Structure of intellectual capital - an international comparison

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Abstract

Purpose

Academics and practitioners around the world have shown interest in what constitutes the relevant intellectual capital (IC) in firms. However, studies have largely neglected to examine whether IC has identical or different structural elements in various parts of the world. This study draws on institutional theory and suggests that country-specific institutional structures may impact the perception of IC, and empirically analyses whether differences exist between five countries.

Design/methodology/approach

This study tests for the differences in the underlying categorizations of IC in a sample consisting of 708 firms across five countries. Confirmatory factor analysis and comparison of different possible IC models are conducted to empirically examine IC structure.

Findings

Results demonstrate that IC has predominantly the same underlying elements across the examined countries. However, trust capital in Finland and renewal capital in Serbia are structurally different compared to other countries.

Research limitations/implications

Institutional theory and multinational corporate superculture can explain the similarity in the IC structures across countries. Specifically, globalized markets carry institutionalized rules, norms,

and expectations for the participating firms; under the influence of this superculture, the firms begin to assimilate. Conversely, the differences suggest that some country- and culture-specific differences remain even during the transition to global markets.

Originality/value

This study is among the first to question the assumption that IC has identical structural elements across the world, and merges theories of IC and institutions to explain possible origins of these differences.

Keywords: intellectual capital, intellectual capital accounting, structure, superculture

Article classification: research paper

1. Introduction

The vast majority of today's global wealth is based on intangible factors including firms' IC (Edvinsson and Malone, 1997; Ferreira and Hamilton, 2010; Hamilton, 2006; Petty and Guthrie, 2000). Therefore, intellectual capital (IC) is currently a subject of vivid discussion in the realms of academia, business practice, and government. Researchers have widely suggested that, in the current knowledge economy, firm performance accrues primarily from intangible assets, known as the IC of the firm (e.g. Bontis, 1998; Cabello-Medina *et al.*, 2011; Chen *et al.*, 2004; Edvinsson and Malone, 1997; Hsu and Sabherwal, 2012; Inkinen, 2015; Sveiby, 1997; Youndt *et al.*, 2004). The concept of IC covers the intangible resources and capabilities that a company needs to function, compete, and create value (Brooking, 1996; Drucker, 1993; Edvinsson and Malone, 1997; Grant, 1996; Nahapiet and Ghoshal, 1998; Stewart, 1997; Sveiby, 1997).

To examine the role of knowledge and intangibles in producing organizational value and competitiveness, researchers in the field of management accounting have developed a perspective labelled IC accounting (ICA; e.g. Roslender and Fincham, 2001; Tayles *et al*., 2002; Ricceri, 2008; Guthrie *et al*., 2012; Dumay, 2014). This perspective focuses on identifying, measuring, and reporting knowledge resources as well as the activities that develop such resources, and aims to understand how a firm's IC can be managed and measured for the purpose of improved management control (e.g. Mouritsen *et al*., 2001; Bukh *et al*., 2005; Mouritsen and Larsen, 2005).

The ICA perspective has generated interest across the globe, spurring organizational development and academic research activities in a wide variety of countries. An examination of the literature concerning IC in firms in different countries revealed that many managerial-perspective IC studies are based on a theoretical framework that divides IC into three elements related with human, structural/organizational, and relational/social capital dimensions (e.g. Bontis, 1998; Edvinsson and Malone, 1997; Roos and Roos, 1997; Stewart, 1997; Sveiby, 1997). This three-dimensional categorization has been widely implemented in empirical studies concerning IC in firms across the world, from Malaysia and Taiwan to the US and Canada, as well as from Uganda, Jordan, and Turkey to Spain, Belgium, and Luxemburg (e.g. Bontis, 1998; Bontis *et al*., 2000; Bozbura, 2004; Youndt *et al*., 2004; Hsu and Fang, 2009; Sharabati *et al*., 2010; Hormiga *et al*., 2011; Kamukama *et al*., 2011; Mention and Bontis, 2013).

However, organization and management can differ in various national, regional, and cultural contexts, as demonstrated by the studies on cross-cultural management (Adler, 1991; Hofstede *et al.*, 2010; Trompenaars, 1993) and comparative management accounting (Endenich *et al*., 2011; MacArthur, 2006). Because the widely applied tripartite model of IC dimensions (i.e. human, structural/organizational, and relational/social capital) was originally coined in the latter part of the 1990s in reference to firms in highly developed countries (e.g. Sweden, Canada), it is fair to assume that the key intangible assets that produce value for the organization may vary in different conditions. Nevertheless, researchers have applied the tripartite model and other universal IC conceptualizations (e.g. value added intellectual coefficient by Pulic, 2000; calculated intangible

value by Stewart, 1997) around the world in a rather straightforward manner, without questioning their applicability under varying cultural contexts (Dumay, 2009).

In fact, IC research has typically been conducted on the assumption that IC as a phenomenon is rather identical across regional, national, and cultural contexts. Overall, the majority of IC research has involved firms in a single regional context, and studies comparing results from several contexts are very rare. As a result, several scholars have called for studies that investigate the cultural aspect of IC (Yang and Lin, 2009) and that adopt a cross-national approach (e.g. Cabrita and Bontis, 2008; Bontis *et al.*, 2007; Delgado-Verde *et al.*, 2011; Huang *et al.*, 2007) in order to assess the generalizability of the existing theoretical positions. As previously noted, in single-country studies, the IC framework has typically been directly applied using a model originally built by Western researchers arising from highly developed countries. Very few empirical studies to date have addressed the issue of *if and how the structure of IC of firms differs in different national contexts.* This paper argues that the literature lacks in-depth understanding of the national, cultural, or regional differences of IC.

A country's formal institutions, which are mainly regulatory, political, and economic, are reflections of that country's culture (Inglehart and Baker, 2000). Culture, in turn, is a reflection of a socially constructed reality that is built upon informal institutions that are persistent systems, shared meanings, and collective understandings (North, 1990; Peng *et al*., 2008; Scott, 1995). Thus, as cultures differ between countries (Hofstede, 1980), these differences exist also at the institutional level. This study integrates institutional theory and IC theory by suggesting that country-specific institutionalized peculiarities may impact the perception of IC. In more detail, this study claims that managerially-assessed IC is a framework that eventually builds its meaning through a socially mediated constitution, which may vary from context to context because it is influenced by institutional peculiarities.

To address the question of whether the structure of IC is universal (as most existing studies implicitly assume) or varies across countries, this study empirically examines a managerial assessment of IC across firms with more than 100 employees in five countries. The study is based on a cross-country dataset that was collected between fall 2013 and spring 2014 during a research project that was conducted in co-operation with partner institutions from five countries. These countries span from developed (Finland, Spain, Italy) to developing countries (Russia, Serbia), as well as from collectivist (Russia, Serbia) to more individualistic cultures (Finland, Italy, Spain) (Hofstede *et al*., 2010; cf. Greif, 1994). First, this article suggests an extended and elaborated categorization of IC to better understand the differences between country contexts beyond the traditional tripartite distinction of IC. Then, it tests the differences in the underlying categorizations in a sample consisting of structured survey responses of 708 firms across five countries.

