



An intellectual capital perspective of human resource strategies and practices

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Abstract

Previous research has investigated the relationships between intellectual capital (IC) and human resource management (HRM). Others have described the link between IC and strategic initiatives in an organization including strategic human resource management (SHRM). However, little systematic work has been done to develop a holistic overview of connections between the three concepts. Through an analysis of the recent IC literature and the literature that discusses IC, SHRM and HRM, this paper argues that not only are the three concepts closely connected, but also IC should play a key role in SHRM processes and HRM practices in organizations. The strategic connections also demonstrate that IC can be conceptualized as a holistic partner to both SHRM and HRM; thus, adding strong support for the need to measure IC accurately. A theoretical framework is proposed to illustrate IC, SHRM and HRM connections. Finally, the paper suggests directions for future research.

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Introduction

In the last few decades employees have been widely recognized as a valuable resource (Lickert, 1967; Lindsay, 1971; Becker, 1975; Blaug, 1976; Wright & McMahan, 1992; Huselid, 1995; Verreault & Hyland, 2005). The debate has now shifted from *whether human resources are important to how important they are in organizations*. The knowledge that all employees bring to an organization is believed to provide the organization with a valuable asset (Ashton, 2005; Camuffo & Comacchio, 2005). Indeed, many researchers have argued that the collective knowledge of all employees in an organization provides a competitive edge for the organization (e.g. Barney, 2001; Barney *et al.*, 2001; Marr & Spender, 2004; Schiuma *et al.*, 2007; Holton III & Yamkovenko, 2008; Kang & Snell, 2009). Therefore in today's knowledge economy the collective knowledge of an organization is of utmost importance.

Intellectual capital (IC) represents the collective knowledge that is embedded in the personnel, organizational routines and network relationships of an organization (Stewart, 1997; Bontis, 2002; Kong, 2008a). IC has been recognized as an important resource that organizations need to develop to gain sustained competitive advantages (Chen, 2008; Kong & Prior, 2008; Schiuma & Lerro, 2008). Previous research has examined the relationships between IC and human resource management (HRM). For instance, Youndt *et al.* (2004) point out that IC may provide the answer as to what HRM practices use to create or moderate organizational performance. Others have described the links between IC and strategic

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human resource management (SHRM). For instance, Boxall & Purcell (2000) and Stovel & Bontis (2002) suggest that the strategic development and management of IC helps senior executives to make the most of their organizational intellectual resources. This implies that IC may provide senior executives a greater pool of knowledge to make more informed SHRM decisions for future organizational challenges. However, little systematic research has focused on the development of a holistic overview of connections between IC, SHRM and HRM, particularly the effect of IC on HRM practices and strategies. At its heart, the key strategic question is what role IC can play to tie HRM strategies and practices to organizational outcomes.

Practitioners need to understand the relationship between their human resources and firm performance. By doing so they can reach a deeper understanding of the need to measure the IC held and created by those human resources in order to manage it in a manner to achieve maximum effectiveness in firm performance. We suggest placing IC in its holistic context with SHRM and HRM can clarify how IC should be conceptualized in the role of human resources for optimal organizational performance. The theoretical connections between IC, SHRM and HRM are established through the knowledge gathered, built and maintained in organizations.

As knowledge can be obtained at various levels of an organization, the management of IC should be seen as driving force that drives the formation and implementation of HRM strategies and practices in the organization. However, this attempt involves a pivotal attitudinal shift towards a strategic focus of IC and its links to SHRM and HRM. For instance, it is in the interests of human resource managers to recruit the best and brightest employees as a means of achieving competitive advantage. However, new employees' prior industry experience may prevent the new employees to unlearn and re-learn (Hatch & Dyer, 2004). This suggests that managers must take a more holistic overview of IC and its links to HRM strategies and practices. However, an awareness of the strategic focus of IC requires re-education and we hope that this paper provides a starting point for those, whether they are HRM practitioners or strategy researchers, interested in investigating the role of IC in HRM strategies and practices.

