

PURPOSES FOR INTELLECTUAL CAPITAL MANAGEMENT: AN UPDATE OF THE EXPOSED BY BERNARD MARR

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Abstract

Knowledge Management is a well-established theoretical and practical approach intrinsically linked to Intellectual Capital, with Knowledge Management focusing on systematic intangible asset management and Intellectual Capital on their valuation. While Bernard Marr's seminal 2003 work outlined five core purposes for IC—strategy formulation, strategy execution evaluation, diversification and expansion support, compensation basis, and stakeholder communication—the evolving organizational landscape necessitates an updated understanding of these motivations. This research aimed to identify the evolution of these original purposes within recent academic literature, ultimately proposing a refined framework for Intellectual Capital management. Adopting a qualitative, exploratory-descriptive approach, the study utilized a rigorous Systematic Literature Review spanning from 1998 to 2022, complemented by Content Analysis, to meticulously examine relevant scholarly articles. The findings expand Bernard Marr's seminal 2003 initial framework, identifying two additional critical purposes for Intellectual Capital measurement: “measuring the wealth of the public sector” and “innovation”. These newly identified purposes reflect Intellectual Capital's expanded relevance in driving economic development beyond the private sector and its essential role in fostering continuous value creation. In

conclusion, this investigation provides a matured understanding of the motivations for managing Intellectual Capital, offering valuable insights for academics and managers alike by promoting ongoing theoretical refinement and practical application of Intellectual Capital in contemporary settings.

Keywords: *intellectual capital, decision, disclosure, purpose, intangible assets.*

PROPÓSITOS PARA A GESTÃO DO CAPITAL INTELECTUAL: UMA ATUALIZAÇÃO DO EXPOSTO POR BERNARD MARR

Resumo

A Gestão do Conhecimento é uma abordagem teórica e prática bem estabelecida e intrinsecamente ligada ao Capital Intelectual, com a Gestão do Conhecimento focando na gestão sistemática de ativos intangíveis e o Capital Intelectual em sua valoração. Embora a obra seminal de Bernard Marr, de 2003, tenha delineado cinco propósitos centrais para o CI — formulação estratégica, avaliação da execução da estratégia, suporte à diversificação e expansão, base para compensação e comunicação com as partes interessadas — o cenário organizacional em evolução exige uma compreensão atualizada dessas motivações. Esta pesquisa identifica a evolução desses propósitos originais na literatura acadêmica recente, propondo, em última instância, um arcabouço refinado para a gestão do Capital Intelectual. Adota uma abordagem qualitativa, exploratório-descritiva e rigorosa Revisão Sistemática da Literatura abrangendo o período de 1998 a 2022, complementada pela Análise de Conteúdo, para examinar minuciosamente os artigos acadêmicos relevantes. Os achados expandem o arcabouço inicial de Bernard Marr, de 2003, identificando dois propósitos adicionais críticos para a medição do Capital Intelectual: "mensurar a riqueza do setor público" e "inovar". Esses propósitos recém-identificados refletem a relevância expandida do Capital Intelectual na condução do desenvolvimento econômico para além do setor privado e seu papel essencial no fomento à criação contínua de valor. Em conclusão, esta investigação proporciona uma compreensão amadurecida das motivações para gerir o Capital Intelectual, oferecendo insights valiosos para acadêmicos e gestores, ao promover o contínuo refinamento teórico e a aplicação prática do Capital Intelectual em contextos contemporâneos.

Palavras-chave: capital intelectual; decisão; divulgação; propósito; ativo intangível.

1 INTRODUCTION

The concept of management somehow indicates the organization, planning, direction, and control of processes to shape or achieve certain objectives. Knowledge, on the other hand, manifests itself in an organization through human beings who, dynamically, grasp, perceive, recognize, organize, store, analyze, evaluate, or respond based on all received information (Garcia, Rodriguez, and Estrada, 2018). Thus, Knowledge Management (KM), as a subarea of Information Science (IS), is a theoretical and practical science and can be characterized as:

[...] a systematic and integrative process of coordinating activities throughout the organization. Where acquisition, creation, storage, sharing, dissemination, development, and implementation of knowledge occur through individuals and groups, in pursuit of large organizational goals." (Rastogi, 2000, p. 40)

Accordingly, in a knowledge-based economy, KM and Intellectual Capital (IC) conduct are crucial for an effective administration of business resources and for generating competitive advantages, as they act on the intangible (Marr and Chatzkel, 2004; Diefenbach, 2006). Nevertheless, the quantification and administration of these intangible assets continue to pose

a difficulty for scholars and industry experts. The challenge of IC is often attributed to its multidisciplinary nature, encompassing several fields such as human resources, information and communication technology, knowledge management, and sociology (Marr and Chatzkel, 2004; Diefenbach, 2006). Consequently, questions persist about what has happened in the field of IC study over the years. Is there an established standard for measuring IC or are situations still observed in which interest groups or disciplines present new proposals without taking into account existing ones?

