Dear Dr. Monavvarian:

It is a pleasure to accept your manuscript entitled "Developing Social Capital for Facilitating Knowledge Management Practices" in its current form for publication in International Journal of Social Economics.

**Developing Social Capital for Facilitating Knowledge Management Practices**

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**Abstract**

*Purpose* – This study seeks to explore the effect of social capital (SC) on knowledge management (KM) practices. The main problem under investigation is to assess the importance of SC within an organization and to ascertain how it can ensure that knowledge activities would continue to be fitting and proper in the organization.

*Design/methodology/approach* – Based on the notion that certain factors can affect knowledge management, this paper examines the effect of the various aspects of social capital on the knowledge management practices. The research method is descriptive and correlational. The population of the research consists of managers and senior experts of NIOPDC (National Iran Oil Product Distribution Co). A sample of 273 subjects was selected statistical sampling. Data were collected through questionnaire consisting of 25 questions.

*Findings* – The study has found that there are meaningful relationships between all of the dimensions of SC and KM practices. They can also facilitate knowledge management practices. The findings further suggest that among various dimensions of SC, trust has the most influential effect on KM practices.

*Research limitations/implications* – In spite of lacking considerable empirical research investigating the correlations between KM and SC, this research not only extend the understanding of the effect of SC on KM, but also the interrelationship between various aspects of SC and their joint effects on knowledge management practices.

*Originality/value* – Existing research has concentrated on studying the effect of SC on KM, by and large. There is little empirical research investigating the correlations between KM and SC. This paper addresses this gap and contributes understanding of how organizations can promote the effectiveness of KM practices through developing their social capital.

**Keywords:** Knowledge management, Social capital, trust, social norms, networks, obligations and expectations, and identity.

**Paper type** Research paper
Introduction
Knowledge is becoming increasingly more useful and important for organizations (Monavvarian and kasaei, 2007), and is now recognized as a resource that is valuable to an organization’s ability to innovate and compete. It exists within the individual employees, and also in a composite sense within the organization (Bollinger and Smith, 2001). The importance of knowledge lies in the creativity value that it adds to the organization’s assets, and in its ability to improve the effectiveness of an organization’s intellectual capital (Sullivan, 1999). Developments in the management of knowledge can help managers improve their day-to-day work, decision-making processes, create new responses, and enable a set of competitive reactions to be augmented (Kridan and Goulding, 2006). The use and application of knowledge now represents a key source for sustained competitive advantage (Drucker, 1993; Quinn, 1992b; Reich, 1991). Management is likely to be successful only if it has a true strategic orientation approach to manage its stock of knowledge (Edvinsson, 1997).
In such a dynamic condition, refining the KM approach to be consistent with the requirements of current economy is a necessity. In addition it is very important for organizations to know what factors determine an organization’s capacity for knowledge management capabilities. Among these factors social contexts of organization have critical impacts.
The relevance of social capital (SC) for knowledge management (KM) has been discussed by a number of authors, including Manning (2009), Hoffman et al. (2005), McElroy et al. (2006), Smedlund (2008), Tymon and Stumpf (2003), and Widen-Wulff and Ginman (2004). In part, this relevance has been driven by the insight that capitalism’s evolving nature has changed the hierarchical and mechanistic nature of organizations (Manning, 2009).
For example the importance of social structures and social interactions for KM optimization can be noted in long established lean manufacturing techniques, which “often lead to great gains in efficiency, but are totally dependent on the social capital of the workforce (Fukuyama, 2001). In spite of the fact that knowledge management is of great interest and has great potential value to organizations, to date there is no comprehensive theoretical framework that can provide an appropriate structure for analysis and a lens through which to assess how knowledge management can be improved within an organization. This problem is more serious in the field of human-social factors. Such a framework should capture the mechanisms underlying why some organization possess a higher capacity for knowledge management than other organizations. Unfortunately, these underlying mechanisms are not clear and not fully understood yet.
This article attempts to contribute evolving this framework to promote the understanding of the importance of human-social factors in enhancing KM effectiveness. Specifically, it extends understanding in the field of knowledge management by examining how various social capital dimensions can facilitate knowledge management processes. It also examines the possibility of enhancing KM effectiveness through developing the analytical aspects of social capital.
Moreover, the social capital literature is now quite extensive with hundreds of papers and dissertations having been published by as many students and scholars from around the world (Ostrom and Ahn, 2003). According to Lesser (2000), “One of the primary drivers behind interest in social capital is the rise of the knowledge based organizations” (Lesser, 2000). Some other organizational theorists, such as McElroy et al. (2006), Nahapiet and Ghoshal (1998) and Inkpen, Tsang (2005) and Manning (2009) have also analyzed the relationship between SC and KM. In sum, these scholars claim that competitive advantage in the “post-industrial” globalised
economy is characterized by the importance of intangible resources. For example SC resources, embedded in the social fabric of organizations, provide firms with the key social assets, including solidarity and norms of cooperation that are essential for the creation, sharing and management of knowledge (Manning, 2009). Therefore there is a need to explain SC’s meaning for KM purposes.

