

# Accounting for Intellectual Capital and Intangible Assets in the Public Sector: A Systematic Literature Review

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## Abstract

This paper presents the findings of a systematic literature review aimed at identifying current trends and future research opportunities related to accounting for intangible assets in the public sector. We retrieved 52 studies that consider different aspects of accounting for intangible assets (i.e., recognition, measurement, reporting, and disclosure) published in journals between 1972 and 2024 from two databases: Scopus and Web of Science. Our study contributes to the theoretical economic perspective of accounting. The findings reveal a significant research gap in accounting for intangible assets. Despite the latter's increasingly influential role in modern economies and the significant investments by governments in intangibles, the results show that research remains scant.

## Keywords

Intellectual Capital, Public Sector, Recognition, Measurement, Reporting, Disclosure

## 1. Introduction

This paper aims to systematize the literature in accounting about public sector intangibles and Intellectual Capital (IC). It is partly motivated by recent studies (e.g., Dumay, 2016), which identify an underrepresentation of articles addressing issues related to the accounting treatment of intangibles in public sector accounting research. In contrast to the private sector, where there is increased interest in the recognition and measurement of intangible assets (Cinca et al., 2003; Mouritsen

et al., 2001), the public sector has been more concerned with the management than the measurement of these types of assets (Guthrie et al., 2012). This is unfortunate, considering that the public sector utilizes intangible assets more frequently than the private sector (Cinca et al., 2003). Moreover, despite the booming research on IC in public sector organizations between 2013 and 2018 (focusing mainly on European universities), the number remains low compared to the IC-related studies in the private sector (Guthrie & Dumay, 2015).

The underrepresentation of intangibles or IC-related studies in the public sector accounting literature is even more surprising considering the critical role of IC in the value-creation process within modern competitive environments (Cuganesan, 2005), its positive impact on both financial and non-financial performance (Dumay et al., 2015; Secundo et al., 2016), and the significant proportion of GDP held by the public sector in most economies (Dumay et al., 2010). Research has shown that growth is primarily driven by investments in knowledge-based capital rather than traditional forms of capital. Furthermore, it appears that existing research does not adequately account for new types of intangible assets, such as blockchain technologies, cybersecurity systems, and Big Data (Berkman et al., 2018). This is also evident in the public domain, where studies highlight the non-recognition and the subsequent lack of measurement and reporting (or disclosure) of certain types of intangible assets related to digitalization (Heiling, 2025). Recently, the International Public Sector Accounting Standards Board (IPSASB) has called for research on IPSAS 31—Intangible Assets, aiming to address potential modifications to the standard and facilitate the accounting treatment of intangible assets in the public sector (IPSASB, 2023).

Driven by these developments, we conduct a systematic review of the literature on accounting for intangible assets and contribute to the literature in three ways. First, we outline the evolution of research on public sector intangible assets over time. We review relevant publications up to 2024 and aim to understand the latest developments in accounting for intangible assets. Second, we analyze the literature and discuss the findings in terms of four criteria. Finally, we identify the issues that still need to be addressed and propose future paths (Massaro et al., 2016). In sum, we aim to answer the following questions:

*RQ<sub>1</sub> How is research on the recognition, measurement, reporting, and disclosure of public sector IC and intangible assets being developed?*

*RQ<sub>2</sub> What is the focus of the literature on the recognition, measurement, reporting, and disclosure of public sector IC and intangible assets?*

*RQ<sub>3</sub> What are the main gaps in the literature on public sector IC and intangible assets' recognition, measurement, reporting, and disclosure?*

The rest of this paper is structured as follows. Section 2 presents the definitions of IC and intangible assets, and explains the focus of our study. Section 3 analyses the methodology we used to select the sample. Section 4 presents the results of the literature review. Finally, Section 5 discusses the findings and concludes the paper.

## 2. Defining IC and Intangible Assets

The term “IC” was first introduced by Galbraith (1969) as a key resource for creating value within organizations. Since then, various definitions followed, namely that of aggregated knowledge and its practical interpretation into trademarks, brands, and processes (Roos & Roos, 1997), a packaged valuable knowledge that can yield wealth (Stewart, 1999), the possession of the knowledge, applied experience, organizational technology, customer relationships and professional skills that provide a company with a competitive edge in the market (Edvinsson & Malone, 1997). Other terms identified in the literature as synonymous with IC are knowledge assets (Lev, 2001) and intangible assets. The OECD (2000) identifies organizational culture (i.e., leadership style) and human capital (i.e., skills, talent, knowledge) as elements of IC, which can generate economic value, while Kaplan and Norton (2004) include the information capital (i.e., databases, information systems, and technology infrastructure) in the intangible assets. This last term is mainly used in the accounting literature; Intangible assets are defined as “non-financial fixed assets that do not have physical substance but are identifiable and controlled by the entity through custody and legal rights” (IASB, 2004: p. 8).

