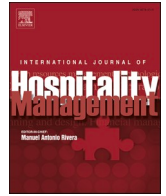




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Full length article

## A bibliometric analysis of intellectual capital research in the hospitality and tourism business setting

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## ABSTRACT

Intellectual capital (IC) strategically matters to hospitality and tourism businesses in which intangible, knowledge-based resources are the key to their competitiveness, resilience, and sustainable value creation. Addressing a knowledge gap in the subject, this study conducted a bibliometric analysis of the IC research in hospitality and tourism business settings to provide a general overview of the developmental trends of studies in this area. The results show that IC research in hospitality and tourism settings gained momentum over the past decade and is now expanding. Scholarly interest in this research is emerging globally, with the United States leading the way. Social and human capital factors are the most investigated IC forms as core, interconnected sources of innovation. Emerging topics, including sustainability, green IC, and strategic approach, indicate an interdisciplinary direction of IC research in hospitality and tourism focused on strategic management of knowledge resources. Implications and future research avenues are proposed.

## 1. Introduction

Intellectual capital (IC) is a key strategic resource in the corporate world, particularly relevant to the success of organizations operating in service industries, such as hospitality and tourism businesses, whose value-creation processes exhibit an intrinsically intangible character (Khaliq et al., 2020). Such businesses rely heavily on intangible, knowledge-based resources, such as the knowledge, skills, and experiences embedded in their personnel; their interactions with customers and their overall relationship networks; and the corporate reputation, know-how, and other assets of knowledge enclosed in their organizational processes and systems (Bontis et al., 2015; Chowdhury et al., 2020; Nieves et al., 2014). These are essential inputs of their business models devoted to the creation of guests' welcome and liking-based services and therefore of outputs which in turn have highly intangible content (Berezina et al., 2016). Furthermore, investing in IC, such as in human, relational, and organizational-related intangibles, is essential to achieve innovation, enhanced performance, a competitive edge, and corporate sustainability, as well as to assist the survival and resilience of hospitality and tourism businesses facing market dynamism, crises, and

natural calamities (Batool et al., 2022; Dang and Wang, 2022; García-Villaverde et al., 2017; Leon, 2021; Ognjanovic et al., 2023).

Academic interest in IC research spans several decades of studies that have fueled a lively interdisciplinary and multidisciplinary debate, encompassing IC management, measurement, and reporting (Al-Khoury et al., 2022; Dumay and Guthrie, 2019). IC is indeed an enigmatic concept with multiple definitions and categorizations from differential research approaches and temporal dimensions, first introduced by Kenneth Galbraith in 1969 as the "using of knowledge and skills" (Bontis, 1998; Swart, 2006, p. 137) in a value creation process. Thomas Stewart's (1997) definition is the most widely used, framing IC as "the sum of everything everybody in a company knows that gives it a competitive edge. [...] Intellectual Capital is intellectual material – knowledge, information, intellectual property, experience – that can be put to use to create wealth. It is collective brainpower" (pp. IX–X). IC research has both gone through evolutionary stages over time and greatly proliferated in the last decade (Faraji et al., 2022), suggesting a revived academic interest in IC. The Integrated Reporting (IR) Framework—as a part of an evolving corporate reporting system covering multi-capital disclosure—has also rekindled interest in IC, introducing a

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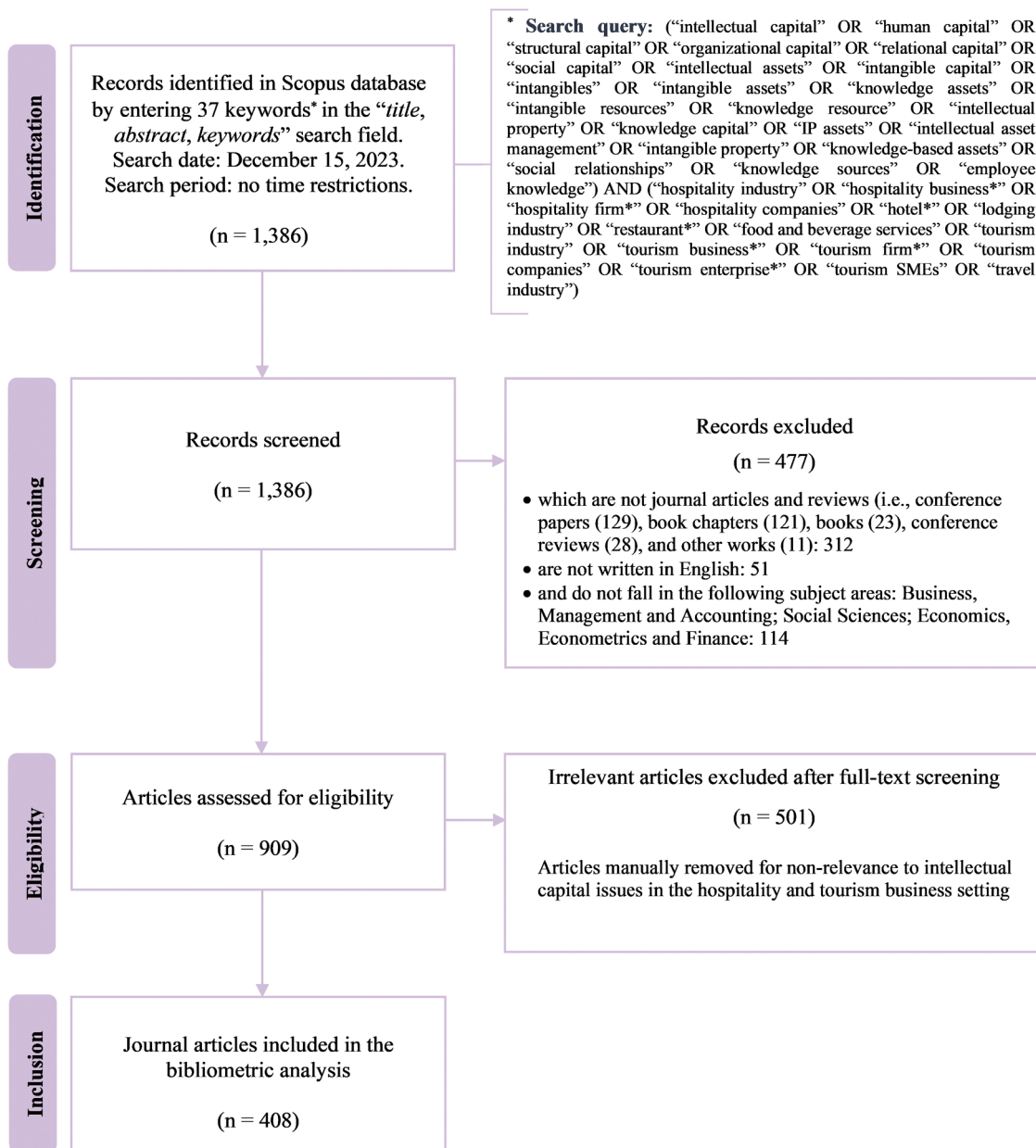


Fig. 1. PRISMA flowchart of the article selection process for bibliometric analysis of IC research in hospitality and tourism business settings.

**Table 1**  
Main publication-related data.

Description	Results
Time span	1989:2023
Total articles	408
Total journals	157
Total authors	1000
Authors of sole-authored articles	45
Authors of multi-authored articles	955
Total countries/regions	72
Total keywords (author keywords and keywords plus)	1414
Articles' annual growth rat%	12.85
Sole-authored articles	46
Articles per author	0.41
Authors per article index	2.45
Co-authors per articles index	2.87

six-capital approach to corporate value creation that emphasizes the relevance of non-physical and non-financial resources (Dumay and Guthrie, 2019; International Integrated Reporting Council (IIRC), 2021). Three of the six IR capitals correspond indeed to the three commonly accepted IC components: human, relational, and structural capital (Adams et al., 2013; Dumay, 2016). As evidence of the growing academic interest in IC research, there are also several recently published bibliometric studies evaluating the IC literature corpus as a whole (e.g., Al-Khoury et al., 2022; Faraji et al., 2022), as well as in the *Journal of Intellectual Capital* (e.g., Bamel et al., 2022) and in a specific corporate context (e.g., Martín-de Castro et al., 2019).

Notwithstanding this keen interest, no study to date has investigated the scientific body of knowledge on IC in the hospitality and tourism industries, leaving a research lacuna. Therefore, considering the importance of IC for the resilience and sustainable competitiveness of organizations belonging to such industries (Costa et al., 2020; Ognjanovic et al., 2023), this study conducted a bibliometric analysis of the IC research in hospitality and tourism business settings to provide a general

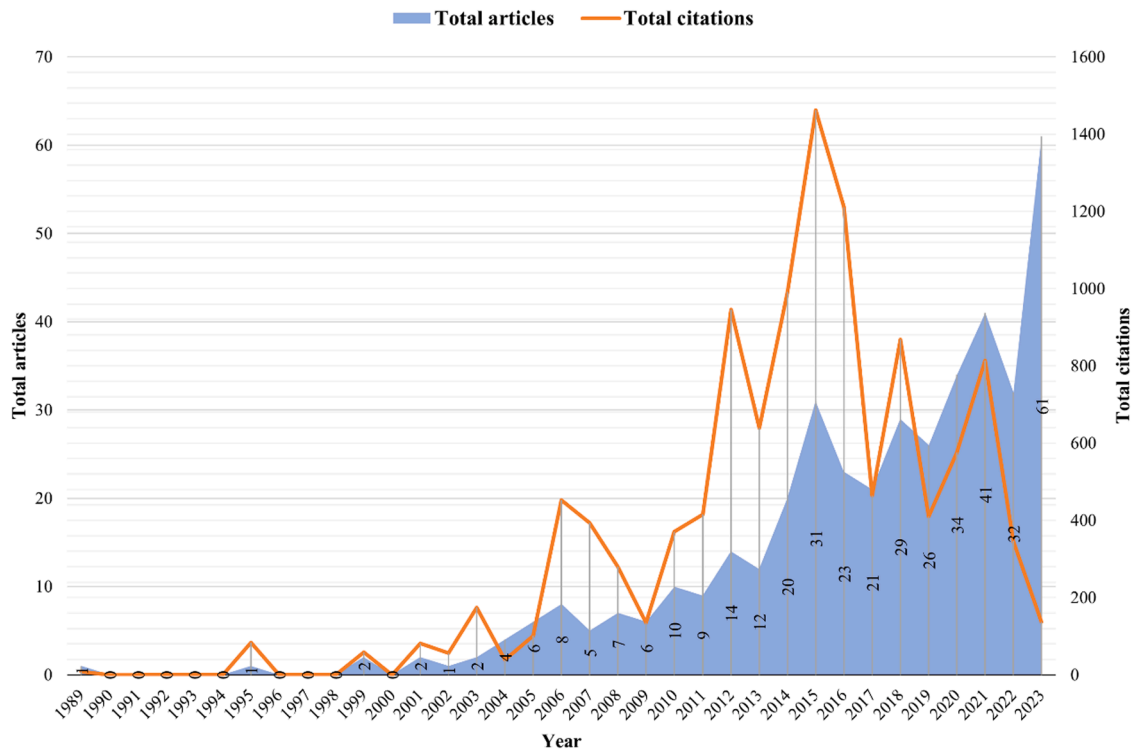


Fig. 2. Publication and citation trends in IC research in hospitality and tourism businesses between 1989 and 2023.

overview of the developmental trends of studies in this area.