The results indicate that IC structure is mostly similar across the five countries, but some differences exist. This suggests that the managerial construction of IC is mostly a universal phenomenon, with specific, notable distinctions regarding the construction of trust capital in

Finland and renewal capital in Serbia. These results provide interesting, institutionally-driven implications for ICA research, as well as for IC research more generally. The article concludes with a discussion of those findings and their implications for ICA research and practice.

The following section offers an overview of the relevant IC literature as well as a suggestion for a novel seven-dimensional conceptual model of IC. The section progresses by discussing cross-country differences in the structure of IC through the lenses of an institutional approach. Following this discussion is a description of the data collection and methodological selections, with a focus on the survey research strategy. The final two sections present the results of the analysis and the conclusion with a discussion and an overview of the study's implications.

2. Intellectual capital: literature review and new dimensions

ICA research can be divided into two key approaches: the financial statement approach and the organizational approach (Guthrie *et al.*, 2012). Whereas the first is interested in the conditions and solutions for external accounting and disclosure measures of intangibles, the latter focuses on organizing and managing intangibles. This paper adopts the second, organizational approach to IC, since it allows for the conceptual and empirical assessment of the detailed and potentially culturally-specific fabric of firm-level IC.

Within this literature, most studies have viewed IC as composed of three elements: human, structural/organizational, and relational/social capital (Bollen *et al.*, 2005; Bontis, 1998; Bozbura, 2004; Edvinsson and Malone, 1997; Hormiga *et al.*, 2011; Hsu and Fang, 2009; Sharabati *et al.*, 2010; Tseng and Goo, 2005; see also Inkinen, 2015). More recently, some researchers have questioned whether these three elements are sufficient, or if there are some other intangible value drivers that are not addressed by this customary categorization of IC (e.g. Kaufmann and Schneider, 2004; Kianto, 2007). Specifically, past studies have distinguished the following three additional dimensions: entrepreneurial capital, renewal capital, and trust capital. Viewing intangibles from this broader, more detailed perspective might enable an improved identification of country-specific variations in the IC structures of firms. The first part of the theory-building section discusses these new IC elements and the reasons for including them in IC models. Then the study moves on to demonstrate what kinds of previous research on ICA have adopted a cross-country perspective. The previous studies are quite limited, but still add to the understanding of the potential variation across countries in terms of the structure of IC.

2.1 Towards an overarching IC typology

Human, structural/organizational, and relational/social capital constitute the three-dimensional model of IC that has been established as an emergent standard within IC literature (Bollen *et al.*, 2005; Bontis, 1998; Bozbura, 2004; Edvinsson and Malone, 1997; Hormiga *et al.*, 2011; Hsu and Sabherwal, 2012; Hsu and Fang, 2009; Nahapiet and Ghoshal, 1998; Roos and Roos, 1997; Sharabati *et al.*, 2010; Stewart, 1997; Subramanian and Youndt, 2005; Sullivan, 1998; Sveiby,

1997; Tseng and Goo, 2005; Youndt *et al.*, 2004). A recent systematic review of empirical IC literature by Inkinen (2015) reaffirmed that the three-dimensional IC measurement model has been far and away the most frequently used combination. Infrequently, researchers have included and examined some further IC dimensions, such as innovation capital (Chen *et al.*, 2004; Maditinos *et al.*, 2010; Tseng and Goo, 2005) and renewal capital (Kianto *et al.*, 2010).

A multitude of elements constitute the IC dimensions. For instance, *human capital* refers to people and their thinking capability, skills, knowledge, experience, and motivation (Bontis, 1998; Edvinsson and Malone, 1997; Roos and Roos, 1997; Stewart, 1997), while *structural/organizational capital* includes "all the non-human storehouses" of knowledge within a firm (Bontis *et al.*, 2000, p. 88), ranging from information systems, databases, and intellectual properties to culture-carrying artefacts of organization (Bontis, 1998; Edvinsson and Malone, 1997; Stewart, 1997). Finally, *relational/social capital* consists of the value and knowledge that reside in connections with customers, suppliers, distributors, partners, institutions, and various other related parties (Edvinsson and Malone, 1997; Nahapiet and Ghoshal, 1998; Roos and Roos, 1997).

One criticism of the three-dimensional model of IC is that it offers a rather rough categorization, as the amount and diversity of intellectual elements would permit a more accurate separation between the IC dimensions. Therefore, the categorization of IC into further dimensions, as depicted in Figure 1, enables a finer-grained analysis and improved understanding of the phenomenon. Actually, these additions do not expand the theorized boundaries of overall IC, but rather distinguish some of the dimensions into more specific elements, as they are the results of a critical examination of the established three-fold model.
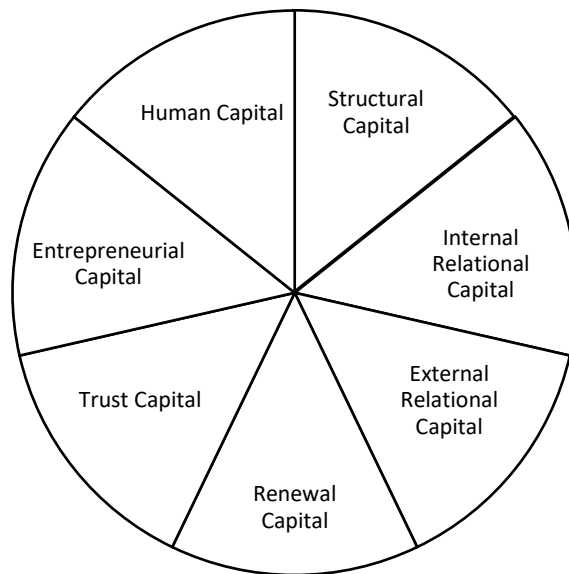
Figure 1: Intellectual capital dimensions: an elaborated model

Figure 1 shows that, in addition to the established human, structural/organizational, and relational/social capital dimensions, this study identifies a group of new elements to IC. First, this study separates the established dimension of relational capital into internal and external dimensions, since the earlier definitions have been conceptually inconsistent. The relational/social capital dimension of IC is usually related to either extra-organizational (e.g. Bozbura, 2004; Cabrita and Bontis, 2008), intra-organizational (Yang and Lin, 2009), or both intra- and extra-organizational (Yli-Renko *et al.*, 2002) contexts. To make this difference explicit, this study divides the dimension into *internal* and *external relational capital*, referring to relationships with intra-organizational and extra-organizational stakeholders. The other expansions to the classic IC categorization include *renewal*, *entrepreneurial*, and *trust capital*. The following sub-sections discuss these dimensions.

