and outcome expectations. <i>Information Systems Journal</i>, 24(2), 167-202.</li> </ul>	A+	1
Information and Management <ul style="list-style-type: none"> <li>French, A. M., Luo, X. R., &amp; Bose, R. (2017). Toward a holistic understanding of continued use of social networking</li> </ul>	A+	3

<p>tourism: A mixed-methods approach. <i>Information &amp; Management</i>, 54(6), 802-813..</p> <ul style="list-style-type: none"> <li>• He, W., Qiao, Q., &amp; Wei, K. K. (2009). Social relationship and its role in knowledge management systems usage. <i>Information &amp; Management</i>, 46(3), 175-180.</li> <li>• Mehta, N., Hall, D., &amp; Byrd, T. (2014). Information technology and knowledge in software development teams: The role of project uncertainty. <i>Information &amp; Management</i>, 51(4), 417-429.</li> <li>• Mehta, N., Hall, D., &amp; Byrd, T. (2014). Information technology and knowledge in software development teams: The role of project uncertainty. <i>Information &amp; Management</i>, 51(4), 417-429.</li> </ul>		
<p>Organization Science</p> <ul style="list-style-type: none"> <li>• Okhuysen, G. A., &amp; Eisenhardt, K. M. (2002). Integrating knowledge in groups: How formal interventions enable flexibility. <i>Organization Science</i>, 13(4), 370-386..</li> </ul>	A+	1
<p>Journal of Information Technology</p> <ul style="list-style-type: none"> <li>• Riemer, K., &amp; Klein, S. (2008). Is the V-form the next generation organisation? An Analysis of Challenges, Pitfalls and Remedies of ICT-enabled Virtual Organisations based on Social Capital Theory. <i>Journal of Information Technology</i>, 23(3), 147-162.</li> <li>• Urquhart, C., Liyanage, S., &amp; Kah, M. M. (2008). ICTs and poverty reduction: a social capital and knowledge perspective. <i>Journal of information Technology</i>, 23(3), 203-213.</li> </ul>	A+	2
<p>Administrative Science Quarterly</p> <ul style="list-style-type: none"> <li>• Huysman, M., &amp; Wulf, V. (2006). IT to support knowledge sharing in communities, towards a social capital analysis. <i>Journal of information technology</i>, 21(1), 40-51.</li> <li>• Xiao, Z., &amp; Tsui, A. S. (2007). When brokers may not work: The cultural contingency of social capital in Chinese high-tech firms. <i>Administrative Science Quarterly</i>, 52(1), 1-31.</li> </ul>	A+	2
<p>Journal of the American Society for Information Science and Technology</p> <ul style="list-style-type: none"> <li>• Yuan, Y. C., Zhao, X., Liao, Q., &amp; Chi, C. (2013). The use of different information and communication technologies to support knowledge sharing in organizations: From e - mail to micro - blogging. <i>Journal of the American Society for Information Science and Technology</i>, 64(8), 1659-1670.</li> </ul>	A+	1
<p>Urban Studies</p> <ul style="list-style-type: none"> <li>• Graham, S. (2002). Bridging urban digital divides? Urban polarisation and information and communications technologies (ICTs). <i>Urban studies</i>, 39(1), 33-56..</li> </ul>	A+	1
<p>Journal of Management Information Systems</p> <ul style="list-style-type: none"> <li>• Wagner, H. T., Beimborn, D., &amp; Weitzel, T. (2014). How social capital among information technology and business units drives operational alignment and IT business value. <i>Journal of Management Information Systems</i>, 31(1), 241-272.</li> </ul>	A+	1
<p>The Information Society</p> <ul style="list-style-type: none"> <li>• Chen, W. (2013). The implications of social capital for the digital divides in America. <i>The Information Society</i>, 29(1), 13-25.</li> <li>• Steinfield, C., LaRose, R., Chew, H. E., &amp; Tong, S. T. (2012). Small and medium-sized enterprises in rural business clusters: the relation between ICT adoption and</li> </ul>	A	2

