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IC and public sector: a structured literature review

IC and public sector

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Abstract

Purpose – The purpose of this paper is to present a structured literature review of the public sector intellectual capital (IC) literature. It is, in part, motivated by a recent review of the IC literature by Guthrie *et al.* (2012, p. 74), who found that the public sector is one of the least addressed areas of IC research.

Design/methodology/approach – This paper presents a structured literature review of public sector IC articles that is as up to date as possible. The authors use and update the dataset from Guthrie *et al.* (2012) to include another five plus years of data, including seven articles appearing in this special issue.

Findings – The public sector IC has a primary research focus on central government and central government agencies, education (especially universities), Europe (especially Italy and Spain) and empirical research using case studies mainly investigating management control and strategy. It appears public sector IC researchers are firmly entrenched in performative third-stage research, investigating “how” IC works in organisations rather than offering normative solutions.

Research limitations/implications – Three areas offered as a way of forwarding public sector IC research. First, there is a need to expand public sector IC research from beyond the confines of education (university) research. There is also an opportunity for a study to synthesise the findings. Second, there is also a need for more longitudinal research in public sector IC because IC is not an event, but a journey. Third, there is an opportunity for researchers to undertake empirical research with organisations to develop and test IC frameworks and models in specific public sector contexts.

Practical implications – The authors call for researchers to consider helping public sector practitioners implement IC frameworks and models through interventionist research. In keeping with the performative third-stage IC research agenda, interventionist research makes it possible for academic researchers to act as a catalyst for implementing IC frameworks and models in practice.

Originality/value – This paper is a must read for IC researchers wanting to embark on public sector research. The paper outlines how public sector IC research has developed, offers critique and outlines future opportunities for research that has potential impact, rather than concentrating on already well-researched contexts.

Keywords Public sector, IC research, Intellectual capital, Structured literature review

Paper type Literature review

Introduction

This paper’s purpose is to present a structured literature review of the public sector intellectual capital (IC) literature. It is, in part, motivated by a recent review of the IC literature by Guthrie *et al.* (2012, p. 74), who found that the public sector is one of the

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least addressed areas of IC research. This is surprising considering that the public sector contributes a significant proportion of GDP in most economies (Dumay *et al.*, 2010), and is strongly reliant on the generation and utilisation of capabilities and knowledge in its service delivery (Cuganesan *et al.*, 2012).

However, the public sector has been transforming over the last few decades with the introduction of new public management and the creation of government business enterprises (GBEs), which seek to garner profits alongside providing public services (English *et al.*, 2005). Additionally, many services previously in the realm of the public sector have been privatised, such as telecommunications (Bortolotti *et al.*, 2002). Hence, the delineation between the private and the public sector is increasingly blurred as “these public services now are significantly managed, delivered and governed by private and third sector organisations” (Broadbent and Guthrie, 2008, p. 129). Given these recent developments, the field of IC research about the public sector is worth exploring.

Guthrie *et al.*'s (2012) review of published IC research indicates a wide spread of IC in public organisational types including universities (Cañibano and Sánchez, 2009), local governments (Farneti and Guthrie, 2008), hospitals (Habersam and Piber, 2003), government departments (Dumay and Guthrie, 2007), research organisations (Leitner and Warden, 2004), police departments (Collier, 2001) and regional clusters (Pöyhönen and Smedlund, 2004). Notwithstanding the broad range of organisational sites, the extent to which there is a limited body of in-depth research into particular organisational form means there are still ample research opportunities in this area, especially given evidence that new forms of measuring and accounting for value are required (Cuganesan and Lacey, 2011). Guthrie *et al.* (2012) established that the focus of the majority of IC studies reviewed was management issues (Chang and Birkett, 2004), with only a few focusing on IC reporting (Catasús *et al.*, 2007). Further research on IC reporting is potentially significant considering the recent interest in integrated reporting (International Integrated Reporting Council (IIRC), 2012, 2013), which includes IC and other forms of non-financial capital. How the public sector might respond, especially from a policy perspective is a potentially useful research topic.