The definitions and underlying concepts of IC discussed above offer a valuable framework for comprehending the nuances of IC. By delving into these foundational elements, one gains a clearer insight into the importance and application of IC. However, the existing IC definitions lack the specificity necessary to accurately identify, classify, and measure individual assets. To address this issue, several scholars (e.g., Andriessen, 2004; Brooking, 1996; Edvinsson & Malone, 1997; Guthrie et al., 2006) have developed classification schemes that enhance our understanding of the components of IC and the roles it plays (Marr & Schiuma, 2001; IASB, 2004). Despite variations in the related IC components due to the plethora of IC classification systems in the literature, most researchers agree on a tripartite classification of IC, which includes human capital (people-oriented), structural capital (rooted in the organization and its systems), and relational capital (embedded in customers and other relationships external to the organization), as suggested by Sveiby (1997). This categorization has been widely accepted and referenced, including in recent studies (Gardini et al., 2019).

In this study, our focus is on accounting. Therefore, we use the term “intangible assets” over IC. However, in line with prior studies (e.g., Lev, 2001), we acknowledge that these terms are synonymous, as they both refer to “future benefits that are not embodied materially,” and that the different terms primarily reflect the domain within which they are used.

### 2.1. Stages of IC Development

The IC development consists of three stages (Dumay & Garanina, 2013). The first stage creates awareness about IC conceptualization and theoretical development, focusing on the recognition of IC and its role in achieving a competitive advantage (Stewart, 1999). The second stage refers to IC measurement, management, and

reporting tools development and IC impact on financial performance (Stewart, 1999), and develops models and measures to “manage” IC and hence, creates different classifications to define and group different methods of IC evaluation (Ricceri, 2008). The third stage critically examines IC in practice, focusing on “how” IC works and develops within organizations (Guthrie et al., 2012). While the second stage of IC reporting predominantly focuses on measuring IC and its linkage with the financial outcomes of organizations, the third stage of IC reporting delves into the deeper managerial implications of managing IC across various types of organizations. This stage can be classified as a bottom-up research approach, in contrast to the top-down approach. Researchers emerged in the mid-2000s with a fourth stage that relates to the development of an IC ecosystem extending beyond organizational boundaries and examining IC from various geographical scopes (i.e., countries, cities, regions) (Bisogno et al., 2018; Secundo et al., 2016). These four stages of IC research have developed from addressing the weaknesses of the former stage. Dumay et al. (2018) initiated the fifth stage, which questions whether “managing IC is a worthwhile endeavor” rather than “what IC is worth to its stakeholders and the environment”.

As discussed by Dumay et al. (2018), IC is a critical area of study for accounting researchers. These scholars argue that the field should expand its focus to encompass broader social and environmental issues, rather than concentrating solely on organizational management. This shift in perspective challenges traditional managerialist arguments, which primarily advocate for enhanced accounts of IC’s value within firms. By broadening the scope, researchers can explore significant questions about the wider societal roles and implications of IC. This approach not only enriches academic discourse but also fosters a more comprehensive understanding of the impact of intellectual capital in diverse contexts. This fifth stage illuminates how the interaction of IC components, including cultural and natural capital, when combined with experience, knowledge, and intellectual property, can be leveraged to create economic, utility, social, and environmental value (Dumay et al., 2020).

## 2.2. Public Sector Intellectual Capital Accounting

Guthrie et al. (2012) find that the least popular areas of IC research appear to be the public sector and not-for-profit organizations. Dumay et al. (2015), following their research, state that the Public Sector IC primarily focuses its research on central government and related agencies, educational institutions (particularly universities due to researchers’ ease of accessing them (Bellucci et al., 2021)), and specific regions in Europe, notably Italy and Spain. Their research primarily employs empirical methods, utilizing case studies to explore management control and strategy within these entities. Researchers in PSIC are deeply engaged in what is termed performative third-stage research. This approach delves into understanding “how” IC functions within organizations, rather than proposing normative solutions or frameworks. In their later study, Dumay et al. (2018) underline that, over the past two decades, the interest in IC accounting research across Eu-

rope, North America, and Australasia has advanced and highlighted the extension of IC accounting research beyond the academic level to regulatory bodies, including the Financial Accounting Standards Board (FASB).

Prompted by Guthrie et al. (2012), who found that the public sector is one of the least addressed areas of IC research, and enhanced by the call of Dumay et al. (2015) for further research on IC in the public sector, we conduct a systematic literature review to identify the gaps in this field. From a recognition perspective, the complexity of conceptualizing IC impedes its acceptance and adoption, notably, in public sector organizations. From the measurement perspective, measuring outcomes is a well-recognized challenge within the public sector. According to Höglund et al. (2021), outputs must be directly linked to public value through measurable outcomes. This approach ensures that the services provided by public institutions not only fulfill their intended purposes but also contribute positively to the community in a quantifiable way. From a reporting perspective, it is of utmost interest to see how the public sector has responded to the IC consideration of integrated reporting (IIRC, 2013), which incorporates IC and other forms of non-financial capital (Dumay et al., 2015). Lastly, from a disclosure perspective, Dumay (2016) emphasizes the importance for researchers to understand how reporting differs from disclosure and how publicly listed, private, public sector, or third sector organizations disclose new information that is important to investors and stakeholders. However, a more recent study highlights developments in IC disclosure practices driven by new reporting frameworks such as integrated reporting (Dumay et al., 2020).

