

Intellectual Capital and Innovation: A Case Study of a Public Healthcare organisation in Europe

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Abstract: This research study focuses on innovation and the Human, Structural, and Relational components of Intellectual Capital, using Santos-Rodrigues *et al.* (2011) research proposal as a framework. It aims to investigate the influence of Intellectual Capital on a public Healthcare organisation's capability for innovation. Sixty five of the sixty eight questionnaires administered to hospital managers and leaders between July and August of 2011, were used in the research. The study suggests that a relationship exists between the incentives to innovate (a dimension of Human Capital) and the innovation created, with trust being the only Structural Capital dimension related with the innovation adopted. It was found that networks and alliances (a dimension of Relational Capital), is the only dimension simultaneously related with the innovation created and adopted constructs, hence, Relational Capital being the only Intellectual Capital construct related simultaneously with both innovation creation and adoption. The research further suggests that there is a direct relation between Human Capital and innovation, principally with the innovation created. The Structural Capital construct was found to be partly related with the Innovation Adoption construct.

Keywords: Intellectual Capital, Innovativeness, Healthcare, Human Capital, Structural Capital, Relational Capital

1. Introduction

The survival of any organisation, especially within an ever increasingly globalised world, depends largely on its ability to innovate. Organisational intelligence, represented by information and knowledge systems, the skills and abilities of employees, the quality of production processes and customer service, each have a great impact on its ability to innovate. To succeed in this context, or simply remain viable, organisations must be innovative (Govindarajan and Trimble, 2005).

Hospitals are very complex organisations. This complexity is influenced by the number of different departments and services provided, each having its own leadership and being quite differentiated. Furthermore, a mix of industrial, scientific and technological procedures is conducted on humans, with a diverse set of cultural, educational and social components intertwined. For this study, the hospital provided an excellent context to investigate whether the Intellectual Capital constructs, i.e. Human Capital, Structural Capital, and Relational Capital, could influence its potential to innovate. The influence of Intellectual Capital

on the innovative capacity of a hospital was therefore investigated, and the innovation constructs considered for this study were the adoption and creation of a product, and process and management innovation.

The research study identified three hypotheses:

- Human Capital influences the innovative capacity of a hospital (H1)
- Relational Capital influences the innovative capacity of a hospital (H2)
- Structural Capital influences the innovative capacity of a hospital (H3)

To validate the research hypotheses, the components proposed by Santos-Rodrigues *et al.* (2011) were considered.

1.1 Human capital

In the 1960s, a very strong interest began to develop around the concept of Human Capital. The formalization of models focusing on Human Capital were pioneered by Schultz (1961) and Becker (1962), and an active set of individual skills were identified, suggesting that Human Capital cannot be considered as the property of an organization. The performance of an organisation reflects individual employee capabilities; hence, Human Capital is extremely important to an organization. Ehrenberg and Smith (1997) suggest that employees have a set of attributes and value that can be "rented" to the employer, and as such always expect a "reward" (Ehrenberg and Smith, 1997). The employer perception of the value of this contribution to the organization, however, also needs to be considered.

Human Capital refers to the human aspect of the organization, i.e., the combination of skills, qualifications and expertise that provides individual character (Bontis *et al.*, 1999). Bontis *et al.* (1999) further emphasize the importance of human uniqueness to initiate, change and innovate within the organization through motivational elements, suggesting the key to sustaining an organization over the long term. Human Capital represents the value of the knowledge and talent which is embodied in people who make up the organization, representing its know-how, capacities, knowledge, talent, competence, attitude, intellectual agility, creativity, amongst others (I.A.D.E.-C.I.C., 2003, Edvinsson and Malone, 1997, Bontis and Fitz-enz, 2002, Roos *et al.*, 1997, Davenport *et al.*, 2003, Kaplan and Norton, 1996, Santos-Rodrigues *et al.*, 2011). Currently, the knowledge and skills of employees is extremely important to any organization; however, several research studies have established that additional formation and knowledge creation does not necessarily lead to improved performance (Santos-Rodrigues *et al.*, 2010). Sanchez *et al.* (2000) refers to the employee's training as a springboard to raise the educational level of the company and consequently influence the innovation capacity.

