Review

Explaining the unpredictability: A social capital perspective on ICT intervention

Zafor Ahmed

Carleton University, Carleton University, 1125 Colonel By Dr, Ottawa, Ontario, Canada

ABSTRACT

The significance of social capital and its role in the domain of information systems is ostensive from the extensive application of this concept in ICT (Information and Communication Technology)-related research. Despite overwhelming research to support social capital theory's central predictions, evidence exists for deviations from these predictions. Therefore, the relationship between ICT and social capital often appears largely to be an ambivalent one. By adopting a systematic review approach, the current study attempts to present a suitable explanation for the varied effectiveness of social capital in ICT intervention.

The contribution of the current research can be seen as two-fold. The first is the identification of distinct contexts associated with social capital and ICT intervention. 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 distinct contextual factors that act as enablers in different social capital dimensions. Being cognizant of these factors 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 favourably leverage the contextual enablers

1. Introduction

The significance of social capital and its role in the domain of information systems is ostensive from the extensive application of this concept in ICT (Information and Communication Technology)-related research (Yang, Lee, & Kurnia, 2007), yet the relationship between ICT and social capital appears largely to be an ambivalent one. Comprehensive reviews of social capital literature spanning multiple domains and temporal periods affirm a positive correlation between social capital and favourable outcomes (Adler & Kwon, 2002; Yang et al., 2007; Lee, 2009). As a result, social capital theory has been extensively used in management and IS (Information Systems) literature to investigate collective actions, value creation, knowledge sharing, team performance, research and development, and innovations (Zheng, 2010). Despite overwhelming evidence to support social capital theory's central predictions, evidence exists for deviations from these predictions. Aside from 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 by presenting evidence where the presence of sufficient social capital did not result in a successful ICT intervention (Yang et al., 2007; Urquhart, Liyanage, & Kah, 2008). Although some argue that many of these deviations are due to conceptualizing social capital as an independent

variable, others who treat social capital as a dependent variable are also in this camp. For example, some early researchers portrayed 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 social capital (Verba et al., 1995 in Norris, 1996; Putnam, 2000). Such contradictory results have been described as "inadequate knowledge" (Yang et al., 2007) 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 presenting a suitable explanation. By adopting a systematic review approach as a tool to analyze the multifaceted dimensions 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. Acknowledging the concern that social capital can be simultaneously beneficial and detrimental, it is argued here that such varied behaviour is better understood by looking at the surrounding context of the ICT intervention. Specifically, the presence of three distinct contexts is identified in the ICT and social capital literature, and it is argued that these contextual enablers are largely responsible for the effectiveness of social capital in an ICT intervention. Therefore, the

contribution of the current research can be seen as two-fold. The first is the identification of distinct contexts associated with social capital and ICT intervention. 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 distinct contextual factors that act as enablers in different social capital dimensions. Being cognizant of these factors 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 favourably leverage the contextual enablers.

As the goal here is to develop a stable explanation of the varied effectiveness of social capital, one that encompasses both social capital's influence on the outcome during an ICT intervention and ICT's impact on the level of social capital, 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?
- What are the contextual enablers that influence social capital dimensions during an ICT intervention?
- How does ICT usage influence social capital dimensions?

Inspired by these questions, Section 2 reviews the conceptual origin and manifestation of social capital, followed by a discussion of the significance of context as a theoretical lens for analyzing a social capital-ICT relationship (Section 3). Section 4 outlines the current study's systematic review process. Next, in Section 5, the findings from a selected literature review are synthesized to identify distinct existing contexts. In Section 6, 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 7 offers concluding remarks that summarize the significance of the current findings, its limitations, plus future research directions.

2. Social capital: key concepts

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

Bourdieu's revised and more encompassing definition of social capital was presented in 1992, when he wrote, "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 institutionalised relationships" (Bourdieu & Wacquant, 1992). He further suggested that social capital was an asset for the privileged class to maintain its superiority. Coleman (1990), on the other hand, viewed social capital as an asset for individuals. He cited "the norm," "the social network," and "the relationship" as some of social capital's foundational characteristics. He also pointed out that "they all consist of some aspect of social structures, and facilitate certain actions of actors-whether persons or corporate actors-within the structure." Putnam (1996), projecting social capital as functioning at the societal level, defined it as "features of social life—networks, norms and trust—that enable participants to act together more effectively to pursue shared objectives."

Besides these foundational definitions, social scientists have

proposed and used several other definitions of social capital. One possible reason for this range of definitions and disagreements among researchers can be attributed to particular research focus, where social capital is used to answer questions like: Where does social capital reside? How can social capital be used? or How can social capital be changed? Such questions embody a different intent than simply asking, "What is social capital?" (Robinson, Schmid, & Siles, 2002).

While social capital has been used to shed light upon a wide variety of social phenomena, the central proposition of the social capital theory points to collectively owned capital or resources resulting from a network of relationships (Nahapiet & Ghoshal, 1998). These resources can manifest themselves in various ways that contribute to this lack of consensus on a precise definition of social capital. Nevertheless, most researchers agree on the significance of relationship as a resource. Ahn and Ostrom (2008) argued that several steps are necessary to reduce the existing confusion surrounding the concept of social capital: (1) clearly defining and relating it to other forms of capital, (2) identifying its forms, (3) clarifying the meaning of each form of social capital, (4) establishing causal relationships among the forms of capital and their consequences, (5) developing better measures of social capital, and (6) designing stronger empirical studies to test social capital theories.

Nahapiet and Ghoshal (1998) proposed a useful conceptualization of social capital. While exploring its role in the creation of intellectual capital, they introduced three distinct dimensions of social capital: 1) structural, 2) relational, and 3) cognitive. They also highlighted a 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 the structural dimension; share code and language and shared narratives are used for the cognitive dimension; and trust, norms, obligations, and identification are used to represent the relational dimension of social capital.

In the present study, the term "ICT intervention" is used to encompass a wide range of scenarios where benefits are derived through ICT. Although intervention often implies a broader project containing a number of sub-projects (Urquhart et al., 2008), the scope of this review also includes ICT initiatives like deployment, implementation, development, and adoption in order to ensure a sizable literature selection for analysis and enhance the validity of the findings, as well as to capture the undesired results of social capital in ICT interventions.

3. Context as a theoretical lens in social capital

Aside from concerns surrounding the relationship between social capital and ICT, an often-overlooked aspect is the relationship between social capital and its context. The role of context has drawn increasing attention from information behaviour scholars. Yet, it is still largely unexplored in social capital-related IS literature. Social capital itself is a complex concept when it comes to being operationalized as a construct due to the multifaceted nature of the term. Although Nahapiet and Ghoshal's (1998) representation of social capital through three conceptual dimensions accounts for both individual and group as measuring units, as well as the context of social capital. Schafft and Brown (2003) took a slightly different approach. Motivated primarily by the operating environment, they 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 mobilizing 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. However, Schafft and Brown's conceptualization can be critiqued on the basis that contextual factors influence existing social capital as defined by Nahapiet and Ghoshal (1998), that regardless of level, social capital cannot be separated from its context.

Numerous studies have established the significance of context in