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## Revisiting the intellectual capital research landscape – a systematic literature review

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## CHAPTER 20

### Revisiting the Intellectual Capital Research Landscape – A Systematic Literature Review

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#### **Abstract**

The objective of this systematic literature review (SLR) is to provide insights on IC research models in terms of their preference for a single IC element or multiple IC elements, as well as how this varies between researchers from different continents. This aspect is critical, as recent literature has stressed that a firm needs an interplay of multiple IC elements to create IC-based value. This SLR is conducted by reviewing all the relevant research papers from the twenty top accounting and twenty top management journals published between 2000 and 2017. The results suggest that European researchers have contributed mostly to the multi-element perspective of IC, while American scholars have had the most notable impact on the single-element studies. These results are discussed by

critiquing the current state of the IC literature and by offering transformative ideas for future research directions.

## 20.1 Introduction

Since the late 1990s, intangible value drivers of the firm, such as IC, have been the topic of active debate in academic literature and the business press. Interest in intangibles and IC grew to its current level because of changes that took place in economies worldwide, such as digitalisation of businesses and key knowledge assets, and servitisation of economies. In addition, practitioner-based academic research (e.g., Edvinsson and Malone, 1997; Sveiby, 1997) managed to convincingly argue about the significant role of IC in the era of the knowledge economy and therefore catch the attention of scholars, managers and policymakers. As a result, considerable number of academic research papers are being published on the subject.

Because of the growing number of contributions, several literature reviews have tried to recap and summarise the literature. For example:

- Cañibano, García-Ayuso and Sánchez (2000) reviewed pre-2000 literature on accounting for intangibles.
- Petty and Guthrie (2000) conducted a review on measurement, reporting and management of IC.
- Serenko et al. (2010) conducted a scientometric analysis on IC and knowledge management literature published from 1994 to 2008.
- Guthrie, Ricceri and Dumay (2012) identified the performative third stage of IC research.
- Dumay and Garanina (2013) identified the ecosystem-based fourth stage of IC research.
- Inkinen (2015) focused on empirical literature on IC and firm performance.
- Dumay, Guthrie and Rooney (2018) reviewed the critical IC literature to establish whether IC research needed to break free from organisational boundaries and become multidisciplinary.

These literature reviews have provided scholars with progress reports on the intangibles and IC literature and valuable ideas for future research.

This literature review is motivated by a recent paper that demonstrates that even though European and Australasian researchers and scholars differ from their American counterparts with regard to defining IC or intangible resources, their meanings overlap and are mostly focused on the same intangible value drivers of a firm (Cuozzo et al., 2017). Thus, in light of current knowledge, a comprehensive literature review must cover both intangibles and IC literature domains. Since 2000, regions such as Asia and Africa have become increasingly involved; thus, it is important to study the continents side-by-side and determine their scholarly output on IC research. For example, it is already known that European and Australian scholars have focused on the IC concept, whereas American researchers have given more attention to intangible resources, such as brands and patents (Cuozzo et al., 2017). But what about researchers from the other regions? Have they followed the American or European example, or perhaps developed their own approaches to IC research?

The primary objective of this paper is to examine which elements of IC have been researched since 2000 and whether they have been researched as a subset of issues in isolation of each other or as a whole. It is a common argument that different elements of IC, such as human, structural and relational capital, have synergetic relationships and provide benefits for a firm (e.g., create value) in different combinations (Albertini, 2016; Inkinen, 2015). For example, human capital is argued to be the main source of a firm's creativity and competitive advantage (Roslender and Fincham, 2004), but it can be ineffective if there is a lack of structural and relational capital support. In addition, even a high level of structural capital is not enough if a firm does not have knowledgeable employees (human capital) to take advantage of it. Also, knowledge embedded in and available through relationships (relational capital) is better absorbed by a firm with high levels of human capital than a firm with low levels of human capital, whereas structural capital in terms of maintained and updated databases and information systems helps a firm to keep track of and utilise its relational capital.

Thus, another motivating aspect for this study is to learn if the global IC research community has provided a sufficient body of scientific knowledge from the multi-element IC perspective. This is important because it can be assumed that multi-element IC studies provide more valuable insights into IC research and practice than single-element IC studies. Inclusion of accounting and managerial journals is crucial in this type of literature review as both have published numerous papers on IC, with unique and equally important contributions. Accounting scholars are traditionally more interested in intangibles on the company's balance sheet, whereas management scholars have traditionally focused on recognising and utilising IC as a value-driver of a firm.