Gupta and Roos (2001) contend that the employees of an organization generate capital through their skills, attitudes and intellectual agility. Competence relates to the knowledge, experience and know-how of individuals. The attitude of individuals translates into behavioral patterns: motivations, behavior, conduct and values, as well as the propensity to learn. The intellectual agility relates to the ability to innovate, be creative, adaptable and versatile. Mouritsen *et al.* (2001) contends that an organisation must have an innovative attitude towards its employees and never expect that innovative behaviour is the result of an isolated employee initiative; therefore, the incentive of the company is also important (Osterloh and Frey, 2000). This innovative approach involves some freedom of action of the employees; hence, companies may consider promoting the innovative attitude of employees, as it is a crucial aspect for innovation. Another important driver of an innovative employee is the fairness and equity within the organization, which specifically includes a safe work environment and remuneration to provide compensation for each worker encouraged to participate in the process of knowledge creation, innovation and sharing (Santos-Rodrigues *et al.*, 2011). Bontis and Fitz-enz (2002) claim that a strong relationship exists between the feeling of satisfaction and motivation, with organizational performance.

Knowledge is considered as the raw material of innovation, with creativity providing a technique to enable knowledge to go beyond the original idea, hence, creativity and innovation complement each other. Shelton *et al.* (2005) assert that creativity must be exercised by all levels of the organization to facilitate ideas turning into models. Additionally, the combination of technology and human capabilities enhances the value of creativity (Mouritsen *et al.*, 2001). Another dimension that influences creativity is culture; the cultural aspect of creativity is also linked to innovation, when there is respect for different cultures, this enables openness to new ideas. Although creativity does not guarantee innovation, these complement each other, which could lead to success (Shelton *et al.*, 2005). Denisi *et al.* (2003) warn that to be creative, employees should feel safe and unafraid to take risks and make mistakes. This is supported by the study of Edmondson (1999) which highlights that to enhance creativity and innovation, it is necessary to strengthen the culture of tolerance and security.

Managers should be tolerant of errors of innovation, and should gradually develop relationships within a multidisciplinary context (Wan *et al.*, 2005). The fear of making mistakes can lead to the end of the creative process; leaders must implement strategies and actions to encourage tolerance (Farson and Keyes, 2002). Supervisors also have great power to identify potential sources of innovation in the organization; this power was identified by Nonaka and Takeuchi (1995) who argued that middle managers identify and combine knowledge in order to make it explicit. This gives the managers/directors a commitment to the organization and their employees.

Maciocha and Kisielnicki (2011) suggest that despite belonging to different sections, all of the crucial intangible assets highlights the importance of the active participation of employees in the organisational decision making. This emphasises the important role of Intellectual Capital in corporate value creation. Furthermore, several research studies have concluded that a positive and direct relation exists between Human Capital and product-process innovativeness (Santos-Rodrigues *et al.*, 2010) and that there is a positive and indirect relation between Human Capital and management innovativeness (Santos-Rodrigues *et al.*, 2012, Santos-Rodrigues *et al.*, 2013, Costa, 2010).

1.2 Structural capital

One could assume that the term “Structural Capital” refers to the capital allocated to the structure of the organization, however, Youndt *et al.* (2004) define it as the knowledge, skills, experience and information institutionalized, codified, and used by databases, patents, manuals, structures, systems, routines and processes. It also includes other intangible assets not having a measurable value that can be conferred on the firm even after people have left the organisation. As the name suggests, Structural Capital refers to the organizations’ non-material assets. Edvinsson and Malone (1997) consider Structural Capital to be an outline, empowerment, providing infrastructural support for Human Capital. The main objective of Structural Capital is the retention of Human Capital and hence, knowledge which can become the property of the organization (Stewart, 1998). Structural Capital can then be considered the transformation of the knowledge of individuals who actively share information.