2.2 Renewal capital

As organizational resources and capabilities related with knowledge distribution, leverage, organizational memory, and learning are especially important for firms' competitiveness (e.g. Zollo and Winter, 2002), it seems logical to separately address these issues. Thus, a categorization of IC should include renewal capital, which describes the organization's capacity to renew through knowledge-related activities, such as learning and creativity (e.g. Kianto *et al.*, 2010).

From a knowledge-based perspective, the key mechanisms of organizational renewal are learning (i.e. development of novel mental models and insights; see e.g. Fiol and Lyles, 1985; Huber, 1991) and knowledge creation (Nonaka and Takeuchi, 1995). Therefore, *renewal capital* refers to the organization's capacity to learn and to create new knowledge (Argyris, 2002; Nonaka and Takeuchi, 1995) through activities such as acquiring new information and developing new skills. It represents the resources of the firm for renewing what it knows and can do (Kianto *et al*., 2010). An organization with high renewal capital, sometimes also called innovation capital (Chen *et al*., 2004), is able to build on previous knowledge and to generate new knowledge (Maditinos *et al*., 2010), as well as to develop new products, services, and inventive ideas on a continuous basis (Tseng and Goo, 2005), and thus innovate. Also, an organization that is able to develop new knowledge, innovate, and learn is likely to respond in an agile manner to radical changes in the market and future challenges and to sustain its competitiveness even in changing conditions (Edvinsson and Malone, 1997).

As the discussion above indicates, some links exist between renewal capital and structural/organizational capital within the three-dimensional IC model. However, renewal capital should be studied separately from other structural capital issues because it explicitly addresses renewal through learning and knowledge creation, while structural/organizational capital handles strategies, cultural artefacts, databases, information systems, processes, manuals, patents, routines, mechanisms, charts, and other structural arrangements (Inkinen, 2015). Thus, the contents of these dimensions are not overlapping, and both are required to construct an overarching concept of IC.

2.3 Entrepreneurial capital

Whereas the discussion on renewal capital concerns the firm's ability to learn and to acquire new knowledge and skills, *entrepreneurial capital* is related to the entrepreneurial behaviour exerted by members of the organization. Entrepreneurial capital consists of the competence and commitment related to entrepreneurial activities within the firm (e.g. Erikson, 2002). It is the courage, initiative-taking, and pro-activeness that enable more self-determining development activities within the firm (Dess *et al.*, 1997; Hughes and Morgan, 2007). Further, entrepreneurial capital is defined as the firm's pro-activeness with new opportunities to develop products and strategies and acquire signals from the market (Lumpkin and Dess, 1996), its risk-taking ability in terms of uncertainty acceptance and capitalization on market instability (Cesaroni *et al.*, 2015; Lumpkin and Dess, 1996), its aggressive decision-making to outperform rivals (Lumpkin and Dess, 1996), and its empowerment of employees to make independent decisions, be creative, and be more self-directed (Hurley and Hult, 1998). Thus, a firm with strong entrepreneurial capital is likely to gain competitive advantages through its employees who have a strong affective commitment to the firm, are proactive, and are empowered to make quick decisions (Inkinen *et al.*, 2014).

Entrepreneurial capital is nurtured by the general organizational climate; thus, a linkage exists between it and the structural/organizational capital dimension within the emergent standard three-

dimensional IC model, even though previous IC studies have not typically discussed entrepreneurial orientation. However, it is important to introduce entrepreneurial capital as an independent dimension within the IC model, as its examination will increase the understanding on how entrepreneurial behaviour influences firm performance outcomes. As such, it carries important managerial implications on issues such as power decentralization and motivation.

2.4 Trust capital

An important intangible socio-cultural aspect in organizations is trust, which is an explicitly different issue from relationships in some cultures and more embedded in relationships in other cultures (Gold *et al.*, 2002). To determine the potential institutional differences in this regard, a relationship-related *trust capital* is included in the IC categorization, which refers to the trait of trust that adds value to internal and external relationships (e.g. Mayer *et al*., 1995).

Trust is commonly defined as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another" (Rousseau *et al*., 1998, p. 395). Trust is an essential component of social capital, which enables knowledge sharing and creation across ties (Nahapiet and Ghoshal, 1998). Trust thereby facilitates intra- and inter-organizational knowledge flows, and potentially aids innovation and performance in doing so. Organizational trust is an attribute that has value to the organization, is rare, and is hard to imitate or replace; as such, it could be a source of sustainable competitive advantage (Barney and Hansen, 1994). In other words, organizational trust is a valuable intangible asset (see e.g. Barney, 1991; Gould-Williams, 2003; Tzafrir, 2005; Boxall and Purcell, 2011), and a high level of trust is a strategically important source of competitiveness (Barney, 1986). Consequently, trust between and within organizations could play a role in achieving sustainable competitive advantage through instilling attitudes and behaviours in a way that will eventually constitute a culture of trust that is unique and inimitable (cf. Boxall and Purcell, 2000). Moreover, trust cannot be easily transferred to other organizations because it is a product of historical development and therefore is difficult to imitate.

Although trust capital should be seen as an independent and distinct dimension of IC, it shares some interconnections with the three-dimensional IC conceptualization. First, trust is an integral part of the organizational climate and culture, so it touches partly on structural/relational capital (e.g. Nahapiet and Ghoshal, 1998; Anderson and Jack, 2002). Second, trust is embedded in an organization's relations and relationships, which makes it somehow an attribute of relational capital (e.g. Nahapiet and Ghoshal, 1998; Kale *et al*., 2000). Additionally, as stated in the previous paragraph, trust is also a component of social capital.

However, studying trust as an independent dimension and separately from another IC dimensions offers significant value as it tends to have a remarkable effect on the value of relationships. Thus far, the empirical IC literature has not considered trust as an independent IC dimension, so the level of understanding on how trust, as a part of IC, influences firm performance is very limited (for a recent review, see Inkinen, 2015). In sum, trust can be considered one form of a company's

intangible resources and thus one type of IC asset. This article defines *trust capital* as the trust embedded in a company's internal and external relationships (e.g. Mayer *et al*., 1995).

3. Cross-country differences in IC structure: institutional approach

In addition to the novel categorization of IC, this study suggests that IC is a phenomenon that is impacted by the institutional context of activity, i.e. the structures and mechanisms of social order and co-operation (Scott, 1995). Regulatory, political, and economic institutions set the rules for organizations that operate within a country, shape how governments and individual members can establish or alter the formal institutions, and define monetary and fiscal policies (Holmes *et al*., 2013). In addition to these formal institutions, each country has also informal institutions, which are the systems, shared meanings, and collective understandings that formulate the socially constructed reality and reflect on a country's culture (North, 1990; Peng *et al*., 2008; Scott, 1995). Further, even though formal institutions are explicit and quite stable by nature, they persist only if the country's people collectively see them as meaningful and effective (Tolbert and Zucker, 1996). Therefore, formal institutions are embodiments of the country's people and culture (Inglehart and Baker, 2000).