This SLR takes a novel and multi-disciplinary view of IC by reviewing all the relevant research papers from the twenty top accounting and twenty top management journals published between 2000 and 2017. It provides insights on IC research models in terms of their preference for a single element or multiple elements, by discussing and critiquing the current state of the IC literature and by offering transformative ideas for future research directions. Next, this paper will provide details of the methodology of the SLR which will be followed by the results, a discussion and conclusions.

## **20.2 Methodology**

When conducting a literature review, it is important to choose the correct body of literature, to not bias the results (Massaro, Dumay and Guthrie, 2016). For this reason, a rigorous, structured literature review methodology was applied, as discussed by Massaro, Dumay and Guthrie (2016), to identify relevant articles devoted to research on intangibles and IC in the leading accounting and management journals. The research articles were identified and selected for this study by following a structured six-phase procedure.

Phase 1: The twenty top academic journals in the fields of both accounting and management were chosen. Following the approach of Massaro, Dumay and Guthrie (2016), they were selected based on Google Scholar Metrics, which lists the top academic journals based on citations received in the last five years for a wide variety of categories and subcategories. It also provides a broader coverage of

literature sources than Web of Science or Scopus (Harzing and Alakangas, 2016). Based on their quality, relevance and impact, the following accounting and management journals were considered for further analysis (see Table 20.1).

Table 20.1: Top 20 accounting and management journals according to Google Scholar Metrics

<b>Top 20 accounting journals</b>	<b>Top 20 management journals</b>
Accounting & Finance	Academy of Management Journal
Accounting and Business Research	Academy of Management Review
Accounting Horizons	Entrepreneurship Theory and Practice
Accounting, Auditing & Accountability Journal	Harvard Business Review
Accounting, Organizations and Society	Industrial Marketing Management
Auditing: A Journal of Practice & Theory	Journal of Business Research
Contemporary Accounting Research	Journal of Business Venturing
Critical Perspectives on Accounting	Journal of Corporate Finance
European Accounting Review	Journal of Management
International Journal of Accounting Information Systems	Journal of Management Studies
International Tax and Public Finance	Journal of Marketing
Journal of Accounting and Economics	Journal of Operations Management
Journal of Accounting and Public Policy	Journal of Product Innovation Management
Journal of Accounting Research	Journal of the Academy of Marketing Science
Journal of Business Finance & Accounting	Management Decision
Management Accounting Research	Management Science
National Tax Journal	Omega
Review of Accounting Studies	Organization Science
The Accounting Review	Strategic Management Journal

(Source: [https://scholar.google.com/citations?view\\_op=top\\_venues&hl=en&vq=bus\\_accountingtaxation](https://scholar.google.com/citations?view_op=top_venues&hl=en&vq=bus_accountingtaxation))

Phase 2: The individual articles were searched directly via the journals' homepages by using local website search engines. All articles published from 2000 to 2017 were taken into consideration. During an article search, it is crucial to use appropriate keywords to find the right body of literature. Based on the approach of Eccles and Krzus (2010), the following keywords were used to search literature from the journal web pages: "intangible asset\*", "intellectual asset\*", "intangible capital", "intellectual capital" and "intangible\*". After the initial search, removal of duplicates and delimitation based on the year of publication, the number of academic papers was 2,147 and 4,172 for accounting and management journals, respectively.

Phase 3: Based on the title, those articles that did not resonate with the research objectives of this paper were excluded. Thus, if a title did not appear to relate to accounting or managerial research on IC or intangibles, it was deleted from the shortlist. At this point, the number of potentially relevant papers was cut significantly, to 532 for accounting journals and 1,561 for management journals.

Phase 4: The next step was to exclude articles from the shortlist based on the abstracts. At this point, book reviews, discussion articles and editorials/introductions were excluded because they do not provide research results based on detailed methodological support, which may bias the results of further analysis. As a result, the number of potentially relevant papers was reduced to 349 for accounting journals and 427 for management journals.

Phase 5: Based on observations of the full texts, articles that had only a marginal focus on intangibles or IC were excluded. For example, those articles that used intangibles or IC only as control variables in their empirical models or did not reflect the role of intangibles or IC in the interpretation of the results were excluded. The final 325 articles from the twenty top accounting journals and 265 articles from the twenty top management journals reflect a "corpus of scholarly literature, to develop insights,

critical reflections, future research paths and research questions” (Massaro, Dumay and Guthrie, 2016) in the fields of intangibles and IC.