Continuous improvement of organizations can be enhanced by information technology in order to restate and absorb Human Capital as an asset belonging to the organization, a view defended by Edvinsson and Malone (1997). Cabrita (2008) portrays an important aspect - if an individual has a high intellectual ability, and the company the individual is employed with has a poor organizational structure, it will not be able to take advantage of the Intellectual Capital residing in these individuals.

Schuller (2005) defines Structural Capital as having the ability to affect the Human Capital component. Culture can be developed within the organization to boost learning and innovation (Denisi *et al.*, 2003). Jassawalla and Sashittal (2003) refer to the environment created among employees as the culture of innovation that improves behaviour. These authors discuss three important factors for the innovative capacity component: cognitive

elements, behaviours, artefacts and symbols. Organisations should value a culture which emphasizes knowledge and skills. Culture is the essence for the development of skills and resources for innovation.

Trust is a concept with some subjectivity, it cannot be imposed, only encouraged and maintained (Ford, 2001). Ford (2001) further contends that, the concept has undergone changes over time and has distinguished business confidence in three categories: strategic trust, personal trust and organizational trust. Despite the different backgrounds of personal and organizational trust, both are infused by relative risk and interdependence. Rousseau *et al.* (1998) argue that trust is not a behaviour, rather, it represents a psychological condition. Santos-Rodrigues *et al.* (2011) considers that the confidence associated with rewards at work adds motivation for creativity. The attitude of workers is influenced by trust, motivating them to participate in activities that trigger innovation.

The structure of an organization depends on the degree of bureaucracy and complexity of the organisation. Subramanian and Nilakanta (1996) argue that formalization is related to the characterization and description of the duties of employees, a fact which is negatively related to innovation, according to Santos-Rodrigues *et al.* (2011). Several authors argue that firm size has an influence on its ability to innovate, and a positive relationship between firm size and the ability to innovate exists (Damanpour, 1992). Wan *et al.* (2005) found a positive relationship between decentralized organizations and innovative capacity.

In general, hospitals are organizations with an inflexible hierarchy where creativity does not develop easily, however, there are groups who facilitate innovation; IADE (2003) reinforces the importance of this idea in the business world. The lack of a system for collecting and developing ideas of employees hinders innovation in the hospital. For organisations it is important to remove the entire value of the innovation process (Shelton *et al.*, 2005); there is a suggestion that Structural Capital is related with innovativeness (Santos-Rodrigues *et al.*, 2011) and with cumulative growth rate (Santos-Rodrigues *et al.*, 2012).

1.3 Relational capital

Relational Capital refers to the relationships the external world has with an organization. Several research studies refer to it as Capital of the customer. However, it is worth noting that, in the realm of Intellectual Capital, all entities that relate to the organization are endowed with knowledge and capabilities that enhance all of their activities (Cabrita and Bontis, 2008).

Roos *et al.* (1997) and Brooking (1996), contend that Relational Capital has other characteristics that affect the capital and client relationships. They further contend that Relational Capital is not only as a result of links with customers but also shareholders, suppliers and others who interact with the organization. Some authors argue that there is a social component of Relational Capital, claiming that the diversity of relationships in society is mirrored by a variant of Relational Capital, namely Social Capital.

Relational Capital is generated as the organization establishes relationships with external agents, Relational Capital therefore has an individual strand and a collective one; through the process of socialization, the individual component turns into a collective one. Relational Capital is also deemed to be the result of the value generated by the organisation's relationships with the environment, including with suppliers, buyers, competitors, shareholders, stakeholders, and the society. In hospitals, as in all other organizations, all internal and external elements are important, such as training, experience, and related internal and external factors. Relational Capital is therefore an important aspect of innovation. The interactions with the external world are also of relevance to innovation, although it is unusual that stakeholders contribute in a substantial way. The company structured and centred only on internal interactions does not succeed; it is necessary to look outward and consider the wider market.

Relational Capital is also considered to be the product of a network of relationships of all stakeholders of an organization with the external environment. Bontis (1996) considers it to be the value that is extracted from the company's relationships with its customers, shareholders and all other stakeholders. Stewart (1998) suggests that it is the most valuable asset of all intangible assets.