The special issue of the *Journal of Intellectual Capital (JIC)* also motivates this paper. Therefore we present a structured review of the public sector IC articles in this special issue that is as up to date as possible. We use and update the dataset from Guthrie *et al.* (2012) to include another five plus years of data, including seven articles appearing in this special issue. Doing so allows us to answer three research questions that form the basis of a structured literature review (Massaro *et al.*, forthcoming):

- RQ1. How is research for inquiring into IC from a public sector perspective developing?
- RQ2. What is the focus and critique of IC research from a public sector perspective?
- RQ3. What is the future of IC research from a public sector perspective?

The paper has three further sections. First, the methodology section outlines how we selected the articles for analysis and how we develop and apply the analytical framework. Second, the results and discussion section answer the first two research questions by providing descriptive statistics and critiquing the results. Third, we offer our calls for the future of public sector IC research, also providing some closing remarks and the limitations of our paper.

Methodology

This paper employs a variant of a structured literature review to answer the three research questions listed above. The methodology is similar to other recent reviews in the IC literature (Guthrie *et al.*, 2012; Dumay and Garanina, 2013; Dumay, 2014a; Dumay and Cai, 2014, 2015). These advantage of this method of review over traditional authorship reviews is their empirical grounding that avoids missing seminal articles and eliminates most researcher bias (Massaro *et al.*, forthcoming). Therefore, this paper presents a comprehensive review of IC articles published in eight leading accounting journals from 1999 to the beginning of 2015. The following sub-sections outline the methods applied to developing the structured literature review.

Article selection

The authors follow Guthrie *et al.* (2012) and continue to use eight generalist internationally recognised accounting journals and two specialist journals, the *JIC* and the *Journal of Human Resource Costing and Accounting (JHRCA)*. The authors use the same accounting journals because the journals publish interdisciplinary accounting including IC (Guthrie and Murthy, 2009, p. 129) and are generally available to scholars through research databases. The accounting journals examined are:

- *Australian Accounting Review (AAR)*.
- *Accounting Auditing and Accountability Journal (AAAJ)*.
- *Accounting Forum (AF)*.
- *Accounting Organizations and Society (AOS)*.
- *British Accounting Review (BAR)*.
- *Critical Perspectives on Accounting (CPA)*.
- *European Accounting Review (EAR)*.
- *Management Accounting Research (MAR)*.

Building on the dataset we examined the titles and abstracts of all articles published in the journals from 2010 to the beginning of 2015 and selected articles containing aspects of IC from a public sector perspective. The dataset from the ten journals now consists of 53 articles. We then loaded the PDF versions of the articles along with their citation data into an endnote database. We use an existing Microsoft Access Database for coding the articles.

Analytical framework

The Guthrie *et al.* (2012) analytical framework is adapted to the revised dataset as detailed in Table I. In this case we first read five articles each and then discussed the appropriateness of the original framework. After the discussion we modified the framework. For example, the “B. Organisational focus” category in Guthrie *et al.* (2012) is no longer needed because all articles must now be focused on “B4. Public sector” attribute. Additionally, the “A. Jurisdiction” and “C. Location” category did not seem as relevant to our study. Therefore, we now base the “A. Jurisdiction” category on different government levels rather than the broader organisational types found in Guthrie *et al.* (2012). Notably, we add the “A4. Government business enterprise” to include companies delivering public services where their major shareholder is government (see Dumay and Rooney, 2011b). Similarly, the

JIC		Articles	%
16,2	<i>A. Jurisdiction</i>		
	A1. Central government	25	47.2
	A2. State/regional	12	22.6
	A3. Local government	3	5.7
	A4. Public business enterprise (PBE)	4	7.5
	A5. Other	9	17.0
	Totals	53	100.0
270	<i>B. Public sector focus</i>		
	B1. Health	8	15.1
	B2. Education/research	21	39.6
	B3. Defence	4	7.5
	B4. Police	1	1.9
	B5. Welfare	0	0.0
	B6. Infrastructure	11	20.8
	B7. Other	8	15.1
	Totals	53	100.0
	<i>C. Location</i>		
	C1. Europe/UK	30	56.6
	C2. Australasia	14	26.4
	C3. North America	4	7.5
	C4. South America	1	1.9
	C5. Africa	1	1.9
	C6. Asia/China	1	1.9
	C7. Other	2	3.8
	Totals	53	100.0
	<i>D. Focus of the article</i>		
	D1. External reporting – ICD other reports and media	14	26.4
	D2. Auditing	0	0.0
	D3. Accountability and governance	1	1.9
	D4. Management control/strategy	29	54.7
	D5. Performance measurement	5	9.4
	D6. Other	4	7.5
	Totals	53	100.0
	<i>E. Research methods</i>		
	E1. Case/field study/interviews	33	62.3
	E2. Content analysis/historical analysis	6	11.3
	E3. Survey/questionnaire/other empirical	9	17.0
	E4. Commentary/normative/policy	0	0.0
	E5. Theoretical: literature review/empirical	5	9.4
	Totals	53	100.0
	<i>F. IC frameworks and models</i>		
	F1. No model proposed	26	49.1
	F2. Applies or considers previous models	17	32.1
	F3. Proposes a new model	10	18.9
	Totals	53	100.0
	<i>G. Academics and practitioners</i>		
	G1. Academics	119	95.0
	G2. Practitioners	6	5.0
	Totals	122	100
	<i>H. Google scholar citations</i>		