Accordingly, to explain the effects of SC on KM the relationship between various analytical aspects of SC will be investigated with KM practices - Capabilities of acquiring, externalizing, and reusing pertinent knowledge, and stimulating the development of new knowledge to achieve the vision and ideals.

Therefore, this study is a scientific research aimed to study the role of SC, especially analytical aspects of SC, on knowledge management. Its findings will be important in filling the existing gaps in the current literatures.

2. Theoretical discussion and hypothesis development

2.1 Knowledge management

KM is seen as a significant component of a business strategy that has the ability to provide an organization with opportunities to manage new market challenges. Additionally, as Teece (1998) argues, knowledge can form the basis for sustained competitive advantage. The number of organizations claiming to work with KM is growing progressively (Grover and Davenport, 2001; Martensson, 2000; Moffett et al., 2002).

Knowledge management has been defined as the process of accumulating and creating knowledge, and facilitating the sharing of knowledge so that it can be applied effectively throughout the organization (Turban et al., 2003). Knowledge management involves four main processes. The first process is the generation of knowledge, which includes all activities that discover “new” knowledge. The second process is knowledge capture, which involves continuous scanning, organizing, and packaging of knowledge after it has been generated. Knowledge codification is the third process and it is the representation of knowledge in a manner that can easily be accessed and transferred. The fourth process, knowledge transfer, involves transmitting knowledge from one person or group to another person or group, and the absorption of that knowledge (Pearlson and Saunders, 2004).

2.2 Knowledge management practices

Knowledge is an important competitive advantage for any organization. Increasing competition, continuous changes and mergers in industry have, however, made the risk of losing valuable knowledge, due to transfer or termination of employees, a real problem (Gunnlaugsdottir, 2003). Organizations must, therefore, preserve their knowledge base and take steps to utilize effectively both the internal and external knowledge which is of relevance to their operations and make it explicitly available to their employees (Lia and Leen, 2007).

The purpose of knowledge management practices in organizations is to ensure growth and continuity of performance by protecting critical knowledge at all levels, applying existing knowledge in all pertinent circumstances, combining knowledge in synergistic ways, acquiring relevant knowledge continuously, and developing new knowledge through continuous learning that builds on internal experiences and external knowledge (Bourdreau and Couillard, 1999).

In general, the required activities for knowledge can be thought of as being of four kinds, transferring, diffusing, storing, and innovating of domain knowledge (Berztiss, 2001; Chua, 2004). Knowledge transferring refers to the identification and acquisition of knowledge either
through exploitation, exploration or codification (Manor and Schulz, 2001). Knowledge diffusing refers to the flow of knowledge from one part of the organization to other parts. If this process is not properly managed, valuable sources of knowledge in the organization will remain local or fragmentary, and internal expertise under-leveraged. Knowledge storing refers to the articulation of tacit knowledge into formats such as formulae, manuals or documentation that are comprehensible and accessible to others (Marwick, 2001; Sanchez, 1997). Knowledge innovating refers to the refinement of existing knowledge into new knowledge to achieve improvement in efficiency and effectiveness (Lia and Leen, 2007). Consequently, knowledge activities can be seen as actuators for stimulating the development of new knowledge to achieve the vision and ideals through identifying, capturing, reusing and leveraging pertinent knowledge (Lia and Leen, 2007).

2.3 Social capital

The social capital literature is now quite extensive with hundreds of papers and dissertations having been published by as many students and scholars from around the world (Ostrom and Ahn, 2003). Most of this activity has occurred within the past twenty years, especially by Coleman (1990) and Putnam (1993).

The term social capital first arrived on the scene in the sociology literature. It initially appeared in community studies, highlighting the central importance of networks of strong, crosscutting personal relationships developed over time that provide the basis for trust (Nahapiet and Ghoshal, 1998). Putnam (1993) referred to social capital as being akin to a moral resource. He viewed social capital from a community level of analysis and found it to be embodied in what he referred to as networks of “civic engagement.”