Bourguignon *et al.* (2004) argue that a literature-based analysis helps to increase the level of clarity and precision of an unknown or unclear research area, which we believe is a necessity if we are to understand the theoretical and practical aspects of strategic connections between IC, SHRM and HRM. As the findings revealed from the analysis are representative for the current state and progress of the field, this study provides a holistic overview of the strategic links between the three concepts to strategy scholars and HRM practitioners. This literature-based analysis is the first step towards a cogent and comprehensive perspective of theoretical development of strategic links of the three concepts. More importantly,

the analysis helps to present a call for further conceptualization and future empirical examination to gain more validity. Further we concur with Schiuma *et al.* (2008) who argued that the conceptualization of IC needs a common understanding that theoretical development can be grounded in across disciplines. However, we extend the argument to include the need for a clear conceptualization of the roles that IC plays in HRM and SHRM.

The paper will first provide an overview of HRM strategy research in the knowledge economy. This is followed by a brief discussion of what IC entails and how IC is an integral part of the SHRM processes and HRM practices. A theoretical framework is proposed to illustrate strategic connections between IC, SHRM and HRM. The paper will finish with suggested directions for future research.

HRM strategies and practices in the knowledge economy

The resource-based view (RBV) of the firm, which emerged in the early 1980s but was increasingly noticeable in the 1990s (Wernerfelt, 1984; Barney, 1991; Conner, 1991; Peteraf, 1993), has played a key role in legitimating the relevance of HRM to strategy research (Wright *et al.*, 2001). RBV contends that the internal aspects of the firm should be the centre of strategic analysis (Nelson, 1991; Rumelt, 1991; Bontis, 2002). Organizations must possess resources with attributes that are rare, valuable, imperfectly imitable and non-substitutable, which allow them to hold the potential of sustained competitive advantage over other competitors (Barney, 1991; Hoskisson *et al.*, 1999). Delery (1998, p. 290) notes that 'while the resource based view provides a nice backdrop, explaining the importance of human resources to firm competitiveness, it does not specifically deal with how an organization can develop and support the human resources it needs for competitive advantage'.

Some researchers have taken the RBV further by stressing that knowledge is a critical strategic resource for organizations. This perspective has become known as the knowledge-based view (KBV), an extension of the RBV (Grant, 1997; Zack, 1999; Wiklund & Shepherd, 2003). The ultimate objective of managing knowledge in an organization is to encourage knowledge transfer and support knowledge sharing and re-use it, so that value can be created (Duffy, 2001). Spender (1996, p. 59) argues that KBV 'can yield insights beyond the production-function and resource-based theories of the firm by creating a new view of the firm as a dynamic, evolving, quasi-autonomous system of knowledge production and application'. Thus, KBV implies that knowledge is a static internal resource that can be controlled, exploited and traded like most physical resources in organizations (Kong, 2008a). Generally speaking, knowledge acquired through information systems, often referred as codified knowledge, can be articulated and thus is at risk of expropriation, whereas the knowledge residing in

routines, processes and analysis is tacit knowledge, which cannot be articulated and is therefore isolated from rivals. Accordingly, even though KBV has focused attention on knowledge as critical resource in organizations, the KBV approach, which primarily focuses on codified knowledge, does not create truly sustainable competitive advantage and has very little links to SHRM processes and HRM practices.

According to Colbert (2004), HRM strategy has two assumptions. Firstly, knowledge of employees, notably tacit knowledge, has the potential to provide both the foundation for strategy formulation and the means for strategy implementation in an organization (Colbert, 2004). Secondly, the organization's HRM practices are likely instrumental in developing the strategic capability of its pool of human resources (Colbert, 2004). In other words, the role of human resources in creating strategic advantage through HRM strategies and practices is possibly amplified by their intertwined relationships with the collective knowledge of employees in the organization (Hatch & Dyer, 2004). Accordingly, the management of knowledge, particularly tacit knowledge, is of critical strategic importance to organizations (Liebeskind, 1996; Ambrosini & Bowman, 2001; Marr *et al.*, 2004; Haesli & Boxall, 2005; Kim & Gong, 2009).