Table I.
Analytical
framework

“Location” category was too narrow because it did not include emerging research locations such as Asia, China, South America and Africa and thus these become new attributes.

We add three new categories “B. Public sector focus” “G. Academics and practitioners” and “H. Google scholar citations” to the framework. The new categories are influenced by other structured literature reviews. Thus, “B. Public sector focus” follows Massaro and Dumay’s (forthcoming) review of public sector knowledge management (KM) and takes a granular look at the type of public service. The category “G. Academics and practitioners” is included to represent the article’s number of authors, broken up into whether the author(s) is an academic or practitioner, based on the author’s affiliation[1]. This category is particularly relevant for IC research because IC was initially a practitioner-oriented field (e.g. Sveiby, 1989; Stewart, 1997) and academics became involved in the late 1990s, with the *JIC* first publishing in 2000 (Dumay, 2014a, p. 6). Last, in keeping with Dumay (2014a) and Massaro *et al.* (forthcoming) we include Google scholar citation data to measure the impact of the articles with other scholars.

Results and discussion

In this section we answer the first two research questions: first, how is research for inquiring into IC from a public sector perspective developing?; and second, what is the focus and critique of IC research from a public sector perspective? To do this we use the raw counts as displayed in Table I. In addition, when we find issues worth further investigation and critique, we undertake further analysis based on combing the descriptive results and delving deeper into specific issues found in the articles.

Given that Guthrie *et al.* (2012) developed their IC research analysis up to 2009, it is worth noting the continued development of public sector IC research. Since 2009, there have been a further 25 articles published (including seven in this special issue) with only three articles appearing outside of the *JIC* (*AAAJ* – Samkin and Schneider, 2010; *JHRCA* – Dumay and Rooney, 2011a; *CPA* – Habersam *et al.*, 2013). Considering 25 articles represent almost half of our sample, with some publications appearing beyond the *JIC*, this demonstrates there is an interest in developing public sector IC research.

Jurisdiction

As shown in Table I, the primary focus is on central government and central government agencies (25). However, when coding the articles we observe that the lines between what is a central government function and a state/regional function is sometimes blurred or non-existent because different countries have different structures. For example, Singapore does not have separate states and thus can only be classified as “A1. Central government” (e.g. Chua, 2002). Some countries, like Australia, have distinctly separate federal and state governments (e.g. Whyte and Zyngier, 2014) along with local governments overseen by the states (e.g. Farneti and Guthrie, 2008). Commonly, articles focusing on “A1. Central government” are about universities (e.g. Bezhani, 2010; Secundo *et al.*, 2015).

Public sector focus

The focus of articles is important because it highlights how researchers apply themselves to investigating a particular function in the public sector. As shown in Table I, there is a dominant focus on “B2. Education/research” (21) representing almost 40 per cent of the dataset. Further examining the articles reveals that the majority deal specifically with universities, especially Italian and Spanish universities, as opposed to other types of educational institutions. One article that stands out is Habersam

et al. (2013, p. 319), which investigates “how a mandatory external (mostly) non-financial reporting process, labelled Knowledge Balance Sheets (KBS), is interpreted and used by different stakeholders in the Austrian university system”. The article stands out because it examines mandatory reporting, something that IC researchers have often advocated.