Given the foregoing, the importance of this research is fundamentally anchored in the pursuit of clarifying the underlying reasons for intangible asset measurement, with the aim of fostering a more effective utilization of IC procedures (Marr and Chatzkel, 2004). The overarching goal is to identify the evolution of purposes for IC management, drawing on recent academic literature, specifically aiming to (a) revisit the five original purposes presented by Bernard Marr in 2003, (b) analyze the literature produced between 1998 and 2022 to identify new purposes that have emerged in the field of IC management, and (c) propose an updated framework of these purposes that reflects the evolving needs and transformations within the contemporary organizational environment.

However, it is acknowledged that the process of measuring intangible assets remains a complex endeavor, particularly concerning limitations in data availability, inherent uncertainties, and a persistent lack of objectivity and verifiability of information (Bandeira and Andrade, 2018). Consequently, despite the proliferation of various proposed methods over the years—including the Skandia Navigator (Edvinsson & Malone, 1997), Sveiby's Intangible Assets Monitor (Sveiby, 1997), and the Value Added Intellectual Coefficient (VAIC) developed by Pulic (1998)—both practitioners and scholars frequently question their practical utility, methodological rigor, and inherent validity in comprehensively and accurately capturing the true value of Intellectual Capital.

The literature on intangible assets describes the significant contribution made by scholars from various fields and currents in the search for consistent answers to the raised question. It is possible to ensure that Bernard Marr has been, over the past decades, making a significant contribution to IC research. According to Marr, Gray, and Neely (2003), before determining the application of a certain method and/or IC report, it is necessary to determine the organization IC purpose. Thus, Marr, Gray, and Neely (2003) consider purpose as a fundamental element for measuring IC. However, the constant mutations occurring in the organizational environment, especially in the last two decades, prompt this research to identify the evolution of these purposes.

In this context, the pursuing for new IC measurement purposes, aims to contribute to the maturation of this research field and to the knowledge improvement of readers, academics, and managers. Furthermore, it aims to consolidate knowledge and other intangible assets as important sources of competitive advantages in the new economy, as well as to position KM as a powerful strategic tool to facilitate the increase of competitiveness and sustainability of business organizations.

For its operationalization, this research is subdivided into subsections. In addition to this introduction (subsection 1), the theoretical foundations (subsection 2) supporting the discussion on the theme of IC measurement purposes are presented. Following that, the methodological procedures (subsection 3) are elucidated so that, subsequently, the analysis of results (subsection 4) is evidenced through the outlined findings. Consequently, the final considerations (subsection 5) are drawn, and the references used in the course of this investigation are listed.

2 THEORETICAL BACKGROUND

From an organizational standpoint, KM is intrinsically linked to IC. Both KM and the study of IC recognize knowledge as a crucial intangible asset, highlighting the pivotal role of individuals in its creation and dissemination. Specifically, Venkitachalam and Schiuma (2022), along with Nonaka and Takeuchi (1997), emphasize KM's focus on how human contributions drive knowledge creation and sharing. Conversely, the field of IC explores how organizations quantify this asset, which fundamentally stems from the human capital within the enterprise (Ali; Anwar, 2021; Sveiby, 2010). Therefore, by working alongside people within the social context of firms, both IC and KM collaborate to deliver significant financial and non-financial benefits to businesses.

It is observed that, in the last two decades, numerous studies have been conducted in the areas of KM and IC (Sveiby, 1997; Pulic, 1998; Bontis, 1998; Chen *et al.*, 2005; Pulic, 2008; Hang Chan, 2009; Ramezan, 2011; Denicolai *et al.*, 2015; Sudibyo and Basuki, 2017; Halid and Choo and Salleh, 2018; Castrillón and Hernández, 2019). By investigating the transition from an industrial economy, moderated by physical resources, to a knowledge-based economy, in which intangible intellectual assets are generators of competitive advantage, economic success, and value creation (Ellis and Seng, 2015), academics identified that IC and KM interact to provide gains to organizations.

Thus, knowledge-based resources have surpassed traditional production inputs (land and physical capital) as an important factor to maintain a company's competitive advantage (Reinhardt *et al.*, 2001; Suhendah, 2012; Carlucci and Kujansivu, 2014; Halid and Choo and Salleh, 2018). In an attempt to validate the above, the literatures of KM and accounting have produced numerous studies proposing models and tools for measuring, evaluating, and disclosing IC. In these, the benefits, limitations, and paradoxes are approaches faced by companies in the process of IC management (Guthrie, 2001; Roslender, 2004; Cuganesan *et al.*, 2007; Cuganesan and Dumay, 2009; Sveiby, 2010; Lombardi and Dumay, 2017).

Concerning the use of unstructured information for decision-making, KM offers a unique added value. For this reason, numerous organizations rely on KM to ensure that their decision-makers have sufficient and reliable information to deliberate assertively (Du Plessis, 2005). Consequently, KM allows organizations to identify significant opportunities that support advancements in goods, services, and processes. In this context, the measurement and management of IC have gradually taken on a prominent role in the organizational environment (Halid, Choo, and Salleh, 2018).

