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International entrepreneurship: a bibliometric overview

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Abstract The aim of this paper is to provide an overview of the academic research on International Entrepreneurship (IE). To accomplish this, an exhaustive bibliometric analysis was carried out, involving a bibliometric performance analysis and a graphic mapping of the references in this field. Our analysis focuses on journals, papers, authors, institutions and countries. To perform the performance analysis, the work uses a series of bibliometric indicators such as h-index, productivity and citations. Furthermore, the VOS viewer to graphically map the bibliographic material is used. The graphical analysis uses co-citation, bibliographic coupling and co-occurrence of keywords. The results of both analyzes are consistent among them, and show that the USA is the most influential country in IE research as it houses the main authors and institutions in this research field. Moreover, is observed and expected the continued

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growth of the field globally. Our research plays an informative and complementary role as it presents most of the key aspects in International Entrepreneurship research.

Keywords International entrepreneurship · Bibliometric analysis · H-index · Mapping science · VOS viewer

Introduction

International Entrepreneurship (IE) is a recognized research field that has emerged from the study of the international activity of new firms. This phenomenon has been studied for some decades as a result of globalization and technological advances, which have prompted the rapid geographic expansion of new firms as a result of the large number of international competitors in an increasingly global marketplace (Felzensztein 2016). McDougall (1989) was one of the first researchers to provide evidence of such companies and to define the new field of IE. However, several researchers believe that the starting point of the IE field was not until the publication of the article by Oviatt and McDougall (1994), which focused on the internationalization of new ventures, which has been facilitated by advances in communication and transportation technologies and mainly by the changing role of the entrepreneur. According to Autio (2005), this new approach opened up a completely new direction in international business research, which ultimately led to what is known today as *International Entrepreneurship*.

It is well known that IE arises at the intersection of two major areas of knowledge - International Business and Entrepreneurship (McDougall and Oviatt 2000). Since its inception, IE has been characterized as a field of research that has withstood continuous changes both in its definition and its domain (Keupp and Gassmann 2009). Thus, what began on the basis of the internationalization of new firms has expanded to the current study of entrepreneurial internationalization in all types of companies, regardless of age or size (Oviatt and McDougall 2005). Thus, IE is now defined as:

> *…the recognition, formation, evaluation, and exploitation of opportunities across national borders to create new businesses, models, and solutions for value creation, including financial, social, and environmental...* (Zahra et al. 2014)

Nevertheless, IE research has managed to grow rapidly, and it has the attention of many renowned researchers. As a result, several issues of the most important Business and Management journals have been devoted to the topic of IE. Some of the published papers have even obtained awards in the most prestigious journals of *International Business*, *Marketing* and *Entrepreneurship* (for example, Chetty and Campbell-Hunt 2004; Knight and Cavusgil 1996; McDougall et al. 1994). Moreover, the IE research community has built a rich academic structure to support and encourage research in the field. For example, in 1998, some of the leading researchers (Etemad, Wright and Johnson) launched the *McGill International Entrepreneurship Conference Series*, and as a result, 2009 marked the launch of ie-scholars.net, which is a virtual community that was built to encourage and facilitate the sharing of resources, experience and knowledge on a global scale (Ie-scholars.net 2016).

Although, the *Journal of International Entrepreneurship*, which is dedicated to the IE field, was launched in 2003 (Coviello et al. 2011).

Today IE research has become an important field, with an increasingly established position. The field has attracted hundreds of researchers from the most diverse areas of the social sciences, which has led to an increasingly widespread body of literature (McDougall et al. 2014).