The next two most commonly researched areas are “B1. Health” (8) and “B6. Infrastructure” (11). The “B1. Health” articles are either specifically focused on hospitals and IC (Habersam and Piber, 2003; Lee *et al.*, 2007) or use different health-based organisations to investigate specific research questions (e.g. Vagnoni and Oppi, 2015 in this special issue), highlighting this as a current issue in IC research.

Of the 11 “B6. Infrastructure” articles, six emanate from a longitudinal IC study at the New South Wales Department of Lands (Lands) where different researchers investigated IC practice from 2004 to 2011 at a state government department in Australia that is responsible for looking after the land infrastructure of the State of New South Wales. The series of articles is a must read for scholars wanting to investigate how IC can develop over time in a specific setting (Boedker *et al.*, 2004, 2005; Cuganesan *et al.*, 2007; Dumay and Guthrie, 2007; Dumay and Rooney, 2011a, b). Examining IC over the long term is important as it is one of the main arguments behind managing IC (Mouritsen *et al.*, 2001).

It is interesting to note that other public services, especially police (1) and defence (4) have fewer articles and welfare has none. These are key public services on which many citizens rely and thus present an opportunity for researchers to investigate how IC is (or is not) employed in these public services. Similarly, since there has been significant research on IC in universities there is an opportunity for an article synthesising IC research on universities to explore what future contributions can be made because there is a danger of the research becoming repetitive and losing its potential to create new knowledge (Dumay, 2014b).

Location

In keeping with previous IC literature reviews, the primary location for public sector IC research is in Europe (30) and Australasia (14) (see Guthrie *et al.*, 2012, pp. 74-75; Dumay, 2014a, pp. 12-13). When investigating “C1. Europe/UK” further, we find that two countries dominate the public sector IC research, Spain (8) and Italy (13), representing 70 per cent of articles. This is interesting because IC began in Scandinavia and the initial interest was from Scandinavian public service entities that involved in developing the Danish IC reporting guidelines (see Mouritsen *et al.*, 2003, p. 4).

Similarly, Australia dominates the “C2. Australasia” countries with articles emanating from Australian studies of which six are the Lands articles previously mentioned, and one article from New Zealand (Samkin and Schneider, 2010). The Lands project is now finished (see Dumay and Rooney, 2011b) and while there are still articles under review and waiting to be published (Dumay and Rooney, forthcoming) the stream of articles from Lands will dry up. However, Australia continues to produce more public sector IC research with recent *JIC* articles by Oliver (2013) and Whyte and Zyngier (2014), and with Massingham and Tam (2015) and Roos and O'Connor (2015) in this *JIC* issue.

Similarly, locations such as North (4) and South America (1) and China are underrepresented. However, we note the first article published based on evidence from South Africa (Veltri and Silvestri, 2015). This is because of South Africa’s involvement in integrated reporting, which includes intellectual and other capitals (IRC, 2013, p. 2).

Integrated reporting is also starting to appear in the general IC literature (Abeysekera, 2013). Interestingly, the International Integrated Reporting Council (IIRC) has recently set up the Public Sector Pioneer Network to encourage public sector entities to participate in integrated reporting. This should provide fertile IC research ground for the future to investigate how IC pays a role in public sector integrated reporting.

Focus of the article

This category reveals the greatest difference between public sector IC research and general IC research due to the emphasis on “D4. Management control/strategy” (29) articles or 54.7 per cent of our sample, compared to 37.8 per cent in the original Guthrie *et al.* (2012, p. 75) study. The increase comes at the expense of “D1. External reporting – ICD other reports and media” (14) down to 26.4 from 31.2 per cent and “D5. Performance measurement” (5) down to 9.4 from 18.2 per cent. This highlights how IC is being implemented differently in the public sector with less emphasis on measuring and reporting and more emphasis on managing IC (see Dumay and Rooney, 2011b).

The above results mean a low emphasis on “D3. Accountability and governance” (1) and “D2. Auditing” (0). However, considering our earlier comments on the advent of integrated reporting, the auditing and assurance of integrated reports is emerging as one of the challenges the IIRC and its supporters will prioritise (International Integrated Reporting Council (IIRC), 2014a, b). This, combined with IC related research, could provide more insights into how to assure non-financial information such as IC.

