

The Role of Intellectual Capital in the Healthcare Sector: The Case of the Local Health Units of Rome

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Abstract

Healthcare Organizations can be identified as contexts that can be defined as highly “knowledge-intensive”, both because of the peculiar characteristics of the personnel working in them, who are highly specialized, and because of the quality of the services provided. When we talk about Intellectual Capital within the Public Administration, the health sector proves to be among the least investigated, with the consequent lack of a reference model for the presentation of variables and a clear awareness of the criticalities found in the representation of this concept in such complex organizations. For this reason, the following research focuses on the content analysis of the Corporate Acts of the six Roman Local Health Units (ASLs) to analyze the impact of Intellectual Capital on Organization performance, specifically by resorting to key indicators identified concerning the three dimensions of Intellectual Capital (relational-individual-internal). The study aims to propose insights on IC for all public settings, both health and non-health, to integrate better the Intellectual Capital employed and help stakeholders understand the topic better.

Keywords: intellectual capital, healthcare organizations, corporate acts, public sector, roman local health units

1. Introduction

Healthcare Organizations can be identified as highly “knowledge-intensive” contexts because of the peculiar characteristics of the highly specialized personnel working in them and the quality of the services provided. This knowledge represents a precious asset that must be valued and consolidated and continuously updated and developed. For this reason, healthcare organizations must be seen and considered not only as areas of service and performance delivery but also as areas that use, produce, and form knowledge (Baccarini et al., 2008). Today, the primary source of business value no longer lies in the mere production of tangible assets but in the creation, acquisition, and enhancement of intangibles (Veltri & Nardo, 2008). These are elements that cannot be quantified according to the traditional parameters of the financial statements (Baccarini et al., 2008). Companies can no longer ignore these, neither from a management and performance point of view nor concerning communication. Concerning this second aspect, for the recognition of intangibles, it is necessary to use disclosure tools as an alternative to the financial statements, which do not provide adequate information in this regard. In literature, many scholars point out that the balance sheet, due to its construction rules, cannot highlight all the intangible resources available to the company. For this reason, this task should be carried out by complementary documents to the balance sheet, focused on the intangibles of the company itself (Lev, 1996; Smith & Parr, 2000; Sullivan, 2000; Zambon, 2004), or by reports created ad hoc.

Intellectual Capital (IC) is part of the context just described. Among its various meanings, the ability to maintain and develop knowledge is one of the main reasons for an organization’s economic success. Today, the definition of this concept is still complex and in the process of being defined (Zambon, 2004), but it is undoubtedly transversal. When we speak of the Intellectual Capital of a company, we refer to the set of “knowledge” possessed by the people who work there, the organizational methods with which it is managed, and the relationships it has with its stakeholders (Baccarini et al., 2008). One of the most widely accepted definitions is undoubtedly the one elaborated by the OECD (1999), which considers IC as the economic value of two

categories of intangible resources of a company, structural (or organizational) capital and human capital. Structural capital refers to the ownership of IT systems or distribution networks. In contrast, human capital includes both internal (personnel) and external (clients and suppliers) resources.

In the face of substantial unanimity in recognizing the importance of intellectual capital assessment, considered a useful process to rationally synthesize qualitative judgments regarding the functionality of knowledge and business relationships (Petty et al., 2009; Andriessen, 2004; Guthrie et al, 2001; Lev, 2001; Quagli, 1995), as well as of the integration of IC in non-financial reporting (Ricceri, 2003), there is not as much evidence of the use of intangible asset financial statements to report on these aspects (Veltri & Nardo, 2008). Furthermore, the existing literature notes the lack of qualitative methodologies to identify what is the amount and content of Intellectual Capital disclosure (ICD) within the business operating documents published by organizations. From this point of view, the healthcare sector is not exempt either.

Therefore, considering the manifest difficulty in measuring the dimensions that make up the CI, evaluating them, and assigning an economic value to them, but also considering their growing importance, the above contribution aims to answer the following Research Question:

RQ: To what extent is Intellectual Capital integrated within the documents drafted by healthcare organizations?