McElroy defines SC as: “social capital consists of knowledge and organizational resources that enhance the potential for individual and collective action in human social systems” (McElroy, 2006). Social capital comprises those resources that actors may access through social ties that may affect an individual’s action directed toward another based on the social structure in which the action is embedded and the history of transactions between the actors (Bourdieu, 1986; Coleman, 1988; Putnam, 1993). It is “the sum of the resources, actual or virtual, that accrue to an individual or group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (Bourdieu and Wacquant, 1992). It is not lodged either in the actors themselves (that is, it is not human capital), or in physical implements of production (that is, it is not physical capital). But like other forms of capital, social capital is productive, making possible the achievements of certain ends that, in its absence, would not be possible (Lang, 2004). Social capital represents resources that reside in function-specific social relationships in which individuals are embedded. It is function specific in the sense that it may well be important to one outcome but irrelevant to another outcome (Teachman et al., 1997).

Social capital serves three important functions. First, it represents a structure of obligations, expectations, and trustworthiness. Social systems with high trustworthiness are ones in which expect social obligations to be repaid somewhere down the line. As such, individuals in social structures with higher level of obligations outstanding have more social capital to draw on. Second, it serves as information channels. As information may be costly to acquire because it requires attention, which is scarce, social relations constitute a form of social capital that provides access to information which facilitates action. Finally, social capital serves as a system of norms and effective sanctions, that is, effective norms which constrain people from socially undesirable actions. For example, one prescriptive norm within a collectivity that constitutes an
especially important form of social capital is the norm that one should forgo one’s self-interest to act in the collectivity’s interest (Lang, 2004).

Coleman’s understanding of SC is beneficial for SC and KM as he was explicitly concerned with explaining why individuals cooperate in social structures. In more detail, Coleman’s understanding of SC aimed to introduce social structure into the rational action paradigm – that is, to fuse sociological and economic traditions, the historical “passion and interests” (Manning, 2009). Therefore, Coleman wanted to refine the orthodox economics’ “engine of action” to develop the utility maximizing model within its social context by introducing economic terms into sociological analysis. For example, Coleman argued that HC theory was deficient in that its individualist perspective failed to acknowledge the importance of social structures. Thus, according to Coleman, HC investment would be optimised if the individuals in question had high levels of SC and thus were able to exploit the utility of their HC within their embedded social networks and structures (Manning, 2009). Further, in Coleman’s interpretation:

Social capital is defined by its function. It is not a single entity, but a variety of entities having two characteristics in common: They all consist of some aspect of social structure, and they facilitate certain actions of individuals within the structure [. . .] A given form of social capital that is valuable in facilitating certain actions may be useless or even harmful in others. Unlike other forms of capital, social capital inheres in the structure of relations between persons and groups (Coleman, 1990).

In this paper, we emphasize collective action, but this focus does not deny the importance of individual actors. Indeed, every collective consists of (groups of) individuals; and individual behavior and knowledge, in turn, are necessary ingredients for collective action and knowledge. This individual perspective can best be integrated with a view of collectives as multi-actor systems (Gazendam and Jorna, 1998; Helmhout et al., 2004).

2.4 The link between SC and KM

In an era where competitive advantage is perceived to be linked to knowledge, considerable interest in KM continues to be the trend. A notable common feature of this trend is an emphasis upon knowledge work, knowledge workers and the nature of knowledge within organizations. This debate results growing importance of collaboration among organization’s individuals and groups. One potentially rich area for collaboration is that between emerging group of professionals, who have a primary focus on management of the knowledge resource in organizations. Indeed, interest in the relationship between KM and SC has increased over recent years as both KM and SC have grown more sophisticated and complex (Manning, 2009).

Before one can undertake an analysis of the relationship between the two areas, it is necessary to state as clearly as possible what is understood by KM. Much of the literature of KM continues to reflect a techno-centric focus and emphasizes on such hard factors as structure and technology. In essence, this perspective regards knowledge as an entity that can be captured, manipulated and leveraged. This is a limited and ultimately hazardous perception. Having a comprehensives and realistic understanding of knowledge management requires awareness of the effects of human-social factors on knowledge management (Manning, 2009).

For present purposes, it is important that knowledge is viewed as a social creation emerging at the interface between people and information and especially within communities engaged in communication, knowledge-creation and knowledge sharing and learning. From an operational perspective, KM can be described as the systematic processes by which an organization identifies, creates, captures, acquires, shares and leverages knowledge (Rumizen, 2002).
One way of developing understanding the KM and SC relationship is to examine the broader context of this inter-disciplinary discourse. Therefore, this section will discuss the explanatory reasons for this recent interdisciplinary discussion, contending that there are a number of interconnected factors at play that have attracted KM scholars to SC literature. These causal factors are as follows (Manning, 2009):

1. the significance of SC achieving “umbrella” inter-disciplinary status;
2. SC’s “honeyed nature”;
3. SC’s focus on qualitative phenomena; and
4. the apparent simplicity of operationalising SC.

