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Linking National Contexts with Intellectual Capital: A Comparison between Spain and Morocco
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The ‘national environment’, which includes belief and value systems, shapes the way individuals, groups and organisations perceive the world around them and determines how they react to ongoing changes. This paper analyses the role of different context’s effects on intellectual capital by means of an empirical investigation of 112 Small to Medium sized Enterprises (SMEs) in the Spanish and Moroccan telecommunication industries. Within the investigation, repeated ANOVA were used, which were validated by factor analysis. Results support that Spanish SMEs are more positively associated with higher levels of human, structural and relational capital. The meaningful differences are clearly found in the ‘structural capital’. Our findings open avenues for further research to explore how governments can facilitate learning and unlearning environments in SME communities. These findings have important implications for general intellectual capital theories, as they suggest that there is no guarantee that intellectual capital theories developed within the cultural context of one particular country can be applied in another with good effect. National contexts provide the environment for learning, which in turn may have the effect of adequately improving intellectual capital.

Keywords: national contexts, intellectual capital, Spain, Morocco, SMEs.

El ambiente nacional, el cual incluye las creencias y los sistemas de valores compartidos, influye de una forma clara y directa cómo las personas, los grupos y las organizaciones perciben el mundo alrededor de ellos, y determina cómo afrontan a los cambios a los que tienen que hacer frente. Este trabajo analiza el papel que los diferentes contextos nacionales ejercen sobre la creación de capital intelectual, mediante un trabajo empírico de 112 pequeñas y medianas empresas (PYMEs) del sector de las telecomunicaciones en España y Marruecos. Para ello, hemos utilizado la técnica estadística de medias repetidas apoyada con un análisis factorial confirmatorio. Los resultados sugieren que las empresas españolas se encuentran asociadas a niveles mayores de capital humano, estructural y relacional. Las mayores diferencias se encuentran en el capital estructural. Circunstancias estas que ponen en riesgo la validez de generalizar los resultados obtenidos por la nueva corriente desarrollada entorno al capital intelectual en diferentes contextos culturales. Además, dado que los resultados apoyan que el contexto nacional proporciona el ambiente necesario para aprender, y este a su vez se asocia a la creación de capital intelectual, el presenta trabajo plantea una futura línea de investigación que relaciona el contexto de aprendizaje y desaprendizaje impulsado desde los diferentes gobiernos y el capital intelectual de las PYMEs.

Palabras clave: contextos nacionales, capital intelectual, España, Marruecos, PYMEs.

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Statistics from the Small Business Service (2004) reveal that 36 per cent of SMEs perish after three years. Some of the reasons for these closedowns are related to issues of uncertainty, trust and lack of knowledge. Intellectual capital or IC can be considered to be an aggregated collection of the intangible assets derived from knowledge processes and activities that add value to the financial and tangible capital held by the organization (Sullivan, 2000: p. 192). IC is typically considered to include: human capital - that in the minds of individuals: knowledge, competences, experience etc; structural capital - that which is left after employees go home: patents, processes, databases etc; and relational capital - customer relationships, brands, trademarks etc. Culture has been defined in numerous ways. Hofstede (1980) proposes that symbols, heroes, rituals and values form culture. Taylor (1998) suggests that 'national culture' (hereafter NC) is that complex whole which includes knowledge, belief, art, law, morals, custom, and any other capabilities and habits acquired by man as a member of a society. NC is reflected in “general tendencies of persistent preference for particular states of affairs over others, persistent preferences for specific social processes over others, and general rules for selective attention, interpretation of environmental cues, and responses” (Tse, Lee, Vertinsky & Wehrung, 1988: p. 82). In the context of this work the NC represents the collective context, norms, values and beliefs within a country. In small firms, knowledge creation is likely to result from founders or parents (Bartlett and Ghoshal, 1989) or from personal contacts with the social environment in which they have grown up and collected their life experiences (Hofstede, 1980; 1991). Furthermore, SMEs tend to stay focused on their home markets (United Nations, 1993) which is also linked to the NC. Even though the effect of NC on IC may be a relatively greater burden on SMEs than on large firms, previous studies, particularly in IC, have focussed on NC differences in large world-class organisations rather than in SMEs (e.g. Chaminade & Johanson, 2003; Long & Fahey, 2000; Lynn, 1999). This paper revises the relationship between NC and IC for SMEs. This issue is addressed by comparing the IC of the Spanish and Moroccan Telecommunications Industries. The key factors of NC and IC are discussed and presented in the next section.

Conceptual framework

**Intellectual capital**

In relative literature, the concept of IC has been defined from different management perspectives (Marr and Chatzkel, 2004). For instance, accounts prefer to talk about intangibles and according to International Accounting Standards Board (IASB, 2004), define them as “non-financial fixed assets that do not have physical substance but are identifiable and controlled by the entity through custody and legal rights”. From a human resource perspective, IC refers to skills, knowledge, and attitudes of employees. From a marketing perspective, intangibles such as brand recognition and customer satisfaction are at the heart of business success, whereas from an information technology perspective, intangibles are seen as being software applications and network capabilities (Cegarra and Sabater, 2005). Martínez-Torres (2006) also discusses how the IC conceptual framework can be effectively utilised to achieve the mission and the strategic goals. Following this author, although structural capital has the greatest influence on strategic objectives, human, structural and relational capitals are neither independent nor autonomous, but interacting permanently. Based on the arguments above, we define IC as all intangible resources that are available to an organization that give a relative advantage and which in combination are able to produce future benefits. The key benefits of IC for SMEs are the provision of environmental information (Birley, 1985; Gilmore and Carson, 1999), support and confirmation in decision making (Carson, Cromie, McGowan & Hill, 1995; Johannisson, Alexanderson, Nowicki & Senneseth, 1994), creating new contacts (Birley, 1985) and gaining ideas for new product offerings (Carson et al., 1995). Following the work of Stewart (1998), Sveiby (1997), Edvinsson and Malone (1997), as well as St-Onge (1996) among others, IC is defined as encompassing: 1) human capital; 2) structural capital; and 3) relational capital.