Phase 6: NVivo software was utilised to code the abstracts and full texts of the chosen articles. The coding protocol for each reviewed article comprised the following information: name of author/authors, year of publication, country of origin of the first author and the elements of intangibles or IC in focus in each article.

### **20.3 Results**

The home country of the affiliated university of each first author was used as a measure for each article’s country of origin. Africa was represented by countries such as Egypt and South Africa; Asia included countries such as China, Japan, Singapore and Taiwan; the Americas were represented by the United States, Canada, Brazil and Mexico; and Europe included several countries from the Continental Europe and the United Kingdom. In addition, Australia and New Zealand formed a group of their own. Next, to establish whether the article was focused on accounting for intangibles or IC, the research perspective of the papers was coded in terms of the elements of intangibles or IC in focus in each article. One group represents those papers that focus on intangibles recognised by different accounting standards (research and development costs, advertising expenses, patents and other capitalised intangibles, etc.), while the second group consists of articles devoted to IC. The distribution of papers based on this coding is represented in Figure 20.1.



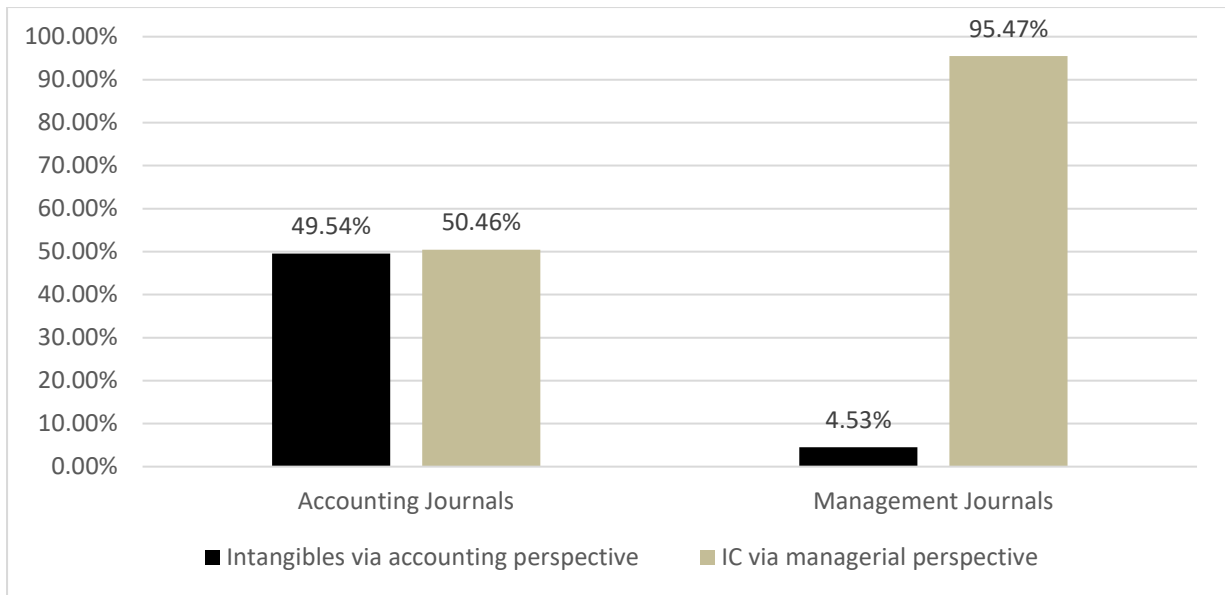
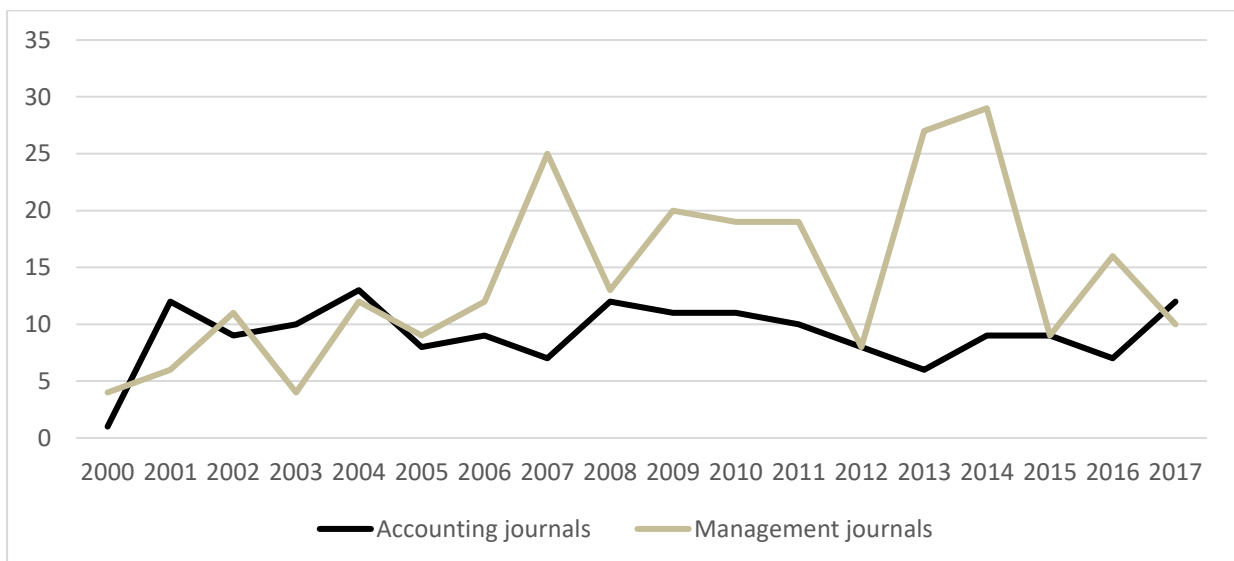