Cultures make countries different (Hofstede, 1980), and the arguments above suggest that the differences exist also on the institutional level; thus, these institutionally-driven peculiarities are likely to have an effect on how IC is constructed in different countries. In particular, differences may emerge in how the managerial construction of IC assessment in terms of the seven IC dimensions constitutes the overall IC in a given country context. For instance, there might be differences of which particular IC dimensions are seen as separate from each other, and which are seen as belonging to the same socially constructed element of IC. Therefore, this study claims that managerially-assessed IC is a framework that eventually builds its meaning through socially mediated constitution, which may vary from one context to another because it is influenced by the institutional characteristics arising from the country's culture.

Previous studies have indicated variation within the levels of IC dimensions between countries (e.g. Lin and Edvinsson, 2008, 2011, 2012) and in IC reporting (e.g. Guthrie *et al*., 2004; Guthrie *et al.*, 2006; Vandemaele *et al.*, 2005), but no research has yet discussed the national differences in the underlying IC structures and configurations. While some researchers, such as Tovstiga and Tulugurova (2009), have suggested that the impact of IC on organizational performance is conditioned on the socio-political context of their operations, no studies have directly addressed the culturally bound versus universal nature of the underlying models of IC. This study agrees with Dumay (2009) that a drawback of IC research is the tendency for researchers to try to fit the tripartite model, which might in the end have little relevance for understanding value creation in varying country contexts. Distinguishing the national peculiarities of IC structures is important, as it affects the implications of the previously conducted cross-national comparative studies on IC.

Also, the result of this study increase understanding on which IC dimensions should be measured and managed in different national contexts.

Whether the structure of IC differs in different country contexts has been left unexplored in the existing research. Comparative research on IC is rare, and most studies have examined IC within a single country, typically implementing some IC method that was originally developed in a different country context, with possibly a very different societal system, geographical attributes, and cultural factors. Notably, a large number of studies have implemented the tripartite division of IC into human, structural/organizational, and relational/social capital across all continents (e.g. Bontis, 1998; Bontis *et al.*, 2000; Bozbura, 2004; Youndt *et al.*, 2004; Hsu and Fang, 2009; Sharabati *et al.*, 2010; Hormiga *et al.*, 2011; Kamukama *et al.*, 2011; Mention and Bontis, 2013). However, these studies have not examined the applicability of the underlying structure for analysing the companies' IC. As a result, the issue of whether the nature of intangibles differs in various countries has been left relatively in the shade.

Among the few researchers that have examined ICA from a comparative perspective, Chaminade and Johanson (2003) investigated the implementation of a European research and organizational development project in Spain and Sweden. They argued that adopting and applying IC ideology and management activities differ according to the national culture. Abeysekera (2007) compared the IC reporting of large firms operating in Sri Lanka and Australia, and found that the differences in the reporting of intangibles between firms in these two regions could be attributed to cultural values as well as economic, social, and political factors. Tovstiga and Tulugurova (2009) examined IC practices across four regions, and argued that differences between IC practices of firms reflect socio-economic and national cultural factors. Nazari *et al.* (2009) found significant differences in IC management and the organizational characteristics influencing it between Canada and the Middle East. Based on experiences of ICA implementation in Spain and Norway, Chaminade and Roberts (2003) suggested that successful strategies for ICA implementation are likely to differ in different countries. Guthrie *et al.* (2006) compared the voluntary reporting of IC in Australian and Hong Kong-based listed companies, and pointed out that, despite a lack of quantitative measures, Australian companies managed to disclose more information on IC. However, Bozzolan *et al.* (2006) investigated IC disclosure practices in Italy and the UK, and found that they did not differ across nations, but rather as a function of firm size and sector.

Based on this evidence concerning the impact of national culture on IC management activities, it seems plausible, from an institutional approach, that the structure of the IC phenomenon itself (i.e. the configuration of the intangibles perceived to create value for the firm in a particular context) would differ from country to country. For example, regulatory institutions set expectations for how entrepreneurial capital can create value within the firm, and political institutions, which influence the political stability of the country, are likely to affect how trust capital is perceived. The following section proceeds to an empirical examination of the institutionalization of IC, starting with describing the data collection and methods of the study.

4. Methods

4.1 Sample and data collection

The data utilized for this study included five survey datasets using the same research design and items, but conducted in different countries. Survey data were collected from Finland, Italy, Russia, Serbia, and Spain in 2013-2014. These countries were selected based on international academic collaboration during a research project by five academic institutions from the countries. The aim of the project was to study IC with a rather diversified set of developed and emerging market countries. The questionnaires were developed in English and then translated into different languages. From each country, the initial population comprised a cross-industry sample of companies that included all firms with at least 100 employees. Country-specific databases (e.g. Intellia in Finland and SABI in Spain) were utilized in identifying companies. All eligible firms were contacted; for practical reasons, the method of contact varied slightly between countries. For example, an external research company contacted firms in Finland by telephone. In other countries, researchers conducted the data collection via telephone, face-to-face interviews, and online surveys. To reduce the possibility of bias resulting from these various data collection modes, all of the data collection procedures strictly followed the similar survey design format and data collection guidelines to minimize any variation in the respondents' assessment of the items. Furthermore, recent method literature has suggested that the mode of data collection does not matter in terms of reliability of the findings (see e.g. Hair *et al*., 2006; Maguire, 2009; Szolnoki and Hoffman, 2013; Dodou and de Winter, 2014). Based on this assessment, this study has no major risk of bias in terms of data collection modes across countries. Confidentiality was emphasized, and the respondents were promised a summary of the results.

Following the initial contacts, 708 usable responses were received from Finland (259), Spain (180), Italy (102), Russia (87), and Serbia (80). In all countries, the study followed the key informant approach in that most of the respondents held positions such as a human resources (HR) director or manager, other director or manager, or managing director, indicating their expertise and key position regarding the issues regarding IC. In order to examine whether there were differences between different groups of respondents within each country, a one-way analysis of variance (ANOVA) comparison of means was performed for each individual item. No notable differences were found in how respondents with different positions evaluated the existence of IC dimensions.

The companies in the sample represented a wide variety of industries, including manufacturing, wholesale and retail trade, miscellaneous services, and transportation and storage. The next sub-section discusses the characteristics of samples from different countries in more detail.