### 3. Methodology

This section outlines the structured literature review approach, which aims to answer the research questions and identify issues that require further investigation (Massaro et al., 2016). Due to the scant research on accounting for intangible assets in the public sector (Dumay et al., 2015; Guthrie et al., 2012; Paoloni et al., 2020), we did not impose any time limitations on our research.

#### 3.1. The Literature Review Protocol

To reduce research bias and ensure the replicability and transparency of the systematic literature review, we developed a review protocol describing in detail the steps of the review process, enabling it to be replicated (Tranfield et al., 2003).

Selecting search terms is critical for identifying relevant studies (Cronin et al., 2008). Drawing on prior literature on public sector IC and intangible assets (e.g., Dumay et al., 2015; Guthrie et al., 2012), we identified the terms related to the accounting domain. These terms were included in the search string (“intellectual capital” OR “intellectual capital information” OR “intellectual capital report\*<sup>1</sup>” OR “intellectual capital recogn\*” OR “intellectual capital disclos\*” OR “intangible\*” OR “intangible assets” OR “intangible assets report\*” OR “intangible assets

<sup>1</sup>The asterisk (\*) indicates that different suffixes were permitted.

recogn\*” OR “intangible assets measur\*” OR “intangible assets disclos\*”) AND (“public sector” OR “local government\*” OR “IPSAS\*” OR “EPSAS\*”).

We searched the string in two databases, namely SCOPUS and ISI Web of Science (WoS), which are major available electronic databases for multidisciplinary scientific literature (de Moya-Anegón et al., 2007). The search was limited to “Titles, abstracts, and keywords”, as these are the parts of the articles that typically contain keywords in the body of the text and prevent documents not related to the research object from being extracted (Paoloni et al., 2020). The search was launched on November 1st, 2024. This step produced a total of 2,675 documents (see Figure 1).

The second step was to apply inclusion criteria and restrict our selection. We limited our search to document type “Article”. To avoid translation issues, we restricted our selection to articles written in English (Mauro et al., 2017). We also limited our search to specific analysis areas, notably “Business, Management and Accounting,” and “Economics, Econometrics, and Finance” in Scopus, and “Public administration,” “Economics,” “Business,” and “Management” in WoS. Finally, we limited the source types to “Journal” and publication stage to “Final” and “Article in press.” To ensure that the structured literature review covered high-quality research already subjected to peer review, we imposed an additional restriction on journals included in the “Academic Journal Guide 2021” rating system and limited the selection to fields we considered relevant to accounting, namely “accounting,” “economics,” “ethics-csr-management,” “finance,” “information management,” and “public sector”. This second step produced a total of 272 documents (226 from Scopus and 46 from WOS).

Then we unified the two databases and applied exclusion criteria. First, we removed duplicates. This resulted in the discarding of 31 documents. Then, we assessed the focus of the articles (Paoloni et al., 2020; Mauro et al., 2017). Although relevant to the topic we chose to analyze, many of the articles extracted from Scopus and WoS focused on the private sector or domains other than accounting, such as management or human resources. We manually assessed each article by first reading the title, keywords, and abstracts. Then, if this information was not enough for an assessment, we read the entire paper. To minimize subjectivity and bias, this task was performed individually by each author, and then our results were compared (Paoloni et al., 2020). This process resulted in the removal of 204 additional documents, reducing the number of eligible articles to 37.

To ensure that we did not omit any relevant articles due to different keywords, a third step was considered necessary. We examined the cited articles within the documents extracted from Scopus and WoS and identified four additional articles. Furthermore, we used the advanced search function in Google Scholar and repeated the search. Eleven additional articles were identified during this process, which were not included in the Scopus and WoS databases, bringing the total to 52 papers for review. Figure 1 presents the review protocol of our study.

### 3.2. The Research Coding Scheme

Drawing on prior literature (e.g., Massaro et al., 2016; Nerantzidis et al., 2022; Paoloni et al., 2020; Rana et al., 2022), we developed a coding scheme to analyze the selected papers. This coding scheme allowed us to classify each paper according to four criteria: (A) distribution of papers by academic discipline and journal, (B) temporal distribution of papers, (C) distribution of papers by author, and (D) distribution by research methodology, geographical distribution by continent and country, and distribution by organizational focus. To ensure the reliability of our coding scheme (Littell et al., 2008), each author read and classified the papers according to these criteria. Then, we shared and discussed findings to resolve any possible differences in the classification.