- Human capital or HC represents the individual knowledge stock of an organization as represented by its employees (Bontis, Crossan & Hulland, 2002). Some of the key measures that are used to identify the extent of firm-specific HC include level of formal education, years of work experience and level and number of years of managerial experience (Swart, 2006).
- The concept of structural capital or SC refers to the value of what is left when the human capital – the employees – have gone home. That is the objective and collective knowledge of an organisation which is often expressed as “the way we do things around here” (Purcell, Kinnie, Hutchinson, Rayton & Swart, 2004). Databases, customer lists, manuals, trademarks and organizational structures, to give a few examples (Skandia, 1996).
- Relational capital or RC represents the relationships with internal and external stakeholders (Roos, Roos, Dragonetti & Edvinsson, 1998). That is, firms will partner with other firms who have complementary rather than competing knowledge sets. Therefore, the essence of RC theory is that the partnering and learning transactions that take place across the boundaries of the firm (Bouty, 2000).
National culture

Webster (1988) affirms that NC is the sum of all ways of living built up by a group of human beings and transmitted from one generation to another. Therefore, it grows and remains stable over relatively long periods of time and is often discernable at all levels of an organization (Lundberg, 1996). Cultural norms and beliefs are powerful forces shaping people’s perceptions, dispositions and behaviors (Markus and Kitayama, 1991). The employees’ commitment to create knowledge is a function of the perceived employees’ values (Klein and Sorra, 1996). Schneider and De Meyer, (1991) further propose that managers in different countries have differing perceptions of the external environment because they possess different cultural values. For example, international differences in language, culture and context, can provide differing perceptions of the external environment. Considering this we suggest that the mechanisms through which workers are influenced by cultural values can be explained from both value theory of culture (Hofstede, 1980) and social learning theory (Bandura, 1977) perspectives.

According to the value theory of culture (Hofstede, 1980), cultural values impact individual values, and individuals’ behaviors depend on the cultural values to which they are exposed. For example, Schneider and De Meyer (1991) explain how management efforts are likely to reflect the extent to which the environment is perceived as uncertain and how far business can control it. In his seminal work, Hofstede (1980) proposed four cultural dimensions regarding the relations with authority, the conception of self and the ways of dealing with conflicts. Hofstede (1991: 140) contends that power distance, individualism versus collectivism, masculinity versus femininity and uncertainty avoidance, have particular relevance for issues in organizational design. As Chandler, Shama, Wolf and Planchard (1981) point out individuals from individualistic cultures, compared to those from collectivistic cultures, have personality traits that reflect greater sense of internal locus of control. When groups of workers look at their own values, then thinking, learning, and examining become important for those things they believe they already know (Kabanoff, Waldorsee & Cohen, 1995). Long and Fahy (2000) suggest a number of cultural characteristics to the creation of IC. They hold that culture, among other things:

- Shapes assumptions about which knowledge is important;
- Mediates the relationships between individual and organisational levels of knowledge;
- Creates a context for social interaction and shapes the creation and adoption of new knowledge.

On the other hand, social learning theory suggests that individuals can learn vicariously, and future behaviors are guided by vicarious learning (Bandura, 1977). In other words, as they socially learn and develop cognitive maps appropriate to the local resources, employee behaviors will tend to follow the values emphasized by the local context. Under this framework, SMEs exist predominantly because of a constant and essential exchange with their economic and social environment. They have limited access to costly professional information, and are more likely to rely on personal tips and local mechanisms of information exchange (Spence, Schmidpeter & Habisch, 2003). Previous literature highlights the importance of local relationships, trust and solidarity for small business development (Bandura, 1977). Since local relationships can include local civic engagement, and associated intellectual capital, we might also expect SMEs to be highly embedded and engaged at a local level (Bolton, 1971). As Kreacic and Marsh (1986) point out critical routines and repertoires of companies in different countries vary significantly depending on the national cultural distance between them. Therefore, it is important to recognize that the ‘connections’ that are used to create and enhance IC are never context free, they are always created, shared and leveraged within a context shaped by the nation’s history, the national resources, and the national attributes.