4.2 Descriptive statistics

In terms of age, some differences existed among the studied countries. The average age of the firms in the Finnish, Spanish, and Italian samples was around 30 years. The companies from Serbia

and Russia were younger, around 20 years. The oldest companies were found in Spain (mean value 31 years) and the youngest in Russia (19 years). In all countries, most of the companies were established 11-50 years ago. It should be noted that the percentage of young companies (established 0-5 years ago) was low in the samples from Serbia (0%), Spain (0.6%), Italy (2.9%), and Russia (4.9%).

The company size was assessed by two means; by the number of employees and the volume of annual sales. In the Spanish (65.7%), Finnish (53.7%), and Italian (47.5%) samples, most of the companies had 100-249 employees, whereas Russian (50.6%) companies employed more than 1000 people. This discrepancy is shown also in the mean values for employees, as the average Russian company had about 7000 employees, whereas Spanish and Finnish companies employed an average of 337 and 446 people, respectively. Utilizing the annual sales metric, this study found that quite large variations existed between countries. The biggest average sales figures were found in Italy (820 million euros) and in Russia (627 million euros). The smallest companies in terms of sales were Spanish (92 million euros) and Serbian (98 million euros). Finnish companies were positioned in between, with average sales of 157 million euros.

Table 1 presents the four biggest industries of the sample from each country. In most of the countries, manufacturing was the biggest industry among the studied companies. The percentage varied from Serbia's 50% to Italy's 34%. Only in Russia was wholesale and retail trade (22.4%) represented more than manufacturing (20%). Other industries that were among the four biggest in most of the countries were services (Finland, Russia, and Serbia) and information and communication (Italy, Russia, Serbia, and Spain).

Table 1. Descriptive statistics.

	Finland	Spain	Serbia	Russia	Italy
N	259	180	80	87	102
Age (mean; sd)	28.5; 25.09	31; 22.1	21.24; 13.14	18.99; 14.09	28.9; 21.28
Personnel (mean; sd)	445.53; 734.44	336.92; 542.17	761.85; 1243.6	7037.1; 23192.4	2411.15; 13928.40
Sales 1000 eur (mean; sd)	156775; 400034	92017.99; 230594	97667; 128329.31	627205; 1556125	819755.44; 4844279.27
Age (%):					
0-5 years	8.5	0.6	0	4.9	2.9
6-10 years	11.2	5	13.8	20.7	8.8
11-50 years	66.4	83.3	80	69.5	73.5
50+ years	13.9	11.1	6.3	4.9	14.7
Personnel (%):					
100-249	53.7	65.7	34.7	22.4	47.5
250-499	23	22.5	26.7	20	18.8
500-999	10.7	8.4	18.7	7.1	12.9
1000+	9.4	3.4	20	50.6	20.8
Industry (%):					
Largest	Manufacturing (37.8)	Manufacturing (43.9)	Manufacturing (50)	Wholesale and retail trade (22.4)	Manufacturing (34)
2nd largest	Services (9.7)	Information and communication (28.3)	Wholesale and retail trade (13.8)	Manufacturing (20)	Wholesale and retail trade (16)
3rd largest	Transportation and storage (8.1)	Other (8.3)	Services (11.3)	Information and communication (15.3)	Administrative and support service activities (9)
4th largest	Administrative and support service activities (7.7)	Professional. scientific and technical activities (7.8)	Information and communication (7.5)	Services (14.1)	Information and communication (9)

4.3 Measurement scales

The survey consisted of 28 items measuring seven different dimensions for and representing together the concept of IC. In all scales, respondents were asked to assess how the different statements on IC dimensions applied to the organization they represented.

Because the comprehensive concept of IC is in its early stages, established measurement scales do not exist. Therefore, the measures for IC dimensions were both adapted from the previous literature and developed by the authors. First, a thorough literature review was conducted to find empirically

validated measurement scales for IC. Then, the applicable scales were supplemented with items and scales developed by the authors. In order to confirm the operational validity and psychometric robustness of the scales attained, the survey was pre-tested by means of statistical analyses with the sample of managers (N=151) collected from Finnish companies. In addition, to ascertain content validity of the scales, an international panel of experts assessed the scales and gave their insights for further development. Their feedback was incorporated into the final version of the survey.

Appendix 1 presents the scales, items, and related literature sources for the different dimensions of IC. All of the measures were based on a five-point Likert scale (1-strongly disagree, 5-strongly agree).

5. Results

5.1 The structure of intellectual capital

As the comprehensive conceptualization of IC introduced in this study is quite novel, several analyses were performed to test whether the suggested structure for the IC dimensions exists universally in all countries and, if not, to determine what differences exist between countries. Thus, the objective of the following section is to test the validity and applicability of the proposed conceptual model of IC in different countries, and to identify the similarities or possible differences in the structure (different dimensions) of IC between countries.

Confirmatory factor analysis (CFA) was conducted to test the dimensionality of the structure for the concept of IC dimensions. According to the theoretical conceptualization, the structure of IC should exhibit a latent structure with seven factors. A total of 708 cases were processed by means of LISREL 8.50. PRELIS 2.50 was used to compute the covariance matrix, and the maximum likelihood estimation method was applied. The analyses were conducted separately for the datasets from each country.

First, CFA was conducted separately for each factor (i.e. each IC dimension separately) to verify that the items were, in fact, grouped together. During this phase, a few items were removed (one item at a time) because of the large standardized residuals with the other items.

In the next phase, all seven factors were tested together. In the analysis for all samples, the initial model fit indices indicated that the original model needed to be re-specified to fit better with the sample data. Then items were gradually removed according to the values of the standardized residuals. From each pair of items with a large standardized residual, the one with a lower squared multiple correlation was removed and the one resulting in greater improvement in the model fit was retained. As a result of the above steps, several items were removed. The lowest number of items removed was from the Finnish data (6 items) and the highest from the Serbian data (16 items).

Appendix 1 presents the final models and model fit indices for the structure of IC in different countries. The following three absolute-fit measures were obtained: the likelihood-ratio chi-square value, the root mean square error of approximation (RMSEA), and the goodness-of-fit index (GFI). Even though all the measures fell within acceptable levels, incremental measures i.e. the non-normed fit index (NNFI), the comparative fit index (CFI), and incremental fit index (IFI) were needed to ensure acceptability of the models from other perspectives.

In sum, the various measures of overall goodness-of-fit gave sufficient support to deem the results an acceptable representation of the hypothesized construct (see Appendix 1). The cross-validation (see e.g. Hair *et al.*, 2006; Conroy and Motl, 2003) revealed that there are differences in how IC is perceived to exist in various countries. In the Finnish sample, all seven hypothesized dimensions remained, while at the opposite extreme the Serbian sample retained only five dimensions. The most significant findings were that trust capital was found as a dimension of IC only in the Finnish sample, and renewal capital did not differentiate as a dimension of its own in the Serbian sample. These findings will be further elaborated in the discussion section.