First, SC has developed into one of the most omnipotent social theories. In Paldam’s words, “One of the main virtues of social capital is that it is close to becoming a joint concept for all social sciences” (Paldam, 2000). One result of this interest is that “the literature on the idea of social capital is now enormous” (Dasgupta, 2005). In consequence it is reasonable to suggest that KM scholars' interest in SC is driven in part by the motivation of not being marginalized from this burgeoning inter-disciplinary meeting place. Put more generously, SC ubiquity offers the potential to amplify inter-disciplinary communication across the social sciences, including the interface between KM and SC.

The second reason motivating interest in SC from a KM perspective can be located in what Portes identifies as a focus on the positive consequences of sociability, while putting aside its less attractive features. For instance, Portes (1998) notes a “sociological bias to see good things emerging out of sociability: bad things are more commonly associated with homo economicus”. Dasgupta (2005) also summarizes the concept as producing a “warm glow” and as “Offering an alternative to impersonal markets and coercive states, the communitarian institutions built around social capital have looked attractive to scholars in the humanities and social sciences” (Dasgupta, 2005). Therefore, the SC lens’s humanistic emphasizes on sociability and embedded connections, at the expense of mechanistic interpretations of organizations, offers an approach that is intuitively attractive to many scholars.

Third, according to Baron et al. (2003), “though not consciously planned by any set of individuals (SC aimed) to reintroduce the social element into capitalism”. In methodological terms, SC opened, “up the way for different approaches to modelling social relations, which address some of the moral and technical complexities of their protean character” (Baron et al., ) These authors consider that the concept had instrumental value in capturing qualitative phenomena, which contrasted with exclusively quantitative and asocial perspective that abstracted or dis-embedded economic activity from its social context. Further, Fukuyama (1999) reaches a similar conclusion, claiming that social capital analysis is important because: “It constitutes the cultural component of modern societies”.

Finally, the KM and SC discourse was generated by the deceptive simplicity of SC, including its apparent ease of being operationalised and quantified. This is the key instance of the quantification approach that measured or enumerated SC by researching associational life. In Paldam’s words, “It appears to be precisely because Putnam proposed such a simple and operational proxy that social capital moved from being a specialty of network sociologists into a major research topic for many professions” (Paldam, 2000). Therefore, one reason for SC’s contemporary ubiquity is the ease that Putnam’s “instrument” suggested the concept could be readily operationalised and quantified (Manning, 2009).

Accordingly the main hypothesis that will be investigated in this research can be stated as follow:
2.5 Analytical aspects of social capital and research sub-hypotheses

The literature is full of competing points-of-view on such a vast concept as SC. Further, Foley and Edwards (1999) and Adler and Kwon (2000) have concluded that SC tends to be understood from the author’s particular area of expertise. In consequence there are numerous interpretations of SC, which also reflects the fuzzy and multi dimensional nature of phenomena that SC examines. Nonetheless, there is a need to offer a limit on SC’s boundaries for the theory to have any clear-cut meaning for better understanding its relevance with KM. The key issue we would like to address here is what social capital consists of and what forms does it take?

Despite the differences found in the literature, there are substantial areas of overlap as well – significantly so. Our aim here will be to restrict our remaining discussion to only those areas of significant overlap between widespread theories of social capital that most scholars seem to agree account for the bulk of the phenomenon. In particular, we will address the following major elements, or forms, of social capital: trust, beliefs, norms, rules, and networks. Briefly described below, then, are the five major forms of social capital of interest to us. For the sake of brevity, we will only include one or two references from the literature for each, relying as we do on perspectives that we think are sufficiently representative of current, mainstream thought.

2.5.1. Trust

According to Putnam, “trust is an essential component of social capital” (Putnam, 1993). “Trust facilitates cooperation. The greater the level of trust within a community, the greater the likelihood of cooperation. And cooperation itself breeds trust” (Putnam, 1993); “Social networks allow trust to become transitive and spread: I trust you, because I trust her and she assures me that she trusts you” (Putnam, 1993).

Fukuyama defines trust as “the expectation that arises within a community of regular, honest, and cooperative behavior, based on commonly shared norms, on the part of other members of that community” (Fukuyama, 1995). Some scholars also make the all-important distinction between the trust of a trustor, and the trustworthiness of a trustee. Ostrom and Ahn (2003) see both as important forms of social capital. As for trustworthiness, they say, “We emphasize that individuals’ intrinsic values are an independent reason for behaving cooperatively and reserve the term trustworthiness primary to refer to such intrinsic motivation” (Ostrom and Ahn, 2003).