Linking intellectual capital with the telecommunication sectors of Spain and Morocco

In order to analyse the relationship between NC and IC, the telecommunication sectors of Spain and Morocco were considered. The total market in Spain and Morocco for ‘telecommunications’ include fixed, mobile and data communications with broadband Internet access as a key means of transmission. In Spain, this market represents 18 percent of the total European telecommunications market and nearly 4.7 percent of the Spanish gross domestic product (GDP). The Spanish Telecommunications industry had an increase in 2004 by 8.2% when compared to 2003, with operational revenues of 37189 million euros. In the Morocco telecommunications sector, deregulation in 1999 was followed by a significant reduction in tariffs. The sector employs 47000 people and generates added value of around 2% of the Moroccan GDP. Therefore, both industries are very similar in many respects. In both countries, almost all public telecommunications infrastructures were traditionally controlled indirectly by the established political regime and its administrative authorities, which acted as monopolists (El–Yahyaoui, 1995). In the late 1990s, both telecommunications sectors underwent major structural transformations. Furthermore, for the period between 1995 and 2000, Morocco’s and Spain’s telecommunications investment reached 3% and 4.7% percent of the GDP, respectively (El–Mandjra, 2001).
In spite of those similarities between Spain and Morocco, the two countries have very different historical and economic development. According to the Organisation for Economic Co-operation and Development (OECD, 2005), the Spanish economy has grown at an average annual rate of 3.6 percent between 1996 and 2004. Furthermore, in those years the government has made liberalization of the banking, energy, and telecommunications sectors and a decline in public spending as a percentage of the Spanish 'GDP' as a cornerstone of the efforts to develop Spain's economy. Today the economy of Spain is the fifth largest in Europe, accounting for around 9% of EU output. However, trade deficit seems to be a chronic characteristic of the trade balance in Morocco. It reached 12.3 percent of GDP in 2000 as compared to 10.2 percent of GDP in 1995. The recorded Morocco GDP growth declined from roughly 6 percent during the period 1973-77 to less than 3 percent over the period 1993-2000.

As shown in Figure 1, the Spanish and Moroccan cultures score differently in all of the four cultural dimensions: power distance, uncertainty avoidance, individualism and masculinity. Our first proposal is that cultural differences might influence the experience and interest in IC among firms. Following Hofstede (1980, 1985, 1991) in low power distance countries (Spain) communication is an asset. Information flows naturally in the firm. On the other hand, in large power distance countries (Morocco) information is related to power, and the general belief is that the more information you share, the less powerful you are. Therefore, if power is to be assured, information flows must be limited. The latter reinforces one way (either top-down or bottom-up) communication channels between superiors and subordinates. Open and widely spread communication is hampered. It could therefore be proposed that the interest and experience with IC is greater in Spain than in Morocco.

The results for the individualism-collectivism index plotted in Figure 1, showed Spain as the most individualist society. In more individualist countries (Spain), the ties between individuals are loose and everyone is expected to look after himself or herself and his immediate family only. In direct contrast to this, in collective societies, people are integrated into strong, cohesive in-groups. However, in feminine societies (Spain) more emphasis is given to the environment, the working conditions and the co-operation with other workers, while in more masculine countries (Morocco) there is a stronger focus on measurable results, image and, somehow, short term achievements. In feminine cultures there is supposed to be a greater focus on management implications than in masculine cultures, in that case, the interest and experience with IC would be again greater in Spain than in Morocco.

Uncertainty avoidance is linked to rules, stability, risk aversion, uniformity and conservatism (Gray, 1995). It is argued that strong uncertainty avoidance (e.g. Spain) fosters the orientation toward the long term, with a greater emphasis on planning (effort to create the future and not to extrapolate it from the past) than on evaluation, integrating the long run and the short run and facilitating the strategic decision making. Under this environment, relationships are characterized in Spanish companies by Kay (1993) as ‘relational’, in that they are essentially long term and based on trust. Furthermore, the implementation of a new way of management (e.g. IC management) requires time, and, therefore, will be more common in high uncertainty avoidance countries (Spain). Consequently, IC would again be greater in Spain than in Morocco.

Hofstede has received a lot of criticism over the years (Gooderham and Nordhaug., 2002). Spector et al. (2001), for instance, summarise some of the criticisms of Hofstede’s work, including a lack of exhaustiveness, adequacy of the sample of nations, generalizability, possible historical changes, and some validity problems. Critics have also argued that this view of culture and nation is maintained through stereotyping and ethnocentrism and invokes the concept of being born into predefined categories. Also, when Hofstede claims that one nation is the equivalent of one culture, he does not take into consideration that there can be many cultures in one single nation (Wildavsky, 1989). We must be constantly aware or at least open to all possible kinds of groupings and not just the national groupings that Hofstede draws upon. Cultural and national diversity should not be confined or defined as polar, i.e. individualism contra collectivism, culture and nation are both far more complex and dynamic, i.e. differences in class and education (Baskerville-Morley, 2003).

(PDI) Power Distance Index; (IDV) Individualism; (MAS) Masculinity; (UAU) Uncertainty Avoidance Index.

Figure 1. Comparison of Spain culture with Morocco culture.
**Hypotheses**

Although some of the above arguments about IC and NC may be truth, others may have changed, especially as a result of recent developments around the globe. However, we still believe that national attributes are potentially critical aspects for small business life. National attributes are factor endowments, as a way of describing special infrastructures and other factors available in the territory (skilled labour pool, universities, research and development centres, etc.); related and supporting industries, underpinning and complementing core industry processes; demanding conditions, because a strong, trend-setting local market in quantity and quality help local SMEs to move beyond basic country advantages to search for competitive advantages (Hervas-Oliver & Dalmaz-Porta, 2006). Figure 2 provides a synopsis of the national attributes that could be used to enable better creation of IC. In the following paragraphs, we shall explain the way that SMEs develop human, structural and relational capital using these national attributes.