Tacit knowledge is frequently assumed to contribute to competitive advantage due to its inimitability based on its intangible, firm-specific and socially complex nature; and thus is protected from imitation (Barney, 1991; Hatch & Dyer, 2004; Schultze & Stabell, 2004). Although tacit knowledge may reside in many forms and places such as organizational routines, human skills and network relationships within an organization, it is ultimately members of the organization who embrace it (Grant, 1996; Hitt *et al.*, 2001). Thus human resources become a primary repository of tacit knowledge (Tomer, 1987; Lado & Wilson, 1994). An organization that treats every member as a part of the 'knowledge crew' (Nonaka & Takeuchi, 1995, p. 19) is more likely to be able to acquire, integrate, store, share and apply knowledge; thus adding impetus to the importance of SHRM processes and HRM practices.

Although tacit knowledge presents a logic link to SHRM and HRM, it does not provide researchers with an integrating ground for research and theory, and offers little, in an explicit sense, in the way of prescriptions for managers dealing with HRM strategies and practices. Schultz & Hatch (2005) argue that managers need simple but comprehensive frameworks in order to be able to comprehend and set directions in a complex and ever shifting reality. Against this background, it is important to have a framework that can help to affirm Colbert's first assertion, connect it to the second, and improve the focus and effectiveness of HRM strategies and practices in the knowledge economy. Ulrich (1997) also argues that a rich, integrated theoretical framework helps focus and organize research efforts, enables the practice of HRM to become a truly strategic discipline and assists

organizations to thrive more effectively in their particular operating environments. Intellectual capital (IC), by its nature involves tacit knowledge, may provide that theoretical framework.

The IC concept

Intellectual capital (IC) is commonly defined as the sum of an organization's resources encompassing collective tacit knowledge, human skills, experience and any intellectual resource that can contribute to value creation for the organization (Stewart, 1997; Sullivan, 1998; Bontis, 2002). When physical assets and financial capital are no longer the resources that facilitate competitive advantage, IC becomes the only differentiating factor that provides a competitive market position to an organization (Teece, 2002). As what constitutes IC for one organization may not be the same for another organization (Roos *et al.*, 2001; Snyder & Pierce, 2002), IC is compatible with RBV's four attributes of firm resources: it is rare, valuable, costly to imitate and non-substitutable. Accordingly, IC is considered context-specific (Bontis *et al.*, 1999; Roos & Jacobsen, 1999) and investments in IC are likely to be different depending on the type of organization (Subramaniam & Youndt, 2005). In other words, the IC literature has its roots firmly grounded in the resource-based theory (Peppard & Rylander, 2001). Following the work of a number of scholars in the field of IC, it is generally accepted that the concept of IC encompasses three primary interrelated components: human capital, structural capital and relational capital (Saint-Onge, 1996; Stewart, 1997; Sveiby, 1997; Bontis, 1998; Dzinkowski, 2000).

Human capital subsumes various human resource elements, including cumulative tacit knowledge, competencies, experience and skills, and the innovativeness and talents of people (Roos & Jacobsen, 1999). Human capital cannot be owned but only be rented (Edvinsson, 1997) and knowledge can only be created by individuals but not by organizations (Nonaka & Takeuchi, 1995; Stewart, 1997). New organizational members carry human capital when they join an organization (Grasenick & Low, 2004). A loss of organizational memory due to individuals' departure may cause a threat to the organization. This is because organizational members take their talent, skills and tacit knowledge with them when they leave the organization (Roos *et al.*, 1997; Bontis *et al.*, 2000; Grasenick & Low, 2004). That is why human capital is important to organizations.