In order to analyse its impact on company performance, specifically concerning the healthcare organizations in the metropolitan area of Rome, the research focuses on a content analysis of the Corporate Acts of the ASLs in the area, from which it was possible to trace nine key variables identified concerning the three dimensions of Intellectual Capital (relational-individual-internal). The study aims to propose insights on CI for all public settings, both health and non-health, to integrate better the Intellectual Capital employed and help stakeholders understand the topic better.

After the introduction, the second section reviews the literature on the concept of Intellectual Capital, investigating its role within public organizations, specifically Healthcare Organizations (HCOs). The third Section is dedicated to developing the methodology; Section 4 analyses and discusses the results. Finally, Section 5 concludes the research paper by highlighting the main critical issues/limits in the discussion/future perspectives.

2. Intellectual Capital in Healthcare Companies

IC represents the set of intangible factors that determine the dynamism, productivity, success, and professionalism of the company and the staff working in it and, for this reason, it undoubtedly constitutes a determining factor for all organizations because it can contribute to the creation of value and competitive advantage (Iazzolino & Laise, 2016; Lerro et al., 2014; Allee, 2000). Over the last few years, the topic of Intellectual Capital has seen its relevance increase in economic-managerial studies in Italy and abroad (Veltri & Nardo, 2008). The contributions in the literature on Intellectual Capital and the role of intangibles are numerous and focus on different aspects of the interests of the authors, functional models, or the analysis they propose (Marr, 2005). Although the different study approaches developed in the literature, the most widespread representation of IC is based on the taxonomy that identifies human, relational, and structural capital as its main dimensions (Meritum Project, 2002). Although authors use different terminologies (Edvinsson, 1997; Edvinsson & Malone, 1997; Roos et al., 1997; Stewart, 1997; Sveiby, 1997), they generally refer to (Veltri & Nardo, 2008):

- Individual capital, understood as the set of resources belonging to the organization's personnel;
- Internal capital, meaning the procedures, the administrative system, the organizational development;
- Relational capital, as the intangible value generated by the relationships with the outside world. This tripartition has widely experimented in the private world.

It is possible to find numerous studies on Intellectual Capital, both theoretical and empirical, based on the analysis of case studies and surveys. On the other hand, the model is still poorly applied to the public context, which represents one of the areas where IC research is less addressed (Guthrie et al., 2012). However, there are now well-established examples at Austrian Universities or some Scandinavian Local Authorities (Veltri & Nardo, 2008). Dumay et al. (2015) emphasized the need to engage in IC research within the public sector by highlighting, with concrete implications, the benefits it could bring to citizens. Only recently have scholars examined IC as applied to public organizations, particularly healthcare organizations, concerning which, however, few empirical investigations have been conducted (Peng et al., 2007; Sillanpää et al., 2010). Vagnoni et al. (2015), specifically to healthcare organizations and IC, highlight a current gap in research. The taxonomy described above (MERITUM, 2002) represents the most widely used model for testing most IC management practices within Healthcare Organizations (Cavicchi, 2017), finding consistent application in healthcare studies

conducted (Habersam & Piber, 2003; Evans et al., 2015), as illustrated in Table 1.

Table 1. Dimensions of intellectual capital in healthcare organizations

Individual capital	Internal capital	Relational capital
1. Human resources (medical, nursing, technical, administrative staff, etc);	1. R&D;	1. Relations with Stakeholders (suppliers, patients, population, universities, local authorities, other health authorities, trade unions, financiers, the Region, etc.).
2. Training;	2. Technology/ICT;	
3. Knowledge;	3. Culture;	
4. Skills.	4. Organizational Climate;	
5. Experience;	5. Management;	
6. Professionalism;	6. Patents/Copyrights.	
7. Growth.	7. Intangible Assets.	