The national context to create human capital represents anything related to people: knowledge, education and individuals’ competence in realizing national tasks and goals (Smith, Dugan & Trompenaars, 1996). Education is ‘the basic building block of human capital’ (Bontis, 2004: p.7). In this regard, Spain aims at a substantial annual increase in per capita investment in human resources thereby lowering the number of 18 to 24 year olds with only lower-secondary level education. However, the literacy rate in Morocco is very low. More than half of the population aged 15 or older is almost illiterate. And the situation gets worse if we compare men and women: the literacy rate for men almost doubles that of women. The employment rate is another indicator of human capital (Bontis, 2004). Morocco’s unemployment rate has not changed significantly (between 16 and 23 percent) between 1996 and 2004, while the Spanish unemployment rate has halved from 22 percent to around 10.4 percent (Valle, Martin & Romero, 2001). Another very important aspect which differentiates both countries is that of ‘modernizing social protection and promoting social inclusion’. While Spain promotes social inclusion and gender equality and provides quality health service (Myro, 1995), workers in Morocco do not usually have health coverage and they have to pay for doctors and medicines themselves. Considering that employees’ perceived values imply internal processes to the persons as reflection, intuition, or interpretation, human capital will be more relevant to cultures which are characterized by new trends like Spain. The Spanish social model, with its developed systems of social protection, must underpin the transformation to the knowledge economy. Therefore, morocco’s human capital indicators are much lower than those of countries with similar per capita income (e.g. Spain). This consideration allows us to frame the first hypothesis of the work:

**H1:** SMEs in nations featured for being low powder distance country, individualist country, feminine society, strong uncertainty avoidance are more positively associated with higher levels of human capital than SMEs in nations featured for being large powder distance country, collective country, masculine society, weak uncertainty avoidance.

SMEs create structural capital when their employees transform their individual knowledge into social knowledge. Management has a key role to play in creating and sustaining this transformation (Schein, 1993). This idea is also recognized by Stahle and Hong (2002), who suggest that management helps to develop, articulate and translate an organization’s vision into action and change. In this regard, Spain tends to be sceptical about the value of classical management systems and written rules. Nowadays, the management process is more informal and intuitive, with intense verbal communication (and periodical negotiation) (Amat, Carmona & Roberts, 1994). On the other hand, Morocco has reproduced the French system of powerful professional groups (e.g., engineers, lawyers etc): managers are graduates of elite institutions in France (Rouban, 1999). This has created a rather divisive ‘administrative feudalism’ (Marais, 1973) with a high pay and education differential between senior and junior staff. Furthermore, it is a reality, that Anglo-Saxon models of strategic management are not widely disseminated or practiced in Morocco (Barsoux and Lawrence, 1990; Evans and Rauch, 1997). Bloom, Calori & De Woot, (1994) suggest that “there is no doubt that the European management model is evolving an orientation towards people” (1994:18). They tend to take what Lessem and Neubauer (1994) describe as a ‘humanist’ approach to employees, rather than the ‘rationalist’ approach proposed by the classical schools of management. Hence the role of managers among Spanish companies is not to exercise power over people or force them to do their attributes,
but to make sure that functions are properly organized to achieve the agreed-upon purposes of the business (Hampden-Turner and Trompenaars, 1994: 271). Given that this people orientation may push the transformation of individual knowledge into structural capital, we also propose the hypothesis:

H₂: SMEs in nations featured for being low powder distance country, individualist country, feminine society, strong uncertainty avoidance are more positively associated with higher levels of structural capital than SMEs in nations featured for being large powder distance country, collective country, masculine society, weak uncertainty avoidance.

SMEs can create relational capital through different ways (e.g. trade fairs, chambers of commerce, universities, training centres, etc). Therefore, the national context to foster the creation of relational capital could include several factors. Bontis suggests that this context represents the ‘non-human storehouses of knowledge, which are embedded in its technological, information and communications systems as represented by its hardware, software, databases, laboratories and national structures’ (2004: p.8). In this regard, one of the aims of the Spanish government is to create a friendly environment for starting up and developing innovative business, especially SMEs. For example, the Spanish Ministry of Science and Technology has launched various programmes aimed at increasing the use of technology by SMEs, and has increased the public spending in R&D (Spain spent 1.29 of its GDP to R&D in 2003, while Morocco devoted .3% of its GDP to R&D).

Spain is also working on the removal of barriers to trade, the liberalization in the areas of gas, electricity, postal services and transport and the harmonization of regulations. Spain also aims for the integration of the financial markets. Most of these measures concern economic reforms for a complete and fully operational internal market, this includes: removing red tape; lowering the costs of doing business; improving the access to venture capital; and coordinating macro-economic policies. Under this environment, we suggest that the Spanish context assesses the inter-organizational relationships and linkages and the extent to which organizations are able to capitalize on cooperative and coordinating capabilities, allowing a greater fluency of knowledge and facilitating the creation of relational capital. Therefore, we propose:

H₃: SMEs in nations featured for being low powder distance country, individualist country, feminine society, strong uncertainty avoidance are more positively associated with higher levels of relational capital than SMEs in nations featured for being large powder distance country, collective country, masculine society, weak uncertainty avoidance.