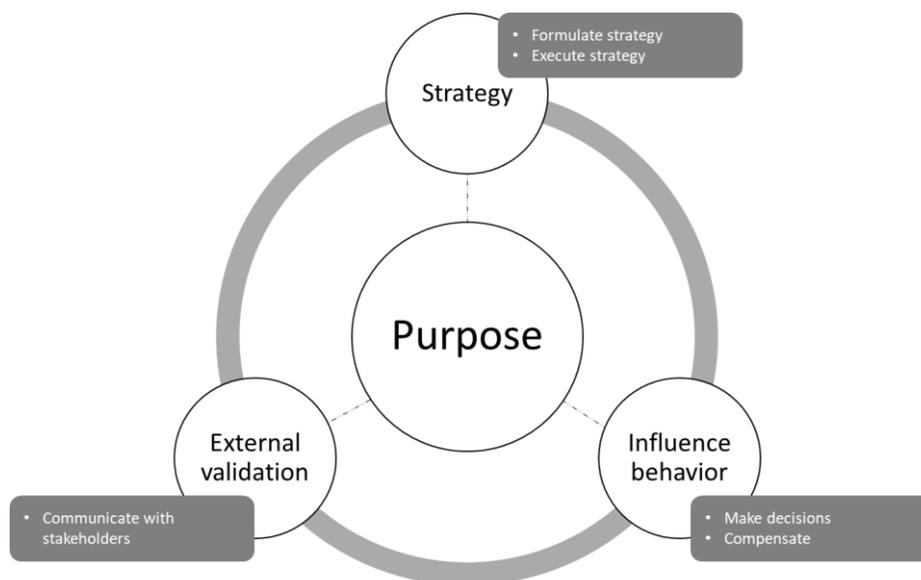
In this way, growth, above-average returns, and sustainable competitive advantages are no longer driven solely by investment in physical assets such as factories, offices, or machinery, but also, significantly, by investment in IC assets. However, Beattie and Smith (2013) argue that IC alone is not capable of creating value and competitive advantage; it needs to be applied. Therefore, elucidates the need for a better understanding of IC dimensions behavior (Stewart, 1997; Edvinsson and Malone, 1997; Roos *et al.*, 1997; Bontis, 1998; Guthrie, 2001; Cikrikci and Dastan, 2002; Bozzolan *et al.*, 2003; Ricceri, 2008; Curado, 2008; Denicolai *et al.*, 2015; Morris, 2015).

Coincidentally, empirical studies have been conducted with the intent of identifying purposes for IC measurement. Consequently, they recognized a lack of a precise characterization of the difficulties in quantifying this intangible resource, resulting in a restricted comprehension of organizational frameworks. It sheds light on the issues that managers may have, such as confusion and hesitancy, when making decisions regarding IC management. This statement suggests that while there have been numerous models and

instruments proposed for managing IC, it is still challenging to determine the practical reasons for using them (Carlucci and Kujansivu, 2014).

Seeking to enhance this understanding, Marr, Gray, and Neely (2003) considered purpose as a fundamental footing for measuring IC and, accordingly, proposed foundational elements for its identification (Figure 1).

Figure 1 – Purposes for Intellectual Capital Measurement



Source: Adapted from Marr et al. (2003)

Substantially, the classification of purposes for measuring IC embrace the following characteristics: a) assisting organizations in formulating their strategy; b) evaluating the execution of the strategy; c) aiding in diversification and expansion of decisions; d) providing a basis for compensation; and finally, e) communicating the measures to stakeholders. Recent research on purposes for IC measurement indicates that understanding business strategy delineates risks and results in better allocation of corporate efforts (Di Vaio et al., 2020; Salvi et al., 2020). The decision-making process by investors is intrinsically related to the quality and adequacy of information about intellectual assets (Alfiero et al., 2021). Nevertheless, Kelchevskaya et al. (2021) assert that creativity, personnel training, expertise, research and development, and customer satisfaction are rapidly becoming inputs for corporate value creation. In summary, Vitolla et al. (2020) describe the importance of ensuring that non-financial information is consistent, relevant, reliable, and comparable over time and among companies.

It is expected, therefore, that the determining aspects that position this intangible asset can be developed positively to advance understanding of the purposes for which organizations need to measure their IC. Moreover, these aspects constitute indispensable elements for establishing solid and consensual ground for conducting this theme. Additionally, in accordance with the elements that constitute the rigor of this research, the methodological procedures, to be presented in the next section, establish the pathways for guiding the present investigation.

3 METHODS

Considering the context of Minayo's research (1998, p. 22), where the methodology is established as "[...] the path and the instrumental of the approach to reality," and relating this assertion to what is suggested in Gil's study (2019), it is observed that scientific research should be presented through its type, population and sample, data collection, and data analysis. Thus, this section articulates the methodological procedures used in this investigation in an attempt to seek answers to the research question.

Regarding the type, it is necessary to describe the nature and approach. Thus, this research presents an exploratory-descriptive nature. Exploratory, as it supports the familiarization with the investigated problem, and descriptive, as it aims for accuracy in the exposition of the phenomenon under study (Perovano, 2016). The approach is qualitative, allowing for causal determination, prediction, and possible generalization of findings (Hoepfl, 1997), as well as the investigation of the phenomenon through interpretative means, providing greater depth in the analyses (Mascarenhas, 2012).

