IC Theory and Public Healthcare

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Abstract: The healthcare sector is in crisis worldwide and under pressure from various trends such as digitalization, economic recession, population ageing, and workforce shortfall. This challenges in particular public sector healthcare management's ability to provide services and meet communities' growing expectations. Although the value of healthcare organizations is largely based on intellectual capital (IC), such as the experience and skills of professionals, knowledge available through relationships, codified knowledge, and organizational culture, knowledge-related literature in healthcare management has previously focused more on knowledge management activities than on intangibles and their management. Moreover, the public sector is the least examined area in the IC literature. The literature on this specific aspect – IC in public healthcare – has so far focused largely on identifying different aspects of IC rather than recognizing its value in action. To contribute to this knowledge gap, this article studies the role of intellectual capital in public sector healthcare management to elaborate on this critical component of organizational survival, renewal, and performance. This study aims to elucidate what this topical context requires of the application of IC theory and how it can advance the theoretical approach. Based on a literature review and preliminary empirical data gathered through thematic interviews with knowledge management professionals in a public healthcare organization in the throes of major healthcare reform, this article draws on the importance of intellectual capital in the public healthcare sector.

Keywords: Intellectual capital,Healthcare management, Public sector, Reform

1. Introduction

Healthcare is a highly knowledge-intensive industry as, according to Miles (1995), its economic activities are intended to result in the creation, accumulation, or dissemination of knowledge, which is a source of value creation (Grant, 1996) and of support for decision-making. The volume of healthcare data has led knowledge-related development to focus on reports, patient information systems, business intelligence, and data lakes. Although these measurable and technical dimensions of knowledge as a form of data and systems are important and form the basis of information and knowledge, there is a need to re-evaluate the role of intellectual capital in healthcare.

As is typical for all post-industrial knowledge-based economies, the predominant characteristic of healthcare is continuous and quick change. The healthcare sector is in crisis worldwide and under pressure from several different trends such as digitalization, economic recession, population ageing, and workforce shortfall (e.g., Liu et al., 2017). This challenges in particular public sector healthcare management's ability to provide services and meet the users' growing expectations. In Finland, public healthcare services are undergoing a major reform, in which the responsibility for organizing these essential public services has been transferred from the municipalities to larger wellbeing services counties mainly based on the regional division. The reform aims to improve the availability and quality of basic public services throughout the sparsely populated welfare country of Finland. In addition to the ongoing reform, public healthcare in Finland is facing the abovementioned global challenges of population ageing, lack of skilled labour, and rising costs of healthcare. Taken together, all these change factors challenge us to improve the effectiveness of services and find solutions from both intangibles and economics.

Although the value of healthcare organizations is largely based on intellectual capital (IC), such as the experience and skills of professionals, knowledge available through relationships, codified knowledge, and organizational culture (e.g. Grant, 1996; Evans, Brown & Baker, 2015), the knowledge-related literature in healthcare management so far has focused more on knowledge management activities than on intangibles and their management (e.g. Paoloni et al., 2020). Moreover, the public sector is the least examined area in the IC literature (e.g. Dumay, Guthrie & Rooney, 2015; Guthrie & Dumay, 2015). The sparse literature on this specific context – IC in public healthcare – has mostly focused on identifying various aspects of IC (e.g. Dumay et al., 2020) rather than recognizing its value in action.

To reduce this knowledge gap, this article studies the role of intellectual capital in healthcare management to elaborate on this critical component of organizational survival, renewal, and performance. This study aims to elucidate what this topical context requires of the application of IC theory and how it can advance the

theoretical approach. Based on a literature review and empirical data gathered through thematic interviews with knowledge management professionals in a public healthcare organization in the throes of a major healthcare reform in Finland, this article addresses on the importance of intellectual capital in the public healthcare sector. The contribution brings together two disciplines, intellectual capital management and health management, and presents preliminary findings of the interviews. The research questions are:

(*1) In what context is intellectual capital examined in healthcare management?*

(2) What further research avenues can be identified in this specific context?