benefits derived from cluster membership. <i>The information society</i> , 28(2), 110-120.		
International Journal of Information Management <ul style="list-style-type: none"> <li>Ahmed, Z. (2018). Explaining the unpredictability: a social capital perspective on ICT intervention. <i>International Journal of Information Management</i>, 38(1), 175-186.</li> </ul>	A	1
Information, Communication and Society <ul style="list-style-type: none"> <li>Appel, L., Dadlani, P., Dwyer, M., Hampton, K., Kitzie, V., Matni, Z. A., ... &amp; Teodoro, R. (2014). Testing the validity of social capital measures in the study of information and communication technologies. <i>Information, Communication &amp; Society</i>, 17(4), 398-416.</li> </ul>	A	1
International Journal of Management Reviews <ul style="list-style-type: none"> <li>Lee, R. (2009). Social capital and business and management: Setting a research agenda. <i>International Journal of Management Reviews</i>, 11(3), 247-273.</li> <li>Pillai, K. G., Hodgkinson, G. P., Kalyanaram, G., &amp; Nair, S. R. (2017). The negative effects of social capital in organizations: A review and extension. <i>International Journal of Management Reviews</i>, 19(1), 97-124.</li> <li>Zheng, W. (2010). A social capital perspective of innovation from individuals to nations: where is empirical literature directing us?. <i>International Journal of Management Reviews</i>, 12(2), 151-183.</li> </ul>	A	3
Communications of the Association for Information Systems <ul style="list-style-type: none"> <li>Durst, C., Viol, J., &amp; Wickramasinghe, N. (2013). Online Social Networks, Social Capital and Health-related Behaviors: A State-of-the-art Analysis. <i>Communications of the Association for Information Systems</i>, 32, 135-158.</li> <li>Ryan, S. D. (2010). Information systems and healthcare XXXVI: Building and maintaining social capital—evidence from the field. <i>Communications of the Association for Information Systems</i>, 27(1), 307-322.</li> <li>Yang, S., Lee, H., &amp; Kurnia, S. (2009). Social capital in information and communications technology research: Past, present, and future. <i>Communications of the Association for Information Systems</i>, 25(1), 23.</li> </ul>	A	3
British Journal of Management <ul style="list-style-type: none"> <li>Newell, S., Tansley, C., &amp; Huang, J. (2004). Social capital and knowledge integration in an ERP project team: the importance of bridging and bonding. <i>British journal of management</i>, 15(S1), S43-S57.</li> </ul>	A	1
Journal of Computer Information Systems <ul style="list-style-type: none"> <li>Lee, H., Park, J., &amp; Lee, J. (2013). Role of leadership competencies and team social capital in IT services. <i>Journal of Computer Information Systems</i>, 53(4), 1-11.</li> </ul>	A	1
International Journal of Project Management <ul style="list-style-type: none"> <li>Park, J. G., &amp; Lee, J. (2014). Knowledge sharing in information systems development projects: Explicating the role of dependence and trust. <i>International Journal of Project Management</i>, 32(1), 153-165.</li> </ul>	A	1
Computers in Human Behavior <ul style="list-style-type: none"> <li>Chou, H. W., Chang, H. H., Lin, Y. H., &amp; Chou, S. B. (2014). Drivers and effects of post-implementation learning on ERP usage. <i>Computers in Human Behavior</i>, 35, 267-277.</li> </ul>	B	1
International Journal of Social Economics <ul style="list-style-type: none"> <li>Oxoby, R. (2009). Understanding social inclusion, social cohesion, and social capital. <i>International Journal of Social Economics</i>, 36(12), 1133-1152.</li> </ul>	B	1