Structural capital refers to the learning and knowledge that is enacted in day-to-day activities. It is the pool of knowledge that remains in an organization at the end of the day after individuals within the organization have left (Roos *et al.*, 1997; Grasenick & Low, 2004). Structural capital is the supportive infrastructure for human capital. Structural capital deals with the mechanisms and structures of organizations that can assist individuals in their quest for optimum intellectual performance (Bontis, 1998). This intellectual performance ultimately enhances

overall organizational performance. Structural capital includes all of the non-human storehouses of knowledge in organizations such as databases, routines, organizational culture and anything that creates value for organizations (Grasenick & Low, 2004).

Relational capital represents an organization's relations with its external stakeholders and the perceptions that they hold about the organization, as well as the exchange of knowledge between the organization and its external stakeholders (Bontis, 1998). Examples of relational capital include: the loyalty of valuable customers as a result of understanding their needs and meeting them consistently; the mutual trust and commitment given by key suppliers; the reliability and reliance partnership from allied partners; the reputation and relationships that an organization has developed over time in its surrounding community; the knowledge of laws and regulations as well as the lobbying and networking skills; and the critical understanding and intelligence about competitors.

The effect of IC on SHRM and HRM

The IC concept explicitly places knowledge into three interrelated IC components and thereby is better defined and more hands-on than other related concepts (Peppard & Rylander, 2001). The three IC components, namely human capital, structural capital and relational capital, offer a structured framework for HRM strategies and practices, which can be applied in organizations immediately (Roos, 1998).

Human capital exists in human resources in the form of cumulative tacit knowledge and human skills through a sequence of HRM functions such as employee selection, development and deployment (Snell & Dean Jr., 1992). Generally speaking, the stock of human capital increases when new employees join an organization (Grasenick & Low, 2004). A higher level of human capital is often associated with greater productivity and higher incomes or compensation (Wilson & Larson, 2002). However, the human capital embodied in the new employees is not firm specific. As Hatch & Dyer (2004) point out, when an organization acquires human resources in the external job market it must undergo a period of dynamic adjustment costs before the best uses of the human resources can be discovered and tailored to the needs of the new environment. Besides, new employees' prior industry experience may affect their performance, preventing them to unlearn and re-learn knowledge in the new environment (Hatch & Dyer, 2004). In other words, human resources, along with their human capital, may not move between firms as easily as it was perceived. Accordingly, organizations should pay attention more on the development and deployment of human capital as recruitment and selection of human resources is not enough to ensure competitive advantage.

The role of human resources in creating competitive advantage depends highly on the other two IC components: structural capital and relational capital. Employ-

ees' know-how is most inimitable when it is firm specific and resides in the organization where it was originally developed (Hitt *et al.*, 2001). Hatch & Dyer (2004) argue that learning process within an organization helps to create firm-specific human capital and that potentially makes the human capital less useful to rivals. Other structural capital elements such as organizational culture and routines also help to amplify human capital, increase firm specificity and decrease imitability (Kong, 2009). Accordingly, HRM managers should not ignore structural capital when formulating and implementing HRM strategies and practices.

Organizations do not exist in a vacuum, in that they often interact with external stakeholders (Kong, 2008b). Representing the exchange of knowledge between an organization and its external stakeholders, relational capital acts as a multiplying element creating value for the organization by connecting human capital and structural capital with other external agents (Ordóñez de Pablos, 2004). As Knight (1999, p. 24) argues:

... as investments are made in human capital, more competent and capable people develop better structural capital for an organization. Improved human capital and structural capital go on to create more productive external (relational) capital through the delivery of better products and services to high-value customers ... a virtuous cycle begins its upward spiral into further organizational value and growth.