Trust is frequently argued to be important to knowledge sharing. Many authors believe that when there are trust-relationships, people are more willing to provide useful knowledge. Also, when trust exists, people are more willing to listen and absorb each other’s knowledge (e.g., Andrews and Delahay, 2000; Levin, 1999; Mayer et al. 1995; Tsai and Ghoshal, 1998). Therefore, from the literature, we can expect trust to have a positive influence on knowledge sharing. Consequently, knowledge management practices such as developing, sharing, coordinating and recycling knowledge would highly take places with existing high degree of trust among organization’s individuals and groups. Therefore, we propose:

\[ H1: \text{Trust will positively affect knowledge management practices.} \]

2.5.2. Social norms

Norms are perhaps the most commonly discussed form of social capital in the literature. According to Coleman, “a norm is a property of a social system, not of an actor within it” (Coleman, 1990). Norms “specify what actions are regarded by a set of persons as proper or
correct, or improper or incorrect’’ (Coleman, 1990). Social norms provide for social control in an organization. They are general, internalized sets of accepted behavior for members of the social network. Social norms are a common belief system that allow participants to communicate their ideas and make sense of common experiences (Adler and Kwon, 2000). They are shared strategic visions, systems of meanings, and normative value orientations (Nahapiet and Ghoshal, 1998). Social norms increase efficiency of action and reduce external unknowns. They also contain shared knowledge and history for an organization. They are the accumulated history of the organization in the form of social structure appropriate for productive use by any member of the social network in the pursuit of his or her interests (Sanderfur and Laumann, 1988). According to Coleman ‘‘individuals do internalize norms’’ (Coleman, 1990), and that predictions of behavior must therefore take the internalization of norms into account. This is an age-old problem of balancing self-interest against those of the group. One solution suggested by Coleman is that prescriptive ‘‘norms’’ enforce behavior – that is, the actor forgoes self-interest and acts in the interest of the collectivity, as they have internalized these collective norms (Manning, 2009). Putnam claimed that ‘‘Voluntary cooperation is easier in a community that has inherited a substantial stock of social capital, in the form of norms of reciprocity and networks of civic engagement’’ (Putnam, 1993). Indeed, he later defined social capital as something which ‘‘refers to connections among individuals – networks and the norms of reciprocity that arise from them’’ (Putnam, 2000). Ultimately, what makes norms of reciprocity qualify as social capital for Putnam is that ‘‘they lower transaction costs and facilitate cooperation’’ between individuals (Putnam, 1993).

Accordingly it seems that enforcing such norms as collaboration and reciprocity can facilitate KM practices especially knowledge sharing. Therefore, we propose:

\[ \textbf{H2: Social norms will positively affect knowledge management practices.} \]

2.5.3. Networks (Information channels)

Information channels are social networks within the organization and also are the mechanisms that connect them to the outside world. Information channels are the most obvious example of social capital. They are the directly observable inventory of social capital. Information channels also contain the formal structure of an organization. This dimension of social capital consists of personal relationships that people develop with each other through a history of interaction (Hoffman, et al., 2005). As Putnam points out: the core idea of social capital theory is that social networks have value. Social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them (Putnam, 2000).

This is an important form of SC, as it provides contemporary and contextualized information that are essential for KM. This form of SC can be thought of as facilitating the process that permits the development of tacit, experiential knowledge, in the vernacular of ‘‘learning the ropes’’ (Manning, 2009). This form of SC corresponds closely to the skills-based, difficult-to-codify, insider knowledge as described by Polanyi (1958). This is a significant form of SC for KM: it stresses that social relations constitute SC, as they provide ‘‘the potential for information that inheres in social relations’’ (Coleman, 1990). Therefore, we propose:

\[ \textbf{H3: Networks will positively affect knowledge management practices} \]

2.5.4. Obligations and expectations

Lesser (2000) viewed this dimension of social capital as the positive interactions that occur between individuals in a network. These interactions have been viewed as positive largely because of the levels of trust and reciprocity that they engendered (Putnam, 1993). The existence of these obligations and expectations of future benefit are nurtured in an organizational
environment containing strong social ties and are hampered by the absence of these ties (Hoffman, et al., 2005).

One of the manifestations of these obligations and expectations is reputation. Reputation is the expectation of others (outside the network) concerning an organization’s future conduct. Reputation cannot arise in an open structure (Coleman, 1988). In order for reputation to occur, there must be closure and supporting social norms. Within a network, obligations and expectations lead to collective trust, which becomes a potent form of expectational asset (Knez and Camerer, 1994; Nahapiet and Ghoshal, 1998).