The research's target population comprises the body of academic literature on IC. From this extensive pool, the sample was carefully delineated to include articles directly relevant to the study's objectives, particularly those that explore the diverse purposes and applications of IC measurement. For data collection, a Systematic Literature Review (SLR) was conducted, following the established methodology of Kitchenham (2004). This rigorous approach was selected for its capacity to systematically evaluate and interpret all relevant and available research (as detailed in Table 1), thereby ensuring a comprehensive understanding of the specified research question, topic area, or phenomenon of interest.

Table 1 – SLR – Intellectual Capital purposes

Stage	Description
1. Question formulation	1.1. Focus of the question: Purposes for measuring IC. 1.2. Quality and breadth of the question. 1.2.1. Problem: Identifying purposes for measuring IC. 1.2.2. Question: What purposes underpin a foundational framework for measuring IC? 1.2.3. Keywords and synonyms: IC measurement methods: "intellectual capital" AND "decision" OR "disclosure". 1.2.4. Intervention: Purposes for measuring IC used by organizations. 1.2.5. Control: Previous literature reviews. 1.2.6. Effect: Identify in the IC literature the measurement purposes.
2. Research sources election	2.1. Definition of source selection criteria: Indexed databases. 2.2. Study languages: English. 2.3. Source Identification. 2.3.1. Source search methods: Keyword search using separators (AND/OR). 2.3.2. Search sequence: Purposes for measuring IC. 2.3.4. Source List: Scopus / Web of Science (WOS)
3. Studies selection	3.1. Definition of Studies. 3.1.1. Definition of Study Exclusion Criteria. (1) Studies that do not contain the descriptors in the keywords. (2) Studies that do not discuss purposes for measuring IC. (3) Studies that are not scientific articles. (4) Duplicate studies. (5) Studies unavailable for download.

Stage	Description
	3.2. Procedures for Study Selection. 3.2.1. Selection of Initial Studies: The studies by Pires, Alves, and Fernandes (2020), Sveiby (2010), and Marr, Gray, and Nelly (2003) allowed for the proposition of the construct of purposes for measuring IC and revealed the challenge for academics and managers in adopting IC measurement methods.
4. Information extraction	4.1. Execution of extraction. 4.1.1. Evaluation of Study Quality. 4.1.2. Extraction of objective results from studies: Introduction, theoretical framework, methodological procedures, analysis and discussion of results, and conclusion.
5. Summary of results	5.1. Final Comments - Number of studies. - Research bias, selection, and extraction.

Source: Kitchenham (2004)

In this context, data collection stems from a SLR conducted in the SCOPUS and Web of Science (WOS) databases. These databases were selected based on the report by Falagas *et al.* (2008), which states that the SCOPUS database covers research from 1966 onwards and indexes 12,850 journals, and according to the narrative of Guz and Rushchitsky (2009), which asserts that the WOS database encompasses around 10,000 journals and is composed of seven distinct citation databases; representing a significant amount compared to other databases.

For data analysis, the Bardin Content Analysis method (1977, p. 42, original italics) was used, which consists of the "analysis of communications aiming to obtain, through systematic and objective procedures, a description of the content of messages, indicators (quantitative or not) that allow the inference of knowledge." To apply this method, it is necessary to establish analysis categories, capturing segments of content from the original text for subsequent organization, categorization, and frequency counting (Bardin, 1977). According to Laville and Dione (1999), these categories may emerge during the application of the method (open), defined a priori (closed), or defined and modified throughout the analysis (mixed).

In this sense, the analysis categories of this research are broad and encompass the purposes to quantify IC as a fundamental framework for managing and evaluating organizational performance. Additionally, the ATLAS.ti tool, version 9.1, was used as the technological means to support the application of content analysis.

4 RESULTS AND DISCUSSIONS

An individual initiating an IC measuring endeavor should be guided by the recognition of the essentiality of its use. However, the fundamental inconsistency between managers' expectations, method developers' promises, and what systems can actually accomplish renders these systems fragile and susceptible to manipulation, posing a challenge for academics and managers (Sveiby, 2010). In the aim of enhancing the understanding of this field of study, the research protocol application (Table 2) was conducted.

For the identification of purposes for measuring IC (Table 1), 1,231 scientific research papers were obtained concerning the interval from 1998 to 2022. The study selection stage involved 454 studies rejected for not containing the descriptors in the keywords (exclusion criterion 1); 155 for not discussing the purposes of IC measurement (exclusion criterion 2); another 23 for not being scientific articles (exclusion criterion 3); while 514 were identified as

duplicates and duly excluded (exclusion criterion 4); and 12 were not available for download (exclusion criterion 5). Ultimately, 73 research papers remained as a result of the exclusion stage.