Bibliometric analysis is an increasingly popular methodology in business research, widely and effectively used to show the evolution and development of a field of scholarly interest (Gao et al., 2021; Wu et al., 2022). Based on different bibliographic data analyses of publications, it enables objective retrospective evaluations of scientific products in a given research area or journal (Donthu et al., 2020; Yadav et al., 2022). These evaluations can reveal useful insights into the performance of and relationships between research constituents (e.g., top-contributing authors, countries and articles, and core themes) in that area to guide future studies (Donthu et al., 2021). Accordingly, using a combination of bibliometric analysis techniques to perform both descriptive and network analyses, this study examined a Scopus bibliographic dataset covering 408 journal articles published up to December 2023 in an attempt to answer:

RQ1: *What is the publication activity trend describing the development of IC research in hospitality and tourism business settings?*

RQ2: *Which are the top articles, journals, authors, and countries contributing to IC research in these settings?*

RQ3: *Which connections and collaborations stand out?*

RQ4: *What prominent research themes emerge?*

The value of this paper is its contribution to the advancement of both the IC and hospitality and tourism literatures. Adopting a bibliometric perspective, it is the first to map the publication activity trends, leading articles, journals, authors, countries, and prominent themes and theoretical frameworks in IC research conducted to date in the hospitality and tourism business domain, thus providing a snapshot of the ongoing progress and future directions of studies in this area. To the authors' knowledge, there is no previous bibliometric study or literature review on the subject that provides a picture of what is known about IC in the hospitality and tourism industries.

The rest of the paper is organized as follows. Section 2 provides a brief literature overview outlining the importance of IC and its multiple facets in hospitality and tourism businesses. Section 3 details our bibliometric methodology and data. After that, the results of both descriptive and network analyses are reported and discussed in Section

4. Section 5 concludes the paper by outlining the study's implications, limitations, and future research avenues.

## 2. IC matters to hospitality and tourism businesses: a literature overview

Several studies in the hospitality and tourism domain demonstrate the saliency of IC and its ability to enhance business performance and innovativeness, particularly in hotels and small and medium-sized tourism firms (Babajee et al., 2020; Costa et al., 2020; Khaliq et al., 2020; Omerzel and Jurdana, 2016; Rudež and Mihalič, 2007). These authors have argued that as hospitality and tourism businesses are service-oriented, their success depends heavily on IC resources, thus implying necessary value-creation and reporting strategies (Davey et al., 2017). The hospitality and tourism literature presents different categorizations of IC resources. Several studies adopted the traditional tripartite categorization into human, relational, and structural capital (e.g., Bontis et al., 2015; Leon, 2021; Sardo et al., 2018; Zeglat and Zigan, 2014), and some proposed different classifications (e.g., Khaliq et al., 2020). Some recent studies also underpinned *green IC*—which integrates IC and environmental concerns, thus discussing human, relational, and structural green capital—as typically relevant to hospitality businesses' strategic management to create sustainable value (Dang and Wang, 2022; Martínez-Martínez et al., 2021; Xin and Wang, 2023). Furthermore, various studies dealt exclusively with one of the possible categories, specifically, human or social capital (e.g., Aman-Ullah et al., 2022; Liu and Lee, 2015).

### 2.1. Human capital in hospitality and tourism businesses

*Human capital* consists of intangible values owned by the individual human resources of an organization, including knowledge, skills, experiences, creativity, innovation capability, motivation, and well-being (e.g., Bontis et al., 2015; Swart, 2006). It has been identified as a crucial driver in enhancing the productivity and competitiveness of hospitality and tourism businesses (Aman-Ullah et al., 2022). For instance, human

Table 2

Top 20 most cited articles in IC research in hospitality and tourism businesses between 1989 and 2023.

Rank	Article title	Authors	Year	Journal title	Total citations	Citations per year
1	"Understanding satisfied and dissatisfied hotel customers: Text mining of online hotel reviews"	Berezina, K., Bilgihan, A., Cobanoglu, C., Okumus, F.	2016	Journal of Hospitality Marketing & Management	377	47.13
2	"A stage to engage: Social media use and corporate reputation"	Dijkmans, C., Kerkhof, P., Beukeboom, C.J.	2015	Tourism Management	331	36.78
3	"The resilience of formal and informal tourism enterprises to disasters: Reef tourism in Phuket, Thailand"	Biggs, D., Hall, C.M., Stoeckl, N.	2012	Journal of Sustainable Tourism	258	21.50
4	"What drives employees' intentions to implement green practices in hotels? The role of knowledge, awareness, concern and ecological behaviour"	Chan, E.S.W., Hon, A.H.Y., Chan, W., Okumus, F.	2014	International Journal of Hospitality Management	234	23.40
5	"Hospitality employee knowledge-sharing behaviors in the relationship between goal orientations and service innovative behavior"	Kim, T.T., Lee, G.	2013	International Journal of Hospitality Management	222	20.18
6	"The impact of knowledge sharing on organizational learning and effectiveness"	Yang, J.T.	2007	Journal of Knowledge Management	183	10.76
7	"Social capital, geography, and survival: Gujarati immigrant entrepreneurs in the US lodging industry"	Kalnins, A., Chung, W.	2006	Management Science	173	9.61
8	"Antecedents and consequences of intellectual capital: The role of social capital, knowledge sharing and innovation"	Allameh, S.M.	2018	Journal of Intellectual Capital	172	28.67
9	"Social capital and tourism entrepreneurship"	Zhao, W., Ritchie, J.R.B., Echtner, C.M.	2011	Annals of Tourism Research	172	13.23
10	"Tourism productivity: Evidence from the United Kingdom"	Blake, A., Sinclair, M. T., Soria, J.A.C.	2006	Annals of Tourism Research	170	9.44
11	"Innovation, entrepreneurship, and restaurant performance: A higher-order structural model"	Lee, C., Hallak, R., Sardeshmukh, S.R.	2016	Tourism Management	168	21.00
12	"Building dynamic capabilities through knowledge resources"	Nieves, J., Haller, S.	2014	Tourism Management	166	16.60
13	"The impact of employees' positive psychological capital on job satisfaction and organizational citizenship behaviors in the hotel"	Jung, H.S., Yoon, H.H.	2015	International Journal of Contemporary Hospitality Management	160	17.78
14	"Sustainability motivations and practices in small tourism enterprises in European protected areas"	Font, X., Garay, L., Jones, S.	2016	Journal of Cleaner Production	156	19.50
15	"On the relationship between intellectual capital and financial performance: A panel data analysis on SME hotels"	Sardo, F., Serrasqueiro, Z., Alves, H.	2018	International Journal of Hospitality Management	138	23.00
16	"Knowledge-based resources and innovation in the hotel industry"	Nieves, J., Quintana, A., Osorio, J.	2014	International Journal of Hospitality Management	136	13.60
17	"Management innovation in the hotel industry"	Nieves, J., Segarra-Ciprés, M.	2015	Tourism Management	134	14.89
18	"Intellectual capital in Serbia's hotel industry"	Bontis, N., Janošević, S., Dženopoljac, V.	2015	International Journal of Contemporary Hospitality Management	129	14.33
19	"Comparing voluntary policy instruments for sustainable tourism: The experience of the Spanish hotel sector"	Ayuso, S.	2007	Journal of Sustainable Tourism	128	7.53
20	"Green human resource management practices and environmental performance in Malaysian green hotels: The role of green intellectual capital and pro-environmental behavior"	Nisar, Q.A., Haider, S., Ali, F., Jamshed, S., Ryu, K., Gill, S.S.	2021	Journal of Cleaner Production	128	42.67

capital is a core factor affecting the financial performance of hotels (Vale et al., 2022) and the sustainable growth of restaurants (Asoba and Patricia, 2021; Carlbäck et al., 2023). Human capital appears critical to providing quality and innovative human services and fostering customer relationships (Sardo et al., 2018). Also, human capital factors, such as spiritual and emotional intelligence and workplace attitude, are crucial for the hospitality industry's sustainability in challenging times (Batool et al., 2022). In short, hospitality and tourism businesses greatly rely on their personnel's knowledge and skills—including knowledge of linguistic and cultural diversity and the ability to handle emergencies and create unique guest experiences—which encourage the development of dynamic capabilities that allow these businesses to compete sustainably (Nieves and Haller, 2014).

## 2.2. Social and relationship capital in hospitality and tourism businesses

Also relevant to hospitality and tourism businesses is *social and relationship capital*, which consists of intangible values inherent in and generated through an organization's intra- and extra-networks of relationships (Adams et al., 2013; Chowdhury et al., 2020; Liu et al., 2020). Related studies approached these relationships differently, including referring to them as *relational capital*. The latter covers the spectrum of relationships hospitality firms build and nurture both with

their customers or guests and with other key stakeholders including commercial partners, tourism promotion organizations, government, and local communities (Rudež and Mihalič, 2007; Sardo et al., 2018; Zeglat and Zigan, 2014). Relational capital also includes interpersonal relationships between the firm's employees or groups and divisions, which promote, for example, hotel service innovation (Liu et al., 2020). Khaliq et al. (2020) approached customer relationships separately in terms of "customer capital" (i.e., customer loyalty and satisfaction, brand, and reputation) and found that it is one of the most important IC resources affecting small tourism business performance.