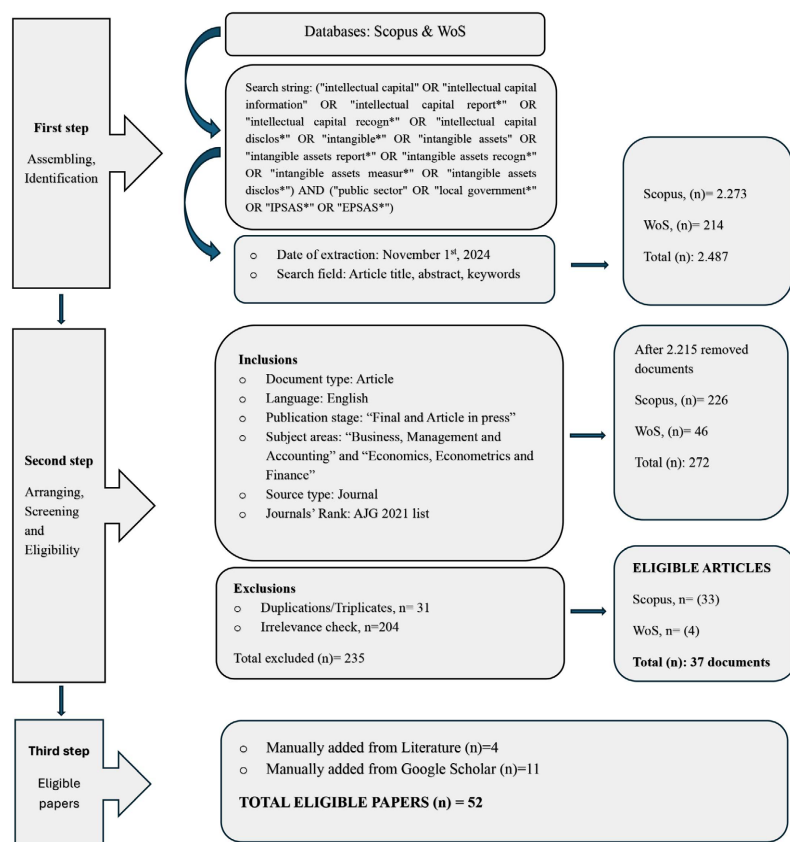


Figure 1. The literature review protocol and search strategy.

## 4. Results

This section presents the findings of our systematic review in response to the research questions stated in the introduction.

### 4.1. Development of the Research on Public Sector Intangible Assets' Recognition, Measurement, Reporting, and Disclosure (RQ<sub>1</sub>)

With this research question, we aim to shed light on the field's development and

the progress made to date. The analysis follows the four criteria, adapted from prior systematic literature review studies (e.g., Nerantzidis, et al., 2022; Paoloni et al., 2020; Rana et al., 2022): (A) distribution of papers by academic discipline and journal, (B) temporal distribution of papers, (C) distribution of papers by author, and (D) distribution by research methodology.

#### 4.1.1. Distribution by Academic Discipline and Journal

**Table 1** illustrates the distribution of articles within the selected fields of the “Academic Journal Guide 2021” list: accounting, economics, ethics-csr-management, information management, and public sector. The 52 studies were found in fifteen journals. As shown in the Table, 69% of them (36 articles) were published in the ethics-csr-management field. Of these, 31 were published in the Journal of Intellectual Capital. The second-highest number of articles was in the accounting field, where nine studies (17%) were identified. The articles were evenly distributed across four high-ranked journals: Critical Perspectives in Accounting, European Accounting Review, Journal of Public Budgeting, Accounting and Financial Management, and The British Accounting Review. The relatively low representation of articles in the accounting discipline indicates that issues related to intangible assets are not adequately addressed by accounting journals.

**Table 1.** Accounting discipline and journal distribution of papers.

CABS 2021 field/Journal	Number of papers
<b>ACCOUNTING</b>	<b>9</b>
Critical Perspectives on Accounting	2
European Accounting Review	2
Journal of Public Budgeting, Accounting and Financial Management	3
The British Accounting Review	2
<b>ECONOMICS</b>	<b>2</b>
Australian Economic Review	1
Review of Income and Wealth	1
<b>ETHICS-CSR-MANAGEMENT</b>	<b>36</b>
Journal of Business Research	1
Journal of Intellectual Capital	31
Journal of Management and Governance	3
Measuring Business Excellence	1
<b>INFORMATION MANAGEMENT</b>	<b>2</b>
Government Information Quarterly	1
Knowledge Management Research and Practice	1
<b>PUBLIC SECTOR</b>	<b>3</b>
International Journal of Public Sector Management	1
Public Management Review	1
Public Personnel Management	1
<b>Total</b>	<b>52</b>

#### 4.1.2. Temporal Distribution of Papers

**Figure 2** presents the temporal distribution of articles by discipline and year. In

the ethics-csr-management discipline, papers are relatively evenly distributed over time, except for a few small peaks in the years 2010, 2015, 2018, and 2020. In other disciplines, publications on accounting for intangible assets are sporadic, with no discernible trend.