Method

Data collection and measures

As noted above, the Spanish and Moroccan Telecommunications Industries were the subjects of our data collection. SMEs have been recognized as being fundamental players within the Spanish and Moroccan Telecommunications Industries (e.g. Achy, 2004; OECD, 2005). Due to the absence of a census of SME’s that comprise the Spanish and Moroccan Telecommunications industries in 2004, a preliminary effort was made to identify those companies that could be the target of our data collection. We used a list of 1100 SMEs provided by the SABI database (Sistema de Análisis de Balances Ibéricos) and the American Chamber of Commerce in Morocco as an initial sampling frame. According to The Spanish National Classification of Economic Activities (CNAE-642) and the American Chamber of Commerce in Morocco, all companies have their headquarters’ domicile in Spain and Morocco respectively, and were classified according to the European Union classification as SMEs¹. Consequently, we had 665 SMEs from Spain and 435 SMEs from Morocco as an initial sampling frame, which main areas of activity include fixed and mobile and data communications with broadband internet access as a key means of transmission.

In order to test the hypotheses above, we employed key informant methodology (Kumar, Stern & Anderson, 1993) to collect survey data in the telecommunication industry in Spain and Morocco. The executives surveyed were identified as appropriate key respondents based on two criteria: (a) possession of sufficient knowledge, and (b) adequate level of involvement with regard to the issues under investigation (Campbell, 1955). Thus, respondents were asked to indicate whether he or she was actively involved in the decision making process. Only those companies where the respondent(s) was actively involved were asked to complete the survey. Therefore, the key respondent was the CEO or principal owner who was also a key decision-maker in the business. To further ensure the validity of our data and ensure that we isolated the correct key informant, we included validation items in the research instrument. We used these items to again verify that the executives who responded were

¹ According to the European Commission (2003:36), SMEs comprise fewer than 250 employees, with an annual turnover not exceeding of €50 million euros, and an annual balance sheet total not exceeding of €43 million euros. The research considered the SMEs with between 10 and 249 employees as a population.
fully qualified to provide the information we requested. Given the key issues under exploration in this study (i.e., human, structural and relational capital), respondents were also asked to indicate the three essential factors or the three most critical resources that produce success in their companies. Although this information was not available from multiple respondents, all available answers were related to intellectual capital factors e.g., employee commitment and motivation, customer satisfaction and attention and customer service procedures.

The information-collecting period lasted for about two months, from early November to December 2004. Prior to the completion of the survey, the companies were informed of the work objectives; they were assured of its strictly scientific and confidential character as well as the global and anonymous treatment of the data (Moroccan companies were informed by a letter in English and Moroccan). The information was collected by sending letters and e-mails to the manager or general director of the SMEs. By contrasting each hypothesis, only those surveys that had answered all the relevant questions were considered. The total number of surveys that were completed was 112 (56 from Spain and 56 from Morocco), which gives a response rate of 10.18% of the total. Although the size of the sample is small, it is considered sufficient, since it is greater than 50 (Barrett & Kline, 1981) and above the minimum subject to item ratio of at least 5:1 (Gorsuch, 1983; Hatcher, 1994). Furthermore, a comparison between companies who had answered and companies who had not answered yielded no significant differences relevant to turnover, total assets and the number of employees, which suggests that non-response bias is not a problem (Armstrong and Overton, 1977).

Based on a discussion of the literature, a questionnaire that was made up of 18 items (6 measuring the range of human capital; 6 measuring the range of structural capital; and 6 measuring the extent to which the relational capital was achieved) was designed. See Appendix for a list of items.

- The measures relating to the existence of HC scale consisted of 6 items adapted from a scale designed by Bontis (1998) to measure the construct of ‘Human Capital’. These items describe the combination of four factors: individuals’ genetic inheritance; individuals’ education; individuals’ experience; and individuals’ attitudes about life and business (Hudson, 1993).
- The existence of SC was measured using 6 items adapted from a scale designed by Bontis (1998) to measure the construct of ‘Structural Capital’. This construct arises from processes and organizational value, reflecting the external and internal focuses of the company, plus renewal and development value for the future (Bontis, Chua-Chong & Stanley, 2000).
- Among the indicators of RC, we selected three factors relating to the existence of profitable customers (e.g. purchase repetition, satisfaction, loyalty, relationship, and collaboration) (Duffy, 2000; Edvinsson & Malone, 1997). We also adopted three questions focusing on some characteristics of the company such as reputation and prestige, selling branded products or actions to capture new profitable customers, which are also important aspects of relational capital (Chang and Tseng, 2005).
- In order to show a reference point about the presence of different national contexts (NCs), we considered whether (0), the company had its headquarters in Morocco or (1), the company had its headquarters in Spain.

Assessment of the measures

The items of the proposed model were evaluated with exploratory techniques to assess the reliability and dimensionality of the measures. In a first stage, each construct was assessed using the item-to-total correlation, Cronbach’s alpha, and exploratory factor analysis. The decision to retain items was based on recommendation proposed by Hair, Anderson, Tatham and Black (1998) with regard to statistical criteria (loadings and regression weights). As a result of the exploratory analysis, several items were dropped. Thereby, the psychometric properties of the measures improved the original proposal. In order to get a more robust evaluation of the quality of the measures, a confirmatory analysis was achieved using the correlation matrix as input via LISREL 8.50 (Jöreskog and Sörbom, 2001) maximum likelihood method.