Many other studies approached network relationships of hospitality and tourism firms in terms of *social capital* that stresses social interaction and cooperation—both within and outside the firm (internal and external social capital, respectively)—as a potential source for knowledge acquisition and competitive advantage (e.g., Dai et al., 2015; García-Villaverde et al., 2021). Indeed, these studies used the theory of Nahapiet and Ghoshal (1998), who conceptualized three social capital dimensions that create IC: i) *structural social capital* (existing connections between actors in a network and its configuration); ii) *relational social capital* (trust and expectations nurturing interpersonal relationships); and iii) *cognitive social capital* (shared values and goals). For instance, Liu and Lee (2015) found that these dimensions can affect knowledge management, thus supporting the entrepreneurial orientation of street

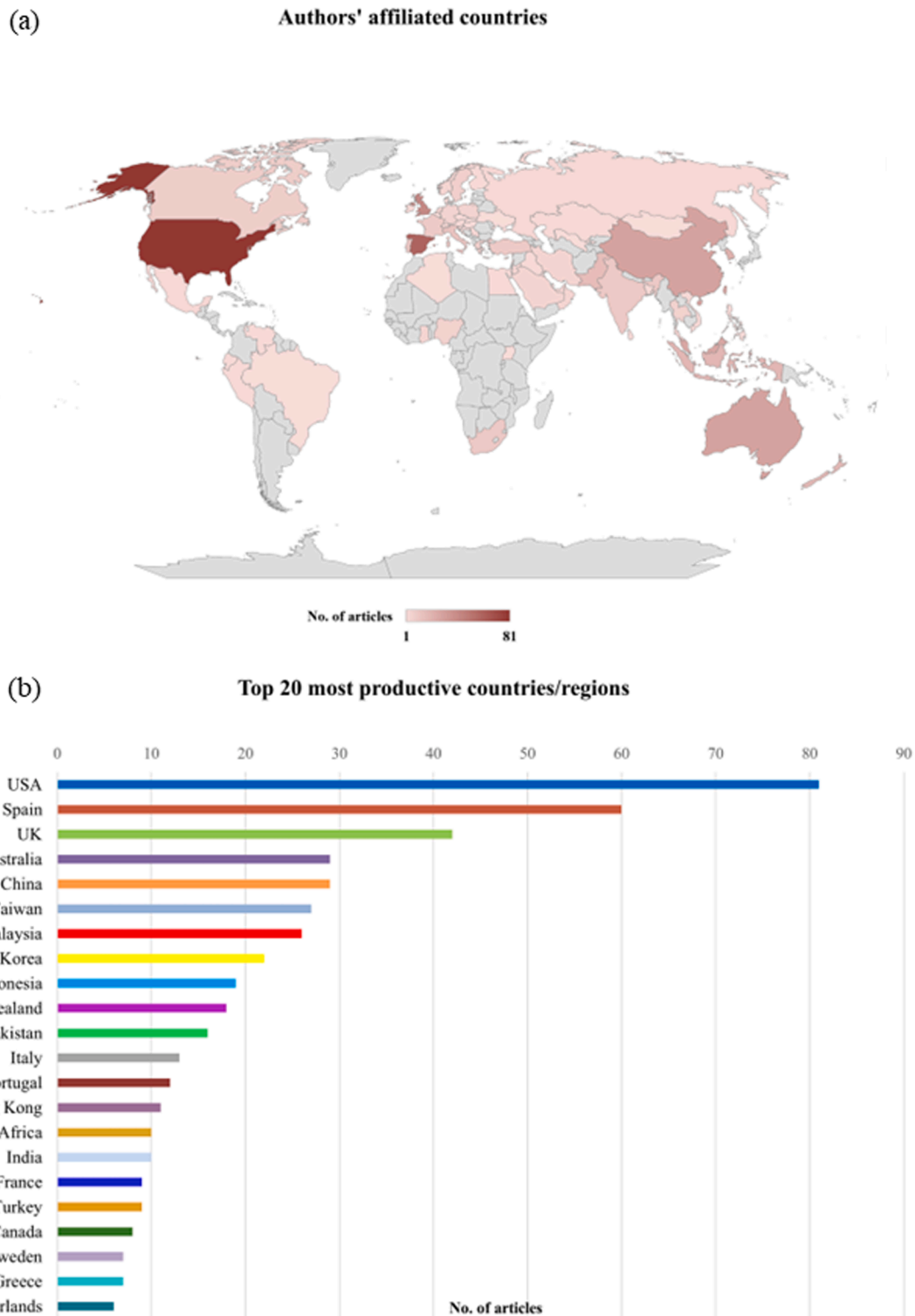


Fig. 3. (a) World map of all 72 authors' affiliated countries/regions; (b) graphical representation of the top 20 most productive countries/regions.

food and beverage vendors. Chowdhury et al. (2020) demonstrated that social capital can facilitate restaurant product innovation capability through knowledge sharing in workplace routines. Similarly, García-Villaverde et al. (2021) argued that external relationships (e.g., those with suppliers, destination management organizations, third-party websites, travel agencies, entertainment firms, government, and other local agents) can enable hospitality firms located in tourism destinations to innovate their products and services. Social and relationship capital is

also relevant to develop human and structural capital, business performance, competitiveness, and reputation in hotel businesses (Allameh, 2018; Brien et al., 2019; Dai et al., 2015; Liu, 2017).

### 2.3. Organizational or structural capital in hospitality and tourism businesses

The influence of organizational or structural capital on hospitality and

**Table 3**

Top 20 most contributing journals to IC research in hospitality and tourism businesses between 1989 and 2023.

Rank	Journal title	No. of articles	Total citations	Average citations
1	International Journal of Hospitality Management	39	2243	57.51
2	International Journal of Contemporary Hospitality Management	33	1134	34.36
3	Sustainability	17	151	8.88
4	Tourism Management	16	1454	90.88
5	Journal of Hospitality and Tourism Management	13	345	26.54
6	Journal of Human Resources in Hospitality and Tourism	11	71	6.45
7	Worldwide Hospitality and Tourism Themes	10	56	5.60
8	Journal of Hospitality Marketing & Management	9	583	64.78
9	Journal of Sustainable Tourism	9	458	50.89
10	Journal of Intellectual Capital	9	448	49.78
11	Tourism Economics	9	94	10.44
12	Journal of Hospitality & Tourism Research	7	79	11.29
13	Cornell Hospitality Quarterly	6	150	25.00
14	Current Issues in Tourism	6	63	10.50
15	Journal of Environmental Management and Tourism	6	11	1.83
16	African Journal of Hospitality, Tourism and Leisure	5	31	6.20
17	International Journal of Tourism Research	4	105	26.25
18	International Journal of Hospitality and Tourism Administration	4	34	8.50
19	International Journal of Learning and Intellectual Capital	4	5	1.25
20	Journal of Hospitality Financial Management	4	0	0.00

tourism businesses' profitability and innovativeness was also ascertained (Bontis et al., 2015; Omerzel and Jurdana, 2016). This capital consists of intangible values owned by an organization and stored in business processes and structures, including tacit routines, explicit procedures and rules, strategies, systems, databases, culture, and intellectual property (Barney, 1991; Swart, 2006). Some studies even found that it strongly affects business performance (Zeglat and Zigan, 2014) and new service development in hotels (Liu et al., 2020). Also highlighted has been the supportive role of structural capital in empowering employees to successfully operate and develop key relationships, such as through the hotel's culture, management philosophy, and information technology (Rudež and Mihalič, 2007). According to Lee et al. (2016), hospitality businesses should focus on management and marketing innovations to remain competitive since their products are difficult to protect through patents and copyrights, such as by promoting new ways of organizing employees' work or customer loyalty programs on social networking sites. Furthermore, Martínez-Martínez et al. (2021) proposed a "pro-environmental behavioral intention" factor as an extending element of structural capital to address the hospitality industry's environmental challenges.

### 3. Methods and data

The main purpose of this study was to provide an overview of the developmental trends of IC research in hospitality and tourism business settings through a bibliometric analysis of the existing relevant literature. To conduct a rigorous and reliable bibliometric analysis we relied upon the procedural recommendations provided by Donthu et al. (2021). Accordingly, after defining the purpose and scope of the study

(Step 1), we chose suitable techniques (Step 2), collected data for bibliometric analysis (Step 3), and finally performed the analyses and reported the findings (Step 4).

#### 3.1. Choice of bibliometric analysis techniques and tools

This sub-section details the techniques and tools selected (Step 2) and then used for bibliometric analysis.

Consistent with the study's purpose and questions, we decided to use two categories of bibliometric analysis techniques, namely performance analysis and science mapping. *Performance analysis* is a descriptive bibliometric analysis that examines the contributions of different research constituents (e.g., authors, universities, countries, and journals) to a scientific field. It uses publication- and citation-related metrics (i.e., productivity and impact measurements, respectively) to unpack the prolific constituents, thus identifying their research performance (Donthu et al., 2021). The number of publications and citations is a widely used performance indicator to describe publication and citation trends, the most cited articles, and the most contributing journals, authors, and their affiliated universities and countries (e.g., Donthu et al., 2020; Wu et al., 2022). Accordingly, using various metrics, including total publications, the number of contributing authors, sole-authored publications, co-authored publications, productivity per active year of publication, total citations, average citations, and co-authorship indices, we employed a descriptive analysis. This analysis was used to both present the publication activity trends describing the development over time of IC research in hospitality and tourism business settings ( $RQ_1$ ) and highlight the top articles, journals, authors, and countries contributing to the field ( $RQ_2$ ).

*Science mapping* examines the relationships in terms of intellectual interactions and structural connections between research constituents (Donthu et al., 2021; Yadav et al., 2022). It uses different techniques that can be combined with network analysis, including publication clustering and network visualizations in VOSviewer software to show major themes addressed in a research field and relationships among journals, authors, and their universities and/or countries (Donthu et al., 2020; Ferreira, 2018). Accordingly, to map connections and collaborations ( $RQ_3$ ) and prominent themes ( $RQ_4$ ) in the IC hospitality and tourism research, we selected techniques for science mapping (i.e., co-citation analysis, bibliographic coupling, keyword co-occurrence analysis, and co-authorship analysis) combined with enrichment techniques of network analysis (i.e., clustering and visualization). Notably, thematic clusters that reveal the prominent themes underpinning the intellectual structure of the IC research in hospitality and tourism were created using co-citation analysis. The latter was then supplemented with a keyword co-occurrence analysis to better understand the content of thematic clusters and forecast future research directions. Indeed, co-citation analysis assumes that publications that are frequently co-cited have a common theme (Donthu et al., 2021). Two papers (e.g., Y and Z) thus have a co-citation link when both are cited in the reference list of a source article (e.g., X). Similarly, based on the co-occurrence of keywords, keywords that frequently occur together across articles unveil "hot topics" (Faraji et al., 2022). Bibliographic coupling assumes that two articles are linked when they share the same references and thus also present similar content or topics of interest; however, for publication clustering, we used co-citation analysis, considered to be a better indicator of themes' similarity between articles (Ferreira, 2018). Consequently, we used a bibliographic coupling of journals, authors, and authors' affiliated countries to map respective intellectual connections (Ferreira, 2018; Gao et al., 2021). This allowed the most influential scientific actors to be identified, thus complementing descriptive results in terms of leading journals, authors, and countries ( $RQ_2$ ). Intellectual collaborations among scholars and countries were then detected through a co-authorship analysis (Donthu et al., 2020).

The software tools used for analysis and visualization were VOSviewer (version 1.6.18) and Biblioshiny, as well as Microsoft Excel for



**Table 4**  
Top 20 most contributing authors to IC research in hospitality and tourism businesses between 1989 and 2023.