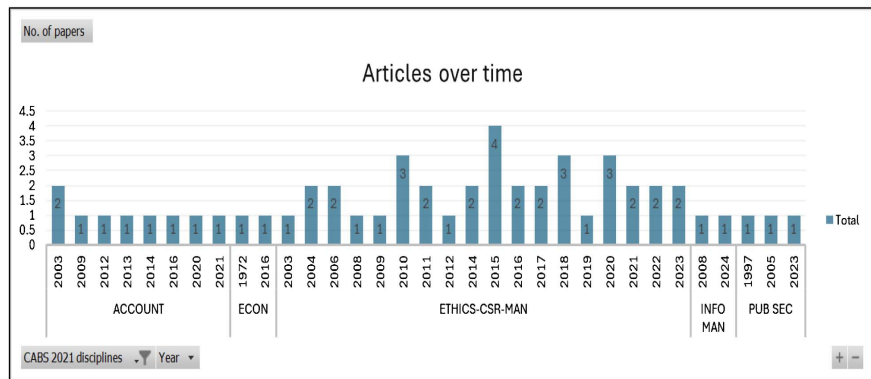


Figure 2. Temporal distribution of articles per academic discipline.

Examining the overall temporal distribution (Figure 3), we see that before 2003, research on intangible assets was practically non-existent, except for Kendrick’s (1972) article “The treatment of intangible resources as capital” and Agor’s (1997) article “The measurement, use, and development of intellectual capital to increase public sector productivity”. Since 2003, a consistently low production of articles has been observed, with the maximum number of publications per year being four articles in the years 2015, 2016, and 2020.

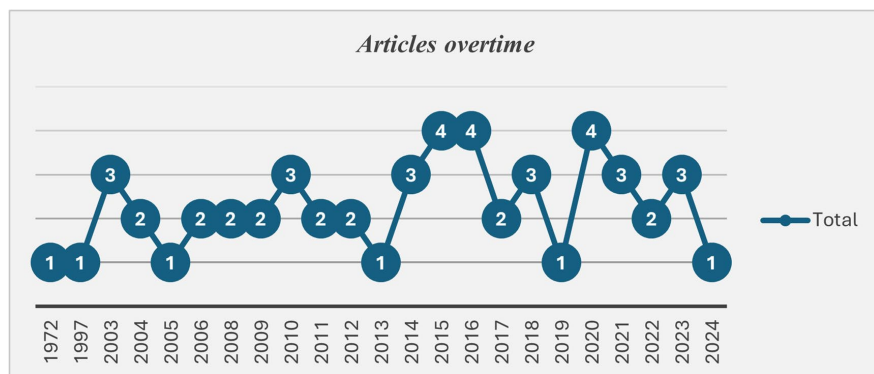


Figure 3. Temporal distribution of articles.

To further explore the time trend of publications, we excluded the Journal of Intellectual Capital from the analysis, as it accounts for the majority of published articles. The rationale behind this decision is that the specific journal specializes in IC studies, thus constituting an outlier in the dataset. To understand how research progressed over time, we needed to examine publication trends in other journals. Figure 4 shows the temporal distribution of articles after excluding the Journal of Intellectual Capital.

Only one year stands out (2020), with three articles, with the rest of the years presenting one or no articles on the topic, and only three years presenting two publications.

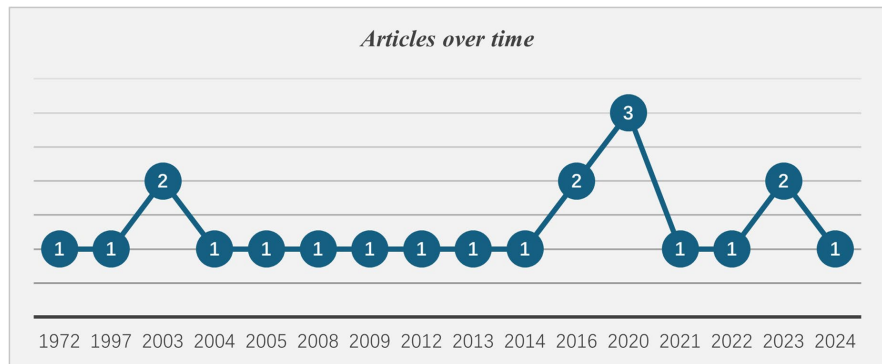


Figure 4. Temporal distribution of articles excluding the Journal of Intellectual Capital.

#### 4.1.3. Distribution of Papers by Author

The next step was to examine how the articles were distributed among authors. The reason for examining authors was to determine whether the Matthew effect, which sometimes occurs in well-established domains, also applies in under-researched areas (Dumay, 2016). In total, we identified 103 authors in the 52 articles under examination. To explore distribution trends, we limited our focus to those authors with at least two publications. This resulted in fifteen authors, presented in Table 2. John Dumay was identified as the author with the most publications on the specific topic (ten papers between 2011 and 2018), followed by Yolanda Ramirez (five publications from 2010 to 2022), Giuseppe Nicolo (four publications between 2018 and 2024), James Guthrie (three publications from 2012 to 2015), and Ange Tejada (three publications between 2011 and 2022). Ten more authors had two publications (see Table 2). For the remaining authors (88 out of 103), we identified only one publication relevant to the accounting of intangible assets, suggesting that the topic was not among their primary research interests.