Figure 20.1: The distribution between accounting and managerial papers on IC and intangibles

The results reflect that accounting journals have published approximately the same amount of papers devoted to both perspectives, while management journals have focused much more on the managerial, non-accounting approach towards IC. To accord with the primary theme of this book, only those papers devoted to the managerial perspective on IC were retained for our analysis, while the sample related to accounting intangibles was reserved for other future research endeavours. During the period 2000 to 2017, there were 164 and 253 papers on IC published in the twenty top accounting and management journals, respectively, which are considered during the following analysis. The publication trend over the years is represented below in Figure 20.2.



## Figure 20.2: The dynamics of the annual number of managerial papers on IC and intangibles

As can be seen from Figure 20.2, accounting and management journals published approximately the same amount of papers on IC up until 2006. The fact that this changed in 2007 was most likely due to the application of International Financial Reporting Standards (IFRS) in Europe and enhancements of the harmonisation process between IFRS and Generally Accepted Accounting Principles in the United States (U.S. GAAP). At the same time, the numbers of papers in management journals reflect a clear trend of increase in 2007. Researchers at that time argued that accounting standards were not capable of capturing the real value of intangible assets, so they started to analyse in detail the non-financial information disclosed in annual reports and other data sources (e.g., Abdolmohammadi et al., 2006; Cerbioni and Parbonetti, 2007). The main topic in post-2006 literature is related to “measuring the unmeasurable” and providing different approaches on investigating “out-of-balance-sheet” intangibles (e.g., Reed, Lubatkin and Srinivasan, 2006; Whitwell, Lukas and Hill, 2007). After 2005, journals from both domains started to publish papers where new approaches to structure IC were introduced. These investigated, for example, reputation (Rindova et al., 2005), customer satisfaction (Aksoy et al., 2008), the efficiency of managerial accounting innovations (Ax and Greve, 2017), environmental disclosures (Middleton, 2015), environmental strategic capital (Clarkson et al., 2011) and ethical capital (McPhail, 2009).

Figure 20.2 shows a surge of management journal papers also after 2008, when the Global Financial Crisis (GFC) hit the world economy. The research papers from that period reflect the importance of IC and its elements for optimising different intra-organisational processes (e.g., Laperche, Lefebvre and Langlet, 2011) and the role of non-financial disclosure for different stakeholders (e.g., Brügger, Vergauwen and Dao, 2009; Francis, Nanda and Olsson, 2008; Luft, 2009). There was also a sudden increase in the number of published papers from 2012 to 2015, especially in the management journals, a deeper analysis of which showed that during that period there was an increased interest in different group dynamics that help companies to generate IC. Some papers investigate the role of CEO’s and board of directors’ IC (e.g., Datta and Iskandar-Datta, 2014; Vandenbroucke, Knockaert and

Ucbasaran, 2016); some are focused on alliances and networking (Arribas, Hernández and Vila, 2013; Elfenbein and Zenger, 2013) and others investigate group and micro-team dynamics and their role in the company's value creation (e.g., Kemper, Schilke and Brettel, 2013). Moreover, there is also a significant research interest in social capital, with 25% of all papers published in 2012 to 2015 focused on this subject (e.g., Du, Guariglia and Newman, 2015; Purchase, Olaru and Denize, 2014).