Collective trust allows group members to rely on each other more generally to help solve the everyday problems of cooperation and coordination (Kramer et al., 1996). With collective trust present, group members can rely on one another to follow through with things expected of them and obligations owed by them. Group members are then more willing to work for the group with the knowledge and expectation that the group will work for them when the time comes.

Collective trust strengthens obligations and expectations (Hoffman, et al., 2005).

For KM purposes, the significance of this form of SC is that building the social fabric of an organization requires bounded networks. Hence, loosely organized virtual organizations, for instance with open procurement, would struggle to establish these norms. This observation also corresponds with network theory concerning network closure assisting the development of reputation (Lin, 2001). Therefore, we propose:

\[ H4: \text{Obligation sand expectations will positively affect knowledge management practices.} \]

\[ 2.5.5. \text{Identity} \]

Identity occurs when individuals see themselves as one with another person or group of people (Nahapiet and Ghoshal, 1998). The individual takes the values or standards of other individuals or groups as a comparative frame of reference (Merton, 1968; Tajfel, 1982).

Identity with a group or collective enhances concern for collective processes and outcomes, thus increasing and strengthening group norms and collective goals. This group identity increases perceived opportunities for information exchange and enhances frequency of cooperation (Lewicki and Bunker, 1996). In contrast, where identity is not present there are significant barriers to information sharing, learning, and knowledge creation (Child and Rodrigues, 1996; Pettigrew, 1973; Simon and Davies, 1996). Therefore existing the sense of identity can facilitate KM practices that can benefit the organization. Therefore, we propose:

\[ H5: \text{Identity will positively affect knowledge management practices} \]

\[ 3. \text{Research model} \]

This study focused on SC because managers and scholars have largely accepted the notion that SC is linked with KM, and there is growing evidence to suggest that if SC is supportive of knowledge-leveraging, it can foster creative, innovative, and initiative-taking behaviors among participants and sharing knowledge among individuals and groups in organization – i.e. behaviors that are linked to advantageous knowledge practices (Lia and Lee, 2007). Therefore, this study intends to examine which of the analytical aspects of SC would benefit running of knowledge management practices. Figure 1 shows the suggested research model for this study.
4. Research methodology

The methodology will be discussed in terms of sampling and data collection, measurement instrument, reliability and construct validity of questionnaire and data analysis.

4-1) Sampling and data collection

The study uses data collected from NIOPDC (National Iran Oil Product Distribution Co). Data collection was carried out in the form of structured questionnaires. Sample of the study includes managers and senior experts of the corporation. They filled in a questionnaire consisting of 25 items—sample size was 273 from 950 populations.

Population..........................950
Sample .............................273
No. Of Items.........................25

To enhance validity of the study, 300 questionnaires were distributed among managers and senior experts; at last 275 questionnaires could be collected. All of the items in the questionnaire were measured using five-point Likert Scales.

4-2) Reliability and Validity

The collection of response data was subjected to principal factor analysis (Table II & III) with the Varimax procedure to verify the number of different dimensions of the constructs related to
Social capital and Knowledge management and to reduce the number of items to a more manageable number. Exploratory factor analysis was conducted using the number of factors that were expected by theory (for example two factors for Knowledge management construct).

<table>
<thead>
<tr>
<th>Table II</th>
<th>Rotated Component Matrix</th>
</tr>
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<tbody>
<tr>
<td>Social capital</td>
<td>Component</td>
</tr>
<tr>
<td>Q1</td>
<td>Social norms</td>
</tr>
<tr>
<td>Q3</td>
<td>.156</td>
</tr>
<tr>
<td>Q4</td>
<td>.054</td>
</tr>
<tr>
<td>Q5</td>
<td>.183</td>
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<tr>
<td>Q6</td>
<td>.498</td>
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<td>Q7</td>
<td>.721</td>
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<td>Q8</td>
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<tr>
<td>Q9</td>
<td>.252</td>
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<td>Q10</td>
<td>-.207</td>
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<tr>
<td>Q11</td>
<td>.524</td>
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<tr>
<td>Q12</td>
<td>.113</td>
</tr>
<tr>
<td>Q13</td>
<td>.021</td>
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<tr>
<td>Q14</td>
<td>.191</td>
</tr>
<tr>
<td>Q15</td>
<td>.334</td>
</tr>
<tr>
<td>Q16</td>
<td>.159</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 8 iterations.