Table 2. Distribution of articles by author.

Author	Year	Title	Journal	No. of Papers
Dumay, John	2011	“Measuring for managing?” An IC practice case study	JIC	10
	2012	Reflections and projections: a decade of intellectual capital accounting research	BAR	
	2014	15 years of the Journal of Intellectual Capital and counting: A manifesto for transformational IC research	JIC	
	2015	IC and public sector: A structured literature review	JIC	
		New frontiers in the use of intellectual capital in the public sector	JIC	
		Unlocking intellectual capital	JIC	
	2016	A critical reflection on the future of intellectual capital: from reporting to disclosure	JIC	

## Continued

		Intellectual capital, calculability, and calculation	BAR
		Managing intellectual capital through a collective intelligence approach: An integrated framework for universities	JIC
2018		Identifying future directions for IC research in education: a literature review.	JIC
<b>Dumay, John Total No. of papers</b>			<b>10</b>
2010		Intellectual capital models in Spanish public sector	JIC
2011		Intellectual capital in Spanish public universities: stakeholders' information needs	JIC
2014	Ramirez, Yolanda	Recognition and measurement of intellectual capital in Spanish universities	JIC
2019		Digital transparency and public accountability in Spanish universities in online media	JIC
2022		Determinants of online intellectual capital disclosure by Spanish local governments	JIC
<b>Ramirez, Yolanda Total No. of papers</b>			<b>5</b>
2018		New trends in intellectual capital reporting: Exploring online intellectual capital disclosure in Italian universities	JIC
2020	Nicolo, Giuseppe	Accountability through intellectual capital disclosure in Italian Universities	JMG
2023		Intellectual capital disclosure and its determinants in healthcare organisations—Evidence from Italy	IJPSM
2024		Does the mayor's profile influence intellectual capital disclosure? Empirical evidence from Italian local governments	KMRP
<b>Nicolo, Giuseppe Total No. of papers</b>			<b>4</b>
2012		Reflections and projections: a decade of intellectual capital accounting research	BAR
2015	Guthrie, James	IC and public sector: A structured literature review	JIC
2015		New frontiers in the use of intellectual capital in the public sector	JIC
<b>Guthrie, James Total No. of papers</b>			<b>3</b>
2011		Intellectual capital in Spanish public universities: stakeholders' information needs	JIC
2019	Tejada, Ánge	Digital transparency and public accountability in Spanish universities in online media	JIC
2022		Determinants of online intellectual capital disclosure by Spanish local governments	JIC
<b>Tejada, Ánge Total No of papers</b>			<b>3</b>
2003		Exploring intellectual capital in hospitals: two qualitative case studies in Italy and Austria	EAR
2013	Habersam, Michael	Knowledge balance sheets in Austrian universities: The implementation, use, and re-shaping of measurement and management practices	CPA
<b>Habersam, Michael Total No. of papers</b>			<b>2</b>
2010		Intangible assets in higher education and research: mission, performance or both?	JIC
2016	Passiante, Giuseppina	Managing intellectual capital through a collective intelligence approach: An integrated framework for universities	JIC
<b>Passiante, Giuseppina Total No. of papers</b>			<b>2</b>

**Continued**

Piber, Martin	2003	Exploring intellectual capital in hospitals: two qualitative case studies in Italy and Austria	EAR
	2013	Knowledge balance sheets in Austrian universities: The implementation, use, and re-shaping of measurement and management practices	CPA
<b>Piber, Martin Total No. of papers</b>			<b>2</b>
Puntillo, Pina	2015	IC and public sector: A structured literature review	JIC
	2020	On intellectual capital management as an evaluation criterion for university managers: a case study	JMG
<b>Puntillo, Pina Total No. of papers</b>			<b>2</b>
Rooney, Jim	2011	“Measuring for managing?” An IC practice case study	JIC
	2016	Intellectual capital, calculability and qualcalution	BAR
<b>Rooney, Jim Total No. of papers</b>			<b>2</b>
Rossi, Francesca Manes	2018	New trends in intellectual capital reporting: Exploring online intellectual capital disclosure in Italian universities	JIC
	2020	Accountability through intellectual capital disclosure in Italian Universities	JMG
<b>Rossi, Francesca Manes Total No. of papers</b>			<b>2</b>
Samkin, Grant	2008	Intellectual capital reporting by the New Zealand local government sector	JIC
	2015	Voluntary reporting of intellectual capital: Comparing the quality of disclosures from New Zealand, Australian and United Kingdom universities	JIC
<b>Samkin, Grant Total No. of papers</b>			<b>2</b>
Secundo, Giustina	2010	Intangible assets in higher education and research: mission, performance or both?	JIC
	2016	Managing intellectual capital through a collective intelligence approach: An integrated framework for universities	JIC
<b>Secundo, Giustina Total No. of papers</b>			<b>2</b>
Aversano, Natalia	2020	Accountability through intellectual capital disclosure in Italian Universities	JMG
	2023	Intellectual capital disclosure and its determinants in healthcare organisations—Evidence from Italy	IJPSM
<b>Aversano, Natalia Total No. of papers</b>			<b>2</b>
Elena, Susana	2006	Intellectual capital in universities: Improving transparency and internal management	JIC
	2009	Intellectual capital dynamics in universities: A reporting model	JIC
<b>Elena, Susana Total No. of papers</b>			<b>2</b>