Results

Table 1 summarizes the results of the confirmatory factor analysis. The fit index of RMSEA is below .08, and indices of GFI, CFI and IFI are above the common standard of .85 (Hair et al., 1998). The reliability of the measures is calculated using Bagozzi and Yi’s (1998) composite reliability index and with Fornell and Larcker’s (1981) average variance extracted index. For all the measures both indices are higher than the evaluation criteria of .7 for the composite reliability and .5 for the average variance extracted (Bagozzi and Yi, 1988). Based on these results, we conclude that the reliability and the convergent validity of our measurements are assured. These results suggest the use of three items to measure the human capital (p_HC = .824, p_HCAVE = .613), three to measure the structural capital (p_SC = .818, p_SCAVE = .599), and finally another three to measure the relational capital (p_RC = .820, p_RCAVE = .607).

Discriminant validity was assessed by calculating the
shared variance between pairs of constructs and verifying that it was lower than the average variances extracted for the individual construct (Fornell and Larcker, 1981). The shared variances between pairs of all possible scale combination indicated that the variances extracted were higher than the associated shared variances in all cases. In the interest of thoroughly discriminant validity, an additional test was examined; supporting this assumption since the confidence interval (± 2 standard errors) around the correlation estimated between any two latent indicators never includes 1.0 (Anderson and Gerbing, 1988). The constructs correlation matrix, shared variances, means and standard deviations are shown in Table 2.

In order to determine differences depending on whether or not the company was in Spain or in Morocco, the system repeated measures ANOVA was used to prove the explanatory power of only one factor or independent variable not metrics, in our case \( NC = 1 \) the company was in Spain and \( NC = 0 \), the company was in Morocco on a set of dependent variable metrics, \( (HC, SC \) and \( RC)\). Mauchly’s test of sphericity analyses the null hypothesis that the error covariance matrix of the orthonormalized-transformed dependent variable is proportional to an identity matrix. As the Mauchly’s test of sphericity is

### Table 1
**Construct summary, confirmatory factor analysis and scale reliability**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Standardized loading</th>
<th>t-value</th>
<th>Reliability (SCR(^a), AVE(^b))</th>
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<tbody>
<tr>
<td>Human Capital: with respect to your employees indicate the degree of agreement or disagreement (1= strong disagreement and 7= strong agreement).&lt;br&gt;( X_1: ) Existence of employees with capacity to energize and motivate other employees&lt;br&gt;( X_2: ) Loyalty and commitment of the employees&lt;br&gt;( X_3: ) Team work</td>
<td>.88</td>
<td>10.68</td>
<td>SCR = .82</td>
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<td></td>
<td>.79</td>
<td>9.30</td>
<td>AVE = .61</td>
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<td></td>
<td>.66</td>
<td>7.41</td>
<td></td>
</tr>
<tr>
<td>Structural Capital: with respect to your company indicate the degree of agreement or disagreement (1= strong disagreement and 7= strong agreement).&lt;br&gt;( X_4: ) Existence of processes to review and define the strategy&lt;br&gt;( X_5: ) Patents possession, brands, licenses, grants...&lt;br&gt;( X_6: ) Development of market research processes</td>
<td>.79</td>
<td>9.07</td>
<td>SCR = .81</td>
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<tr>
<td></td>
<td>.74</td>
<td>8.35</td>
<td>AVE = .59</td>
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<td></td>
<td>.79</td>
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</tr>
<tr>
<td>Relational Capital: with respect to your competitors indicate the degree in which your company reached the following objectives (1= much worse and 7= much better)&lt;br&gt;( X_7: ) The number of repeat purchases&lt;br&gt;( X_8: ) Attention and customer service procedures&lt;br&gt;( X_9: ) Knowing the changes in your clients’ necessities and habits</td>
<td>.81</td>
<td>9.65</td>
<td>SCR = .82</td>
</tr>
<tr>
<td></td>
<td>.64</td>
<td>7.08</td>
<td>AVE = .60</td>
</tr>
<tr>
<td></td>
<td>.87</td>
<td>10.55</td>
<td></td>
</tr>
</tbody>
</table>

The fit statistics for the 9 measurement constructs were:
\( \chi^2(24)=84.51; \text{GFI}=.87; \text{CFI}=.90 \text{IFI}=.90 \text{RMSEA}=.07; \)

\(^a\) Scale Composite Reliability (SCR) of \( pc=(\sum\lambda_i)^2 \text{var}(\xi) / \left[ (\sum\lambda_i)^2 \text{var}(\xi) + \sum\theta_{ii} \right] \) (Bagozzi and Yi, 1998).

\(^b\) Average variance extracted (AVE) of \( pc=(\sum\lambda_i^2 \text{var}(\xi))/\left[ \sum\lambda_i^2 \text{var}(\xi) + \sum\theta_{ii} \right] \) (Fornell and Larcker, 1981).

### Table 2
**Construct correlation matrix**

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard deviation</th>
<th>HC</th>
<th>SC</th>
<th>RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Human Capital (HC)</td>
<td>5.97</td>
<td>.79</td>
<td>.61</td>
<td>.27</td>
</tr>
<tr>
<td>2. Structural Capital (SC)</td>
<td>4.83</td>
<td>1.19</td>
<td>.45*</td>
<td>.59</td>
</tr>
<tr>
<td>3. Relational Capital (RC)</td>
<td>6.09</td>
<td>.70</td>
<td>.47*</td>
<td>.46*</td>
</tr>
</tbody>
</table>

\*\( p < .01 \). Intercorrelations are presented in the lower triangle of the matrix. The Average Variance Extracted (AVE) is depicted on the diagonal. Shared variances are given in the upper triangle of the matrix.
significant $\chi^2 = 10.124$ at a level of ($p < .01$), we can assert that the dependent variables are related. The Box’s M test of equality of covariance matrices is significant with an $F$ value of $5.772$. Therefore we support that the observed covariance matrix of the dependent variables is not equal across groups.