Research methods

Another major difference between public sector and other IC research is the complete lack of normative research – all articles we reviewed use empirical research as their main foundations. Thus we argue that from the onset researchers investigating public sector IC have been interested in how IC works in the public sector, rather than taking a prescriptive approach to how it should work. Thus public sector IC research seems to have skipped the first and second stages of IC research (Petty and Guthrie, 2000) and embraced what Guthrie *et al.* (2012) label the performative third stage of IC research, before the movement was apparent.

Early empirical public sector IC research appeared in the *JIC*'s first issues (Joia, 2000; Mrinalini and Nath, 2000) and continues into this special issue of *JIC* (e.g. Borin and Donato, 2015; Massingham and Tam, 2015). Specifically, “E1. Case/field study/interviews” (33) represent most empirical public sector IC research while there is comparatively little “E2. Content analysis/historical analysis” (6), a popular research method in IC research (Dumay and Cai, 2014, 2015). This is not surprising considering that case studies are an appropriate method for investigating the focus on topics such as “D4. Management control/strategy” (Yin, 2014). Similarly, the lack of focus on “D1. External reporting – ICD other reports and media” explains the lack of research using “E2. Content analysis/historical analysis” (6). Therefore we argue that public sector IC research methods are relevant to the research focus.

IC frameworks and models

A significant concern raised by Guthrie *et al.* (2012, p. 76) was that “most papers (66.2%) do not address ICA (intellectual capital accounting) frameworks again highlighting the inability to take an existing IC framework into consideration when researching IC. On the other hand, the ICAR (intellectual capital accounting research)

literature has mainly concentrated on the development of new frameworks (22 per cent of papers) compared with the utilisation of existing frameworks (11.8 per cent of papers)". However, the results for public sector IC research differ because more research utilises existing frameworks (32.1 per cent) than attempts to create new frameworks (18.9 per cent), which come mainly at the expense of articles that do not use specific frameworks. Therefore, this is further evidence of how public sector IC researchers are more interested in how IC works in the public sector, rather than proposing how it should work.

The above analysis complements the findings of Dumay and Garanina (2013), who found that IC researchers tend to increasingly apply frameworks to their research after 2009. Similarly, in our article sample there are only two articles applying frameworks published before 2009 (e.g. Chaminade and Johanson, 2003; Sánchez and Elena, 2006) and 14 articles published in 2009 and after (e.g. Whyte and Zyngier, 2014), with four appearing in this special issue (Chiucchi and Dumay, 2015; Massingham and Tam, 2015; Roos and O'Connor, 2015; Veltri and Silvestri, 2015). This is in keeping with Guthrie *et al.*'s (2012, p. 69) argument that a "third stage of IC research is emerging based on a critical and performative analysis of IC". Thus, we argue that our evidence shows that contemporary public sector IC researchers are developing third stage IC research by examining IC practices in action.

Academics and practitioners

The origins of IC research are grounded in the seminal works of practitioners like Sveiby (1997), Edvinsson (1997) and collaborations between academic and practitioners, such as Kaplan and Norton's (1992) Balanced Scorecard. Similarly, if we take on board Guthrie *et al.*'s (2012) call for more performative studies investigating IC in action, we might expect research collaborations between academics and practitioners. Therefore, we are interested in whether there are any practitioners involved in developing public sector IC research.

Our results show that very few practitioners (6) become involved in writing about and publishing the results of IC studies in the public sector. This is not an issue explored by Guthrie *et al.* (2012). However, this is not an issue that has gone unnoticed as there are several examples of action research (e.g. Whyte and Zyngier, 2014) or interventionist research (Chiucchi and Dumay, 2015) in the articles in our sample that could benefit from the input of the managers and practitioners involved in the studies as co-authors.

We argue that articles co-authored by practitioners (managers) could become more relevant and insightful to practitioners and academics alike. For example, Leitner *et al.* (2005, p. 528) applied data envelopment analysis (DEA) for evaluating and benchmarking the IC of Austrian universities and further proposed DEA as a consulting and management tool for evaluating IC performance. Therefore, their research contributes to understanding IC in the university context and makes a practice contribution by identifying and testing a new tool for evaluating IC performance.