Rank	Author name	Affiliation	No. of articles	Total citations	Average citations
1	Liu, C.-H.	National Kaohsiung University of Science and Technology (Taiwan)	8	296	37.00
2	Nieves, J.	University of Las Palmas de Gran Canaria (Spain)	7	675	96.43
3	Jang, S.	Purdue University (USA)	7	232	33.14
4	Brien, A.	Lincoln University (New Zealand)	7	92	13.14
5	Marco-Lajara, B	University of Alicante (Spain)	6	85	14.17
6	Hallak, R.	University of South Australia (Australia)	5	260	52.00
7	García-Villaverde, P.M.	Castilla-La Mancha (Spain)	5	216	43.20
8	Úbeda-García, M.	University of Alicante (Spain)	5	85	17.00
9	Zaragoza-Sáez, P.D.C.	University of Alicante (Spain)	5	85	17.00
10	Khaliq, M.	Mirpur University of Science and Technology (Pakistan)	5	47	9.40
11	Kim, T.T.	Kyung Hee University (South Korea)	4	457	114.25
12	Lee, G.	Kyung Hee University (South Korea)	4	457	114.25
13	Elche, D.	University of Castilla-La Mancha (Spain)	4	230	57.50
14	Martínez-Pérez, Á.	University of Castilla-La Mancha (Spain)	4	214	53.50
15	Claver-Cortés, E.	University of Alicante (Spain)	4	77	19.25
16	Okumus, F.	University of Central Florida (USA)	3	611	305.50
17	Quintana, A.	University of Las Palmas de Gran Canaria (Spain)	3	284	94.67
18	Lee, C.	University of Otago (New Zealand)	3	236	78.67
19	Palacios Marques, D.	Polytechnic University of Valencia (Spain)	3	135	45.00
20	Carlback, M.	Örebro University-Campus Grythyttan (Sweden)	3	122	40.67

property,” and “knowledge-based assets”. Additionally, to cover most of the relevant published hospitality and tourism research on the subject under study, we supplemented these terms by adding three other alternative keywords, namely “social relationships,” “knowledge sources,” and “employee knowledge.” We then expanded further the query by combining it with additional terms to locate the IC literature, targeting businesses in the hospitality and tourism domain. To identify such terms, we began our search using generic keywords, such as “hospitality industry,” “hospitality business\*,” “hospitality firm\*,” “hospitality companies,” “tourism industry,” “tourism business\*,” “tourism firm\*,” “tourism companies,” and “tourism enterprise\*.” As we read more articles, we added six specific keywords, namely “hotel\*,”

“lodging industry,” “restaurant\*,” “food and beverage services,” “tourism SMEs,” and “travel industry”. Thus, we reached a total of 15 alternative keywords concerning the hospitality and tourism industries to be combined (using the Boolean operator AND) with the 22 IC-alternative keywords comprising both those used by Faraji et al. (2022) and the three that we added further.

The search query thus obtained (Fig. 1) was entered in the “title, abstract, keywords” search field of Scopus without using any time restrictions. The search identified 1386 publication records as of December 15, 2023. We applied three inclusion/exclusion criteria for document screening. As the first criterion, we included only peer-reviewed journal articles (1027) and reviews (47)—the only records commonly recognized as *certified knowledge* (Ramos-Rodríguez and Ruíz-Navarro, 2004; Yadav et al., 2022). We therefore excluded conference papers (129), book chapters (121), books (23), conference reviews (28), and other works (11)—a total of 312 documents. As a second criterion, we then excluded articles that were not written in English (51), thus narrowing the sample to 1023 articles in English. We subsequently read the title and abstracts of the identified articles to examine their relevance to the topic under analysis. Following this preliminary screening, as the third screening criterion, we decided to filter the records by three relevant subject areas (i.e., Business, Management and Accounting; Social Sciences; and Economics, Econometrics and Finance), concluding that only English articles and reviews in these areas (909) addressed topics relevant to our study’s purposes. Accordingly, a further 114 articles that fell into different unrelated disciplines (e.g., Medicine, Chemistry, Neuroscience, Engineering, Mathematics, etc.) were excluded.

As for data fetching and cleaning, we exported the CSV (comma-separated values) file and manually removed erroneous entries, as well as checked for the removal of duplicates and data homogeneity. Subsequently, the first three authors thoroughly reviewed the abstracts and frequently the full text of the 909 articles independently to assess their eligibility. To ensure consistency, the reviewers held meetings to compare assessments and reconcile differences through consensual discussions. By doing so, we ended up excluding 501 articles that did not specifically address IC issues in hospitality and tourism corporate settings but focused instead on unrelated topics. These included: the intangible nature of hospitality services and intangible aspects of service consumption experiences or customer perceptions, when such nature and aspects are not addressed in terms of corporate knowledge resources or values; human and social capital macroeconomic-related issues; and heritage tourism products, such as intangible cultural heritage factors associated with a regional economy’s development. We reached a final sample of 408 articles for bibliometric analysis (Fig. 1).

#### 4. Results and discussion

This section presents the results of our bibliometric analysis of the 408 collected peer-reviewed articles addressing IC in hospitality and tourism business settings. It provides answers to the four questions set out in the Introduction, first discussing the results of descriptive bibliometric analysis and then the results of the network analysis. Finally, this section concludes with a discussion outlining the predominant theoretical frameworks embraced across the studies.

##### 4.1. Publication activity trend (RQ1)

Table 1 presents basic information regarding the 408 identified articles that were published in 157 different journals, starting in 1989. One thousand authors from 72 different countries/regions contributed to these articles, including 45 authors who published sole-authored articles and 955 who published multi-authored articles. Two authors (2.45) contributed to each article, according to the average number of authors per article. This could indicate the field’s multidisciplinary profile and a high potential for collaboration (co-authors per articles index = 2.87).



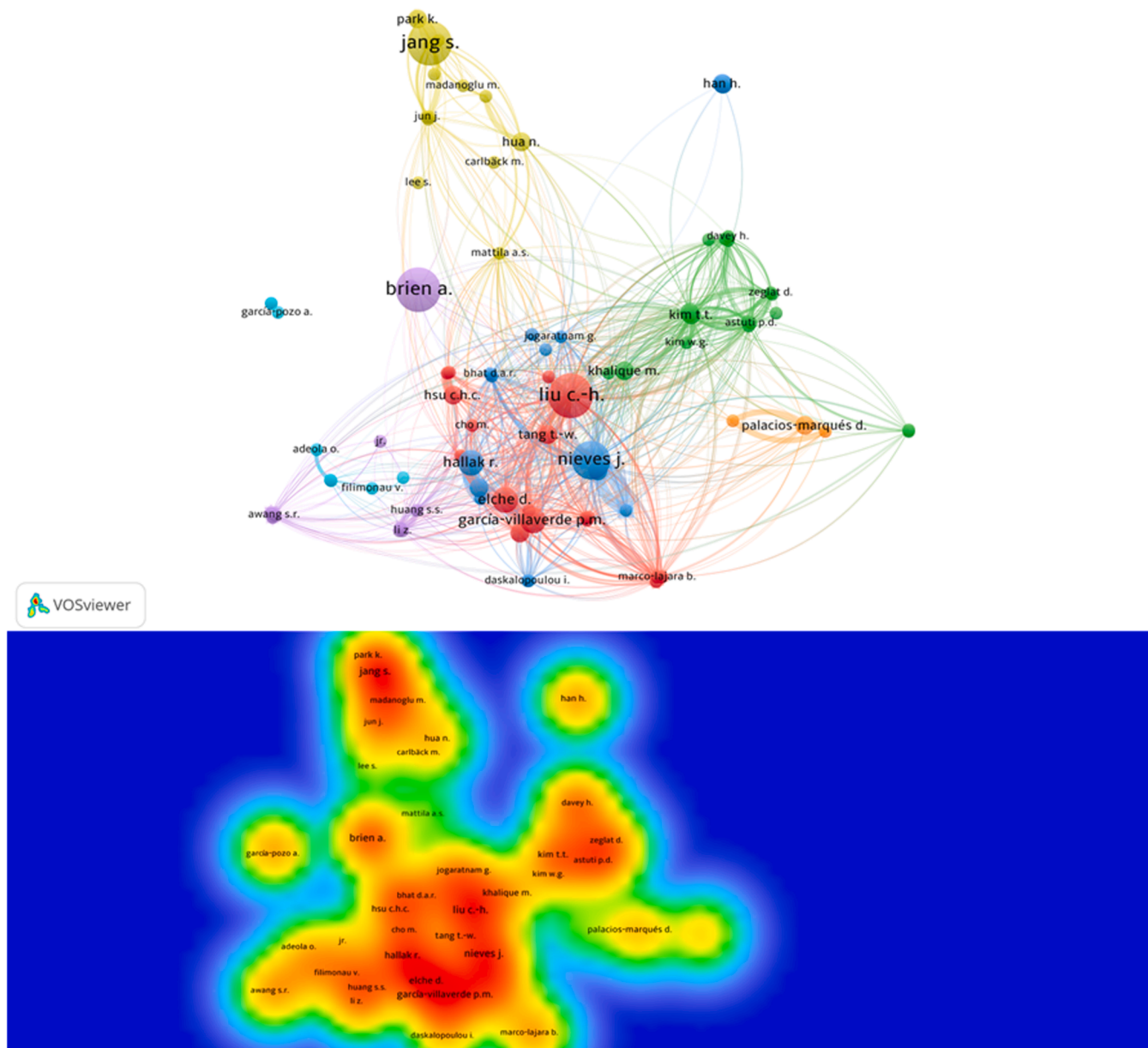


Fig. 5. Network and density visualization of the bibliographic coupling of authors.

Fig. 2 depicts the publication and citation trends in IC research in hospitality and tourism business settings between 1989 and 2023 (as of December 15). Scientific products from this combined setting thus span more than 3 decades, reflecting an overall growth trend. However, most of the articles were published in the last decade. Publications were scarce until the early 2000 s, and they progressively increased thereafter. Notably, since 2013 the number of articles increased substantially, reaching a spike in publication activity in 2021 and 2023—the most productive years. This suggests that IC hospitality and tourism research is expanding. It covered 1414 keywords, pointing to a wide assortment of research topics addressed. Articles published in 2015 are considered highly impactful, as shown by the citation trend in Fig. 2.