As shown in Table 3, the multivariate contrast shows that the Lambda of Wilks is $.773$ with a significant level of ($p < .01$). Furthermore, the partial Eta squared is $.22$ and the observed power is $.99$. As a consequence, NC has an explicative power on dependent variables ($HC$, $SC$ and $RC$). Tests of effects within subjects show an $F$ value of $131.450$ at a level of ($p < .01$). Therefore, we can assert that there are differences among the means of the three IC components. The effect size for each independent variable was (.54) with an estimated power of (1). The interaction $NC*IC$ shows an $F$ value of $19.732$ at a level of ($p < .01$). Therefore, there are also differences among the means of the interaction $NC*IC$. In this case, the effect size for each independent variable was (.15) with an estimated power of (1).

A test of effects between subjects shows an $F$ value of $79.863$ at a level of ($p < .01$). Therefore, we can assert that there are some differences depending on whether or not the company was in Spain or Morocco. The results also highlight a new, interesting direction, as they suggest that the importation of IC paradigms without reference to the surrounding societal values may be ineffective and perhaps dysfunctional in some countries. As Hallinger and Kantamara, (2001), there are inherent limitations of applying knowledge gained in one cultural context to another. In this regard, although, many authors have reflected upon how NC affects management systems (Hofstede, 1991); management control systems (Harrison, 1993); accounting systems (Gray, 1995) and organizational culture (Harrison, Chow, Wu & Harrel 1999; Hofstede, 1985), IC theories have been developed and validated only in western countries. Consequently, the further

Discussion

This research’s first contribution is to create awareness of the relevance of NC when discussing the managing of IC. Results support that there are some differences depending on whether or not the company was in Spain or Morocco. The results also highlight a new, interesting direction, as they suggest that the importation of IC paradigms without reference to the surrounding societal values may be ineffective and perhaps dysfunctional in some countries.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Nationality</th>
<th>$\bar{h}$</th>
<th>$h$</th>
<th>$N$</th>
<th>$F$</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Human</td>
<td>Morocco</td>
<td>16.87</td>
<td>2.35</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Human</td>
<td>Spain</td>
<td>18.92</td>
<td>1.88</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Human</td>
<td>Morocco</td>
<td>17.90</td>
<td>2.35</td>
<td>112</td>
<td></td>
<td>25.986*</td>
<td>.191</td>
</tr>
<tr>
<td>Structural Human</td>
<td>Morocco</td>
<td>12.16</td>
<td>2.95</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Human</td>
<td>Spain</td>
<td>16.80</td>
<td>2.42</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Structural Human</td>
<td>Morocco</td>
<td>14.48</td>
<td>3.56</td>
<td>112</td>
<td></td>
<td>82.538*</td>
<td>.429</td>
</tr>
<tr>
<td>Relational Human</td>
<td>Morocco</td>
<td>17.44</td>
<td>2.39</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Human</td>
<td>Spain</td>
<td>19.10</td>
<td>1.33</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Relational Human</td>
<td>Morocco</td>
<td>18.27</td>
<td>2.10</td>
<td>112</td>
<td></td>
<td>20.558*</td>
<td>.157</td>
</tr>
</tbody>
</table>

Tests of within-subjects effects .................. IC

<table>
<thead>
<tr>
<th>Test</th>
<th>$F$</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilks’ Lambda (.773)</td>
<td>12.250*</td>
<td>.22</td>
<td>.99</td>
</tr>
<tr>
<td>Tests of within-subjects effects .................. IC</td>
<td>131.450*</td>
<td>.54</td>
<td>1.00</td>
</tr>
<tr>
<td>Tests of within-subjects effects .................. NC*IC</td>
<td>19.732*</td>
<td>.15</td>
<td>1.00</td>
</tr>
<tr>
<td>Test of between-subjects effects .................. NC</td>
<td>79.863*</td>
<td>.35</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Box’s $M = 35.688$ F = $5.772$ $\chi^2(2) = 10.124$ $p < .01$

$h$ = Mean; $\bar{h}$ = Standard deviation
advancement of IC as an academic discipline requires that the validity of its theories and models be examined in other cultural settings as well to identify their degree of generalizability and to uncover boundary conditions. Studying the role of NC in IC can teach us the many ways in which IC paradigms are a reflection of the culture in which they were developed.

This research’s second contribution derives from the results of the model’s empirical test. Our findings support that the differences between SMEs in Spain and Morocco to develop their human, structural and relational capitals may be influenced by the presence of different national contexts. These findings support the views of Lynn (1999) that national culture affects the way in which IC management manifests itself and to what degree it is communicated with the outside world. The meaningful differences are clearly found in the ‘structural capital’. This addresses the concerns expressed by authors such as Hofstede (1985) when he highlights the importance of national culture as an influencer of the “way of doing things” and the content and process of communication, the views of space and time, shared objectives and the concepts of organizational membership. An explanation for this could be that human and relational capitals are affected by the advantages and disadvantages of the knowledge categories they concentrate on. On the one hand, human and relational capital make knowledge safer from imitation; but more difficult to store, and susceptible to loss due to labour and client turnover. On the other hand, structural capital is situated within collective organizational routines focuses on the formal and informal aspects of organizational life (Lubatkin, Calori, Very & Veiga, 1998), it renders knowledge easier to store and communicate; but exposes it to higher risk of external capture. Therefore, the “structural capital” in the organization is immanent in and further influenced by the societal or national culture.