Similarly, Manfred Bornemann, an IC practitioner/consultant who collaborates with academics, has written two articles published in the *JIC* (Bornemann and Leitner, 2002; Bornemann and Alwert, 2007), including one testing the implementation of IC reporting in Austrian universities (Bornemann and Wiedenhofer, 2014). Additionally, this *JIC* issue has a paper co-authored by Goran Roos (Roos and O'Connor, 2015), who is a well-known IC scholar and practitioner and holds dual roles as an academic and consultant and policy advisor to the state government of South Australia. These articles show that it is possible to involve practitioners in developing research and subsequent publications (see also O'Donnell *et al.*, 2003). More importantly, Roos and

O'Connor (2015) show how IC researchers and consultants can work together to inform public policy, as called for by many academics, although to date they have had little influence.

Google scholar citation analysis

Further evidence of scholarly interest in public sector IC research is measured by total citations and average citations per year (see Massaro *et al.*, forthcoming). The articles by Borins (2001), Chua (2002), Sánchez and Elena (2006) and Cinca *et al.* (2003), being the most highly cited articles, make these articles a must read for any scholar exploring public sector IC. However, when comparing Table I to Table II only these top four articles from Table I appear in Table II. This shows that few articles dominate the literature and that there is a developing research agenda as evidenced by the articles with relatively higher citations in a short-time period. Most notably these are newer articles from 2009 onwards. Therefore, scholars interested in public sector IC should also consider the contributions from these articles (Table III).

Author analysis

The last analysis examines whether or not there are any dominant authors in public sector IC research. As shown in Table IV there are only 13 authors who have authored or co-authored one or more articles. The most prolific is James Guthrie, with six articles published between 2004 and 2009, four of which emanate from the research conducted at Lands. However, he has not published any public sector IC research since 2009.

Similarly, as shown in Table V, James Guthrie is also the leading scholar for the number of citations received with 174, followed by M. Paloma Sanchez. Again, the majority of the citations for James Guthrie refer to the work at Lands, of which three articles were co-authored with Suresh Cuganesan and Christina Boedker (Boedker *et al.*, 2004, 2005; Cuganesan *et al.*, 2007) who are also listed in Table V and one with John Dumay (Dumay and Guthrie, 2007).

The reason for examining authors and their citations is to check for the superstar or Matthew effect that sometimes occurs when a small fraction of researchers or institutions produce the most works and attract a disproportionate number of

Author(s)	Title	Cites
Borins (2001)	Encouraging innovation in the public sector	162
Chua (2002)	The influence of social interaction on knowledge creation	141
Sánchez and Elena (2006)	IC in universities: improving transparency and internal management	99
Cinca <i>et al.</i> (2003)	The measurement of intangible assets in public sector using scaling techniques	95
O'Donnell <i>et al.</i> (2003)	Human interaction: the critical source of intangible value	87
Habersam and Piber (2003)	Exploring IC in hospitals: two qualitative case studies in Italy and Austria	79
Hellström and Husted (2004)	Mapping knowledge and IC in academic environments: a focus group study	68
Chaminade and Johanson (2003)	Can guidelines for IC management and reporting be considered without addressing cultural differences?	59
Ramírez Córcoles <i>et al.</i> (2011)	IC management in Spanish universities	56
Paloma Sánchez <i>et al.</i> (2009)	IC dynamics in universities: a reporting model	48

Table II.
The ten most cited public sector IC articles

JIC
16,2

276

Table III.
The ten most
citations per year
(CPY) for public
sector IC articles

Author(s)	Title	CPY
Borins (2001)	Encouraging innovation in the public sector	12.46
Sánchez and Elena (2006)	IC in universities: improving transparency and internal management	12.38
Chua (2002)	The influence of social interaction on knowledge creation	11.75
Ramírez (2010)	IC models in Spanish public sector	10.25
Demartini and Paoloni (2013)	Awareness of your own intangible assets: a hypothesis of overlapping between ICS and CSRS processes	10
Paloma Sánchez <i>et al.</i> (2009)	IC dynamics in universities: a reporting model	9.6
Samkin and Schneider (2010)	Accountability, narrative reporting and legitimation: the case of a New Zealand public benefit entity	9.5
Dumay and Rooney (2011b)	"Measuring for managing?" An IC practice case study	9.33
Bezhanı (2010)	IC reporting at UK universities	9.25
Cinca <i>et al.</i> (2003)	The measurement of intangible assets in public sector using scaling techniques	8.64