#### 4.2. Top 20 most cited articles (RQ<sub>2</sub>)

The top 20 most cited articles in IC hospitality and tourism research are listed in Table 2. The most cited article by Berezina et al. (2016) (total citations = 377; average citation rate per year = 47.13) revealed that intangibles such as staff performance are valuable assets to boost a

hotel’s online review reputation. The second most cited article by Dijkmans et al. (2015) (total citations = 331; average citation rate per year = 36.78) surveyed corporate reputation in the airline business context as an intangible asset positively associated with social media engagement. The third most cited article by Biggs et al. (2012) (total citations = 258; average citation rate per year = 21.50) argued that social and human capital are critical resources in tourism enterprise resilience in the face of disasters and crises. The fourth most cited article by Chan et al. (2014) (total citations = 234; average citation rate per year = 23.40) acknowledged the crucial role of employees’ knowledge in promoting and supporting the adoption of green practices within hotel companies. Similarly, the next most cited article by Kim and Lee (2013) (total citations = 222; average citation rate per year = 20.18) emphasized the pivotal role of employees’ intrinsic motivations, such as goal orientations, in driving knowledge-sharing behaviors and fostering innovative practices among hotel employees. The other most cited articles all received fewer than 200 citations in Scopus. These articles present different IC research contents, mostly concerning social capital, including its role in explaining firms’ sustainability practices,



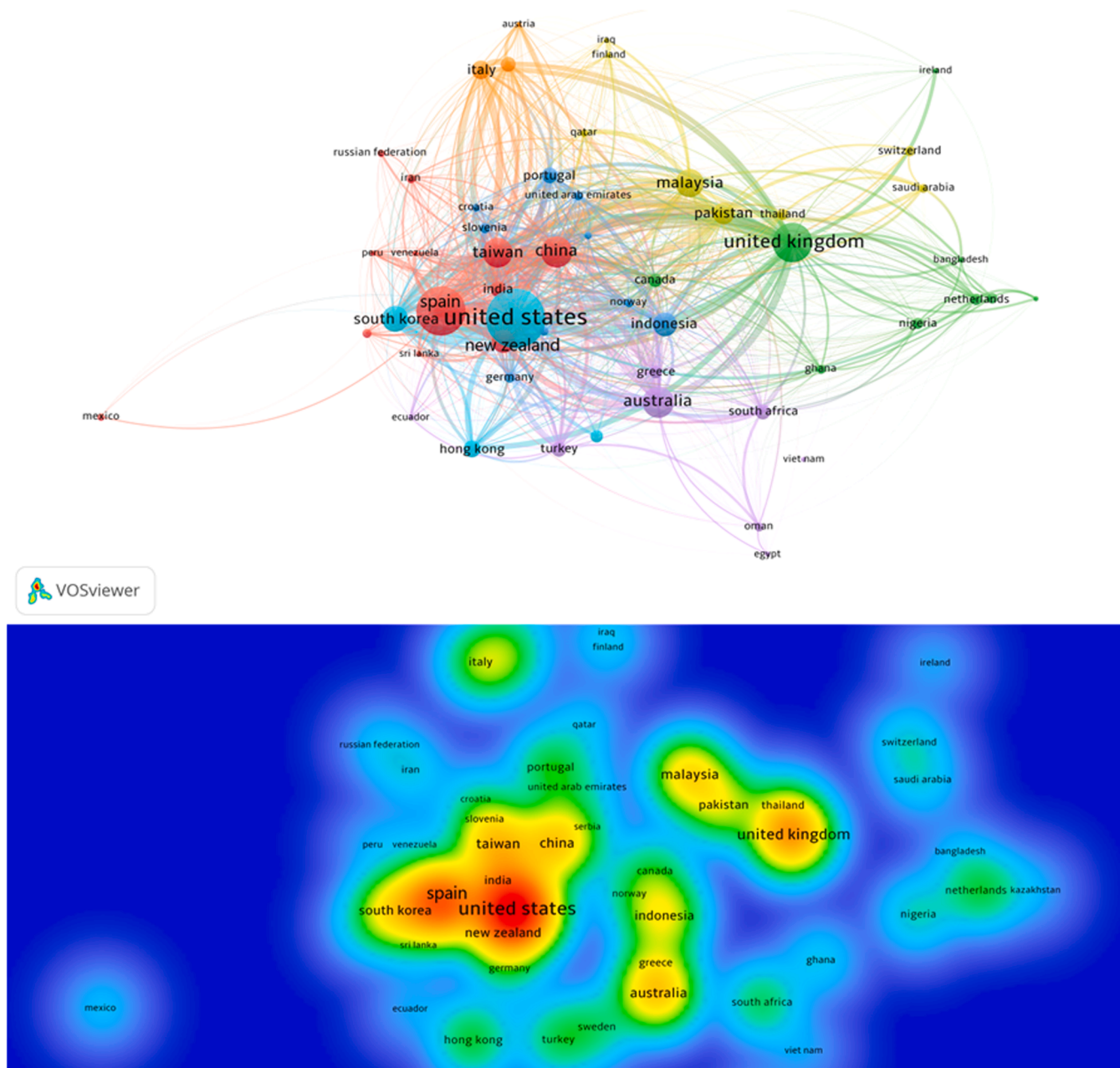


Fig. 7. Network and density visualization of the bibliographic coupling of countries.

4.4. Top 20 most contributing authors (RQ<sub>2</sub>)

The top 20 most contributing authors to IC hospitality and tourism research are listed in Table 4, based on the total number of articles published and citations received in Scopus. Chih-Hsing Liu, affiliated with the National Kaohsiung University of Science and Technology in Taiwan, stands as the most prolific author with the highest number of articles ( $n = 8$ ). Following closely are Julia Nieves (University of Las Palmas de Gran Canaria, Spain) ( $n = 7$ ), SooCheong (Shawn) Jang (Purdue University, the United States of America [USA]) ( $n = 7$ ), and Anthony Brien (Lincoln University, New Zealand) ( $n = 7$ ). Regarding citation scores, Julia Nieves emerges as the most influential author (total citations = 675), followed by Fevzi Okumus from the University of Central Florida (USA) (total citations = 611), and then both Taegoo Terry Kim and Gyehee Lee from Kyung Hee University (South Korea) with 457 citations each (see also Fig. 5). Interestingly, ten of the top 20

authors belong to Spanish universities, and in fact Spain is the second most productive country after the USA (Table 5).

4.5. Top 20 most productive countries (RQ<sub>2</sub>)

The top 20 most productive (by author affiliation) countries/regions are both listed in Table 5 and shown in Fig. 3. The USA ranked first with a total of 81 published articles, accounting for 19.85% of all articles, followed by Spain ( $n = 60$ ; 14.71%), the United Kingdom (UK) ( $n = 42$ ; 10.29%), and Australia ( $n = 29$ ; 7.11%). Based on citation scores, these are also the most influential areas, but Taiwan follows close behind (see also Fig. 7). Both developed and developing countries published IC-related articles in hospitality and tourism business settings, although the former countries are more prolific than the latter. Consistent with Al-Khoury et al. (2022), IC remains understudied in Africa (Fig. 3).

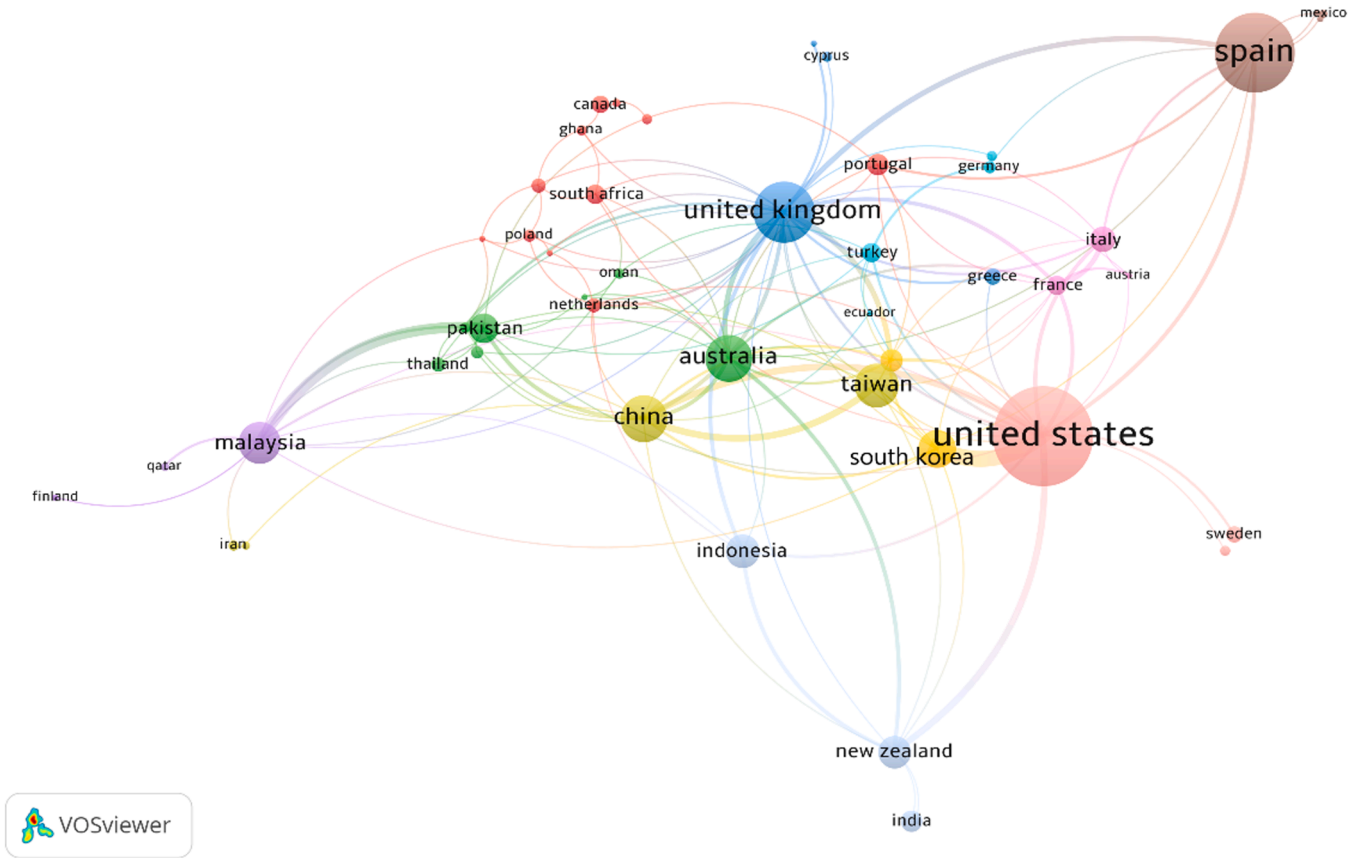


Fig. 8. Network visualization of co-authorship of countries.