The rest of the paper is organized as follows. The next section reviews the literature on IC by briefly presenting the concept and construct of IC and the recent research on IC in healthcare management. In section three, the critical areas of IC management in public HC will be discussed. Section four makes some concluding remarks.

2. Theoretical Background – IC in Healthcare

Intellectual capital is conceptualized as a combination of knowledge and competencies that can act as a sustainable competitive advantage for an organization (Roos et al., 1997; Stewart, 1997). Most of the value of healthcare organizations is made up of intangibles such as the knowledge, experience, and skills of the professionals and leaders; knowledge available through networks of internal and external relationships and institutional and codified knowledge stored in databases, organizational culture, and procedures (e.g. Evans, Brown & Baker, 2015). These intangibles are typically categorized as human capital (HC), relational capital (RC), and structural capital (SC) having separate constructs but also a strong interdependence constituting IC. All the constructs of IC help to ensure the success of the organization (Stewart, 1997). This paper examines IC in terms of its traditional three-dimensional categorization - human capital, relational capital, and structural capital.

Although it is stated that the modern knowledge economy organization's value is largely based on IC, especially in the service sector (e.g. Edvinsson & Malone, 1997; Grant, 1996; Sveiby, 1997) the literature on the role of knowledge in general in the healthcare context has focused on knowledge management, information management, and business intelligence (to name a few), with less attention paid to IC. Also, Paoloni et al. (2020) found in their systematic literature review concentrating specifically on IC in the healthcare context that most of the contributions still focused merely on KM activities rather than on IC itself. When IC was in focus, the contributions to structural capital were numerous but rare regarding relational and especially human capital (Paoloni et al., 2020). This is remarkable given the striking importance of human capital in the form of skilled, qualified, and experienced professionals. Evans & Baker (2015) conclude in their review that the utilization of an IC framework for healthcare organizations is relatively new, and thus the literature on IC in healthcare is growing but not advanced, and only limited organizations manage their IC systematically and strategically (Evans & Baker, 2015). Overall, the literature contemplates IC and healthcare from vastly different points of view (Paoloni et al., 2020).

We scrutinized the literature on intellectual capital in healthcare management to find out in which contexts the role of IC has been examined in healthcare organizations. As our interest is in the management of healthcare organizations (following the theoretical background of strategic management) we excluded medical literature and other healthcare industries (e.g., pharmaceuticals and research). Conceptual articles and literature reviews were likewise excluded. The literature examined was from the private, public, and non-profit sectors. A remarkable feature was the considerable number of Italian studies.

The role of IC in healthcare has been examined from vastly different points of view: The role of IC in the performance of healthcare organizations (e.g. Alfiero, Brescia & Bert, 2021; Pflugfelder & Ng, 2022), the role of IC in the sustainable development of healthcare (e.g. Cavicchi & Vagnoni, 2017), IC in digitalization (e.g. Ratia, 2018), the role of IC in innovations (e.g. Kucharska, 2021), the reporting of IC in healthcare (e.g. Dameri & Ferrando, 2021; Nicolò et al., 2023), and IC in the COVID crisis (Paoloni, M. et al., 2022). Specific to the healthcare context is the middle-range theory of Nursing Intellectual Capital (NIC), which consists of human capital and structural capital but does not include relational capital. The role of NIC has been studied, for example, in relation to cross-cultural competence (Lin, 2015) and patient outcomes (Covell & Sidani, 2013). Considering the current shortage of healthcare professionals (e.g. Liu et al., 2017) NIC would be a valuable construct for further research.

The fundamental importance and multidimensionality of the health sector justifies various approaches. Performance in healthcare is expressed by a multitude of indicators (e.g. effectiveness, productivity, quality of services, employee satisfaction, availability of services etc.) and examined from several different points of view

in the articles reviewed. In private sector studies, the emphasis was more on economic factors (e.g. Tiwari, 2022; Pflugfelder & Ng, 2022; Peng, Pike & Roos, 2007). By contrast, studies on public sector performance provided richer views on performance. Performance was expressed, for example, in terms of employee satisfaction (Torre et al., 2020), patient satisfaction (Fiano et al., 2022) or level of assistance (Alfiero, Brescia & Brett, 2021). In summary, intellectual capital and its components play a pivotal role in performance in diverse ways (e.g. Fiano et al., 2022; Tiwari, 2022; Pflugfelder & Ng, 2022; Torre et al., 2020).