Customers can be considered as a source for new ideas and innovation, especially considering producers of components in the automotive world, Santos-Rodrigues *et al.* (2011) contend that this aspect influences the innovative capacity. The hospital as an organisation is unique in that respect, as customers are sick and weak; however, they have opinions. Their feedback promotes the regeneration of knowledge, providing an organization with the possibility of becoming more efficient and novel (Stewart, 1998). Shelton *et al.* (2005) highlights the role of information technology in the interaction between organizations and customers.

The existence of an external network of consistent partners, allows the capture, balance and adjustment of creativity and value, important for innovation (Shelton et al., 2005). In healthcare organisations, networks are developed as there are regulators of health care, health inspection as well as specialized working groups in a given area. The existence of these networks is an important source of innovation, although it is not guaranteed that innovation happens as a result (Santos-Rodrigues et al., 2011). Alliances and mergers is a way of acquiring knowledge-based resources (Denisi et al., 2003). The alliances arise from the need for companies to complement each other in terms of skills, so that the major goal is reached.

1.4 Innovation in the organization

Organizational performance is a concept that is based on the new domain of management. The importance of the concept is significant, and despite the efforts made in order to ascertain a universal definition, it does not exist. As such, all companies have the need to recreate and establish criteria and performance indicators.

Value creation is another vital aspect of organisational performance, and is a way of responding to the numerous opinions on management and corporate strategy. Organizational performance also depends on internal and external variables of the organization itself, over space and time (Cabrita and Bontis, 2008). The performance indicators and criteria should coincide with the objectives and strategy assumed. The problem occurs when the goals and the measures of success are very different; making it impossible to carry out comparisons with similar organizations, and proving difficult in ascertaining the phenomenon of cause / effect.

It is evident that the process of evaluating the performance of organizations is complex and takes on a number of dimensions, i.e., it cuts across multiple organizational factors, from internal variables to variables external to the entity itself. It is clear that every human being is unique, as an organization includes several individuals; an entity of its own is shaped by the organizational structure imposed.

The dynamic nature of an organization implies that correctly addressing indicators can be difficult, which may lead to a choice of indicators that do not fit the strategic direction of the organization, and as such are false indicators. On the other hand, the volatility of the organization can lead to the real indicators being hidden, and being exceeded by more obvious ones at the time of assessment, receiving more weighting. These possibilities have consequences for the organization, questioning their existence. It is emphasized that the ultimate goal of the evaluation of performance of an organization is to understand whether it adheres to the strategy as specified.

As there is no universal consensus for the assessment of an organizations performance, it is necessary to define key strategic areas, critical to the organization. Following this, it is extremely important to understand the cause / effect relationships to reach conclusive results (Cabrita and Bontis, 2008).

Innovation is important for companies to be competitive, having a great influence on the development of the region and the country in which it resides (Santos-Rodrigues et al., 2011). The relationship between business and environment is the basis for the creation and diffusion of innovation. Shelton, Davila and Brown (2005), suggest that innovation is a management process, and as such its systems and instruments must be grounded in management. When the various components of innovation function in an integrated manner, they provide a source of constant value. McElroy (2002) states that "innovation is a process that is social, and collective, intrinsic to each organization, which makes innovation a process unmanageable, but self-organizing" (p.34). Radical innovation causes profound changes in the activities of the company, while incremental innovation implies small changes, particularly in strengthening the company's practices (Subramaniam and Youndt, 2005).

Product innovation refers to a product or service designed to benefit existing customers or trigger new markets and is customer oriented (O.C.D.E./U.E., 2005). Portuguese competitiveness, known as "Health Cluster Portugal", developed as an attempt to boost the health sector in the Portuguese international markets. This cluster includes R & D institutions and universities, hospitals, pharmaceutical companies, medical and health services.