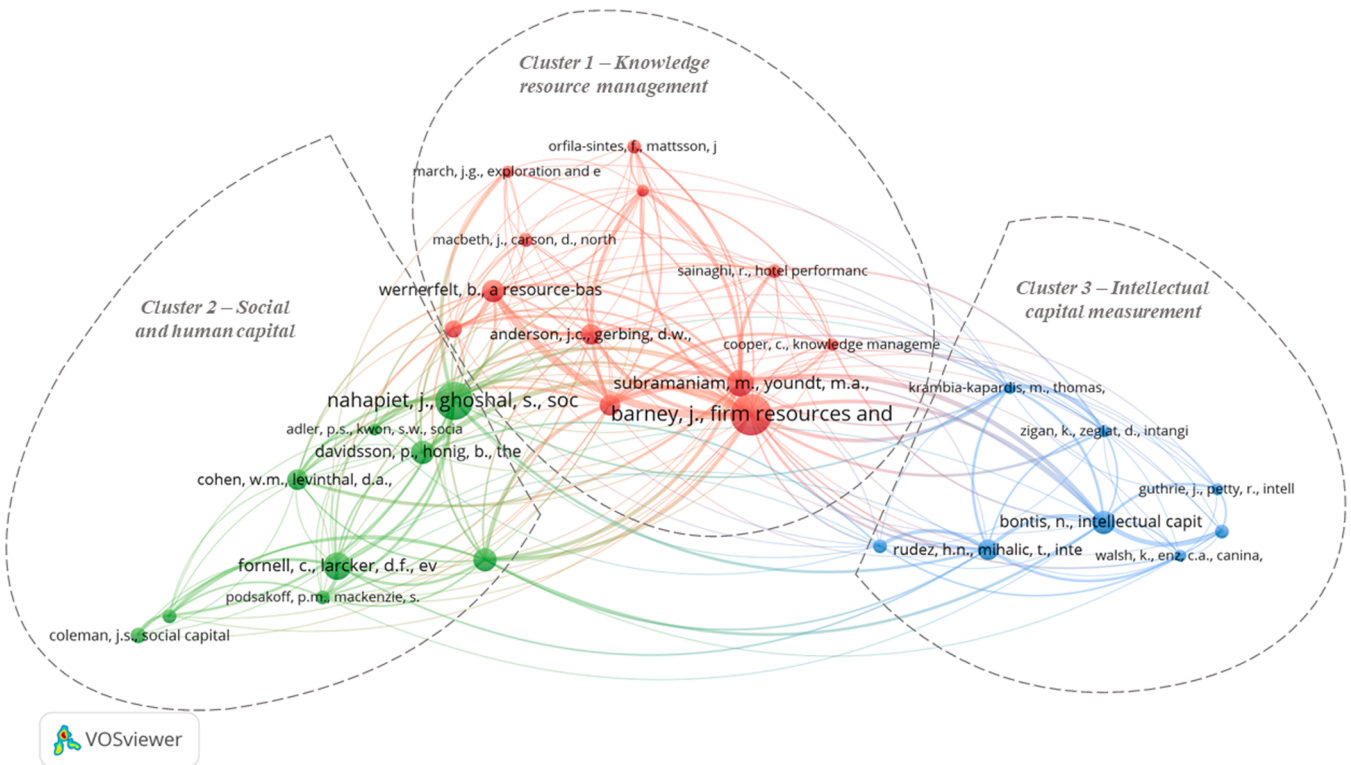


Fig. 9. Co-citation network visualization of cited articles (with at least six co-citations).

Rank	Author	Year	Article Title	No. of co-citations	No. of links	Total link strength
1	Barney, J.	1991	<i>Firm resources and sustained competitive advantage.</i>	26	25	72
4	Subramaniam, M., Youndt, M.A.	2005	<i>The influence of intellectual capital on the types of innovative capabilities.</i>	15	25	57
8	Wernerfelt, B.	1984	<i>A resource-based view of the firm.</i>	12	16	38
9	Hjalager, A.M.	2010	<i>A review of innovation research in tourism.</i>	11	23	44
11	Anderson, J.C., Gerbing, D.W.	1988	<i>Structural equation modeling in practice: a review and recommended two-step approach.</i>	11	18	32
13	Teece, D.J., Pisano, G., Shuen, A.	1997	<i>Dynamic capabilities and strategic management.</i>	9	17	26
16	Sainaghi, R.	2010	<i>Hotel performance: State of the art.</i>	7	14	19
19	Orfila-Sintes, F., Mattsson, J.	2009	<i>Innovation behavior in the hotel industry.</i>	7	12	16
2	Nahapiet, J., Ghoshal, S.	1998	<i>Social capital, intellectual capital, and the organizational advantage.</i>	23	24	54
3	Fornell, C., Larcker, D.F.	1981	<i>Evaluating structural equation models with unobservable variables and measurement error.</i>	16	17	30
6	Hu, M.L.M., Horng, J.S., Sun, Y.H.C.	2009	<i>Hospitality teams: Knowledge sharing and service innovation performance.</i>	13	18	39
7	Davidsson, P., Honig, B.	2003	<i>The role of social and human capital among nascent entrepreneurs.</i>	13	12	23
12	Cohen, W.M., Levinthal, D.A.	1990	<i>Absorptive capacity: A new perspective on learning and innovation.</i>	11	15	24
14	Coleman, J.S.	1988	<i>Social capital in the creation of human capital.</i>	8	6	9
15	Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., Podsakoff, N.P.	2003	<i>Common method biases in behavioural research: A critical review of the literature and recommended remedies.</i>	7	13	21
18	Tsai, W., Ghoshal, S.	1998	<i>Social capital and value creation: The role of intrafirm networks.</i>	7	10	18
5	Bontis, N.	1998	<i>Intellectual capital: an exploratory study that develops measures and models.</i>	13	15	39
10	Rudez, H.N., Mihalic, T.	2007	<i>Intellectual capital in the hotel industry: a case study from Slovenia.</i>	11	15	33
17	*Sardo, F., Serrasqueiro, Z., Alves, H.	2018	<i>On the relationship between intellectual capital and financial performance: A panel data analysis on SME hotels.</i>	7	13	19
20	Bontis, N.	2001	<i>Assessing knowledge assets: a review of the models used to measure intellectual capital.</i>	7	9	14

\* it falls under both the most cited and the most co-cited articles.



Fig. 10. Top 20 most co-cited articles.

4.6. Intellectual connections and collaborations mapping (RQ3)

The extent to which two papers cite the same articles is indicated by their bibliographic coupling. Bibliographic coupling analysis is able to reveal intellectual connections among journals, authors, and their affiliations (Donthu et al., 2020).

In examining the bibliographic coupling of journals in VOSviewer, consistent with Ferreira (2018), we considered a minimum threshold of two articles of a source. The result was a network of 56 journals (35.67% of the overall 157 journals) that were grouped into four major clusters, with 1003 links and a total link strength of 12,345. Fig. 4 visualizes this network along with the density of journals' coupling. Both the size of the nodes and the thickness of the lines connecting them within and between clusters indicate coupling strength. The International Journal of Hospitality Management (IJHM) ranked first with the highest total strength of its bibliographic coupling links (= 4076) with other journals. It heads the largest and central cluster (in red), consisting of 22 journals, including three journals with which it is closely interconnected, among others: the International Journal of Contemporary Hospitality Management (which ranked second with a total link strength of 3152), Tourism Management (total link strength = 1523), and the Journal of Sustainable

Tourism (total link strength = 502). The IJHM is also closely interconnected with the Journal of Intellectual Capital (total link strength = 886), which leads the second largest cluster (in green), consisting of 17 journals, including the Journal of Hospitality Marketing & Management. The third cluster (in blue) consists of 11 journals, led by the Journal of Human Resources in Hospitality and Tourism. The fourth cluster (in yellow) consists of six journals, led by Sustainability, which ranked third. Our descriptive findings revealing the top journals (Table 3) were thus validated and complemented.

Fig. 5 visualizes the network and density diagrams of the bibliographic coupling of authors. Seven intellectual clusters show connections and collaborations among scholars. The clusters were created by grouping 88 authors (8.8% of the 1000 total authors) who met the minimum threshold of two articles. Each cluster brings together scholars linked by the same study interests, and the author with the largest node in its cluster is the most influential in its study area (Gao et al., 2021). Cluster Red is the largest with 18 authors sharing interests in innovation issues and IC in hospitality and tourism, led by Chih-Hsing Liu (Taiwan). Meanwhile, Julia Nieves (Spain) heads the cluster Blue, which comprises 15 authors addressing knowledge resources linked to human and social capital as drivers of service innovation and performance. These