The theoretical framework of IC is usually used to explain the origin and dimension of business performance (Edvinsson, 1997; Guthrie & Petty, 2000; Johanson et al., 1999; Stewart, 1997; Sveiby, 1997). Over time, the need has been felt to turn attention to other factors relevant to evaluating an organization’s performance, thus giving value to the intangible elements of the management process such as ideas, skills, knowledge, and relationships (Veltri & Nardo, 2008). In this direction, IC can also help HCOs to face the new challenge of performance (Sillanpää et al., 2010), pushing hospitals to effectively manage and measure this aspect by looking at the quality of care, volume of services, and physician behavior, while at the same time containing costs (Peng et al., 2007).

So, to conclude, healthcare proves to be among the least investigated sectors of PA (Public Administration) concerning the topic discussed, resulting in the consequent lack of a reference model capable of measuring, presenting, and explaining CI variables in complex organizations such as healthcare.

3. Methodology

Starting from this theoretical reference scenario, the study aims to evaluate and measure the integration of IC within the documents drafted by the ASLs. The methodology used for this study is based on content analysis, which consists of “a qualitative research technique used to interpret and draw inferences in an objective/systematic and quantifiable manner by evaluating textual material against predetermined criteria” (Aggarwal & Singh, 2019, p. 631).

The complete list of ASLs operating in the Lazio region (Note 1) was examined to develop the analysis, focusing on the six organizations present in the Roman area. The Corporate Acts of each HCO were then consulted to understand the levels of integration of the IC. The choice of examining the Corporate Act derives from a perception that it was the most complete and exhaustive document for the research conducted. To bring out the broader thematic structure underlying the various conceptual categories linked to the theme of the IC, nine variables traceable to the three dimensions of the IC were traced. In addition, where necessary, for each parameter, multiple declinations of the term were considered to make the content analysis more exhaustive.

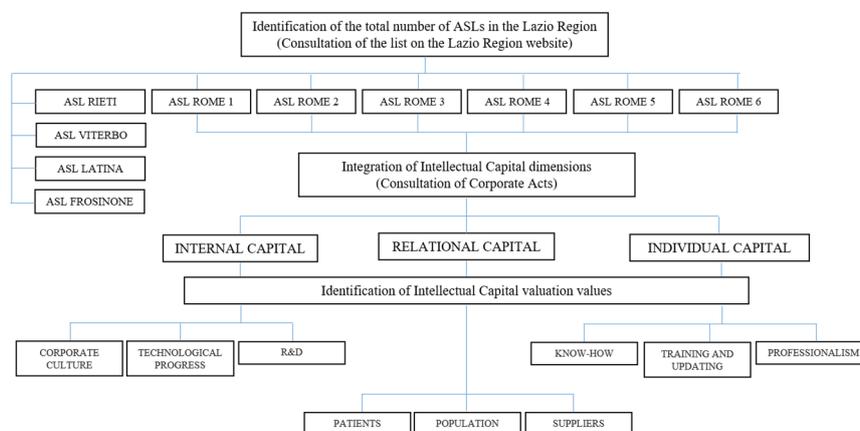


Figure 1. Flowchart

To measure the IC’s integration level in the Roman ASLs and to permit easy reading of the contents, a score was assigned to the six companies under study concerning the critical variables represented in the flow chart. Specifically, the assigned values were given as follows (Figure 2).

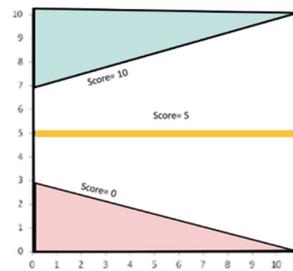


Figure 2. Assigned score

Note. Adapted from MSCI (2022).

Where ASL engagement is limited, the parameter score is also low (0-3) or close to average (4-6), whereas greater integration of the issues under consideration can result in the achievement of very high values (7-10) (Fiorani et al., 2022).

4. Results

It is possible to describe the results using a table summarizing the dimensions highlighted above to identify the three Intellectual capital dimension scores achieved by the various ASLs of the Roman territory. Table 2 illustrates that the ASLs taken as reference integrate, in their Corporate Acts, the dimensions of the IC at different levels. Consequently, the same ASLs are positioned at different levels concerning the parameters evaluated.