The next step of analysis is related to the home country of the author and continent of origin of the publication, which was coded based on the first author's university affiliation. The results are represented below, in Figures 20.3 and 20.4.

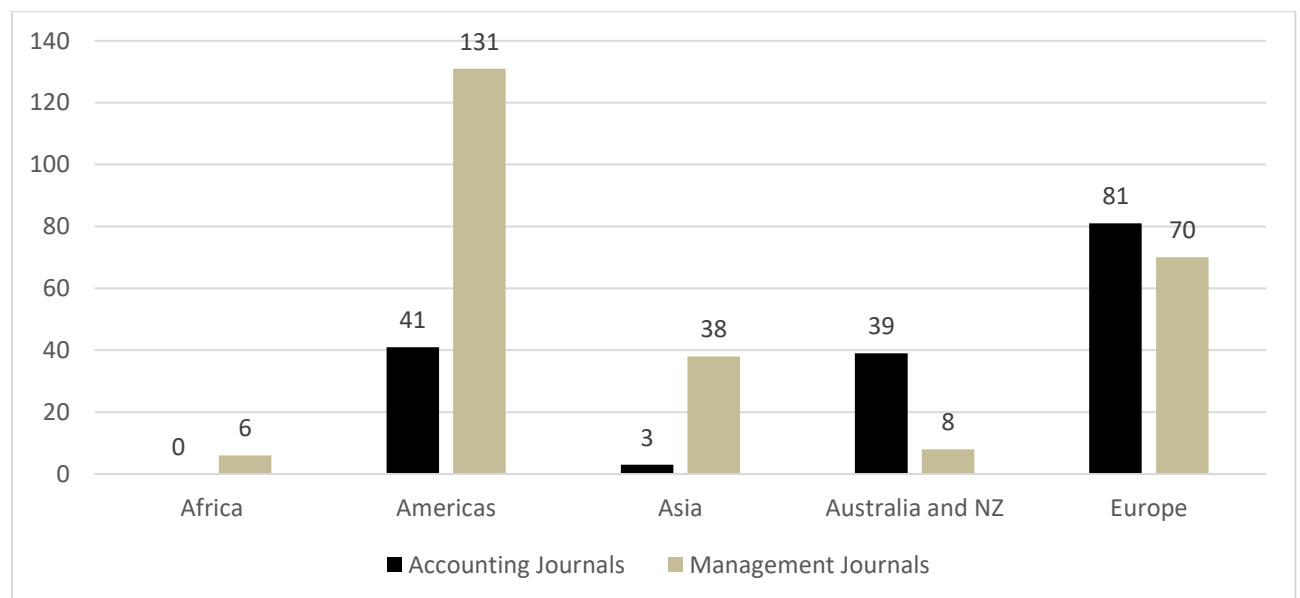


Figure 20.3: IC and Intangibles articles by continent: 2000 - 2017

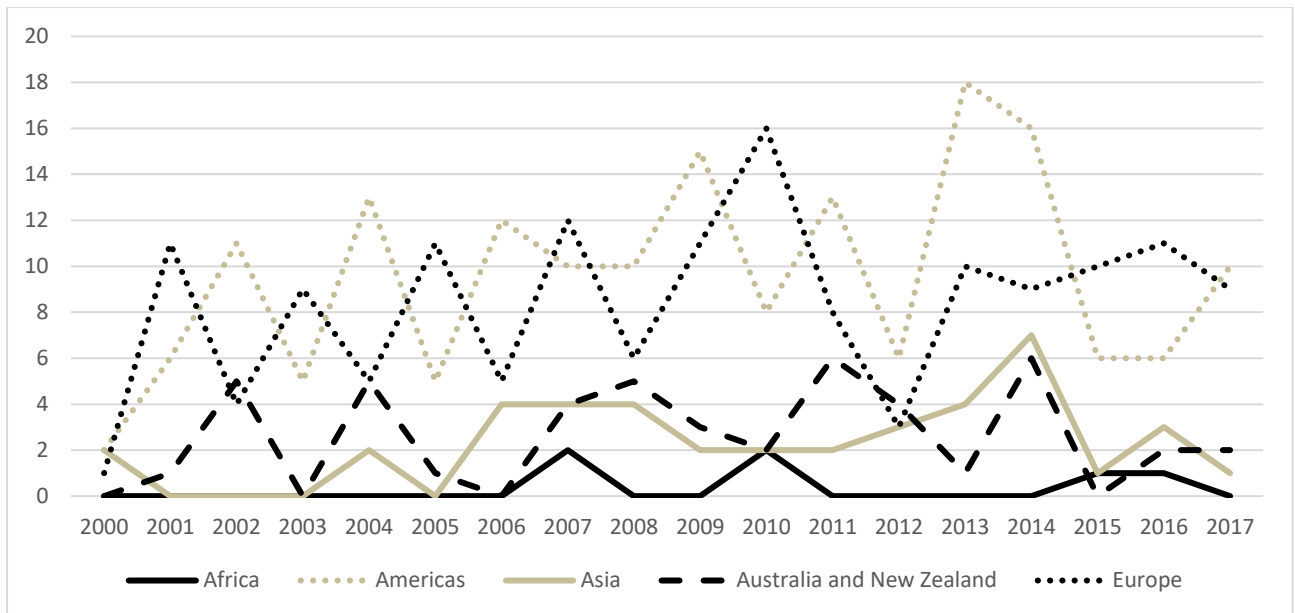


Figure 20.4: The dynamics of the annual number of managerial papers on IC per continent

As can be seen from Figures 20.3 and 20.4, the majority of the papers that were published between 2000 and 2017 fall into the categories of the Americas and Europe. Also, it can be noticed that the share of managerial IC papers published in accounting journals is higher in Europe than in the Americas, while the trend is the opposite for the papers in management journals. The Americas, mainly represented by researchers from the United States, and Europe, with the highest share of papers being from the United Kingdom, are the leading continents/regions according to the amount of papers published during the observation period. It can also be seen that the authors from Asian universities have increased their research productivity since 2005, publishing significantly more papers, specifically in management, rather than accounting, journals. Besides, it seems that researchers from Australian and New Zealand universities publish their research on IC to a great extent in accounting journals.

The subsequent step of the analysis is devoted to studying which elements of IC were the focus of research during the period 2000 to 2017. This is an especially intriguing step, as contemporary studies (e.g., Albertini, 2016; Inkinen, 2015) strongly suggest that IC elements must interact with each other to create value and improve different performance outcomes in firms (e.g., innovation performance). In other words, IC models that focus only on a single element are essentially missing some critical

building blocks and do not necessarily produce as valuable and relevant research results as the multi-element IC models. To make a distinction between multiple-element and single-element taxonomies, papers were coded according to their approach to IC elements. Thus, papers that use the established tripartite framework of IC (human, relational and structural capital), other approaches to IC (e.g., innovation capital, trust capital, strategic capital and entrepreneurial capital, [see Inkinen, 2015]), the tripartite framework extended with some other elements of IC, and a group of “new approaches”, which included some contemporary elements of IC such as reputational capital and environmental capital, were differentiated. The basic coding structure for IC, therefore, was amended each time a new approach emerged or when new multi-element approaches were noticed.

The overall trend regarding single-element versus multi-element approaches is presented in Figure 20.5.