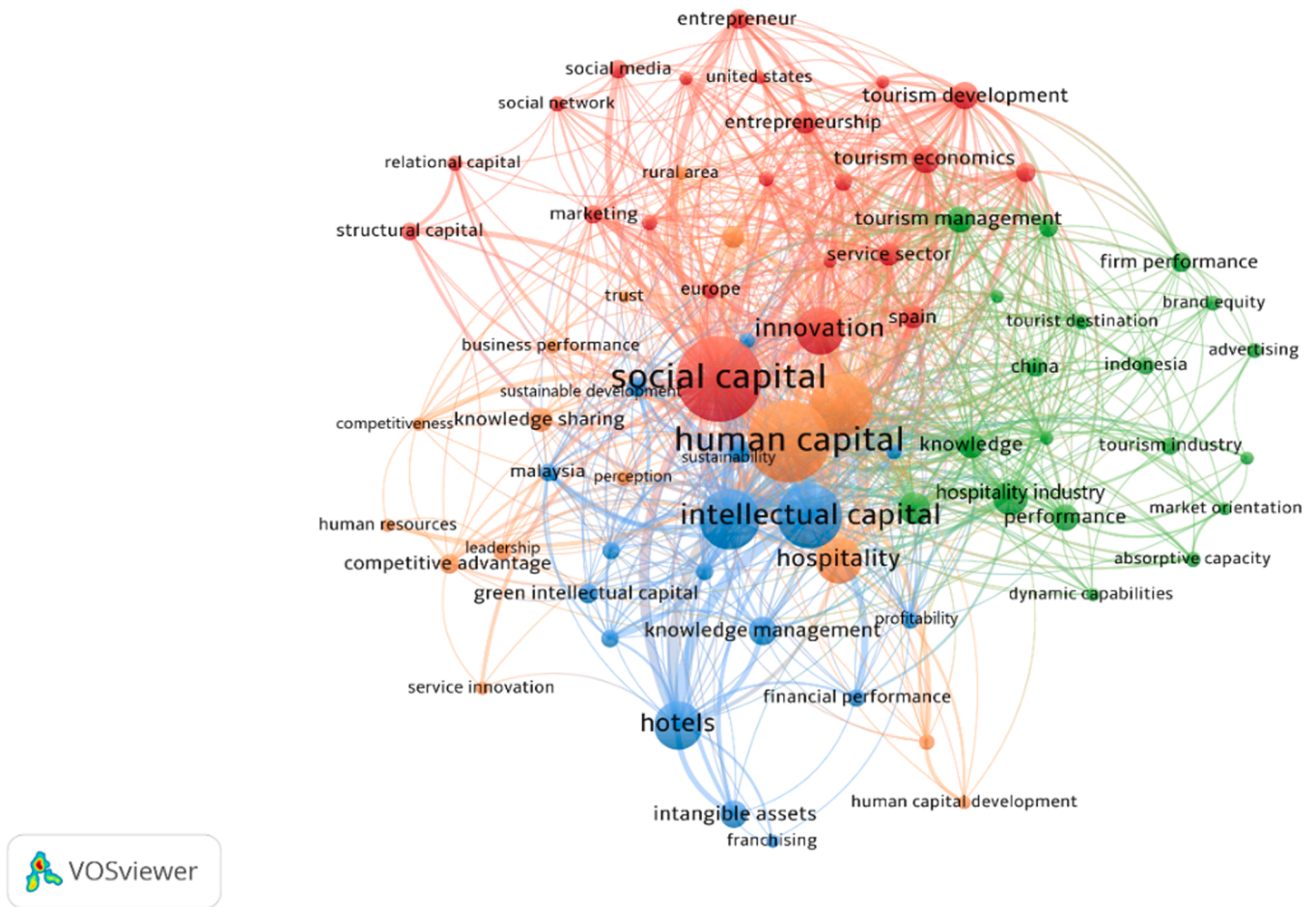


Fig. 11. Co-occurrence network visualization of keywords

scholars placed in the top two positions of the coupling network with their greatest total link strength (2222 for Nieves and 1895 for Liu). Pedro Manuel García-Villaverde (Spain), ranking third in the coupling network with a total link strength of 1625 is also part of the major red cluster, along with his co-authors Elche, Martínez-Pérez, and Ruiz-Ortega from the same university. Their research collaboration is also demonstrated in the co-authorship network in Fig. 6, which shows 88 authors who published at least two articles, 42 clusters, and 64 links with a total link strength of 120. Other scholars who also earned some of the highest authorship's bibliographic coupling indices are Agustín Quintana (Spain) and Rob Hallak (Australia) in the blue cluster as well as Taegoo Terry Kim and Gyehee Lee (South Korea) both leading the cluster Green, which focuses on the IC impact on business performance. These network results concerning influential authors corroborate and complement our descriptive findings in Table 4.

Fig. 7 visualizes the network and density diagrams of the bibliographic coupling of the authors' affiliated countries/regions. The network reveals 53 countries (73.61% of the overall 72), seven clusters, and 1061 links with a total link strength of 55,426. Consistent with the descriptive findings in Table 5, the USA is prominent in this network with the most coupling links (= 52, with a total link strength of 12,648), followed by Spain, the UK, Australia, China, and Taiwan. This implies that scholars with greater competence in IC in hospitality and tourism businesses are affiliated with institutions located in these leading areas. Interestingly, the strength of the USA-South Korea coupling links is the strongest—as shown by the thickness of their connecting line (Fig. 7)—indicating common patterns between scholars of these countries in terms of sharing research interests. This and other international collaborations among scholars are shown in the co-authorship network

between countries in Fig. 8. This network illustrates 53 countries with at least two articles, 11 clusters, and 142 links with a total link strength of 226. Consistent with the previous bibliometric study by Faraji et al. (2022) that assesses IC research as a whole, the present study thus reveals that the USA remained the most influential country in IC by leading knowledge acquisition in the hospitality and tourism industries.

#### 4.7. Prominent, foundational themes (RQ4)

As for our co-citation analysis of the 408 articles in VOSviewer, a minimum threshold of six citations of a cited reference was considered. The co-citation network (Fig. 9) that shows 29 foundational co-cited articles grouped into three major thematic clusters, 212 links, and a total link strength of 396 was obtained as a result. The node size reflects the frequency of co-citations. The top 20 most frequently co-cited articles are also listed graphically in Fig. 10, broken down into the three thematic clusters they fall into. Thus, revealing the seminal, most influential articles, the resulting co-citation network is instrumental to understanding the evolution of the foundational themes in IC research in hospitality and tourism businesses (Donthu et al., 2021). Notably, consistent with Faraji et al. (2022), both Barney's (1991) article on firm resources generating sustained competitive advantages and Nahapiet and Ghoshal's (1998) article on social capital theory—ranking first and second in the number of co-citations, respectively—remained the top-influential publications in IC research, also in the hospitality and tourism domains.

Cluster 1 (red)—*knowledge resource management*—is the largest cluster, with 12 co-cited articles. These shape the basis for themes such as the management of knowledge-based resources for firms' innovation

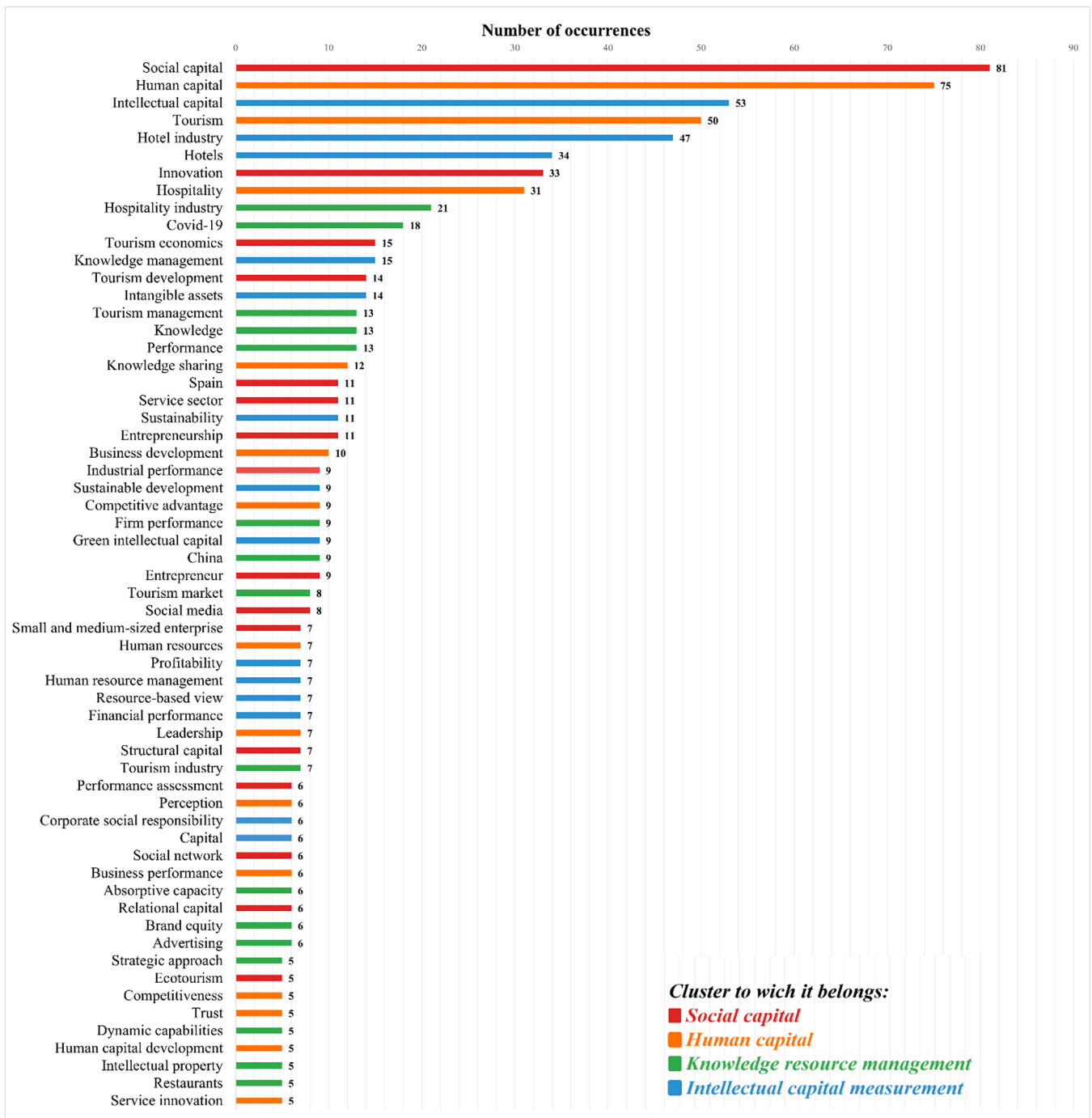


Fig. 12. Most frequently occurring keywords

and sustained competitive advantage; IC's influence on firms' innovation capabilities; tourism service innovation; the development of firms' dynamic capabilities for success; and hotel innovation behavior (see Cluster 1-related articles in Fig. 10). As mentioned above, Barney's (1991) article that leads this cluster is the first most co-cited work in IC research in hospitality and tourism businesses (co-citations = 26; links = 25; total link strength = 72), being also at the center of Fig. 9. This suggests that it provided foundational notions for research development on (strategic) knowledge resource management for the sustainable value creation of these businesses.

Cluster 2 (green)—*social and human capital*—is the second cluster with nine co-cited articles. It is based on the seminal work of Nahapiet and Ghoshal (1998) that laid the groundwork for the development of

social capital arguments (co-citations = 23; links = 24; total link strength = 54). Overall, articles in this cluster mainly focus on social capital's role in influencing firms' competitive advantage and value creation, as well as human capital development, employee knowledge and performance, knowledge sharing and absorptive capacity, and hospitality service innovation (see Cluster 2-related articles in Fig. 10).

Cluster 3 (blue)—*intellectual capital measurement*—is the third cluster, formed by eight co-cited articles. It is led by Bontis's (1998) foundational article on IC which provided the basis for this thematic strand (co-citations = 13; links = 15; total link strength = 39). The major topics addressed by articles in this cluster include the IC concept as a whole, IC components, and measurements of the impact of IC components on financial performance and competitiveness, mainly in hotel businesses.