Table 2. Integration of the IC in the ASL of Rome

	ASL 1	ASL 2	ASL 3	ASL 4	ASL 5	ASL 6
INTERNAL CAPITAL						
Corporate culture	High	High	Low	Low	Average	High
Technological progress	Average	High	Average	Average	Average	Average
R&D	Average	Low	Low	Low	Low	Average
RELATIONAL CAPITAL						
Patients	Average	High	High	High	High	High
Population	High	High	Average	Average	Average	High
Suppliers	Average	Low	Low	Low	Low	Low
INDIVIDUAL CAPITAL						
Know-how	High	High	High	Average	High	Average
Training and updating	High	High	Average	Average	High	High
Professionalism	High	High	Average	Average	Low	Average

4.1 Internal Capital

The first parameter taken into consideration concerns company culture, which should be evaluated based on the company’s strategies to make the organization innovative and oriented towards a path of continuous learning. An analysis of the corporate acts of ASL Rome 1, ASL Rome 2, and ASL Rome 6 reveals a desire to create and nurture a shared idea of the company which promotes integration, participation, and a sense of belonging among staff.

Informing Intellectual Capital, adequacy, and predisposition to technological development is essential. The Corporate Acts emerge that the healthcare sector is increasingly characterized by the rapid use of technologically advanced instruments. This characterization also derives from the fact that the quantity and quality of healthcare services are increasingly linked to technological adequacy (Veltri & Nardo, 2008) as a permanent condition of

development and improvement of services to citizens and the functioning of the corporate structure. Therefore, technological progress is to be understood as mere information and communication support to users (represented by websites) and concerning equipment aimed at personal care. However, even though technology can be a helpful ally in terms of healthcare provision and assistance (see, for example, telemedicine), for this to be possible, an adequate level of skills and an appropriate level of training in human resources is required. ASL Rome 2 supports the medical staff's efficient use of technological equipment.

In line with scientific and technological progress, must, in addition, use the tool of research and perceive this as a real investment (Ministero della Salute, 2015). Indicators related to this fundamental aspect evaluate the products of research, the number of projects carried out and reported, and the degree of involvement and passage of knowledge within the company. Despite the importance of this aspect in the health sector, information on Corporate Acts regarding this parameter is highly reduced and primarily attributable to collaboration agreements with universities and research institutes present in the Roman territory to improve training and research programs in the health sector.

4.2 Relational Capital

Relational capital represents the set of relationships, economic and otherwise, that a healthcare provider establishes in various ways with external parties (Baccarini et al., 2008). In order to conduct the analysis on this dimension of Intellectual Capital, three specific groups were considered, selected based on the ASLs corporate mission, promoting and protecting the health of the population in the area for which the company is responsible. For this reason, the authors have focused attention on the patient stakeholder as the recipient of the services offered. This primary role emerges in the corporate acts of the six ASLs. It is evident the centrality of the patient-user in terms of awareness of health needs and participation in the formulation of services offered. The Total Quality Management model also supports what has been described for the activation of user satisfaction surveys and monitoring of perceived quality, present in the ASL Rome 4 Corporate Act.

All the Local Health Boards show strong attention to external communication, and almost all have made explicit reference to the existence of a Public Relations Officer. The task of the ASLs is not only to safeguard the health of patients but also, at a higher level, to set up awareness-raising campaigns and promote healthy lifestyles.

The last parameter of the Relational Capital examined refers to economic subjects in which the supplier stakeholder is considered. This analysis presented some difficulties for several companies: five out of six did not present information on supplier-ASL relations at the time of the survey. It was, therefore, difficult to estimate the role and the attention that the organizations have towards this category.

4.3 Individual Capital

The three parameters considered in the context of Individual Capital reflect the aspects of know-how, training, and professional growth, in the awareness that the development of healthcare and technical-administrative personnel is a fundamental asset for providing services.