In addition, some observations can be made regarding item-level consistency between countries in terms of the retained IC dimensions. In general, in all countries where a specific IC dimension existed, the structures were alike. For example, both external relational capital and entrepreneurial capital were evaluated with three items that seemed to work in all countries. Also in internal relational capital, structural capital, human capital, and renewal capital, the structures were, if not alike, at least quite consistent between different countries. Only a few one-item differences were observed.

The structure of IC may be different than suggested in this study. For example, one could claim that there are no distinct dimensions of IC (i.e. IC can be conceptualized as a one-dimensional construct), or that the relationship-related dimensions (i.e. internal and external relational capital) should not be examined separately as suggested here. Thus, in order to further establish the dimensionality and validity of the suggested novel structure of IC, the study compared the initial model with competing models. The developed model outperformed competing models on all model fit indices, providing additional support for the chosen model.

5.2 *Construct reliability and validity*

Reliability

The reliability of the items was evaluated by their path coefficients and squared multiple correlations (R2). Composite reliability (CR; also known as construct reliability) was used to assess the reliability of each factor. A complementary measure is the average variance extracted (AVE), which directly shows the amount of variance that is captured by the construct in relation to the amount of variance due to measurement error.

Appendix 1 shows the reliability statistics. All the items were significantly related to their specified constructs, verifying the posited relationships among the indicators and constructs. The CR ranged from 0.63 (for structural capital in the Finnish sample) to 0.89 (for external relational capital in the Italian sample), all exceeding the minimum recommended level of 0.60. The AVE reached the recommended 50% (cf. Diamantopoulos and Siguaw, 2000; Hair *et al*., 2006) in all but two factors, which were structural capital and trust capital in the Finnish sample. In addition, the squared multiple correlations were also mainly over or near the limit of 0.50.

Convergent validity

According to Bagozzi and Yi (1991), weak evidence of convergent validity results when the factor loading on an item of interest is significant. Strong evidence is achieved when the squared factor loading is greater than 0.5 (i.e. more than half of the total variation in the measures is due to the trait). Secondly, convergent validity can be assessed in terms of the degree to which the factors (which could be considered different measures of the construct) are correlated (Bagozzi and Yi, 1991; Smith *et al*., 1996).

As shown in Appendix 1, for most of the items, loadings were greater than 0.7 (the lowest loading was 0.518), and all loadings were statistically significant at the 0.01 significance level. In addition, most of the items turned out to have a squared factor loading (R^2) greater than 0.5. Table 2 gives more evidence of convergent validity in that the correlations between the dimensions of IC stocks were all significant, ranging from 0.165 to 0.691. This suggests that the components all measured some aspect of the same construct.

Table 2. Correlation matrix.

	Mean	1	2	3	4	5	6
1. Internal relational capital	3.43-4.06						
2. External relational capital	3.38-4.07	0.328-0.481					
3. Structural capital	3.58-4.25	0.371-0.552	0.275-0.531				
4. Human capital	3.69-4.05	0.165-0.691	0.218-0.480	0.324-0.586			
5. Renewal capital	3.41-3.72	0.344-0.501	0.364-0.529	0.335-0.504	0.371-0.600		
6. Trust capital	3.94	0.484	0.477	0.384	0.576	0.572	
7. Entrepreneurial capital	3.10-3.65	0.275-0.538	0.322-0.478	0.316-0.517	0.334-0.643	0.498-0.646	0.444

Note: All samples are included in the table (i.e. the lowest and highest values are presented). All correlations are significant at least at the 0.05 level (2-tailed).

Discriminant validity

The discriminant validity was evaluated by two methods. The first method assessed whether the AVE was greater than the variance shared between that construct and the other constructs in the model (i.e. the squared correlation between two constructs; Fornell and Larcker, 1981). Almost all constructs for all countries of the study fulfilled this condition. In all samples, the model's AVEs were greater than the squared correlation between constructs. In addition, the discriminant validity was evaluated with the method recommended by Anderson and Gerbing (1988). Two models were

compared for each possible pair of constructs. In the first model, constructs were allowed to correlate freely, and in the second model, the correlations were fixed as equal to one. All chi-square difference tests in all samples were significant, which indicates that all pairs of constructs correlated at less than one. In sum, these two tests offer evidence of a sufficient level of discriminant validity.

6. Discussion and implications

IC and ICA researchers have long traditions of measuring the value of firm-specific intangible assets across the world, with an (often implicit) assumption that the phenomenon is universally similar. However, the variations of institutional settings across countries affect how people and organizations think and behave. Consequently, perceptions of IC can be strongly impacted by context-specific institutional features. To provide more evidence on the research gap in culture- and context-specificity of IC, this paper examined whether the structure of IC is universal across its different dimensions, or whether it varies in firms that represent different countries and cultural backgrounds. Empirical data for this study was collected from firms in five countries with unified translated versions of a structured survey, and the national IC structures were analysed via statistical methods. The data were collected from directors and managers who were dealing with practical management of IC; thus, this study captured novel understanding of which IC dimensions conceptually exist in the five surveyed countries by building on these expert views on IC issues.

Contrary to the expectations, the results indicated surprisingly few differences in terms of the perceived IC structures among the firms in the five countries. In fact, the structure of IC was very similar across the countries, and the posited country- and culture-specific institutional differences (Hofstede *et al*., 2010) did not translate as differences in how the managers in different countries perceived the structure of IC. Thus, this finding substantiates Tovstiga and Tulugurova's (2009) observation that key intangible assets differed more across firms than across regions. Further, this finding points out the impact of a multinational corporate superculture that is carried by globalized markets and preserved and adjusted by the firms that operate within the same markets. This superculture stretches across country borders and is somewhat apart from local systems and interplay (Munch, 1964). The superculture sets rules, norms, and expectations for the firms that operate under its influence. For instance, it sets minimum requirements for employee skills and characteristics and therefore increases demand for certain types of human capital across country borders. Also, it irreversibly alters the meaning of relationships, as the firms switch from a local perspective to a global mind-set. Possibilities in information storage, analysis, and leverage of knowledge through information technology have become available for firms across the globe. In the point of view of for-profit firms, the globalized and digitalized markets and the associated supercultures seem to be more powerful influencers in terms of behaviour and worldview than the domestic institutions. In sum, as the firms are situated in an institutional environment characterized by a multinational corporate superculture, they will adjust to that institutionalized reality by

adopting the prevailing practices, which explains why the firms around the world assimilate and also perceive IC in a similar fashion (see Chuang *et al.*, 2011).