Researchers generally emphasize the importance of classifying the literature of a research area based on the main trends in the discipline (Adriaanse and Rensleigh 2013; Bjork et al. 2014). For this purpose, bibliometrics is one of the most commonly used techniques, considered also partial and inclusive (Chabowski et al. 2017). Bibliometrics is a field of methodological study that is based on two relevant approaches (Cobo et al. 2011a). The first one, includes a performance analysis, and uses a wide range of indicators that aim to evaluate the impact of citations made by scientific actors to the scientific production of a given field of study. These actors can be, authors, universities and countries. The second approach includes a graphic mapping of science, and aims to show structural and dynamic aspects of scientific research. Currently, both perspectives of bibliometrics have receive increased attention due to the strong development of computer technology and the internet (Cobo et al. 2015; Merigó et al. 2016), and are frequently studied in a combined way to validate and enrich the results of both. Therefore, the complementarity of both approaches makes it possible to construct an overall picture of a specific research field.

Bibliometric studies are fairly common in a wide range of research fields such as Management (Podsakoff et al. 2008), entrepreneurship (Luor et al. 2014) and innovation (Cancino et al. 2017; Fagerberg et al. 2012). Moreover, other studies have developed new modes of bibliometrics analysis to consider specific topics within a field of research, such as the Theory of Transaction Costs (Ferreira et al. 2014) and Foreign Direct Investment Theory (Fetscherin et al. 2010) on the field of International Business; or the Social Entrepreneurship (Rey-Martí et al. 2016), the Global Entrepreneurship Monitor Project (Álvarez et al. 2014), the Family Business (Xi et al. 2015) and Technology Entrepreneurship (Ferreira et al. 2016) on the Entrepreneurship field. Likewise, several bibliometric studies have been published for the celebration of the anniversary of several journals from different areas of knowledge such as *Journal of Business Research* (Merigó et al. 2015b), *Knowledge Based System* (Cobo et al. 2015), *European Journal of Operational Research* (Laengle et al. 2017). Bibliometric studies in the IE field are quite scarce. In fact, the only extant publication is quite general and mainly uses descriptive statistical techniques (Servantie et al. 2016), almost completely ignoring the other techniques and indicators that are normally used in bibliometrics analysis, such as indicators of influence (h-index) and citation analysis. Therefore, the aim of this paper is to complement the work of Servantie et al. (2016) and provide an overview of the IE research based on the main bibliometric approaches. Therefore, an analysis of bibliometric performance and a graphic mapping of the field of study is presented in order to show the most productive and influential studies and the connections between the different scientific actors participating in the IE field. Analyses are performed considering the different levels of information that are found, which include journals, papers, authors, institutions and countries. The references were obtained considering all the documents published between 1989 and 2016 in the

journals indexed in Scopus, which is considered one of the most complete databases in the social sciences (Mongeon and Paul-Hus 2016).

The results of the bibliometric performance analysis and the graphic mapping are consistent among them, and indicate that McDougall and Oviatt are the most influential authors in IE research. Other leaders in the field who are also in the top positions among the most cited authors include Zahra, Knight, Jones, and Coviello. The *Journal of International Business Studies* is the most influential journal, although the *Journal of International Entrepreneurship* is the most productive in the IE field. Predictably, the USA leads the IE research because it houses the most influential authors and universities in the field of study. However, it is important to mention that from a regional point of view, it is the European countries that lead this field. Finally, although there are some limitations associated with this study, it is important to emphasize that the consistency of the results obtained from both bibliometric approaches allows us to postulate this work as a complementary study and with an important informative value within the IE field.

This paper is organized as follows. The following section describes the methodology to be used. Subsequently, the results of this study are presented through an performance bibliometric analysis and a science mapping. Finally, the last section discusses the main conclusions of this study.

Methodology

This study classifies the publications that are framed in the International Entrepreneurship field through an analysis of bibliographic records that are obtained from the Scopus database. The Web of Science (WoS) has traditionally been the main source of scientific evaluation. However, Scopus has become a good alternative to the WoS because it has been designed for both literature search and citation analysis (Meho and Yang 2007; Vieira and Gomes 2009). In other words, Scopus performs the same tasks as the WoS. The Scopus Content Coverage Guide (https://www.elsevier.com/solutions/scopus/content) shows that its database contains over 60 million records, of which 38 million include references that date back to 1996 and 22 million records from previous references that date from 1823 through 1996. These records have been collected from more than 21,500 scientific journals and more than 5000 international publishers, including more than 4200 open access journals, more than 7.1 million paper presentations, over 360 trade publications and 530 book series that cover all areas of knowledge.