Sustainability in healthcare is also a multifaceted phenomenon (Jameton & McGuire, 2002), including social, environmental, and financial aspects. The role of IC and its components (human capital, relational capital, and structural capital) in sustainable development of healthcare has been studied with growing interest especially in the public sector (e.g. Cavicchi & Vagnoni, 2017; Cavicchi, 2017). Also, Al Issa et al. (2022) examined the role of green intellectual capital (GIC) dimensions in sustainable healthcare in public and private organizations. A case study has been carried out in Italy using Integrated Reporting to disclose the level of intellectual capital in a non-profit healthcare organization (Dameri & Ferrando, 2021). Dameri & Ferrando utilized the International Integrated Reporting Framework (IIRF) (Abhayawansa et al., 2019), which broadens the reporting to considering six types of capitals— financial, manufactured, intellectual, human, social, relational, and natural— and considers IC and its components as sources of value (Cheng et al., 2014). Integrated reporting may enable integrated management and better disclosure of IC to meet various stakeholders' expectations (Dameri & Ferrando, 2021).

Kucharska (2022) examined how tacit knowledge influences intellectual capital and innovativeness. The public and private healthcare sectors were compared, and the findings were that public healthcare organizations are less innovative than private ones due to more externally determined IC components than in the private sector. A few articles examined intellectual capital in relation to digitalization from quite varied aspects. Ratia (2018) studied how exploiting business intelligence (BI) tools and IC can create value in the private healthcare sector. Schiavone et al. (2021) analysed the role of intellectual capital in driving the construction of a measurement system of a digitalized health network. Paoloni, P. et al. (2022) explored in the context of remote care services how IC (specifically relational capital) and knowledge-sharing can contribute to the achievement of sustainable development in non-profit health systems.

One article examined the topical COVID-19 pandemic and the role of relational capital in overcoming the crisis in Italian public and private hospitals (Paoloni, M. et al., 2022). The study confirmed the essential role of intangibles, namely relational capital, during periods of uncertainty.

Overall, the literature is still quite sparse and diverse as pointed out in earlier reviews. However, the recent research published after the literature reviews of IC in healthcare by Paoloni et al. (2020) and Evans, Brown & Baker (2015) contribute to the topics reflecting growing pluralism and a wider societal view. This is even more prominent in studies of public sector healthcare compared to those on the private sector, reflecting the growing demands for transparency, sustainability and participation by society and citizens.

3. Critical Areas of IC Management in Public Healthcare

The literature on the public sector is one of the least examined in IC literature (e.g., Dumay, Guthrie, and Puntillo, 2015; Guthrie & Dumay, 2015) even though the public sector contributes a considerable proportion of GDP in most economies (e.g. Dumay, Guthrie & Farneti, 2010). The use of IC in practice in the public sector has been scant and only few articles have explored IC in the public sector. Based on the reviewed literature the critical areas of IC management in public healthcare relate to the following questions: 1) how to define performance, 2) how sustainability is considered, and 3) how the role of intellectual capital and its components are changing while the operating environment changes with accelerating pace. Since little research has been done on this topic in the public HC context, the specificities of the context should be considered.

Kianto & Cabrilo (2022) highlighted earlier the need for the reconceptualization of intellectual capital theory. While their proposals were largely based on findings from private sector organizations, our research complements these findings with the public sector view. Public sector-specific features were found especially when examining the role of IC in sustainable development (e.g. Cavicchi & Vagnoni, 2017), and the role of IC in performance. In public sector research, performance was manifested in numerous ways, and the role of IC studied in relation to patient satisfaction (Fiano et al., 2020), employee satisfaction (Torre, Tommasetti & Maione, 2020) and level of assistance (Alfiero, Brescia & Bert, 2021), reflecting the growing importance of participation, transparency, and effectiveness.