**4.1.4. Distribution of Papers by Research Methodology**

Finally, we examined the distribution of papers between different research methods. We adopted [Mattei et al.’s \(2021\)](#) and [Nerantzidis et al.’s \(2022\)](#) criteria to classify the research methods into i) literature reviews, ii) qualitative research, iii) empirical research, iv) mixed research, v) commentary articles, and vi) critical reviews. As shown in [Table 3](#), three research methods are most frequently used, i.e., literature reviews and qualitative and quantitative studies. The proportion of each of these research methods comprises approximately 1/5 of the total number of studies. Mixed research methods, commentary, and theoretical analyses are less

frequent methods (each representing less than 10% of the total number of studies). The literature reviews extend from 2009 until 2023, a fact suggesting that there is still room for mapping the specific research area.

**Table 3.** Distribution of articles by research methodology.

<i>Research method</i>	<b>No. of Articles</b>	<b>%</b>
Literature review	10	20%
Qualitative research	13	25%
Empirical study	11	21%
Mixed-research design	4	8%
Commentary analysis	7	13%
Theoretical analysis	7	13%
<b>Total</b>	<b>52</b>	<b>100%</b>

## 4.2. Thematic Analysis (RQ<sub>2</sub>)

The thematic analysis of the reviewed articles reveals four emerging clusters, each reflecting a distinct trajectory in how scholars approach the recognition, measurement, reporting, and disclosure of public sector intellectual capital (IC) and intangible assets.

The first cluster focuses on the conceptualization and management of IC and intangible assets in the public sector, most notably within universities. This body of research is primarily concerned with defining what constitutes IC in public organizations, understanding its strategic value, and exploring how it can be systematically managed. Studies in this area (e.g., [Secundo et al., 2016](#)) emphasize that universities, as knowledge-intensive institutions, rely heavily on human, structural, and relational capital to create value. The focus on the academic context reflects a recognition that public institutions, while not profit-driven, still face increasing demands for efficiency, innovation, and accountability—making IC management an essential element of performance and sustainability.

A second thematic cluster focuses on reporting and disclosure practices. Research in this stream explores the factors influencing the disclosure of intangible assets by public sector entities and whether transparency in IC reporting contributes to accountability. Studies such as [Nicolò et al. \(2023\)](#) demonstrate a growing interest in how organizations utilize IC reporting to enhance legitimacy and stakeholder trust. Others, such as [Ramírez et al. \(2022\)](#), emphasize the contextual factors that influence disclosure levels, including governance practices and digital reporting mechanisms. Collectively, these works indicate that IC disclosure is not merely a technical exercise but also a communicative and strategic act shaped by institutional pressures and evolving expectations of openness in the public domain.

A third theme emerges from critical and reflective works that question the theoretical foundations and future direction of IC research. Central to this debate are the contributions of ([Dumay et al., 2010, 2015; Dumay, 2016](#)), who question the limitations of conventional IC reporting models and ask for more context-sensi-

tive and practice-oriented approaches, shifting the focus to a more critical perspective in the examination of IC. Finally, a fourth theme reflects the sector-specific application of IC research across universities, healthcare organizations, and local governments, signaling the field's gradual empirical diversification. While universities remain the dominant research setting (e.g., [Secundo et al., 2016](#)), the inclusion of other sectors indicates growing recognition that IC is relevant across various public contexts, each with distinct missions and value-creation logics.

### **4.3. Literature Gaps in Intangible Assets' Recognition, Measurement, Reporting, and Disclosure (RQ<sub>3</sub>)**

The preceding thematic analysis helps identify the research gaps and answer the third research question. From our analysis, it becomes clear that, besides the JIC, no other journal publishes frequently on the relevant topic. The limited number of publications addressing the recognition, measurement, reporting, and disclosure of IC and intangible assets suggests that the specific topic is outside the research interest of public sector accounting scholars. The increase in studies in 2015 can be attributed to the establishment of the Public Sector Pioneer Network, which encouraged public sector entities to participate in Integrated Reporting ([Guthrie & Dumay, 2015](#)). Furthermore, we find that most studies focus on the management of IC, leaving the accounting treatment of IC and intangible assets underexplored. Considering that our search string included the IPSAS term, we would expect to see papers relevant to IPSAS 31 and their issuance and effectiveness (2010-2011). This identified gap aligns with the findings of prior studies (e.g., [Dumay et al., 2015](#)), which highlight how IC is being implemented differently in the public sector, with a greater emphasis on managing IC (Dumay and Rooney, 2011) and less emphasis on measuring and reporting.