Although the above would be sufficient reason to justify the use of Scopus, we believe that the main reason is the apparent immaturity of the field. IE is a field that emerged in an investigation by McDougall that was published in McDougall 1989. However, although it has shown significant growth in recent years, it is still considered to be an immature field (Jones et al. 2011). This relative immaturity, made us expand the literature search of this field. Mongeon and Paul-Hus (2016) recently noted that Scopus includes most of the journals that are indexed in the WoS, but also has a greater number of exclusive journals compared to the WoS. This was a compelling reason to

select Scopus as our main source of bibliometric records. A relevant example in this sense is that working with Scopus allowed us to obtain records of articles that were published in the *Journal of International Entrepreneurship*, which is a journal that is indexed in Scopus but not in the WoS. We therefore believe that the breadth of the Scopus records allows us to offer a more complete picture of the influence of IE literature in this field of study.

Another important issue that was taken into account in the process of searching for records was the consideration of the multiple definitions of the field of IE. Its progress has been characterized by a continuous development of definitions that have led to changes in the IE domain boundaries (Baier-Fuentes et al. 2018). According to Keupp and Gassmann (2009), the large number of definitions hinders the distinction of investigations that should be considered to be typical IE studies. However, since its inception, the various theoretical developments of IE have generated key concepts that characterize the field. Therefore, these concepts are used as keywords in the literature search process. The search process in Scopus was limited to research that was published between 1989 and 2015 and that utilize the following keywords: "International* Entrepreneur*", "Entrepreneur* International*", "Rapid* International* Firm*", "Earl* International* Firm*", "International* New* Venture*", "Born* Global* Firm*", "Export* Entrepreneur*", "International* Start-up*", "International* Corporat* Entrepreneur*", "International* Intrapreneur*" and "International* Social* Entrepreneur*". Having obtained the results, the studies were selected from the areas that correspond to Business, Management and Accounting. Finally, only research studies involving articles, reviews, notes and letters were evaluated (Merigó et al. 2016).

Once we had completed the search process, the records were subjected to a bibliometric analysis. Bjork et al. (2014) points out that the usefulness of bibliometric analysis lies in the obtaining of a general overview of a specific research field. Bibliometrics involves the application of different methods to determine the qualitative and quantitative changes in a subject of scientific research, establish the profile of publications on a specific topic and identify structural aspects and trends within a discipline (Rey-Martí et al. 2016). Bibliometric methods involve two main approaches: a performance analysis and a graphic mapping of science or bibliometric maping (Noyons et al. 1999). The performance analysis evaluates the impact of citations of the scientific production made by the different actors that interact in a research field. These actors can be countries, universities, departments and, of course, researchers. The performance analysis developed in this document is applied to journal articles, authors, institutions and countries in order to provide a better representation of the research field. Note that this approach also employs a wide range of indicators. The most popular indicators are those that consider the number of publications and the number of citations (Yu and Shi 2015). The number of publications is correlated with the productivity of the author and that the number of citations is correlated to its influence on the scientific community (Merigó et al. 2016). Similarly, other indicators have recently been used, such as the h-index (Hirsch 2005), which is also known as h-classics (Martínez et al. 2014). This index has gained popularity among authors (Alonso et al. 2009) because it can represent the importance of a specific group of articles. The interpretation of the h-index is simple. For example, if a set of papers has an h-index of 15, then 15 of the papers that are included in the set have received at least

15 citations each. Note also that the value of this indicator can change over time. In recent years, however, several indicators have been used to provide a more representative and informative perspective of the data. This has caused uncertainty regarding which is the optimal indicator to better represent the information (Podsakoff et al. 2008). Therefore, the performance analysis presented in this paper includes the most popular indicators and classifies records according to the number of publications, the number of citations and the h-index. In addition, other indicators are considered, such as the ratio of citations of articles (citations / articles) and the number of articles above a threshold citation (Merigó et al. 2015a, b). The performance analysis also presents other indicators that arise in some cases, from the combination of the previously mentioned indicators such as the number of articles in which the papers produced by the actor are cited (ACIE) or the average citations per article of the actor in the IE research (PCIE), among others. Other indicators included are the citation thresholds (≥100, ≥50, ≥20) and some dimensions of temporality (Q1, Q2, …Qn) that allow observing the publication behavior over time of the different scientific actors. Finally, note that each of the indicators are defined at the end of each table included.