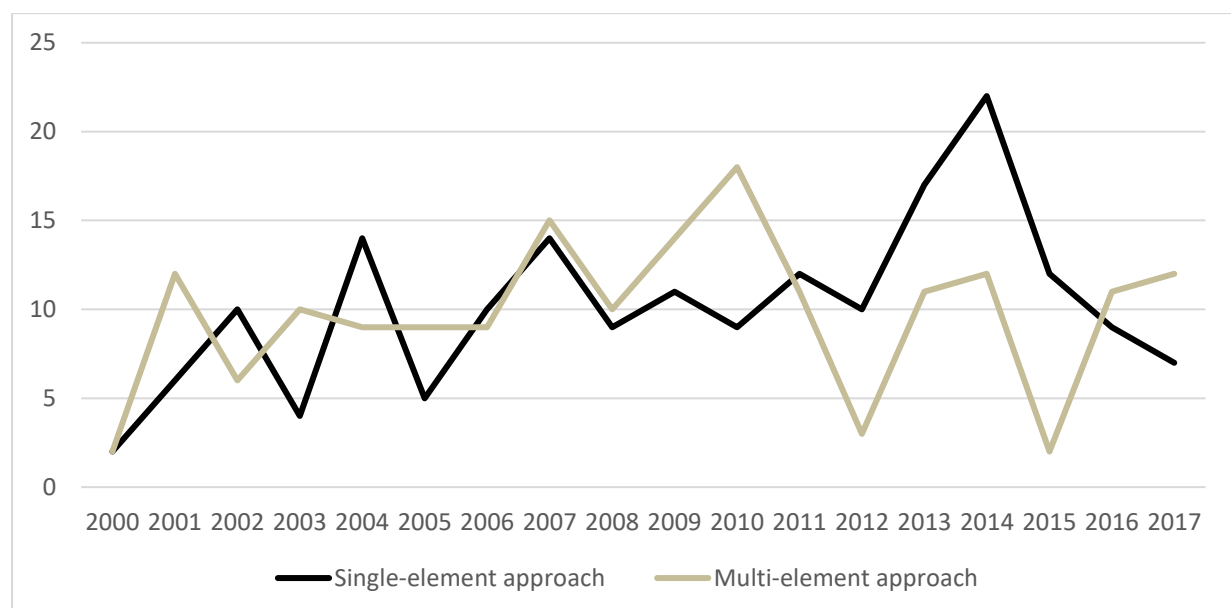


Figure 20.5: The research trend regarding a single-element vs multi-element approach on IC

As can be seen in Figure 20.5, multi-element approaches started to dominate after the GFC in 2008, with researchers and managers probably focusing on how investments in different elements of IC could help their companies overcome difficult financial situations and improve intra-organisational processes and performance. The situation changed in 2012 when single-element approaches started to dominate, with particular attention given to human capital and social capital.

The overall data for the accounting and managerial journals are presented below (Table 20.2). It is evident that academic research does not obey a universal approach towards the structure of IC. The results reflect that papers published in the accounting journals are more often devoted to a multi-element (66.2%) than a single-element (33.8%) approach. Authors frequently apply the classical tripartite taxonomy of IC and even more frequently extend it with one or multiple further elements of IC to give a new edge to their analysis. This is in contrast to the management journals, where researchers prefer single-element approaches to IC (61.4%), with particular attention to social capital (35.0%) and human capital (17.5%). Thus, less than 40% of the papers in these journals are devoted to studying multiple IC elements. Of those multi-element studies, most focus on the classical tripartite model of IC or extended versions.

Summing up the papers from the accounting and management journals, shares of single-element and multi-element approaches to IC are almost equal (51.0% and 49.0%). However, switching the focus to continents provides other kinds of results. The statistics show that researchers representing the Americas are responsible for the majority of the single-element studies on IC (24.5% of the entire sample), with a focus on social capital (10.6%) and human capital (9.8%). This contrasts with the European academics, who write the majority of their research papers on the interrelation between different elements of IC and their combined influence on organisational processes and value creation (22.3%). The "European approach" has also been adopted by Asian (5.6%) and Australian (5.9%) researchers, who more often investigate a multi-element structure of IC and the relationship between different IC elements.