Relational capital assists members of an organization to appreciate the dynamic of external knowledge. External knowledge is important to the role of human resources as it helps to increase the stock of human capital and potentially improve the quality of existing human capital within the organization (Kong, 2009). As argued by Nonaka (1994, p. 30), 'people do not just passively receive new knowledge; they actively interpret it to fit their own situation and perspectives. What makes sense in one context can change or even lose its meaning when communicated to people in a different context'. Accordingly, relational capital can be seen as an external source of innovation and strategic renewal for SHRM and HRM. Table 1 shows examples of the effect of IC components on SHRM and HRM.

From a SHRM perspective, IC focuses on the strategic development and management of knowledge in an organization (Marr *et al.*, 2004; Youndt & Snell, 2004; Youndt *et al.*, 2004; Schiuma *et al.*, 2007). From a knowledge management perspective, IC stresses the re-thinking, re-designing and incorporating of the role of intellectual resources in the organization's strategy (Klein, 1998; Perez & Ordóñez de Pablos, 2003). Due to IC's practical applications, IC provides a basis for managerial conceptual frameworks and methodologies (Peppard & Rylander, 2001).

Youndt and colleagues postulate that IC is the missing link between HRM practices and organizational performance (Youndt & Snell, 2004; Youndt *et al.*, 2004). The

Table 1 Examples of the effect of IC components on SHRM and HRM

Human capital to...		Structural capital to...		Relational capital to...	
HRM strategies	HRM practices	HRM strategy	HRM practices	HRM strategy	HRM practices
<ul style="list-style-type: none"> • Planning succession plans for senior executives 	<ul style="list-style-type: none"> • Sharing knowledge through regular informal sessions 	<ul style="list-style-type: none"> • Fostering learning culture through communities of practices 	<ul style="list-style-type: none"> • Observing tacit knowledge (know-how) among organizational members through job rotation 	<ul style="list-style-type: none"> • Attracting potential employees through the promotion of organizational image and reputation 	<ul style="list-style-type: none"> • Organizing joint functions with key partners

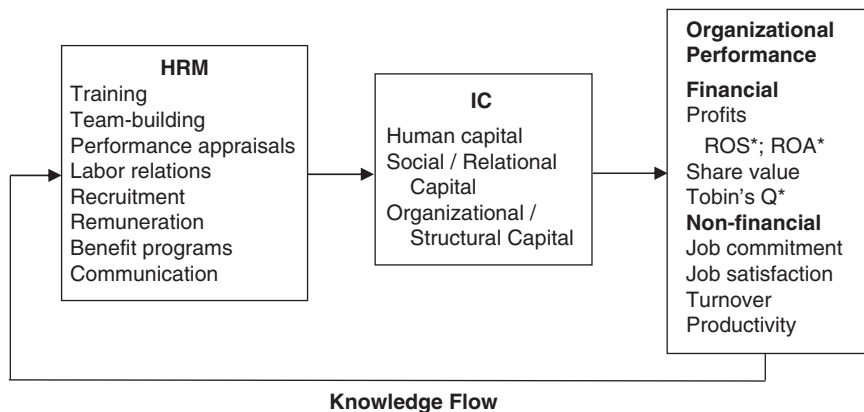


Figure 1 Youndt and colleagues’ HRM, IC and organizational performance model.

Notes: ROS*: Return on sales; ROA*: Return on assets; Tobin’s Q*: $Q = (\text{market value} + \text{preferred stock} + \text{debt}) / \text{total assets}$.

preceding analysis would certainly support such a hypothesis. Thus, HRM can be seen as the starting point for organizational performance. Roos *et al.* (2004) concur with Marr & Spender (2004) that the link between HRM practices and firm performance can best be illustrated and measured by using the IC concept. These HRM practices moderate and/or mediate the effective use of the IC that the organization has access to (Youndt & Snell, 2004; Youndt *et al.*, 2004; Subramaniam & Youndt, 2005). Therefore the output of the organization’s IC directly affects financial and non-financial organizational performance (Youndt & Snell, 2004; Youndt *et al.*, 2004; Subramaniam & Youndt, 2005). Figure 1 shows the model developed by Youndt and his colleagues.