## **5. Discussion and Conclusion**

The systematic analysis reveals significant trends and characteristics in research on the recognition, measurement, reporting, and disclosure of public sector intangible assets. In response to the first research question on how research on the recognition, measurement, reporting, and disclosure of public sector intangible assets is being developed, the key findings include a notable concentration of research in the ethics-CSR-management discipline, with the JIC dominating publication activity. Accounting journals contribute only a small proportion of articles, signaling limited attention from the accounting domain.

Regarding the temporal distribution of papers, we find modest activity in the post-2003 period, with publication rates remaining consistently low. The analysis excluding the JIC revealed sporadic publication patterns, emphasizing the limited engagement of broader academic journals, including those focused on accounting or the public sector. This finding is somewhat surprising, given the increasingly important role of intangible assets in the public sector in creating value and supporting economic growth. Similar to journal engagement, only a small group of

authors has contributed repeatedly to the field, while most of the 103 identified authors have published only once. This pattern suggests a lack of widespread and sustained research interest in the accounting dimension of intangible assets, likely due to the predominant focus on their managerial aspect. The lack of influential scholars or clusters limits the field's potential for conceptual consolidation, innovation, and methodological advancement. Without dominant research clusters setting agendas, developing shared vocabularies, or advancing cumulative theory, progress remains slow and dispersed. The small number of recurring authors act more as isolated contributors than as leaders of larger collaborative networks. As a result, the field lacks the critical mass necessary to establish itself within mainstream accounting and public management research. Finally, the research methods that dominate the field are literature reviews, qualitative analyses, and empirical studies, while other methods, such as mixed-methods designs, commentaries, and critical reviews, remain underexplored, indicating opportunities for methodological diversification.

The thematic review confirms that research is heavily skewed toward IC management and disclosure, particularly in universities, with a far less focus on fundamental accounting issues, such as recognition criteria, valuation methods, or the implementation of standards (including IPSAS 31). Despite the issuance of IPSAS addressing intangible assets, scholarly interest in these standards and their effects is virtually absent. Similarly, post-2008 developments in non-financial reporting, such as CSR, integrated reporting, and environmental disclosures, have not produced parallel research on intangible assets in the public sector.

Given the above, and based on the thematic analysis, our study identifies several gaps. First, despite the relevance of intangible assets to accounting, the discipline lags in addressing their recognition, measurement, and reporting, with notable underrepresentation outside the JIC. Furthermore, research on intangible assets in the public sector remains sparse, with a need for more studies aligned with IPSAS and integrated reporting frameworks. Key areas, such as the voluntary disclosure of intangibles, the impact of integrated reporting, and links to CSR, remain underexplored, particularly in response to economic and regulatory shifts, including the 2008 crisis. Finally, although research activity spiked in certain years (e.g., 2015 and 2020), the causes and broader significance of these peaks remain unclear.

This study makes two important contributions: First, it extends prior reviews by exploring empirical, theoretical, and methodological developments beyond the existing focus on IC management, to the recognition, measurement, reporting, and disclosure of public sector IC and intangible assets. The study's results demonstrate a lack of research on core accounting issues—recognition, valuation, and reporting—despite their importance for transparency and accountability in public sector organizations. Second, it reveals the absence of a Matthew effect (Dumay, 2016), indicating a fragmented scholarly community without dominant research clusters—an insight with significant implications for the field's development; while earlier reviews have mapped themes, methods, and sectoral emphasis, they

have not drawn attention to the fact that few authors consistently publish in this area—or what that means for the field’s growth. By highlighting the absence of a stable research community or central group of scholars, this study helps explain why work on public sector intangible assets has struggled to gain traction in leading accounting journals and why the field has yet to develop stronger theoretical or methodological foundations. Combined, these contributions offer a comprehensive understanding of how the field has evolved and the barriers that have hindered its development.

As with all studies, ours is not without limitations. The main limitation stems from the limited number of published articles, which prevents us from further exploring literature characteristics, such as citation analysis and publication trends. To advance the field, future studies should employ mixed-methods and critical review approaches that can provide more nuanced insights into the challenges and opportunities of intangible asset reporting. In addition, future research could analyze how technological advancements (e.g., digital transformation and AI) influence the recognition, measurement, and disclosure of intangible assets in the public sector. For a research shift towards accounting for intangible assets to be feasible, accounting journals should prioritize research on intangible assets, especially focusing on their integration into mainstream accounting frameworks and standards, such as IPSAS. By addressing these gaps and leveraging emerging opportunities, the field could move toward a more comprehensive understanding of intangible asset practices in the public sector, ultimately enhancing their strategic value and societal impact.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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