Table 2 – Purposes - Outcome of protocol application

Stage	Procedure	Qty.
Protocol Processing	Study Collection	1,231
Selection (exclusion criteria)	Criterion 1 - Not containing descriptors in keywords	- 454
	Criterion 2 - Not discussing purposes of measuring IC	- 155
	Criterion 3 - Not being a scientific article	- 23
	Criterion 4 - Duplicates	- 514
	Criterion 5 – Not available for download	- 12
Partial Result		73
Extraction (quality assessment)	Extraction of objective results from studies: Introduction, theoretical framework, methodological procedures, analysis and discussion of results, and conclusion.	N/A
Resultado final		73

Source: by the authors (2023)

Concerning the extraction stage, all 73 remaining studies met the requirements. Namely: Bamel *et al.* (2022), Lu and Wudhikarn (2022), Amran *et al.* (2021), Yuan, Xia, and Guo (2021); Alfiero, Brescia, and Bert (2021), Wudhikarn (2020), Kelchevskaya *et al.* (2021), Nicolo *et al.* (2020), Widiatmoko *et al.* (2020), Di Vaio, Hassan, and Palladino (2020), Salvi *et al.* (2020), Salvi *et al.* (2020), Torre, Tommasetti, and Maione (2020), Vitolla *et al.* (2020), Jordão, Novas, and Gupta (2020), Dabić *et al.* (2020), Zhu *et al.* (2020), Dumay, La Torre, and Farneti (2019), Goebel (2019), Vanini and Rieg (2019), Camodeca, Almici, and Sagliaschi (2019), Roshani, Owlia, and Abooie (2019), Ratia, Myllärniemi, and Helander (2019), Fazlagic and Szczepankiewicz (2018), Sanchez-Marquez *et al.* (2018), Kaur, Kiranpreet, and Singh (2018), Alfraih (2018), Biscotti, D’amico (2017), Wudhikarn (2017), Giacosa, Ferraris, and Bresciani (2017), Garanina and Dumay (2017), Sudibyo and Basuki (2017), Sharma and Dharni (2017), Demartini, Panaro, and Trucco (2017), Dumay and Guthrie (2017), Sanchez-Segura and Ruiz-Robles (2017), Massaro, Dumay, and Bagnoli (2017), Nevado Peña, Alfaro Navarro, and López Ruiz (2017), Dumay (2016), Wudhikarn (2016), Bini, Dainelli, and Giunta (2016), Castilla-Polo and Gallardo-Vázquez (2016), Melloni (2015), Mkumbuzi (2015), Li and Mangena (2014); Farooq and Nielsen (2014), Lu, Kweh, and Huang (2014), Carlucci and Kujansivu (2014), Dezhong (2014), Lerro and Schiuma (2013), Saleh and Hassan (2013), Cricelli, Greco, and Grimaldi (2013), Pucar (2013), Boujelbene and Affes (2013), Beattie and Smith (2012), Branswijck and Everaert (2012), González-Loureiro and Dorrego (2012), Wang and He (2012), Alfaro, Lopez, and Nevado (2011), Van Winkelen and McKenzie (2010), Oliveira, Rodrigues, and Craig (2010), Huang, Salleh, and Noruddin (2010), Brügggen and Vergauwen; Dao (2009), Isaac, Herremans, and Kline (2009), Singh, van der Zahn, and J.-L.W.M. (2009), Yu and Humphreys (2008), Petty, Ricceri, and Guthrie (2008), Tóth and Kövesi (2008), García-Meca and Martínez (2007), Mettänen (2005), Du Plessis (2005), Claessen (2005), Roos, Pike, and Fernström (2005), Coulson-Thomas (2003), and Masoulas (1998).

The aforementioned literature guides the search for identifying the purposes of IC measurement. Coincidentally, the data analysis regarding motivations for measuring IC follows the classification logic proposed by Marr *et al.* (2003): a) assisting organizations in formulating their strategy; b) evaluating the execution of the strategy; c) assisting in diversification and

expansion of decisions; d) providing a basis for compensation; and finally, e) communicating the measures to stakeholders.

However, studies such as those by Amran *et al.* (2021), Jordão, Novas, and Gupta (2020), Zhu *et al.* (2020), Fazlagic and Szczepankiewicz (2018), Nevado Peña, Alfaro Navarro, and López Ruiz (2017), Mkumbuzi (2015), Dezhong (2014), Pucar (2013), González-Loureiro and Dorrego (2012), Stähle and Stähle, (2012), Alfaro, Lopez, and Nevado (2011), Tóth and Kövesi (2008), Yu and Humphreys (2008), seem to add new perspectives to the purposes for IC measurement proposed by Marr *et al.* (2003), and therefore, were added to this research. These studies introduce innovation (Amran *et al.*, 2021; Jordão, Novas, and Gupta, 2020; Zhu *et al.*, 2020; Mkumbuzi, 2015; González-Loureiro and Dorrego, 2012; Tóth and Kövesi, 2008; Yu and Humphreys, 2008) and the wealth of the public sector (Fazlagic and Szczepankiewicz, 2018; Nevado Peña *et al.*, 2017; Dezhong, 2014; Pucar, 2013; Stähle and Stähle, 2012; Alfaro *et al.*, 2011) as additional purposes for IC measurement.

Thus, in accordance with Laville and Dion's (1999) criteria for conducting content analysis, Table 3 presents a new perspective on purposes for IC measurement.