Santos-Rodrigues *et al.* (2011) contend that it is important to highlight the differences between concepts, i.e. invention is an original creation of an idea, and creativity is the creation of new ideas, while innovation is not just about creativity it has to translate into value. Innovation can be considered as the economic exploitation of creativity.

1.5 Methods

1.5.1 Sample and data collection

The hypotheses were tested using survey data collected in 2011. While obtaining a sample of significant linkage of Intellectual Capital as a strategic resource and its effect on innovativeness, we relied on service directors of a hospital from Northern Portugal as key experts - an established practice in organizational research (Huber and Power, 1985). The survey was distributed to sixty eight service directors. Each participation request included a description of the study and a statement of confidentiality. Sixty Five 65 responses were received, with a response rate of 95.4%.

1.6 Measures

Both Intellectual Capital components and the capacity for innovation have been regarded as multidimensional constructs. This implies the need to establish a series of items to measure. Santos-Rodrigues' *et al.* (2011) questionnaire was used with the scales for Human, Structural and Relational Capital and innovativeness were adapted to the hospital context.

Using the Cronbach Alpha, internal consistency of the constructs for each dimension was verified. Since each dimension is above 0.8, it can be stated that there is a good and very good internal consistency between the items.

Reliability analysis of the variables through Alpha Cronbach.

Variables	Items Nº	Alpha Cronbach
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Human Capital (CH)	14	0,816
Structural Capital (CE)	19	0,927
Relational Capital (CR)	9	0,895
Innovative Capacity(CI)	8	0,858
Source of Innovation(OI)	6	0,890

The Human Capital dimensions relevant to an organisation's innovativeness considered were:

Formation: as a representation of the knowledge of the employees due to the task development;

Innovative attitude: as the commitment and willingness of the employees and employers to innovate;

Creativity: representing the willingness, support and value of the creativity of the employees;

Incentive to innovativeness: as the personal and material incentives regarding the innovative behaviour of the employees.

The Structural Capital dimensions relevant to an organisation's innovativeness considered were:

Culture: reflecting the existence of an innovation-oriented department in the company, as well as processes designed to foster innovation or a collection system and implementing new ideas;

Trust: between employees and the confidence they have in the company and its management. It also includes the environment of confidence in the company and the role played by the leader in the enterprise;

Creation and Knowledge Development: includes institutional support for the creation of knowledge through the existence of groups of valid improvements and use of employee suggestions, as well as the willingness to innovative in processes or suggest improvements;

Organizational structure: reflects the formalization and openness verified in the company.

The Relational Capital dimensions relevant to an organisation's innovativeness were considered were:

Networks and alliances: represent the formal or informal input from customers, suppliers and competitors conducive to innovation in the enterprise. This also reflects the importance and structure of partnership agreements with competitors and partners.

Clients: particularly focused on the contributions and importance of customers for its innovative capacity. It also includes collaboration with knowledge institutions with a view towards innovation and growth of the importance and satisfaction of customers due to the innovative capacity of the company.

Reliance was on the adoption and creation of innovation measures and on the three performance measures of innovativeness: product, process and management innovation (Ahuja, 2000, Hii and Neely, 2000, Davenport et al., 2003, Ravichandran, 2000, Santos-Rodrigues et al., 2011). In the analysis, relative innovation was considered, meaning that an innovation is considered new if it is new to the firm, regardless of whether or not it is new to the world or industry.

1.7 Data analysis

To evaluate the different constructs, the principal components technique was used. This technique aims to reduce the size of the initial set of items that provides common information, seeking to illustrate them all, while creating some new variables which collect common information that keeps the residual and more specific information for each of the original items. The variables with communalities less than 0.4 were eliminated as they do not contain information common to the rest of the items. To select the number of factors, we took into account the Kaiser method, the scree plot and those that explain at least 50% of the total variance (Costelo and Osborne, 2005).

Having reduced the information to better understand its meaning, a rotation process of adjusting to the different axes for the original items was done, to avoid loss of information. Traditionally, it uses a technique that maintains a varimax orthogonal relationship between the components involved, ensuring they are uncorrelated.