Figure 1 demonstrates the flow from HRM to organizational performance. However, this paper argues that the model of Youndt and colleagues is incomplete and should be extended. Firstly, the model illustrates very little regarding the IC and SHRM linkage. Our analysis suggests that there are strong connections between IC, SHRM processes and HRM practices. The model perceives IC as a by-product of HRM functions such as staff selection and training. We argue that IC should be the driving force in the IC, SHRM and HRM relationships. Youndt’s model suggests that HRM practices such as training and recruiting can ‘buy’ human capital that lead

to organizational performance (Youndt & Snell, 2004, p. 339). Our analysis indicates that HRM practices can enhance the stock of human capital but all IC components are inter-related and IC should play a key role in HRM strategies and practices if organizations are to gain optimal human resource effectiveness in the knowledge economy.

It is important to note that organizational performance will dictate organizational strategy in an organization as will the environment within which the organization operates. Industry, culture and economic conditions play a key role in determining an organization’s HRM strategies and practices (Hope-Hailey *et al.*, 1997; Wright, 1998; Buck *et al.*, 2003). This external aspect is missing from the work of Youndt and colleagues. As RBV was critiqued for its lack of an external perspective, Youndt and colleagues can be criticized for the same conceptual error. Their conceptualization of IC is limited to an internal organizational viewpoint.

According to Bontis (1998, 2002) within the framework of IC, relational capital captures the relationships external to an organization but relational capital does not reflect the total influence of the external environment on the organization. The external environment represents any external factors such as natural or man-made disasters, political and/or economic variables that

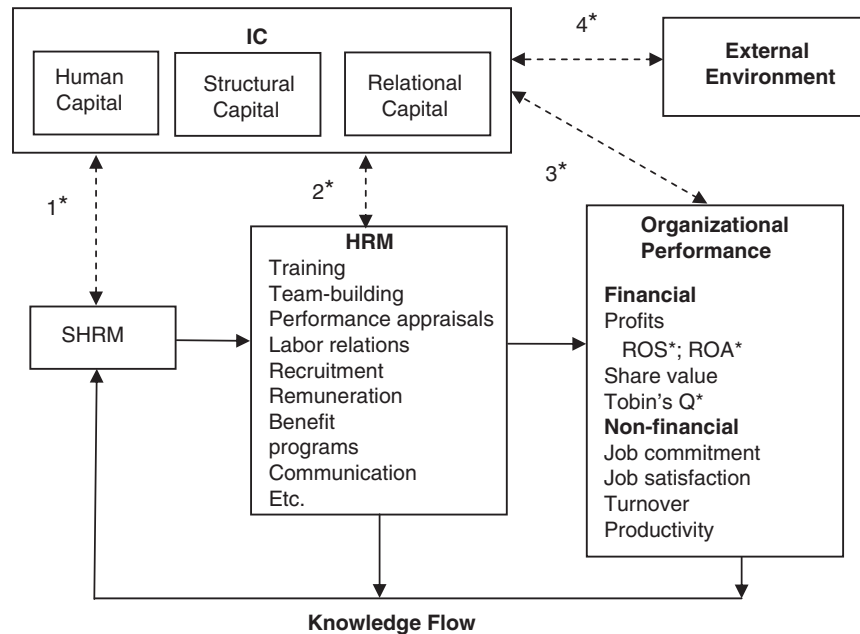


Figure 2 Linking IC, SHRM and HRM – research possibilities.

Notes: ROS*: Return on sales; ROA*: Return on assets; Tobin's Q*: $Q = (\text{market value} + \text{preferred stock} + \text{debt}) / \text{total assets}$.

1*: IC & SHRM Relationships; 2*: IC & HRM Relationships; 3*: IC & Firm Performance Relationships; 4*: IC & External Environment Relationships.

have direct or indirect impact on an organization's day-to-day operations. However, the organization likely has little or no power to prevent or control those external factors. Examples could include acts of war, earthquakes, technology changes and economic crises. The influence of external environment on IC and its relationship on organizations is an area that has seen little research. Figure 2 illustrates the relationships between IC, SHRM and HRM with the consideration of external environment.