Table 3 - Purposes for measuring IC

Purpose	Perspective	Author
a) Assist organizations in formulating their strategy	Strategy planning as a source of present and future value creation (Marr <i>et al.</i> 2003).	Bamel <i>et al.</i> (2022), Yuan, H., Xia, F., and Guo, Y. (2021), Wudhikarn, R. (2020), Kelchevskaya, Y., <i>et al.</i> (2021), Di Vaio, A., Hassan, A., and Palladino, P. (2020), Salvi, A., <i>et al.</i> (2020), Jordão, R. V., Novas, J., and Gupta, M. R. (2020), Roshani, S., Owlia, M. S., and Abooie, A. A. (2019), Biscotti, A., and D'amico, M. (2017), Giacosa, E., Ferraris, A., and Bresciani, S. (2017), Sudibyoy, Y., and Basuki, A. (2017), Sharma, S., and Dharni, K. (2017), Demartini, P., Panaro, C., and Trucco, S. (2017), Bini, M., Dainelli, F., and Giunta, M. (2016), Carlucci, D., and Kujansivu, P. (2014), Saleh, M., and Hassan, A. (2013), Cricelli, L., Greco, M., and Grimaldi, M. (2013), Boujelbene, Y., and Affes, H. (2013), García-Meca, E., and Martínez, I. (2007), Claessen, J. (2005), Roos, G., Pike, S., and Fernström, L. (2005)
b) Evaluate the execution of the strategy	Understanding strategy as the basis for managing internal and external resources of the firm and generating competitive advantage (Marr <i>et al.</i> 2003).	Salvi <i>et al.</i> (2020), Jordão, Novas, and Gupta (2020), Dabić <i>et al.</i> (2020), Roshani, Owlia, and Abooie (2019), Alfraih (2018), Sanchez-Marquez <i>et al.</i> (2018), Farooq and Nielsen (2014), Carlucci and Kujansivu (2014), Saleh and Hassan (2013), Cricelli, Greco, and Grimaldi (2013), Branswijck and Everaert (2012), García-Meca and Martínez (2007), Claessen (2005).
c) Support diversification and expansion decisions	Ability to influence managers' behavior and support daily organizational decision-making (Marr <i>et</i>	Wudhikarn (2020), Di Vaio, Hassan, and Palladino (2020), Salvi <i>et al.</i> (2020), <i>et al.</i> (2020), Torre, Tommasetti, and Maione (2020), Camodeca, Almici, and Sagliaschi (2019), Roshani, Owlia, and Abooie

Purpose	Perspective	Author
	<i>al.</i> 2003).	(2019), Ratia, Myllärniemi, and Helander (2019), Wudhikarn (2017), Giacosa, Ferraris, and Bresciani (2017), Garanina and Dumay (2017), Sanchez-Segura and Ruiz-Robles (2017), Dumay (2016), Bini, Dainelli, and Giunta (2016), Melloni (2015), Farooq and Nielsen (2014), Lu, Kweh, and Huang (2014), Carlucci and Kujansivu (2014), Lerro and Schiuma (2013), Saleh and Hassan (2013), Branswijck and Everaert (2012), van, Van Winkelen, and McKenzie (2010), Huang, Salleh, and Noruddin (2010), Petty, Ricceri, and Guthrie (2008), García-Meca and Martínez (2007), Du Plessis (2005), Claessen (2005).
d) Provide ground for compensation	Support for financial compensations of talents and personal skills that can be used to create wealth. Sustaining financial returns for investors in business value generation (Marr <i>et al.</i> 2003).	Kelchevskaya <i>et al.</i> (2021), Jordão, Novas, and Gupta (2020), Dumay, La Torre, and Farneti (2019), Ratia, Myllärniemi, and Helander (2019), Sanchez-Marquez <i>et al.</i> (2018), Wudhikarn (2017), Demartini, Panaro, and Trucco (2017), Bini, Dainelli, and Giunta (2016), Melloni (2015), Farooq and Nielsen (2014), Lu, Kweh, and Huang (2014), Cricelli, Greco, and Grimaldi (2013), Wang and He (2012), Isaac, Herremans, and Kline (2009), Petty, Ricceri, and Guthrie (2008).
e) Communicate measures to stakeholders	Recognition that stakeholders have the ability to significantly affect the management of the company's resources. The communication process enables interaction between the organization and stakeholders (Marr <i>et al.</i> 2003).	Alfiero, Brescia, and Bert (2021), Di Vaio, Hassan, and Palladino (2020), Salvi <i>et al.</i> (2020), Torre, Tommasetti, and Maione (2020), Vitolla <i>et al.</i> (2020), Vanini and Rieg (2019), Camodeca, Almici, and Sagliaschi (2019), Kaur, Kiranpreet, and Singh (2018), Giacosa, Ferraris, and Bresciani (2017), Garanina and Dumay (2017), Sudiby and Basuki (2017), Demartini, Panaro, and Trucco (2017), Massaro, Dumay, and Bagnoli (2017), Wudhikarn (2017), Dumay (2016), Melloni (2015), Farooq and Nielsen (2014), Lu, Kweh, and Huang (2014), Carlucci and Kujansivu (2014), Huang, Salleh, and Noruddin (2010), Isaac, Herremans, and Kline (2009), Petty, Ricceri, and Guthrie (2008), Roos, Pike, and Fernström (2005).
f) Measure public sector wealth	Treat CI as a key factor in promoting economic growth for cities and even entire nations	Fazlagic and Szczepankiewicz (2018), Nevado Peña, Alfaro Navarro, and López Ruiz (2017), Dezhong (2014), Pucar (2013), Stähle and Stähle (2012), Alfaro, Lopez, and Nevado (2011).
g) Innovate	Identification that the innovation process is of paramount importance for the creation of future organizational and social	Amran <i>et al.</i> (2021), Jordão, Novas, and Gupta (2020), Zhu <i>et al.</i> (2020), Mkumbuzi (2015), González-Loureiro and Dorrego (2012), Tóth and Kövesi (2008), Yu and Humphreys (2008).