Table 20.2: IC elements in the focus of the analysis in accounting and management journals (as a percentage from total sample)

IC elements in focus	Accounting journals						Management journals						The whole sample of journals					
	AF	AME	Asia	ANZ	EUR	Total	AF	AME	Asia	ANZ	EUR	Total	AF	AME	Asia	ANZ	EUR	Total
<b>Single-element approach</b>	<b>0.00</b>	<b>10.29</b>	<b>0.00</b>	<b>10.29</b>	<b>13.24</b>	<b>33.82</b>	<b>1.35</b>	<b>33.18</b>	<b>7.17</b>	<b>1.79</b>	<b>17.94</b>	<b>61.43</b>	<b>0.84</b>	<b>24.51</b>	<b>4.46</b>	<b>5.01</b>	<b>16.16</b>	<b>50.97</b>
Human capital	0.00	5.15	0.00	3.68	8.09	16.91	0.90	12.56	1.35	0.00	2.69	17.49	0.56	9.75	0.84	1.39	4.74	17.27
Relational capital	0.00	0.74	0.00	1.47	0.74	2.94	0.00	1.79	0.45	0.00	0.90	3.14	0.00	1.39	0.28	0.56	0.84	3.06
Structural capital	0.00	1.47	0.00	2.21	1.47	5.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.84	0.56	1.95
Social capital	0.00	1.47	0.00	2.94	0.74	5.15	0.00	16.14	4.93	0.90	13.00	34.98	0.00	10.58	3.06	1.67	8.36	23.68
Other single elements (brand, innovation, entrepreneurship capital)	0.00	1.47	0.00	0.00	2.21	3.68	0.45	2.69	0.45	0.90	1.35	5.83	0.28	2.23	0.28	0.56	1.67	5.01
<b>Multi-element approach</b>	<b>0.00</b>	<b>12.50</b>	<b>0.74</b>	<b>13.24</b>	<b>39.71</b>	<b>66.18</b>	<b>0.90</b>	<b>16.14</b>	<b>8.52</b>	<b>1.35</b>	<b>11.66</b>	<b>38.57</b>	<b>0.56</b>	<b>14.76</b>	<b>5.57</b>	<b>5.85</b>	<b>22.28</b>	<b>49.03</b>
Tripartite taxonomy (human, relational and structural capitals)	0.00	0.00	0.00	2.94	13.97	16.91	0.00	4.04	4.48	0.00	3.59	12.11	0.00	2.51	2.79	1.11	7.52	13.93
Elements of tripartite taxonomy together with other elements of IC	0.00	2.94	0.00	6.62	12.50	22.06	0.45	7.62	1.79	0.45	3.59	13.90	0.28	5.85	1.11	2.79	6.96	16.99
Other multiple IC elements	0.00	9.56	0.74	3.68	13.24	27.21	0.45	4.48	2.24	0.90	4.48	12.56	0.28	6.41	1.67	1.95	7.80	18.11
<b>Total</b>	<b>0.00</b>	<b>22.79</b>	<b>0.74</b>	<b>23.53</b>	<b>52.94</b>	<b>100.00</b>	<b>2.24</b>	<b>49.33</b>	<b>15.70</b>	<b>3.14</b>	<b>29.60</b>	<b>100.00</b>	<b>1.39</b>	<b>39.28</b>	<b>10.03</b>	<b>10.86</b>	<b>38.44</b>	<b>100.00</b>