Table IV.
Authors publishing
more than one public
sector IC article

Author name	Articles
Guthrie, James	6
Dumay, John	4
Ramírez, Yolanda	3
Sánchez, M. Paloma	3
Cuganesan, Suresh	3
Boedker, Christina	3
Elena, Susana	3
Leitner, Karl-Heinz	2
Piber, Martin	2
Habersam, Michael	2
Rooney, Jim	2
Farneti, Federica	2
Massingham, Peter	2

Table V.
Authors with more
than 100 citations
for public sector
IC articles

Author name	Citations
Guthrie, James	174
Sánchez, M. Paloma	158
Elena, Susana	147
Chua, Alton	141
Borins, Sandford	132
Ramírez, Yolanda	119
Cuganesan, Suresh	119
Boedker, Christina	119

citations (Merton, 1968, 1988; Zuckerman, 1977; Rosen, 1981). It exists in all well-established domains, including management (Erkut, 2002; Serenko and Dumay, forthcoming). In the analysis we find no evidence of any disproportionately influential individuals. While Guthrie is the most prolific author, all of his articles are co-authored

and all were published more than five years ago. Similarly, while he leads other authors in total citations, these are spread over six different articles, while other authors such as Borins (2001) and Chua (2002) have well over 100 citations for individual articles published more than a decade ago. Similarly, M. Paloma Sánchez has not published since 2009 (Paloma Sánchez *et al.*, 2009). However, Susana Elena is a co-author of an article in this special issue (Secundo *et al.*, 2015).

The future for public sector IC research

In this section we answer the third research question: What is the future of IC research from a public sector perspective? Considering the original motivation for investigating public sector IC research was a disproportionate lack of IC research in this area, we are pleased to see that public sector IC research is on the increase. Also, this special issue of the *JIC* will hopefully spur further interest because several opportunities are available. We list three from our analysis and observations.

Go beyond the confines of education

First, there is a need to expand public sector IC research from beyond the confines of education research, which to date have dominated public sector IC articles. This is a similar finding to that of Massaro and Dumay (forthcoming), who found that education and research also dominate public sector KM research and speculate this is because these institutions are easier for researchers working in the same field to access. However, areas such as police, defence and welfare are important public services on which citizens rely and require more attention as to the possibilities that IC plays in their operations.

Similarly, while there is a dominant focus on education, especially universities, there is an opportunity for a study to synthesise the findings. Doing so will ensure that future research is informed about the contributions made by previous researchers and outline the frameworks already proposed to test their applicability in practice as Habersam *et al.* (2013) have done with the Austrian universities IC reporting framework. For example, Secundo *et al.* (2015) propose an IC maturity model for implementing IC in universities. While they empirically ground their model, their proposed model still needs testing to validate their recommendations and to refine the model.

More longitudinal research

In keeping with testing IC models there is also a need for more longitudinal research in public sector IC. Within organisations IC is not an event, but a journey. Additionally, one of the main research benefits espoused for IC is its long-term benefits as opposed to managing for the short term. Many public sector entities do not have the same short-term myopic financial pressures of publicly listed companies; they have the opportunity to implement IC-based management and strategic practices.

Again we point to the studies conducted at Lands that offer researchers a unique insight into how a specific public sector organisation managed, measured and reported its IC. The research is also interesting because it involved five different researchers, and resulted in six published articles with another awaiting publication, and reported on IC practices over seven years. While there are some examples of longitudinal IC research over several years in individual articles (Chiucchi and Dumay, 2015), more research needs to follow one or more organisations over time to help further develop insights into an IC journey, rather than IC as an event.

Continue testing IC frameworks and models

In keeping with the work already underway with third stage IC research (Guthrie *et al.*, 2012; Dumay and Garanina, 2013) in the public sector as evidenced by the emphasis on case study research, we call for researchers to continue this work. One of the problems with IC is that there is an abundance of frameworks and models for measuring managing and reporting IC (Sveiby, 2010; Dumay and Roslender, 2013). Case studies of IC in action that test frameworks and models are invaluable for understanding “how” and “why” something works or otherwise (Yin, 2014). A good example is Whyte and Zyngier’s (2014) article testing the Danish IC statement guideline (Mouritsen *et al.*, 2003). Therefore, we encourage continued IC research that we deem more suitable for the public sector.