Despite the overall similarities, the data analysis pointed out some interesting differences between countries regarding the managerial perceptions of IC structures. Notably, the facet of trust capital was analysed to be an independent IC dimension solely within the Finnish companies, and could be therefore claimed to be a completely Finnish phenomenon. This finding indicates that Finnish companies and business managers do not necessarily require existing long-term relationships to trust another party. Instead, they trust as a default, emphasizing that trust is an institutionalized norm within the Finnish culture (see Scott, 1995). This relates with the recent discussions in Finnish politics and media, identifying Finland as a high-trust society (Korhonen and Seppälä, 2005). In comparison, trust capital was embedded into other IC dimensions in other studied countries. Typically, trust is a product of long-term relationships (e.g. Cropanzano and Mitchell, 2005) and thus tied to relational capital dimensions (e.g. Nahapiet and Ghoshal, 1998).

Another notable exception was that the independent managerial construct of renewal capital was missing in the Serbian context. This discrepancy might be due to the country's gradual transition to the free economy, which is still ongoing and increases managers' tendency to avoid uncertain situations such as renewal issues (Hofstede *et al.*, 2010). However, this finding must be retained for further interpretation in future research because some other cultures had relatively high uncertainty avoidance within the country samples wherein renewal capital appeared as an independent structure (Spain, Italy).

On the other hand, the results can be contrasted with previous studies demonstrating differences among nations in terms of how firms manage IC. For instance, Guthrie *et al*. (2006), Abeysekera (2007), Tovstiga and Tulugurova (2009), and Vandemaele *et al.* (2005) found differences in the reporting of intangibles between firms in various countries. Also, previous studies have proposed that the adoption of an IC perspective and effective ways to apply IC management practices differ at least between some countries (Chaminade and Johanson, 2003; Chaminade and Roberts, 2003; Nazari *et al.*, 2009). However, the findings of this paper did not support these assertions; indeed, the findings suggested that management of IC may in fact become more uniform over time, as managerial perceptions of IC impact their behaviour and practices (Tayles *et al.*, 2007).

6.1 Implications for theory

Whether the structure of the IC phenomenon differs across country contexts has been left unexplored in the previous research. Researchers have offered relatively few country-specific conceptualizations of IC, as most studies have taken a universal approach with very little concern for context-dependent factors. The findings of the current study demonstrated that applying the "universal" perspective in relation to IC issues has not been a completely unjustified approach. Overall, the findings pointed out that the phenomenon of IC seemed to possess rather similar structures in the studied countries. This finding also validated that the previously published

literature on cross-country comparisons of IC have demonstrated solid foundations; therefore, IC researchers are encouraged to continue utilizing the universal approach.

The few country-specific peculiarities that were found in the IC structures highlighted that some cultural elements were institutionalized so deep within the nation that they shone through, even though the firms have gone international and been adopted into the superculture. These peculiarities were the society of trust in Finland and the non-existent concept of renewal capital in Serbia. Therefore, these findings suggested that some country-specific characteristics should be considered before utilizing the same theoretical foundations in several countries or conducting cross-country comparisons.

Overall, the ICA research community has recently begun calling for more localized explanations and approaches (Dumay, 2012; Dumay and Garanina, 2013) to increase the practical applicability and relevance of the field. These findings demonstrated that, even amid varying national settings, the key aspects of IC offer a noteworthy homogeneity across firms and contexts.

The findings also supported the usability of an amended categorization of IC, including the facets of renewal capital and entrepreneurial capital. These two issues should be especially relevant intangibles in the increasingly dynamic globalized business environments. Their existence in all of the examined countries (with the exception of renewal capital in Serbia) indicated that the tripartite conventional IC classification (e.g. Bontis, 1998; Edvinsson and Malone, 1997; Roos and Roos, 1997; Stewart, 1997) should be modified to include these aspects as well (as suggested by Inkinen *et al*., 2014).

Finally, building on institutional theory, various cross-country differences were expected to arise, mostly because of the different cultures and their roles as the basis to the country-specific institutions (Hofstede *et al*., 2010; Inglehart and Baker, 2000; North, 1990; Peng *et al*., 2008; Scott, 1995). However, this study uncovered universal premises of IC, suggesting that the multinational corporate superculture is a much stronger influencer than the local institutions. It seems that the firms from five rather different countries are assimilating as they operate within the same markets and are influenced by the same superculture. This finding appeared in the similar dimensionality of IC categories emerging from managerial construction in the sample countries. The differences also showed that some national institutions are so strong that they are able to affect and make a difference in the managerial construction of IC in some countries.

6.2 Implications for practice

As Mouritsen and Larsen (2005) proposed, knowledge resources can be made more manageable by making information on IC available. In particular, the seven-tier categorization of IC as discussed in this study (ref. Figure 1) provides managers with an illustration of the value-creating intangible resources of the firm, which then further supports their measurement and management. Through better understanding of the various IC dimensions, managers are capable of recognizing

the core sources of value-creation potential, and of better allocating investments to identified gaps or spearheads.

The results of this study showed that, for the most part, IC can be perceived as a universally similar phenomenon in the studied five countries. Managers can use this information to evaluate the intangible value of firms, businesses, and markets in various types of situations where wide IC measurement applicability is useful. These situations include providing complementary analytical approaches for matters such as international company mergers and acquisitions, negotiations on strategic collaboration and alliances, and expansion of business functions to abroad. The measurements could also be utilized within multinational companies to assess the IC across different country offices and divisions. However, this study also uncovered institutionally-embedded, cultural peculiarities. As such, IC measurement and management programmes in various types of companies in different countries could adopt the measurement models examined in our study, while keeping in mind the organizational and cultural specificities.

The most striking country-specific peculiarity of IC was found regarding trust capital, which was highlighted as an independent construct only in the Finnish sample. When viewed through institutional theory, this finding implied that managers in Finland should take a contextual, cultural-oriented approach with regard to IC. While trust is a default trait of new or established relationships in Finland, it does not mean that the firm's international counterparts think and feel alike. Instead, it might take a long period of time to build a trustworthy relationship and achieve fruitful co-operation with international colleagues from a Finnish standpoint where trust is more profoundly embedded in organizational life.

The absence of an independent renewal capital construct in Serbia might indicate that economies in transition are characterized with such a high tempo of overall renewal that it affects also the managerial perception of it. Where managers in post-industrial economies are able to identify renewal capital (sometimes labelled as innovation capital) as a particular ability of a firm, their Serbian and other transition economy counterparts are so heavily involved with renewal issues that they cannot structurally separate it from other valuable resources or value-creating activities. Therefore, the Serbian managers could benefit from a more pragmatic approach on renewal, in order to improve the control and systematic management of IC in the midst of economic turmoil. This may apply to managing firms in other transition economy countries as well.

6.3 Limitations and further research directions

There are some limitations that are related to the research design and the execution of some of the country samples. Concerning Russia, the data covered mainly a small sub-set of firms from a particular region of Leningrad Oblast. Furthermore, there was variance in survey data collection modes between countries (e.g. telephone interviews, online survey). While previous research has offered arguments and evidence suggesting that such variation should not typically risk the reliability of the findings (e.g. Hair *et al*., 2006; Maguire, 2009; Szolnoki and Hoffman, 2013;

Dodou and de Winter, 2014), future studies should seek to standardize the data collection procedures in terms of the data collection mode.