The degree of validity of this technique is given by two auxiliary instruments: the Bartlett test and the coefficient of Kaiser-Meyer and Okin (KMO); the values that are usually considered acceptable are those greater than 0.6.

Since the set of items was used for each aspect, trying to measure a single construct, to establish the reliability of the measuring instrument and data collection, the Cronbach alpha coefficient was calculated, through which the internal consistency of the questionnaire was determined. This method is based on the analysis of the average correlations among items related to one theme, from a single administration of the questionnaire. This ratio produces values ranging from zero (0) and one (1). The closer the value to one (1), the more reliable the instrument is. The criteria used for the interpretation of the Cronbach alpha coefficient values are given by Nunnally (1978) as less than 0.6 (low), between 0.61 and 0.70 (high), ranging from 0.71 to 0.80 (good), and over 0.80 (high).

To see the effect between constructs, linear regression techniques were used to evaluate and compare the direct effect of each independent variable on the dependent question (Jardón et al., 1997). For the analysis process, purification and processing of data, determining factors and impact assessment, the Statistical Package for Social Sciences (SPSS version 18) was used.

1.8 Analysis and results

For the Human Capital construct, factorial analysis of principal components showed that the 14 initial variables were explained in 70.54% for 4 common factors obtained from a Varimax rotation with Kaiser Normalization converged in 5 interactions. The KMO indicates a reasonable correlation between the items (KMO=0.729) and Bartlett's test has an associated level of significance of 0.000 which leads to the rejection of the hypothesis that the correlation matrix is the identity matrix ($p < 0.001$), suggesting that there is a correlation between some variables. Both tests allow the continuation of factor analysis. Four indices were set.

For the Structural Capital construct, factorial analysis of principal components showed that the 19 initial variables were explained in 69.71% for 4 common factors obtained from a Varimax rotation with Kaiser Normalization converged in 6 interactions. The KMO indicates a reasonable correlation between the items (KMO=0.842) and Bartlett's test has an associated level of significance of 0.000 which leads to the rejection of the hypothesis that the correlation matrix is the identity matrix ($p < 0.01$); there is a correlation between some variables. Both tests allow the continuation of factor analysis. Three indices were set.

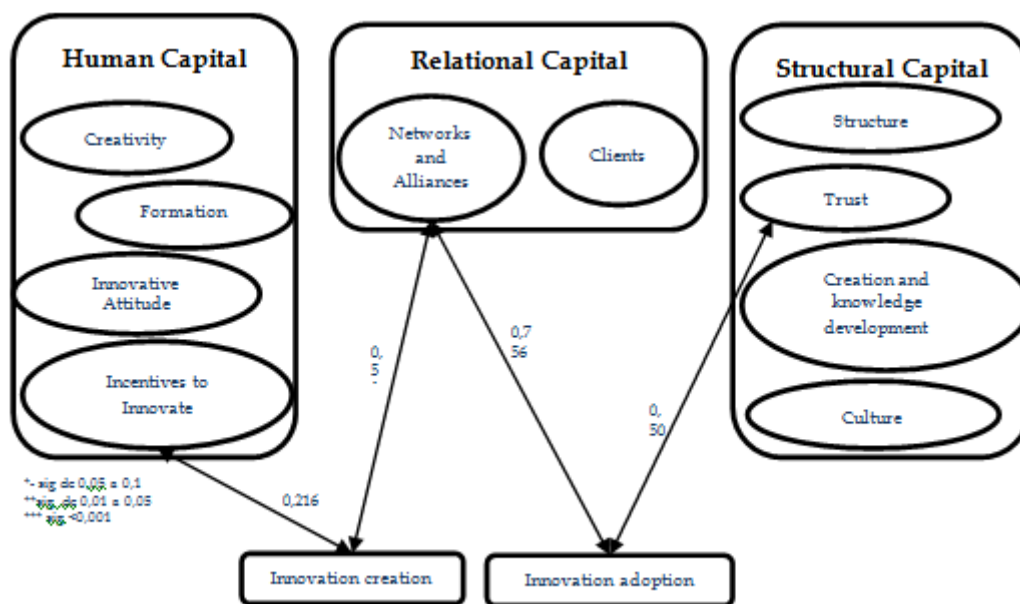
For the Relational Capital construct, the factorial analysis of principal components showed that the 9 initial variables were explained in 68.69% for 2 common factors obtained from a Varimax rotation with Kaiser