Journal of Human Development <ul style="list-style-type: none"> <li>Ibrahim, S. S. (2006). From individual to collective capabilities: the capability approach as a conceptual framework for self - help. <i>Journal of human development</i>, 7(3), 397-416.</li> </ul>	B	1
Journal of Organizational and End Users Computing <ul style="list-style-type: none"> <li>Zhang, L., &amp; Jones, M. C. (2011). A social capital perspective on IT professionals' work behavior and attitude. <i>Journal of Organizational and End User Computing (JOEUC)</i>, 23(1), 64-78.</li> </ul>	B	1
Journal of Community Informatics <ul style="list-style-type: none"> <li>Williams, K., &amp; Durrance, J. C. (2008). Social networks and social capital: Rethinking theory in community informatics. <i>The Journal of Community Informatics</i>, 4(3), 1-20.</li> </ul>	B	1
Information Technology and Management <ul style="list-style-type: none"> <li>Zhao, J., Ha, S., &amp; Widdows, R. (2016). The influence of social capital on knowledge creation in online health communities. <i>Information Technology and Management</i>, 17(4), 311-321.</li> </ul>	B	1
Information Technology for Development <ul style="list-style-type: none"> <li>Molony, T. (2009). Carving a niche: ICT, social capital, and trust in the shift from personal to impersonal trading in Tanzania. <i>Information technology for development</i>, 15(4), 283-301.</li> <li>Thapa, D., Sein, M. K., &amp; Sæbø, Ø. (2012). Building collective capabilities through ICT in a mountain region of Nepal: where social capital leads to collective action. <i>Information Technology for Development</i>, 18(1), 5-22.</li> </ul>	B	2
Journal of Enterprise Information Management <ul style="list-style-type: none"> <li>Teoh, S. Y., &amp; Pan, S. L. (2008). Understanding the influences of social integration in enterprise systems use. <i>Journal of Enterprise Information Management</i>, 21(5), 493-511.</li> </ul>	B	1
Pacific Asia Journal of Association for Information Systems (PAJAIS) <ul style="list-style-type: none"> <li>Huang, L. T., Farn, C. K., &amp; Jeng, H. T. (2012). Motivations for using Information for decision making in virtual Communities: the moderating effects of usage behavior. <i>Pacific Asia Journal of the Association for Information Systems</i>, 4(1), 1-18.</li> <li>Liu, C. C., Liang, T. P., Rajagopalan, B., Sambamurthy, V., &amp; Wu, J. C. H. (2012). Knowledge sharing as social exchange: evidence from a meta-analysis. <i>Pacific Asia Journal of the Association for Information Systems</i>, 3(4), 21-47.</li> <li>Prasad, A., Finau, G., Samuwai, J., Prasad, B., &amp; Green, P. (2013). On facilitating regional integration and economic development with collaborative technologies in the South Pacific. <i>Pacific Asia Journal of the Association for Information Systems</i>, 5(2), 23-37.</li> <li>Wang, J. C., Klein, G., Jiang, J. J., &amp; Cheney, P. (2009). Management Information Systems Research Networks: Creating and Sharing Diverse Knowledge. <i>Pacific Asia Journal of the Association for Information Systems</i>, 1(1), 10, 55-80.</li> </ul>	B	4