The know-how parameter refers to the skills and knowledge of the people who work within the ASL, their mental attitudes, the values shared within the company, synergies, and relationships that it has managed to create. In all the Local Health Units, an approach aimed at harmonizing and enhancing the roles and experiences of each member of staff has been found which, if correctly motivated, can guarantee higher levels of company performance, according to a win-win logic.

Closely linked to the previous parameter, active training activities play an essential role in evaluating company personnel's knowledge and skills. From the company documents of the Local Health Units taken as a reference, it appears that the "training and updating" function has increasingly taken on the connotation of a tool for organizational improvement and the maintenance of the specific knowledge of the various professions. All the local public health agencies have set up an Operational Unit or a Service, generally on the staff of the General Management, which deals with the planning and management of training at the company level, and annually draws up the Annual Training Plan (PAF). In addition, through collaborations with universities, the HCOs contribute to the training of caregivers in the social-health field (ASLs Rome 2, 5, 6). At the same time, ASL Rome 1 and ASL Rome 4 emphasize the activities of the CUG in terms of training programs and work-life balance for employees. Finally, ASLs Rome 1 and 5 also focus on training supported by technological tools, using an IT system to manage activities related to staff training.

Another factor contributing to individual capital qualification concerns the area of professionalism, in which reference is made to career paths and evaluation and incentive processes. All HCOs have systematic processes for evaluating performance and rewarding mechanisms that feed a circular continuous improvement process.

However, only two companies provide information on professional growth paths (ASL Rome 1 and ASL Rome 2).

The scores assigned also take account of the correlation between the various parameters considered. Individual capital is the dimension most explicitly expressed in the organizations above acts. Specifically, the training and refresher courses variable appears to be transversal in treatment, affecting most of the other assessed parameters. A strong focus on issues falling within the sphere of the employee stakeholder means that individual capital is the dimension on which the ASLs place most emphasis in the discussion.

5. Conclusion

The Organization's intangible value requires innovative measurement models that combine traditional economic information with qualitative elements for its representation and management. These capture the distinctive aspects of a company, such as the ability to relate to the outside world, stimulate the dissemination of internal skills and knowledge, or promote and support technological development (Baccarini et al., 2008). In this context, the present work is inserted to highlight the integration of IC dimensions in the healthcare field, strengthening research concerning the gap in this area. Therefore, after analyzing the prevailing literature on intellectual capital and the sharing of a theoretical framework, the authors proceeded to identify the determinants of IC, the elements that compose them, and the indicators that allow an adequate representation.

The content analysis represented a valid methodology capable of highlighting how IC issues become an integral part of the content of the documentation produced by these types of Organizations. The results show that the corporate acts of the six ASLs examined present a homogeneity in the treatment of the themes associated with Intellectual Capital, even if the information contained is limited to a merely descriptive character. In the authors' opinion, these organizations must have specific documents, such as the balance sheets of intangible assets, which allow the companies to represent the qualitative-quantitative dimension of Internal, Relational, and Individual Capital. Therefore, the intangible balance sheet is a tool for measuring the three dimensions of Intellectual Capital, the output of which is a report containing a battery of indicators, including quantitative ones (Veltri & Nardo, 2008). This document has both an external information purpose and an internal management purpose. It is the output of a reporting process. It becomes itself a tool for creating and disseminating knowledge, becoming part of the company's knowledge management.

Through its drafting, we understand how Intellectual Capital is realized in an organization, what activities are put in place to develop it, and what would be appropriate to monitor. However, it is also an ambitious proposal because none of the six ASLs currently prepare such a document. This approach could involve several series of operational difficulties for companies, such as the need to (i) train internal personnel in the application of social reporting processes, as well as (ii) set up an adequate information system to support integrated reporting on company intangibles. Future research contributions could focus on this model's operational and implementation difficulties.

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Note

Note 1. <https://www.regione.lazio.it/enti/salute/personale-ssr/elenco-direttori-sanitari-aziende-ssr>

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