Purpose	Perspective	Author
	value.	

Source: by the authors (2023)

Lu and Wudhikarn (2022), Widiatmoko *et al.* (2020), Dabić *et al.* (2020), Goebel (2019), Dumay and Guthrie (2017), Castilla-Polo and Gallardo-Vázquez (2016), Mkumbuzi (2015), Li and Mangena (2014), Beattie and Smith (2012), Oliveira, Rodrigues, and Craig (2010), Brügger, Vergauwen, and Dao (2009), Singh, van der Zahn, and J.-L.W.M. (2009), Yu and Humphreys (2008), Mettänen (2005), Coulson-Thomas (2003), and Masoulas (1998) present research indicating that the purposes for measuring IC are not explicitly stated. However, they cannot be considered less relevant regarding their contribution to IC theory and therefore should be included in the sample. So, a thorough reading of these studies resulted in the identification (see Table 3) of seven purposes for promoting IC measurement, as follows:

a) **Assist organizations in formulating their strategy:** In studies related to the purpose of strategic formulation, there is an understanding of the strategic importance of IC for corporate competitiveness and value generation, serving as a fundamental structure for companies to develop successful solutions against emerging situations, thereby assisting top management in tactical and strategic planning (Bamel *et al.*, 2022, Yuan *et al.*, 2021, Wudhikarn, R., 2020, Kelchevskaya *et al.*, 2021, Di Vaio *et al.*, 2020, Salvi *et al.*, 2020). This means that IC measurement is not merely a reactive assessment but a proactive tool providing critical insights into an organization's intangible assets, enabling top management to align human, structural, and relational capital with overarching strategic goals. This advances knowledge by reinforcing IC's role as a core strategic resource, transcending purely financial reporting to inform forward-looking decision-making and competitive positioning.

b) **Evaluate strategy execution:** Research by Jordão, Novas, and Gupta (2020), Roshani, Owlia, and Abooie (2019), Carlucci and Kujansivu (2014), Cricelli, Greco, and Grimaldi (2013), and Claessen (2005) highlights that competitiveness, sustainability, performance, and innovation are related to the abilities and capabilities to execute corporate strategy. In this sense, IC metrics act as vital feedback mechanisms, enabling organizations to assess the efficacy with which their intangible assets contribute to the successful implementation of strategic plans. It establishes a more direct and measurable link between effective intangible asset management and tangible operational success, shifting the focus from merely designing strategies to the critical phase of their execution and impact.

c) **Support diversification and expansion of decisions:** Studies by Wudhikarn (2017), Sanchez-Segura and Ruiz-Robles (2017), Melloni (2015), Van Winkelen and McKenzie (2010) discuss challenges in accessing, coordinating, and integrating knowledge more effectively, indicating that reliable information has a direct impact on executive decision-making processes. As a result, accurate and comprehensive information regarding an organization's IC is indispensable for executives navigating complex diversification and expansion choices, allowing them to assess underlying intangible capabilities, potential synergies, and inherent risks. It cements IC's role as a critical input for high-stakes corporate development decisions, extending its utility beyond internal performance optimization to external growth opportunities.

d) **Provide ground for compensation:** Identification, processing, and disclosure of IC-related assets are described in various studies as crucial in the decision-making process of managers and investors, suggesting a strong connection with the purpose of supporting compensation. This implies that leveraging IC insights allows for a more holistic and strategic basis for rewarding talent and specialized skills, ensuring that compensation structures are aligned with contributions to long-term value creation rather than solely short-term financial outputs. It

underscores the necessity of developing fair and motivational reward systems that explicitly acknowledge intangible contributions, thereby fostering a culture of sustained innovation, knowledge development, and talent retention.

e) **Communicate measures to stakeholders:** Ensuring that non-financial information disclosures are consistent, comparable over time and across companies, relevant, and reliable would allow stakeholders to more accurately assess future profits and risks associated with different investment opportunities. Therefore, it signifies that transparent and consistent reporting of an organization's intangible assets provides stakeholders (including investors, employees, and customers) with a more complete and accurate understanding of its true value and future potential, thereby fostering greater trust and enabling more informed decisions. It highlights the critical communicative power of IC, effectively bridging the informational gap between internal intangible assets and external stakeholder perceptions, which can significantly improve market valuation and strengthen stakeholder relations.

f) **Measure public sector wealth (nations/cities):** The significance of IC in economic development has grown in both the private and public sectors. Studies have highlighted the need of defining and quantifying IC areas in cities, regions, and even countries (Fazlagic and Szczepankiewicz, 2018; Nevado Peña et al., 2017; Dezhong, 2014; Pucar, 2013; Ståhle and Ståhle, 2012; Alfaro et al., 2011). This finding means that IC measurement is extending beyond private enterprise to governmental and communal entities, acknowledging that intangible assets such as human capital, social capital, intellectual property, and relational networks within public bodies are crucial for driving economic development, enhancing quality of life, and improving public services at regional and national levels. In this context, the theoretical and practical scope of IC, moves beyond a firm-centric view and recognizes the critical role of intangibles in macroeconomic performance and societal well-being, providing a novel framework for public policymakers and urban planners to identify, manage, and leverage non-financial assets for sustainable development and improved governance.