Four items of Social Capital was omitted because of low Communality (poorly fitting items: Q2, Q9, Q12, Q15, were lower than 0.50) and 1 item of knowledge management (Q19) was deleted. At last Items that had high, positive, and significant coefficients were retained. In fact, comparing the construct items group together to the expected grouping by dimension, poorly fitting items were excluded. Using rotated matrix (Varimax), five factors for Social capital and two factors for knowledge management were detected.
Table III) **Rotated Component Matrix**

<table>
<thead>
<tr>
<th>Component</th>
<th>Knowledge creation</th>
<th>Knowledge share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>-.112</td>
<td>.789</td>
</tr>
<tr>
<td>Q20</td>
<td>.735</td>
<td>.694</td>
</tr>
<tr>
<td>Q21</td>
<td>.210</td>
<td>.785</td>
</tr>
<tr>
<td>Q22</td>
<td>.581</td>
<td>.228</td>
</tr>
<tr>
<td>Q23</td>
<td>.683</td>
<td>.186</td>
</tr>
<tr>
<td>Q24</td>
<td>.835</td>
<td>.626</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

In this study, Reliability tests were performed using Cronbach’s alpha coefficient to estimate quantified consistency of the questionnaire. The Cronbach’s alpha coefficient for social capital was 0.858, and knowledge management was 0.837.

5) **Data analysis**

The assumption in exploratory factor analysis is that the covariances between observed variable can be explained by a smaller number of latent factors (shown in tables II, III). There is no hypothesis about the number of underlying factors or the relationships between the latent factors and observed variables. The aim is to discover these by loading all variables on all factors. By contrast, in confirmatory factor analysis represents a clear hypothesis about the factor structure. In this analysis, Structural Equation Modeling was used, because it is considered very useful. These analyses were carried out for achieving following purposes: assessing the fitness of the model and estimating all the parameters, i.e. the factor loadings, the variances and covariances, and the residual error variances of the observed variables.

For each factor it is also necessary to fix one loading to the value one in order to give the latent factor an interpretable scale. This is because the loadings are a function of the variance or the latent factor, and the latent factor is also a function of the loadings and so we cannot simultaneously estimate unique values for all these. One solution is to fix the variance of all factors to one and then estimate all factor loadings. (Lisrel does this by default), in this research Lisrel fixed "Q20" which is shown in the above model by zero coefficient arrow (Figure4). Q20 to Q25 are Manifest factors of Knowledge Management (latent factors), and trust, social norms, networks, obligation, expectations and Identity are Manifest factors of Social Capital, gained from factor analysis.

5-1) **Model fit of main hypothesis**

Model fit was assessed using several fit indices such as $\chi^2$, Root mean square of approximation etc. Model fit relates to a degree to which a hypothesized model is consistent with the data at hand - degree to which the implied matrix of covariances (based on hypothesized
model) and sample covariance matrix (based on data) fit (Bollen, 1989). The aim of global fit assessment is to determine the degree to which the model as a whole is consistent with the data gathered. Through years, numerous global fit indices have been developed. Unfortunately, none of them is superior to others. Different authors favor various measures. Diamantopoulos and Siguaw (2000) recommend using several measures and at the same time provide reference values for each of them as presented in Table VI.

<table>
<thead>
<tr>
<th>Table IV</th>
<th>Fitness indices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fit indices</td>
<td>Model value</td>
</tr>
<tr>
<td>$\chi^2$/df</td>
<td>1.11</td>
</tr>
<tr>
<td>P-Value</td>
<td>0.04674</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.035</td>
</tr>
<tr>
<td>GFI</td>
<td>0.98</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.97</td>
</tr>
<tr>
<td>CFI</td>
<td>0.91</td>
</tr>
</tbody>
</table>

$\chi^2$ and Root means square error of approximation (RMSEA) are the most widespread measures of global fit and in our case point at acceptable model-fit. Goodness-of-fit (GFI) index and adjusted goodness-of-fit (AGFI) index are absolute fit indices, which directly assess how well covariances based on parameter estimates reproduce sample covariances (Gebring and Anderson, 1993). All of the indices described above lead to a conclusion that the model can be regarded as an appropriate approximation of reality.

5-2) Estimate all of the parameters and testing main Hypothesis

In Figure 2 path diagram of the model (with completely standardized parameter estimates and corresponding t-values) is presented.
In structural equation models, standard model shows the standard coefficient and the T-value model determines whether this coefficient is significant (more than ± 1.96). In this case T-value model shows that Social Capital has a significant direct effect on knowledge management practices and Standard Model indicates the standard coefficient rate of the model.

According to T-value model and standard model it can be said that Social Capital has a positive significant direct effect on knowledge management practices. So the main hypothesis of
this research is accepted by the coefficient of 0.61. In fact, social capital explain 0.61 variation of knowledge management practices and the rest coefficient (0.39) is depend on other factors which are not considered in this research.