The above discussion suggests that human resource managers may be trapped in a suboptimal stable equilibrium, as they may be underestimating the power of national rules and procedures to create IC. For example, well-known approaches of IC such as communities of practice, common language, lateral communication, commitment, motivation and mutual adjustment, to name just a few, may not apply to power distance and masculinity cultures without modifications. This corroborates the finding of McCourt and Ramgutty-Wong (2003), that moving from the Anglophone Commonwealth world of Mauritius to the Francophone world of Morocco increases the intellectual distance from managerial practices. Therefore, the important managerial implications of this paper are that national contexts provide the environment for learning, which in turn may have the effect of adequately improving IC. Factors as power distance, uncertainty avoidance, individualism, masculinity and the long-term orientation are implicit or explicit views and values shared to a considerable extent by members of a nation, by both the external adaptation of the nation (e.g., how the nation should relate to other nations) and the internal integration of the nation (e.g. how members of the nation should relate to and work with others). All these factors are transmitted not only through the formal structure and systems but also through informal processes and communication networks (e.g. rituals and routines, stories and myths, physical symbols, etc.). Furthermore, it is usually impossible to change one without changing them all (Hendry and Hope, 1994).

Conclusions

Using data collected from 112 companies, this work has established a comparison between Spanish and Moroccan SMEs. Our findings show that Spanish companies are associated with higher levels of human, structural and relational capital than Moroccan firms. These findings have important implications for general IC theories, as they suggest that there is no guarantee that IC theories developed within the cultural context of one particular country can be applied in another with good effect. For example, the Spanish interests in the quality of work, individual rights, farming co-operatives, etc. combined with the low power distance and high equality prevalent among Spanish companies, along with impersonalised merits may be seen to be appropriate to move in the direction of changing as a group, rather than as individuals. Under these circumstances, we might expect to find some differences between the way that firms in Spain and Morocco create IC. With these results, we do not pretend to demonstrate to one culture as better than another, for us, it only demonstrates the significant difference between the context related at the IC of the two countries. Our results suggest that the impact of national contexts on IC cannot be taken for granted.

Although this study has provided relevant and interesting insights to the understanding of the impacts of NCs on IC in two different countries, it is important to recognize the limitations associated with this study: Firstly, the development of a time-series database and testing of the IC relationship with NC in a longitudinal framework would provide more insight into probable causation. Secondly, although past studies have reported a strong association between objective and subjective measures of IC (e.g. Bontis et al. 2002), future studies including objective measures might help improve the rigor of the results. Thirdly, in this study we have only considered whether or not the companies were in Spain or Morocco. Therefore, future research should examine how different dimensions of NC can create or obstruct IC.

Our findings also open avenues for further research to explore how governments can facilitate learning and unlearning environments in SME communities (Morden, 1995). Is it possible to provide a cultural tool
that facilitates rather than obtrudes the creation of IC? For example, in countries with a high degree of power distance, individualism, masculinity, and short-term, the creation of IC requires what Schumpeter (1949) refers to as ‘creative destruction’ (i.e. the discarding, or at least the setting aside, of an existing institutional order so as to allow intuitive insights and actions to surface and be pursued). Finally, the sample used for this analysis was drawn only from Spain and Morocco, and the generalizability of the results remains to be tested. Therefore, future research can expand the present study by attempting a countrywide survey.

Note: 'According to the European Commission (2003:36), SMEs comprise fewer than 250 employees, with an annual turnover not exceeding of €50 million euros, and an annual balance sheet total not exceeding of €43 million euros. The research considered the SMEs with between 10 and 249 employees as a population.

References


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APPENDIX

QUESTIONNAIRE ITEMS

Human Capital: indicate the degree of agreement or disagreement (1 = high disagreement and 7 = high agreement) with respect to your organization.

HC1: Satisfaction and motivation of employees
HC2: Composition and characteristics of the staff (age, type of contract...)
HC3: Knowledge and abilities of employees
HC4: Existence of employees with capacity to energize and motivate other employees
HC5: Loyalty and commitment of the employees
HC6: Team work

Structural Capital: indicate the degree of agreement or disagreement (1= high disagreement and 7= high agreement) with respect to your organization.

SC1: Existence of a clear way to understand and manage the business which is shared among managers
SC2: Existence of processes to review and define the strategy
SC3: Knowledge of tasks, responsibilities and decision making
SC4: Patents possession, brands, licenses, grants...
SC5: Appropriateness of procedures for the production and sale of your products and services
SC6: Development of market research processes

Relational Capital: indicate the degree of agreement or disagreement (1= high disagreement and 7= high agreement) with respect to your organization.

RC1: The number of repeat purchases
RC2: Good reputation and prestige
RC3: Clients´ satisfaction
RC4: Attention and customer service procedures
RC5: Knowing the changes in your clients’ necessities and habits
RC6: Selling brand-name products