One problem with attempting to test IC inside organisations is that many organisations are what Chaminade and Roberts (2003, p. 733) call “newcomers” to IC who need to “experiment with the concept [IC] in a more open-minded way”. To help experiment with IC and to pass on knowledge several public sector organisations have enrolled the help of academics in developing IC practices in action research projects, also known as interventionist research (Jönsson and Lukka, 2005; Suomala and Lyly-Yrjänäinen, 2009), whereby academics assist with implementing IC while at the same time making theoretical and practice contributions (Suomala, 2009). Already we have seen a recent example of interventionist research in the public sector IC (Demartini and Paoloni, 2013) and another in this *JIC* special issue (Chiucchi and Dumay, 2015). Thus, we call for researchers to consider helping public sector practitioners implement IC frameworks and models through interventionist research.

We argue it is increasingly possible for academics to become involved with practitioners in researching public sector organisations because there are not the same commercial sensitivities in public sector organisations as in for profit entities. Additionally, involving academics in research has two advantages. First, it allows the organisation to bring in and share the latest knowledge among all employees without fear of commercial sensitivities. After all, the primary objective of an academic researcher is to create and share knowledge. Second, the presence of the academic researcher gives legitimacy to implementing and testing the frameworks and models and thus gives increased legitimacy to the change programmes envisaged by managers in these public sector organisations. Therefore, it is possible for academic researchers to act as a catalyst for implementing IC frameworks and models in practice (Dumay, 2010).

When testing IC in public sector organisations we also call for researchers to consider the cultural and country context in which they are working. As we discovered in the articles analysed, there is an emphasis on continental European studies, especially from Spain and Italy. Additionally, Australia dominates studies from Australasia. While it is good to see an abundance of research from these countries and continents, other contexts need researching. This is especially important because the concept of the public sector in different countries has different philosophies and ways of operating. For example, over the last two decades countries like Australia and the UK have seen a reduction in the public sector through privatisation or deregulation (English *et al.*, 2005). The result is a shrinking public sector and an emphasis on user pays with some government departments becoming GBE’s, thus instilling a private sector management mentality into the public sector (see Dumay and Rooney, 2011b). Therefore, the public sector can benefit not only from the successes of implementing IC in the private sector, but can learn from mistakes as well.

Closing remarks

To conclude the paper we want to encourage researchers to engage more with public sector IC research because there are opportunities available to contribute new and significant knowledge about IC, while at the same time benefiting citizens rather than just shareholders. This is at a time when IC is experiencing resurgence through the inclusion of IC and other capitals in the new integrated reporting guidelines coupled with the IIRC's interest in developing integrated reporting for public sector entities. Whether integrated reporting is the new panacea for IC is questionable as it could be just another reporting fad. However, it is raising significant interest in the "capitals" (Gleeson-White, 2014). Therefore, public sector IC researchers should not ignore investigating how IC is involved in integrated reporting.

The most encouraging aspect of public sector IC research is that it is entrenched in developing practical and theoretical insights from researching IC in action. Based on the calls from previous IC reviews that encourage more performative research in line with the third stage of IC research, public sector IC researchers have been investigating practice from the onset and appear to have bypassed the first two stages. However, this opens an opportunity for researchers to undertake empirical research with organisations to develop and test IC frameworks and models in specific public sector contexts. While most IC frameworks and models mainly have the private sector in mind, developing public sector IC frameworks and models is another way of ensuring the shoe fits the foot, rather than just developing all-encompassing models to cover a broad range of organisations (Dumay, 2009). Thus, the opportunities are abundant; it is just up to public sector IC researchers to seize the opportunities.

Limitations

As with all research this paper has its limitations. First, we only looked for public sector research in the same journals as Guthrie *et al.* (2012), which could potentially ignore other public sector IC articles. However, these are the leading journals for publishing IC research, so we are confident we have selected important articles on the subject. Additionally, using the same articles and similar research framework makes our analysis comparable with Guthrie *et al.*'s (2012) findings. Second, we base the analysis and interpretation of the results and subsequent arguments for the future of public sector IC research on our subjective observations, knowledge and experience. Other researchers using the same data may come up with different interpretations and conclusions. In the end we take responsibility for possible errors and omissions.

Note

1. As most articles have more than one author, this is why the total number reported here exceeds 53.

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