5-3) Model fit of sub-hypotheses and testing them
In this section for testing the sub-hypotheses of this research Structural model has been used, this model shows 6 latent variables (exogenous and endogenous), and explain the impact of exogenous latent construct (social capital) on endogenous latent construct (knowledge management practices). Following model is the T-value model which is showing significance of the effect of exogenous on endogenous and also shows the fit indices of the model.

Fitness indices indicate this model can be regarded as an appropriate approximation of reality.

<table>
<thead>
<tr>
<th>Fit indices</th>
<th>Model value</th>
<th>Reference value</th>
<th>Global model fit?</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$/df</td>
<td>2.05</td>
<td>$\chi^2$/df&lt;3</td>
<td>Yes (Acceptable)</td>
</tr>
<tr>
<td>P-Value</td>
<td>0.000</td>
<td>P-Value &lt;0.05</td>
<td>Yes</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.046</td>
<td>$&lt;0.08$</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.05&lt;RMSEA</td>
<td></td>
</tr>
<tr>
<td>GFI</td>
<td>0.92</td>
<td>More than 0.9</td>
<td>Yes</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.90</td>
<td>More than 0.9</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table V: Fitness indices
Following model is the standard model which is indicating the standard coefficient of the path between exogenous and endogenous.

In standard model, exogenous latent constructs explain endogenous latent construct as follow: Trust, social norms, networks, obligation expectation and identity as the latent constructs explain (subsequently) 0.49, 0.13, 0.19, 0.39 and 0.39 of knowledge management practices as an endogenous latent construct. So the result of above models and indices indicate that all of the five sub-hypothesis of this research has been accepted.

5. Conclusions
Knowledge management is an extensive and multi-dimensional process. Implementing successfully KM practices in organization requires a comprehensive approach to KM that encompasses all of the structural, technological and human-social factors as perquisites of KM. If this process is not properly managed, that is, if these factors of knowledge management and their interactions would be neglected, the organization not be able to get advantage of KM. Although KM implementation requires some technical expertise, however, social and human factors are the most important factors, if KM implementation expected to be successful.
Most of the studies on KM have concentrated on the effects of structural and technological factors on KM; and as a result fail to recognize the critical role of human-social sectors such as SC in implementing KM practices. As a result for filling the existing gap in the literatures, this study clarifies the relationship between KM and SC.

Findings indicate that there are positive relationships between SC (and its dimensions) and KM practices. This research also shows that trust dimension of SC has the greatest effect on KM practices. These findings ascertain that the human-social side of KM and the nature of relationship between individuals and groups in organization have a vital effect on the effectiveness of the KM practices. Therefore Managers can make significant improvements in KM practices, and get more competitive advantages by analyzing, nurturing and advancing these SC dimensions.

In other word, developing SC in organization has a direct and significant impact on implementing KM practices effectively. It can be theorized that social capital can enhance an organization’s ability to manage knowledge because it has the capacity to do a variety of things. In terms of knowledge creation, social capital helps to facilitate the development of collective intellectual capital by facilitating the conditions necessary for exchange and combination to occur. SC can also enhance knowledge capture, knowledge codification, and knowledge sharing. It enhances the entire knowledge management practices because it makes collective action more efficient and complements the formal contracts, incentives, and monitoring mechanisms existing in the organization’s formal systems. Finally, due to the fact that, the result of the research indicates that all of the five sub-hypothesis of this research has been accepted, we could strongly suggest that, the sole consideration of technology (software and hardware) can not guarantee the success of KM implementation. The social and human side of the KM is vital.

6. Implications for theory and practice

Our findings contribute to the SC and KM literature in several ways. First, this research will be characterized as an initiative endeavor that explores the relationship between SC and KM empirically. Second, previous research has often focused on a single dimension of SC (such as trust) and measured it (Walker et al., 1997; Burt, 1992), while it was investigated as a multidimensional concept in this study. Indeed we operationalized three dimensions of SC; and results indicate that these dimensions are interrelated and have differential effects on KM practices. Third, whereas past research has focused on SC as a macro-level concept (Burt, 1992; Walker et al., 1997) in this study we focused on SC as a micro-level concept. Organizations that foster various dimensions of SC will be more successful in implementing KM practices. Having effective knowledge management system enables organizations to benefit from growing efficiency, performance and sustainable competitive advantage. Such organizations are innovative, continuously renew themselves, and are proactive. Thus In the knowledge-based SC can be particularly critical for the organization’s profitability and survival because of its influence on KM practices.
7. References