Future research

IC is an important resource that organizations need to develop strategies for and around them measure, manage, maintain and develop their existing pool of knowledge. Our analysis illustrates that there are strong links between IC, SHRM and HRM and IC should be conceptualized as a holistic partner to HRM strategies and practices. Although the linkage between the three concepts seems to be a logical step, it has yet to be empirically proven. A thorough understanding of the effect of IC on an organization's SHRM decision-making process, an organization can be better situated to take advantage of the knowledge-based economy. Research possibilities of the relationships between the three concepts are shown below and illustrated in Figure 2:

(1) *The relationship between IC and SHRM.* Preceding research has described the link between IC and strategic initiatives in an organization. However, these strategic initiatives are primarily related to

strategic management research. What remains unclear is how IC influences SHRM decision making. If one increases IC does SHRM ability increase proportionally? Does IC mediate or moderate the role of SHRM in relationship to firm performance? What is the direction flow of the relationship?

- (2) *The relationship between IC and HRM practices.* Previous research primarily emphasizes identifying and measuring the influence of human resource practices such as staff selection and recruitment stimulate on individual IC components. However, more research is needed to provide a better understanding of how individual IC components affect HRM practices. For instance, which IC component affects which HRM practices? What can organizations do to strengthen or sustain HRM 'best practices' through which IC components?
- (3) *IC and firm performance.* IC is concerned with the control and alignment of knowledge flow across organizational levels in order to create value and enhance performance for organizations (Petty & Guthrie, 2000; Choo & Bontis, 2002). A current debate is the effect of HRM or SHRM on firm performance. IC has been drawn into that debate. How does IC affect firm performance? Does one component of the IC model have stronger effect than the others? Can firm performance be utilized as a feedback cycle or measurement tool to evaluate effective utilization of IC? What firm performance indicators best illustrate the effective use of IC?

(4) *IC and the external environment.* The IC concept focuses not merely on internal processes, but also on external relationships; and how they interact to create value (Peppard & Rylander, 2001). However, external environmental factors such as natural or man-made disasters have direct or indirect impact on an organization's HRM strategies and practices. What role does IC play in regards to the influence of the external environment on the organization's SHRM processes and HRM practices? Does IC act as a filter on the effects of the external environment on the internal operations (i.e. HRM practices) in the organization? Does one of the three IC components play a more significant role in the filtering process? What impact does the external environment have on IC?

As IC is a relatively new research stream, it needs to be further explored using all empirical methods available to researchers. Researchers need to continue the use of quantitative methods; however, it is our belief that qualitative methods provide the best avenue of exploration of a new field. The use of case studies such as the one conducted by Schiuma *et al.*, (2008) on Ducati offers an excellent research methodology to investigate with qualitative or a combination of research methodologies. The use of case studies highlights firms in the same

industrial environment but different countries, which might answer whether IC has the same effect on SHRM and HRM in different environments. This would further provide the opportunity to examine the effect of IC on SHRM and HRM in new business operations and established operations in the knowledge economy.

Conclusion

The concept of IC plays an important role in SHRM and HRM in organizations. This paper aims to show that IC should be conceptualized as a holistic partner to both SHRM and HRM. The theoretical connections between IC, SHRM and HRM are established through a culture where knowledge is gathered, built, maintained and shared in an organization. However, how IC affects SHRM and HRM offers many questions that need to be answered. These questions must be addressed by using interdisciplinary research and multiple research methods. By understanding the effect of IC on SHRM and HRM, senior human resource executives are more likely to be able to measure both the tangible and intangible assets accurately, which in turn assists the executives to make strategic human resource decisions that enhance HRM performance and thus, enhance firm performance.

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