Note: Africa (AF), Americas (AME), Australia and New Zealand (ANZ), Europe (EUR)

## 20.4 Discussion and conclusions

As the recent academic research has argued, IC creates value for organisations through the interaction of its different elements (e.g., Albertini, 2016; Inkinen, 2015). Thus, the objective of this structured literature review was to explore whether the top-tier academic IC research has provided a sufficient body of scientific knowledge from the multi-element IC perspective. In addition, this paper explored different scholarly traditions with regard to the study of IC, by comparing research approaches of scholars from different continents.

The results show that, overall, research published in the twenty top accounting and management journals between 2000 and 2017 focused equally on single- and multi-element IC approaches. This finding is positive news for the IC research domain, as around half of the top-tier journal papers have taken the multi-element approach to IC and provided valuable knowledge for their readers. On a more practical level, this means that the more complex multi-element IC models (e.g., Bontis, 1998; Inkinen et al., 2017) have received and will likely continue to receive rigorous scientific testing. This will gradually improve the multi-element IC research models and pave the way for relevant and reliable research output.

However, there are significant differences between the two most prominent groups, the American and European researchers. The Americans have preferred to focus on single elements, while the Europeans have favoured multi-element approaches. The American single-element IC approach overlooks other underlying elements and as such is not able to provide more detailed knowledge about IC-based value creation. However, the advantage of this approach is that it provides a simpler understanding of IC, which may be of benefit to scholars and practitioners who are unfamiliar with IC and intangibles and who may go on to research multiple IC elements after getting familiar with IC and intangibles through single elements. Regardless, this finding prompts a call for broadening the American research focus to multiple-element approaches.



## 20.5 Implications and future research

The findings from this literature review have different limitations. First, only the twenty top management and accounting journals were considered. A second limitation is that the sample papers were analysed without taking into account potential connections with other papers; for example, it is possible that in the American papers, multiple-element approaches to IC were initially pursued, which subsequently led to the application of single-element approaches. Thus, investigating interrelations of contributions might be a promising research opportunity. In this context, it needs to be taken into account that papers reviewed in this study are probably related to contributions that were not published in the twenty top management and accounting journals. Also, a bibliometric analysis might provide reasons for the occurrence of some of the results presented here.

Third, only those contributions from the initial sample that focus on the managerial perspective were included in this study. Thus, a further avenue for research lies in analysis of the contribution of accounting-related papers. This analysis would be valuable because accounting looks deeper into understanding the value of IC and intangibles. In order to manage something, there is always the challenge of measuring it, which in the case of IC and intangibles, has always proven to be a challenge. Accounting has several qualitative aspects that need to be taken into consideration, such as relevance and faithful representation, alongside the enhancing characteristics of comparability, verifiability, timeliness and understandability (IASB, 2018, p. 6). Without considering these characteristics in either a single- or multi-element approach to IC and intangibles research, the findings may not be complete. Thus, researchers need to extend their research approaches to ensure what is being measured will make a positive contribution to the management of IC.

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