g) **Innovate:** The purpose of innovating emerges as a source of future value creation for companies and nations, emphasizing the essential role of innovative capital in organizational capital (Amran et al., 2021; Zhu et al., 2020; Mkumbuzi, 2015; González-Loureiro and Dorrego, 2012; Tóth and Kövesi (2008). This finding explicitly recognizes innovation as a core outcome and a distinct, critical form of IC to be actively managed and measured. It signifies a shift from merely supporting existing operations to actively fostering the continuous creation of new ideas, products, processes, and business models that drive future growth and sustained competitive advantage, emphasizing intellectual property, R&D capabilities, creative talent, and a culture of continuous learning. It elevates innovation from a general business objective to a specific IC purpose, thereby clarifying the tangible and intangible assets directly dedicated to or resulting from innovation processes. It significantly strengthens the conceptual link between IC management and a firm's long-term dynamism and resilience in knowledge-intensive economies, providing a clearer lens through which to assess future value potential.

Conclusively, this research considers seven purposes for measuring IC, which include the five given by Marr *et al.* (2003) and two additional purposes - measuring public sector wealth and innovating - identified in the systematic literature review. Therefore, when promoting IC management, it is important to evaluate the underlying objective of this effort and articulate these purposes in order to foster the development of IC.

5 CONCLUSION

The advent of the knowledge economy has fundamentally reshaped organizational value creation, shifting emphasis from tangible physical assets to dynamic intangible resources. In this evolving landscape, Knowledge Management has emerged as a crucial theoretical and practical approach, intrinsically linked to Intellectual Capital. This paradigm shift has underscored the imperative for academics and practitioners to meticulously investigate and leverage these new intangible assets that serve as key differentiators for organizations in a competitive global environment.

Within the burgeoning field of Intellectual Capital, a pivotal contribution was Bernard Marr's seminal work in 2003, which delineated five core purposes for Intellectual Capital measurement: aiding strategy formulation, evaluating strategy execution, supporting diversification and expansion decisions, providing a basis for compensation, and communicating measures to stakeholders. However, the relentless pace of organizational and technological transformation in subsequent decades necessitated a contemporary re-evaluation of these foundational purposes. This research was thus motivated by a primary objective: to systematically identify the evolution of these original Intellectual Capital measurement purposes in response to modern exigencies.

To achieve this objective, the study adopted a rigorous qualitative, exploratory-descriptive research design. A comprehensive Systematic Literature Review (SLR) was conducted, meticulously analyzing a vast corpus of 1,231 scientific articles published between 1998 and 2022. This extensive initial pool was subjected to a rigorous screening protocol, resulting in 73 highly relevant studies. The selected literature was then subjected to in-depth Content Analysis, enabling a nuanced understanding of the evolutionary trajectory and current landscape of Intellectual Capital measurement purposes.

The rigorous analytical process yielded a significant expansion of the prevailing understanding of Intellectual Capital measurement purposes. While confirming the enduring relevance of Marr's original five, the research identified two additional, critical purposes that have gained prominence in contemporary contexts: "measuring the wealth of the public sector" and "innovation". The inclusion of these two new findings highlights a broadened perspective on Intellectual Capital's utility, extending its application beyond the traditional corporate sphere to encompass national and urban economic development, and explicitly recognizing the strategic importance of fostering novel value creation.

This consolidated framework of seven purposes offers a more comprehensive and nuanced understanding of why organizations, and increasingly public entities, engage in Intellectual Capital measurement. For practitioners, it provides a clearer strategic compass, ensuring that efforts in intangible asset management are aligned with diverse organizational ambitions, from enhancing competitive advantage to promoting sustainable growth. For academics, this refined typology clarifies theoretical underpinnings, fostering a deeper appreciation of Intellectual Capital's multi-faceted contributions to value creation, knowledge management, and organizational resilience.

Despite these significant contributions, it is imperative to acknowledge the inherent limitations of this research. The systematic literature review, while extensive, was confined to articles indexed in only two scientific databases (Scopus and Web of Science). Although these databases are highly reputable and contain a substantial volume of relevant studies, this scope inherently means that valuable insights from other specialized databases or grey literature may not have been captured, potentially influencing the comprehensiveness of the identified purposes.

Building upon these findings, future research should endeavor to expand the scope of systematic reviews to include a wider array of academic databases and potentially incorporate qualitative input from experts across various industries and public sectors. Further empirical studies are also warranted to validate the practical utility and impact of these seven purposes in diverse organizational contexts, particularly focusing on the newly identified areas of public sector wealth and innovation. Such continued inquiry will undoubtedly promote relevant advancements towards the full consolidation of Intellectual Capital measurement as a pivotal framework for informed decision-making in organizations, communities, cities, and nations alike.

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