Digital competence was proposed as a newly emerging feature of human capital (Kianto & Cabrilo, 2022), including abilities, skills, and attitudes enabling work in the digital era (Murawski & Bick, 2017). While digitalization is also a major driver of change in healthcare, it is quite surprising that in our review the research relating to the role of IC in digitalization remained quite minor. This may reflect the hectic pace of eHealth evolution in practice, which exceeds the speed of the scientific research process but may in the near future lead to a rise in the research on digital competence. It is also possible that digitalization blurs the boundaries of the intellectual capital components by transforming human capital into structural capital at an increasing pace. One striking example is the rapid rise of artificial intelligence (AI) and its applications (e.g. Biswas, 2023).

Kianto and Cabrilo (2022) also proposed that gig work and other contingent work should be acknowledged as an important aspect of human capital. Gig-workers are not common in the public healthcare sector, but it is a well-known phenomenon in Finland that a significant part of the administrative development work of public healthcare organizations is done by external specialists (e.g., consultants, hired project managers etc.). Moreover, the share of temporary agency nurses and doctors is remarkable. These observations support the need for further analysis of the implication of external or short-term workforce on organizational culture, trust, and organizational structure, as Kianto & Cabrilo (2022) stated.

An open and entrepreneurial culture was proposed as an important facet of structural capital (Kianto & Cabrilo, 2022) supporting, e.g., collective intelligence. Traditionally the public sector has not been seen as an open and entrepreneurial work environment but rather as a fairly hierarchical and rigid place to work (e.g. Parker & Bradley, 2000). Our preliminary results from interviews support the importance of an open and entrepreneurial work environment (also) in public sector health care:

> *"I think we have a very open atmosphere at that point. There are no things that could not be talked about and [we have] an unwritten agreement that if you sometimes feel that something did not go as it should have gone, you can trust that it will be raised right away. […] we have invested in team building in the early stages […] systematically […] keeping up a continuous dialogue."*

> *"[Organization culture,] that's what it's all about. […] How people want to take responsibility. […] want to learn new things. […] I think that it should be nice to be at work. If you come to work for your salary [only], then it's not the kind of culture with which our unit can succeed. […] we need to be a kind of place that people want to stay."*

> *"[…] competition [for employees] is fierce, so in that sense, too, culture [is important] and success in it is a really important factor […]. In a way, we could have a pretty high threshold for leaving us, [people staying] because of internal motivation."*

Moreover, our preliminary results from the interviews highlight the growing importance of relational capital in the form of relationships and networks in the public healthcare organizations due to complexity and importance of healthcare sector:

> *"[…] the existence of [our department] is based on cooperation, we cannot [...] act alone."*

> *"Well, this is really, really strongly about networks. Like cooperation, and now especially the building of cooperation."*

> *"Relatively good contacts […] through the different backgrounds […]. […] here in the organization, with different parties, so that we can get involved and participate in whatever we need to […]. So that's where [our] strengths are especially."*

> *"It is important that we have good contacts to governmental bodies."*

These observations further encourage us to reconsider the theory and concept of IC in the public health care sector regarding human capital, relational capital, and structural capital.

4. Concluding Remarks

A well-functioning healthcare system is vital both socially and for individuals. Public healthcare ensures equality and well-being and thus contributes to preventing the emergence of differences in well-being. The Finnish healthcare reform aims at better performance of the healthcare systems in the ever-changing environment.

The acknowledged model in modern complex change underlines the wide involvement of organizational actors and empowering the organizational culture (e.g., Hendry, 1996). We need to further increase the

understanding of the role of intellectual capital in the public healthcare context to ensure the embracing, recognizing, and managing of intangibles.

In our perspective, IC should not be narrowly understood as stable and undynamic assets or stocks of knowledge embedded in individuals, relations, or organizations. Instead, we should raise our eyes to IC as a vital driving and dynamic force (Singh & Rao, 2016) and broaden the view beyond the organizational boundaries to see how managing IC could help healthcare, associated ecosystems, and future societies in current and forthcoming transformations. More research is needed to identify the specificities of the public sector regarding IC.

We continue to examine this topical issue through a literature review and interviews with healthcare management professionals constantly renewing the healthcare in the midst of public reform.

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