<p><i>Information Systems Management</i></p> <ul style="list-style-type: none"> <li>Hua, L. Y., Ramayah, T., Ping, T. A., &amp; Jun-Hwa, C. (2017). Social Media as a Tool to Help Select Tourism Destinations: The Case of Malaysia. <i>Information Systems Management, 34(3)</i>, 265-279.</li> </ul>	B	1
<p><i>Journal of Systems and Information Technology</i></p> <ul style="list-style-type: none"> <li>Omotayo, F. O., &amp; Babalola, S. O. (2016). Factors influencing knowledge sharing among information and communication technology artisans in Nigeria. <i>Journal of Systems and Information Technology, 18(2)</i>, 148-169.</li> </ul>	C	1
<p><i>European Management Review</i></p> <ul style="list-style-type: none"> <li>Sozen, H. C., Varoglu, D., Yeloglu, H. O., &amp; Basim, H. N. (2016). Human or social resources management: Which conditions force HR departments to select the right employees for organizational social capital? <i>European Management Review, 13(1)</i>, 3-18.</li> </ul>	C	1
<p><i>International Review of Administrative Sciences</i></p> <ul style="list-style-type: none"> <li>Shim, D. C., &amp; Eom, T. H. (2009). Anticorruption effects of information communication and technology (ICT) and social capital. <i>International review of administrative sciences, 75(1)</i>, 99-116.</li> </ul>	C	1
<p><i>Database for Advances in Information Systems</i></p> <ul style="list-style-type: none"> <li>Kawalek, P., &amp; Wood-Harper, T. (2002). The finding of thorns: user participation in enterprise system implementation. <i>ACM SIGMIS Database: the DATABASE for Advances in Information Systems, 33(1)</i>, 13-22.</li> </ul>	N/A	1
<p><i>Journal of Computer-Mediated Communication</i></p> <ul style="list-style-type: none"> <li>Humphreys, L. (2007). Mobile social networks and social practice: A case study of Dodgeball. <i>Journal of Computer-Mediated Communication, 13(1)</i>, 341-360.</li> </ul>	N/A	1
<p><i>Behaviour &amp; Information Technology</i>,</p> <ul style="list-style-type: none"> <li>Xiang, C., Lu, Y., &amp; Gupta, S. (2013). Knowledge sharing in information system development teams: examining the impact of shared mental model from a social capital theory perspective. <i>Behaviour &amp; Information Technology, 32(10)</i>, 1024-1040.</li> </ul>	N/A	1
TOTAL		55

## About the Authors

**Dr. Zafor Ahmed** is an Assistant Professor of Management Information Systems for the collage of business administration at California State University, Sacramento. A number of his research papers have presented at well-known international conferences and published by well-respected IS journals. Zafor has been awarded ‘BIMTECH-STOUGH Young Scholar Award 2015’ and ‘Dr. G. D. Sardana Young Scholar Award 2019’ at the International Conference on Management Cases (ICMC), New Delhi, India for his outstanding research contributions. Zafor possesses over 15 years of industry experience in the area of IT project management, Enterprise Information Systems implementation and IT Security, most of which is with the Bank of Canada (Canadian Reserve Bank).

**Dr. Uma Kumar** is a Professor of Technology Management and the Director of the Research Centre for Technology Management at Carleton University. Her research is in the area of management of technology including technology transfer, efficiency in new product development, e-government, quality in R&D, managing R&D internationally, sustainable new product development, and ERP adoption and implementation. She has published over 250 articles in refereed journals and proceedings. Her more than 20 papers have won best paper awards at prestigious conferences. Twice, she has won Carleton’s Prestigious Research Achievement Award. She has also won the faculty teaching excellence award and the Graduate Mentoring Award at Carleton University. She is the recipient of a number of research grants from reputed research funding agencies.

**Dr. Vinod Kumar** is a professor of Supply Chain Management at the Sprott School of Business (Director of School, 1995-2005), Carleton University. Dr. Kumar has published over 350 articles in refereed journals and proceedings. He has won several Best Paper Awards in prestigious conferences, Scholarly Achievement Award of Carleton University for the academic years 1985-86 and 1987-88 and Research Achievement Award for the year 1993, 2001, 2007 and 2015. He is on the editorial board of several International Journals. In addition, Dr. Kumar has also served for several years on the Board of Governors and the Senate for Carleton University and on the Board of the Ontario Network of e-Commerce. Dr. Kumar’s research interests are in optimizing performance of operation systems; technology transfer; new product development; technology adoption; e-commerce applications and e-Government. He is on Canadian Who’s Who since a number of years.

**Dr. Evren Eryilmaz** is an assistant professor of Management Information Systems at the California State University Sacramento. He earned his PhD in Information Systems and Technology from Claremont Graduate University. His teaching interests include System Analysis and Design, Mobile Application Development, Human Computer Interaction, Java Programming, and other IS related topics. His principal research interests lie in design science research, recommender systems, business analytics, and big data management. His research appears in journals such as Journal of the Association for Information Systems, Communications of Association for Information Systems, AIS Transactions of Human Computer Interaction, and the International Journal of Computer Supported Collaborative Learning.