Furthermore, while authoritative voices such as Mouritsen (2006) and Guthrie *et al*. (2012) have made strong arguments in favour of adopting a performative rather than ostensive approach to IC in management accounting, this study notably took the ostensive approach. This approach was selected for gaining a wider perspective on the structure of IC in a wider set of firms in several countries. Naturally, this approach can and even should be complemented by performative research, offering contextual idiosyncratic understanding of how IC has been and is applied in particular firms across different nations. Obviously, implementing IC assessment methods alone does not suffice; however, to improve performance in the knowledge economy, these should be mobilized through storytelling and vivid communication of and around the measurement (Catasús *et al*., 2007).

Further research could build on our results in several ways. First, researchers could test the seven-part categorization of IC further in different countries to see whether the sufficient universality holds in those settings as well. Second, future studies could connect managerial perceptions of IC dimensions to more objective indicators, to see whether there is a gap between perceptions and more concrete measurement approaches. Third, renewal capital in the Serbian context should be studied further, in order to understand what makes it different from the other countries. Doing so could produce generalizable insights into why the concept of firm-level renewal has such special features among rather young nations. Fourth, the managers in various countries should be interviewed on their stance towards and perception of IC, in order to pick up the potential underlying peculiarities and to compose localized research instruments for future studies.

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Appendix 1. Measurement items, factor loadings and model fit indices.

	Key sources for the scale	To what extent do the following statements on…apply to your company? (1 = completely disagree, 5 = completely agree)	Finland (N=259)	Spain (N=180)	Serbia (N=80)	Russia (N=87)	Italy (N=102)
Internal relational capital	Adapted from Kianto (2008) and inspired by Yang and Lin (2009)	Different units and functions within our company – such as R&D, marketing and production – understand each other well	0.616[a]	0.766[a]	0.751 [a]	0.812[a]	0.826[a]
		Our employees frequently collaborate to solve problems.	0.771***	0.807***	-	-	-
		Internal cooperation in our company runs smoothly.	0.721***	0.874***	0.886***	0.737***	0.697***
		CR	0.75	0.86	0.8	0.75	0.74
		AVE	0.5	0.67	0.67	0.6	0.58
External relational capital	Adapted from Kianto (2008) and Kianto et al. (2010)	Our company and its external stakeholders – such as customers, suppliers and partners – understand each other well.	0.62[a]	0.756[a]	0.678[a]	0.73[a]	0.774[a]
		Our company and its external stakeholders frequently collaborate to solve problems.	0.776***	0.708***	0.61***	0.598***	0.851***
		Cooperation between our company and its external stakeholders runs smoothly.	0.776***	0.851***	0.841***	0.714***	0.935***
		CR	0.77	0.82	0.76	0.72	0.89
		AVE	0.53	0.6	0.51	0.47	0.73
Structural capital	Adapted from Kianto (2008) and Kianto et al. (2010)	Our company has efficient and relevant information systems to support business operations.	0.518[a]	0.694[a]	0.712[a]	0.777[a]	0.731[a]
		Our company has tools and facilities to support cooperation between employees.	0.602***	0.784***	0.784***	0.87***	0.767***
		Our company has a great deal of useful knowledge in documents and databases.	0.679***	0.741***	-	-	-
		Existing documents and solutions are easily accessible.	-	-	-	-	-
		CR	0.63	0.78	0.72	0.81	0.72
		AVE	0.36	0.55	0.56	0.68	0.56
Human capital	Bontis (1998); Yang and Lin (2009)	Our employees are highly skilled at their jobs.	0.736[a]	0.761[a]	0.891[a]	0.832[a]	0.864[a]
		Our employees are highly motivated in their work.	0.626***	-	-	-	-
		Our employees have a high level of expertise.	0.827***	0.816***	0.646***	0.851***	0.57***
		CR	0.78	0.77	0.75	0.83	0.69
		AVE	0.54	0.62	0.61	0.71	0.54

Renewal capital	Hughes and Morgan (2007); Kianto et al. (2010); García-Morales and Llorens-Montes (2006)	Our company has acquired a great deal of new and important knowledge.	0.613[a]	0.728[a]	-	0.82[a]	0.791[a]
		Our employees have acquired a great deal of important skills and abilities.	-	-	-	-	-
		Our company can be described as a learning organisation.	0.748***	0.891***	-	0.796***	0.822***
		The operations of our company can be described as creative and inventive.	0.773***	-	-	-	-
		CR	0.76	0.8	-	0.79	0.78
		AVE	0.51	0.66	-	0.65	0.64
Trust capital	Developed by the authors with the conceptual inspiration from Mayer et al. (1995) and Vanhala et al. (2011)	The way our company operates is characterised by an atmosphere of trust.	0.73[a]	-	-	-	-
		We keep our promises and agreements.	0.677***	-	-	-	-
		Our company seeks to take the interests of its stakeholders into account in its operations.	0.603***	-	-	-	-
		The expertise of our company inspires trust in stakeholders.	0.613***	-	-	-	-
		The image and reputation of our company inspire trust in stakeholders.	-	-	-	-	-
		CR	0.75	-	-	-	-
		AVE	0.43	-	-	-	-
Entrepreneurial capital	Inspired by Hughes and Morgan (2007)	Risk-taking is regarded as a positive personal quality in our company.	-	-	-	-	-
		Our employees take deliberate risks related to new ideas.	-	-	-	-	-
		Our employees are excellent at identifying new business opportunities.	0.746[a]	0.633[a]	0.72[a]	0.751[a]	0.843[a]
		Our employees show initiative.	0.745***	0.764***	0.828***	0.792***	0.944***
		The operations of our company are defined by independence and freedom in performing duties.	-	-	-	-	-
		Our employees have the courage to make bold and difficult decisions.	0.752***	0.755***	0.701***	0.764***	0.819***
		CR	0.79	0.76	0.8	0.82	0.9
		AVE	0.56	0.52	0.57	0.59	0.76
Model fit indices		**Chi-square (df)**	326.97 (188)	160.04 (89)	48.23 (44)	59.22 (62)	80.80 (62)
		p-value	0	0	0.306	0.577	0.05463
		RMSEA	0.054	0.067	0.035	0	0.055
		GFI	0.897	0.899	0.908	0.91	0.897
		CFI	0.978	0.976	0.993	0.996	0.977
		NNFI	0.973	0.967	0.99	0.995	0.966
		IFI	0.978	0.976	0.993	0.997	0.978

Note: [a] Significance level in not available, because the coefficient is fixed at 1. *** Statistically significant at 0.01 significance level.