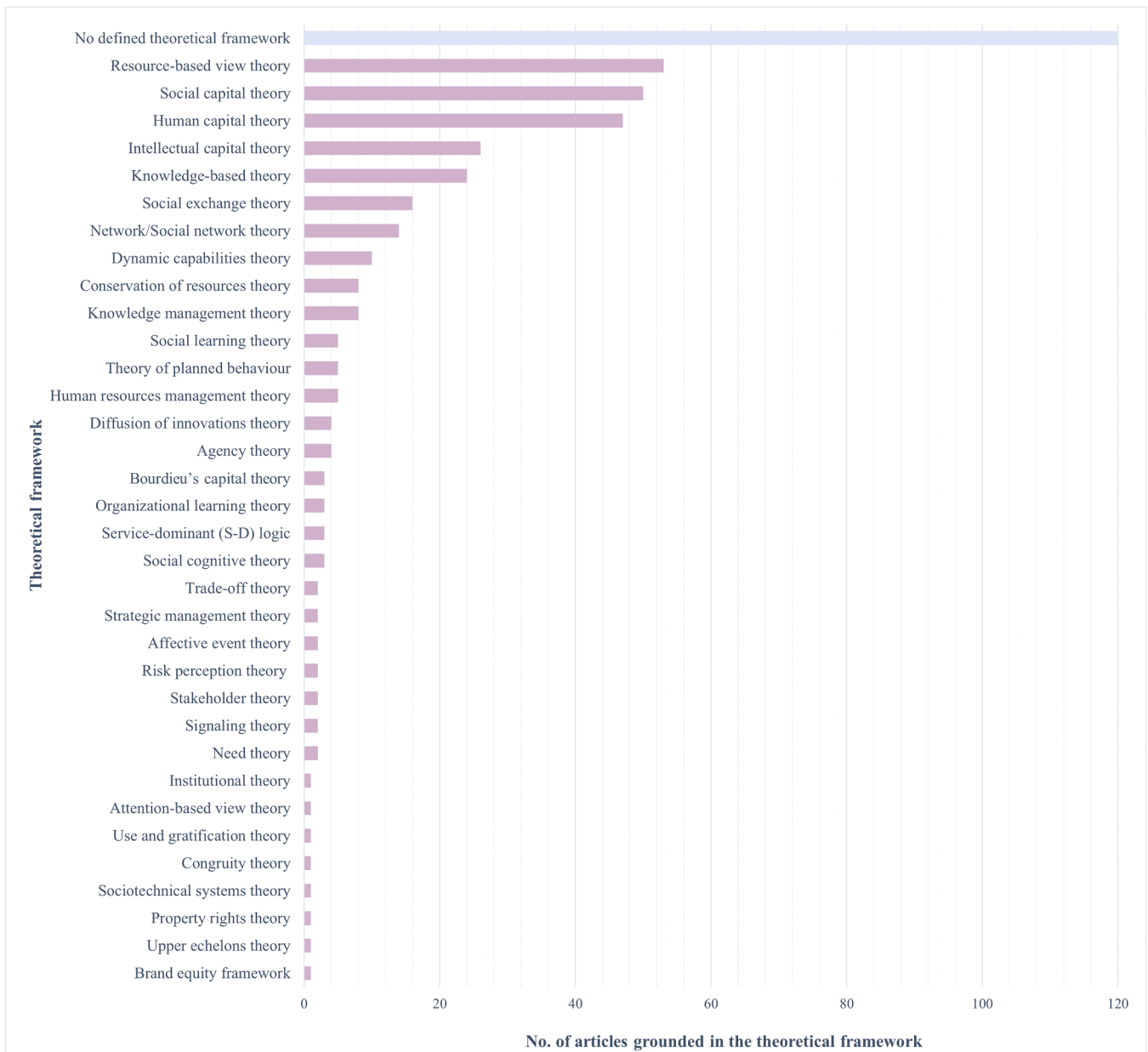


Fig. 14. Theoretical frameworks underlying the articles.

knowledge-based theories, which stand out among others.

Notably, the RBV theory was the overarching perspective for many IC studies providing support for their theoretical foundation (e.g., [Xin and Wang, 2023](#); [Zeglat and Zigan, 2014](#)), also used in combination with the knowledge-based theory in some recent articles (e.g., [Babajee et al., 2020](#); [Ognjanovic et al., 2023](#)). As argued by [Bontis et al. \(2015\)](#), both these are novel theories of strategic management that enhance our comprehension regarding the essence and significance of IC as a strategic resource. In particular, the RBV theory of the firm (identified in 53 articles) examines and assesses an organization's internal resources and capabilities as a source of sustainable competitive advantage, virtually how they are strategically arranged for creating value ([Barney, 1991](#)). Building on this perspective, for instance, [Batool et al., \(2022\)](#) argued that unique intangible resources such as spiritual capabilities, emotional intelligence, and trust contribute to hotels' organizational sustainability. Similarly, the knowledge-based theory (identified in 24 articles) suggests that knowledge and related intangible assets are strategically crucial resources in achieving firms' sustainable competitive advantage.

Indeed, the knowledge-based approach evolved from the RBV. Moreover, the dynamic capabilities perspective, according to which companies compete through their ability to exploit and regenerate their resources and capabilities, also evolved from the RBV ([Nieves and Haller, 2014](#)).

In addition to RBV and knowledge-based theories, other mainstream theoretical frameworks identified were the social capital theory and human capital theory, employed in 50 and 47 articles, respectively, sometimes even in combination. In particular, the studies grounded in social capital theory, which often reference the work of [Nahapiet and Ghoshal \(1998\)](#), emphasized the value of social relationships, networks, and connections in fostering resources and innovation opportunities within hospitality and tourism firms or communities (e.g., [Chowdhury et al., 2020](#); [Dai et al., 2015](#); [García-Villaverde et al., 2021](#)). Furthermore, the social network and social capital notions are linked. This link originated in the concept of embeddedness, which has been used in social network theory (a minor theoretical framework identified in some articles) to explain the mechanisms of social capital formation

(García-Villaverde et al., 2017). The studies grounded in human capital theory (e.g., Aman-Ullah et al., 2022; Carlbäck et al., 2023) used its underlying idea as a theoretical framework, suggesting that employees' knowledge, education, skills, and experience can contribute to higher performance outcomes within hospitality and tourism firms. Several studies (26 articles) also used the IC theory as another mainstream theoretical foundation (e.g., Khalique et al., 2020; Leon, 2021; Liu et al., 2020), which postulates that intangible resources are the most important determinant of firm performance and success.

Alongside the five aforementioned mainstream theoretical frameworks, an array of minor theoretical perspectives was identified, encompassing theories like social exchange theory, network or social network theory, dynamic capabilities theory, conservation of resources theory, and knowledge management theory, among others (Fig. 14). Though diverse in focus, these minor theories collectively emphasize understanding various aspects of organizational dynamics, accumulation of intangible resources, and knowledge acquisition within hospitality and tourism businesses.

## 5. Conclusion

Combining different bibliometric analysis techniques, this study evaluated 408 articles on IC in the hospitality and tourism industries to provide an overview of related research developmental trends. Before this study, a picture of the state of the research in this area was lacking. In an attempt, therefore, to fill this gap and considering the topical, crucial role that IC plays in these industries that are facing sustainability, resilience, and rebuild challenges (Ognjanovic et al., 2023), this study sought to answer four questions defined in the Introduction and discussed in the previous section. The results of our descriptive analysis revealed that IC research in hospitality and tourism businesses gained momentum over the past decade and is in the process of expanding, which suggests the topicality and growing interest in IC issues studied in these corporate settings. This interest is indeed emerging globally, involving scholars from 72 countries/regions across the world, with the USA leading the way as the most contributing, influential country. The leading articles, journals, and authors were also revealed. Notably, the findings of our network analyses corroborated and supplemented our descriptive results, thus they were instrumental in better identifying the most influential scientific actors.

The salient themes addressed by scholars in their evolutionary directions were revealed through co-citation and keyword co-occurrence networks. The results lead to the conclusion that social capital and human capital are the most investigated IC forms as core, interconnected sources of innovation in hospitality and tourism firms. The significance of these IC forms being the most studied aspects is reinforced by the fact that, after the RBV theory, both social capital theory and human capital theory emerged as the main theoretical frameworks underlying the examined articles. Structural capital appeared as an under-studied IC form. Furthermore, IC measurement in relation to business performance and competitiveness also stood out as a well-addressed thematic strand, albeit predominantly in the hotel business context. Conversely, IC reporting was found to be a neglected area of research. Consistent with Faraji et al. (2022), moreover, an interdisciplinary direction of IC research is also looming in hospitality and tourism, which focuses on strategic management of knowledge resources to address global environmental concerns. The discovered emerging topics, including “sustainability,” “green intellectual capital,” “absorptive capacity” and “strategic approach,” indicate this strategic, interdisciplinary direction. Indeed, pursuing green innovation strategies may be particularly relevant to the sustainable value creation of hospitality firms (Dang and Wang, 2022) whose exposure to climate change and other environmental risks requires adaptability for their survival.

## 5.1. Study's implications and limitations

This study mapped the IC research previously conducted in the hospitality and tourism industries, and its findings hopefully inform the development of scholarship, practice, and policies in the field. It offers useful insights into the state of knowledge in this area, which may help scholars identify research gaps and expand IC studies conducted in these industries. Furthermore, it might serve as a cue to inspire bibliometric studies on IC research in other industries or corporate settings. Also, this study could strengthen awareness among hospitality and tourism business managers and practitioners, as well as policymakers, regulators, and standards setters on IC's relevance in the sector.

However, this study has some limitations. It relied on Scopus bibliographic data, which implies that publications not indexed in this database might have been overlooked. Likewise, the search strategy used may not have captured all relevant or available records.

## 5.2. Future research avenues

Future studies could delve deeper into social capital and human capital within a broader range of theoretical frameworks, extending beyond the traditional social and human capital perspectives. These studies may explore various aspects, such as the significance of social relationships with stakeholders and the knowledge and capabilities of managers and employees for advancing innovation and competitiveness within hospitality and tourism businesses. This exploration could involve diverse theories, such as the social exchange theory, network theory, and dynamic capabilities theory, to name a few, which were revealed to be still minor theories within this specific context. For instance, social exchange theory could shed light on the exchange dynamics between employees and customers regarding service, experience quality, and satisfaction, or the relationships between firms and suppliers, providing insights into value creation and co-creation processes. Likewise, network theory could underpin investigations into how collaborative networks among different entities—e.g., hotels, tourism agencies, local governments, and communities—impact the innovation and sustainability of hospitality and tourism businesses. Moreover, future studies could further apply the knowledge-based theory to understand how knowledge assets can be leveraged to enhance businesses' competitiveness, or deeply analyze how knowledge creation and dissemination contribute to innovation in hospitality and tourism services. Similarly, dynamic capabilities theory could be employed to investigate how businesses continually evolve and adjust strategies to meet changing market demands and environmental factors. Future scholars interested in studying IC-related topics in the hospitality and/or tourism domains could also focus on IC forms other than social and human capital, such as structural (or organizational) capital, as well as on intellectual property, innovation, and brand issues—which are still understudied in these domains. Future studies might also focus on other types of tourism firms than hotels. Additional studies could also investigate business settings of those countries still under-represented (e.g., African and South American countries) in IC research. Moreover, other investigators might further assess emerging topics such as green IC in relation to correlated strategic and innovation, management, measurement, and reporting-aspect variables. Finally, IC reporting in hospitality and tourism, which this study showed was overlooked, might be addressed within the multi-capital disclosure encouraged by the IR Framework (Dumay and Guthrie, 2019; International Integrated Reporting Council (IIRC), 2021) that emphasizes the relevance of non-financial IC forms to corporate value creation strategy.

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## CRedit authorship contribution statement

**Lodhi Rab Nawaz:** Investigation, Methodology. **Del Gesso Carla:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing. **Asif Muhammad:** Data curation, Investigation, Software. **Cobanoglu Cihan:** Supervision.

## Declaration of Competing Interest

None. On behalf of all authors, the corresponding author states that there is no conflict of interest.

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