Normalization converged in 3 interactions. The KMO indicates a reasonable correlation between the items (KMO=0.848) and Bartlett's test has an associated level of significance of 0.000 which leads to the rejection of the hypothesis that the correlation matrix is the identity matrix ($p < 0.01$), so there is a correlation between some variables. Both tests allow the continuation of factor analysis. Two indices were set.

Finally, we considered two factors as valid factors that represent the ability to innovate. Factor analysis indicates a reasonable correlation between the variables included (KMO=0.769). The test of Bartlett's sphericity is associated with a significance level of 0.000, from which it follows that there is a correlation between some variables. Both tests allow the continuation of factor analysis. The component matrix shows that the 14 initial items were explained in 69.44% for 3 common factors, obtained through a Varimax rotation with Kaiser Normalization converged in 5 interactions.

Regression with all variables of Intellectual Capital was done, selecting the B's with values greater than 0.200 demonstrating the existence of robust relationships between the constructs. The different behaviours for Innovation creation (product / process / management) and Innovation adoption (product / process / management) was verified. Considering the results obtained with Multiple Linear Regression analysis, it was noted that Human Capital (on the incentives to innovate dimension) and Structural Capital (on the trust dimension) are related only with the innovation creation (product / process / management) construct. Furthermore, the Relational Capital construct (on the network and alliances dimension) is the only Intellectual Capital construct related with the innovation creation and adoption constructs (product / process / management), as represented below:

Figure 1: Model



2. Conclusion

This study suggests that Human Capital is associated with the innovativeness of an organization, supporting the first hypotheses (H1). In particular, the study suggests that Human Capital is related with the constructs "Innovation creation" and "incentives to innovate". The connection, however, as found within this study, is weak. This finding is not a new one, as other research studies have not as yet found a direct connection between Human Capital and for example, cumulative growth rate (Santos-Rodrigues et al., 2012). Additionally, no direct relation between Human Capital and management innovativeness (Santos-Rodrigues et

al., 2011) has been made. Stewart (1998) contends that Human Capital has no significant direct impact on business performance as it needs other intellectual components, such as the Structural and Relational Capital to be processed. In addition, Bontis (1998) and Cabrita (2008) found no significant direct relationship between Human Capital and business performance.

The second hypothesis (H2) was also validated. It was observed that Structural Capital is directly related to Innovation adoption, the results of which were also validated by theoretical arguments (Davenport et al., 2003) that consider that it is the company that turns knowledge into performance. Businesses should support the performance of employees through their infrastructure, information systems, routines, culture and trust, facilitating the dissemination of knowledge. The relationship between Structural Capital and innovativeness was also contrasted by Subramanian and Youndt (2005), Organizational Capital in their case, and they verify the existence of a significant relationship with incremental innovation capacity (not all types of innovative capacity). On the other hand, Structural Capital is not directly related with Innovation creation; this result does not coincide with the argument of several authors who contend that trust is essential for innovation processes to be effective (Adler and Kwon, 2002, Ford, 2001).

The third hypothesis (H3) was also validated, noting that Relational Capital is the only Capital directly associated with both constructs of "Innovation Creation" and "Innovation Adoption". The dimension of networks and alliances is directly and positively related to "Innovation Creation" and "Innovation Adoption". In summary, the three research hypotheses were validated. The study supports the concept that Intellectual Capital influences the innovativeness of the company, although some nuances are worth noting. An important result achieved is that a dichotomy was identified within the "Innovative Capacity" construct. This dichotomy is very relevant to our findings and conclusions.

Acknowledgements

This paper is partially supported by the Portuguese Foundation for Science and Technology - FCT.

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