Graphic mapping is an important methodology in the field of biblimetry, since it allows to analyze the intellectual connections within a field of dynamically changing scientific knowledge. This methodology has been perfected in recent years thanks to the development of some software's that allow analyzing the bibliographic information (Cobo et al. 2011b). Among the most popular softwares we can mention, for example, IN-SPIRE (Wise 1999), CiteSpace II (Chen 2006), Bibexcel (Persson et al. 2009), VOSViewer (van Eck and Waltman 2010), among several others. Note that VOS viewer software is used in this study. VOS viewer, as well as the rest of the mentioned software, use different indicators to extract and represent networks within a field of study. These include co-citation (Small 1973), blibographic coupling (Kessler 1963), co-words or co-ocurrence of keywords (Callon et al. 1983) and co-authorship (Peters and van Raan 1991). Note that the co-citacion analysis studies the cited documents, while the bibliographic coupling analyzes the citing documents. Likewise, the co-ocurrence of keywords analysis studies the keywords of the documents and is used to study the conceptual structure of a research field. The co-authorship measures the degree of collaboration or co-authorship among the most productive sources. Finally, notice that the visualization of the graph is represented by a network of elements, in which the size of the circle varies according to the importance of the element, while the network connections represent how close the link between the elements is. The place of the circles and the colors are used to cluster the items.

Results

Performance bibliometric analysis

This section presents the main results of the performance bibliometric analysis that was applied to records that are associated with IE research and published between 1989 and 2015. The search process was conducted in May 2016 and obtained 1215 publications. Note that these outcomes correspond to the total number of papers that include at least one of the keywords. However, because this paper analyzes only the records that are

published in the areas of Business, Management and Accounting, the total number of publications was reduced to 738 papers.

According to Fig. 1, IE research has increased significantly in recent years. Note that most of the papers have been published in the last decade, with 632 papers that are dated between 2006 and 2015, which represents 85.6% of the total volume. This growth can be explained by several factors. First, there has been an increase in the number of international researchers who study the phenomena that are associated with IE (Martínez et al. 2014). Second, there has been an increasing willingness of journals to receive the research that is related to this field. Finally, there has been an emergence of journals that are dedicated to the field, such as the *Journal of International Entrepreneurship*.

One of the ways to highlight the influence of work in a specific research field is through the number of citations. The papers that are related to IE have a fairly low citation rate compared to the fields of International Business or Entrepreneurship. To evaluate the ratio of citations in the IE field, Table 1 presents the general structure of citations of all the primary research that was obtained from Scopus, which are classified according to threshold citations. Also included is the percentage of papers of each section. Note that only three of the papers have received more than 500 citations and only 23% of all of the papers have received at least 25 citations. Finally, note that for the entire collection of papers in the IE field, the h-index is 70. This specifically means that there are at least 70 papers that have received at least 70 citations.

The most influential journal in IE research

IE studies are published in a wide range of journals. Table 2 shows the ranking of the 40 most productive and influential journals in the field of IE. In addition, some bibliometric indicators are shown, such as the h-index of the IE papers (HIE), the total number of citations that have been received by this group of papers (TCIE), the total number of IE papers (TPIE) and the ratio of IE papers, which is calculated based on the total papers per journal (% PIE). Further, we have included the time evolution of the IE papers that correspond to each of the journals. Finally, note that the journals have been ordered according to their h-index in the IE field (HIE). In the case of a tie, the total number of citations that have been received in the field was taken into account (TCIE).

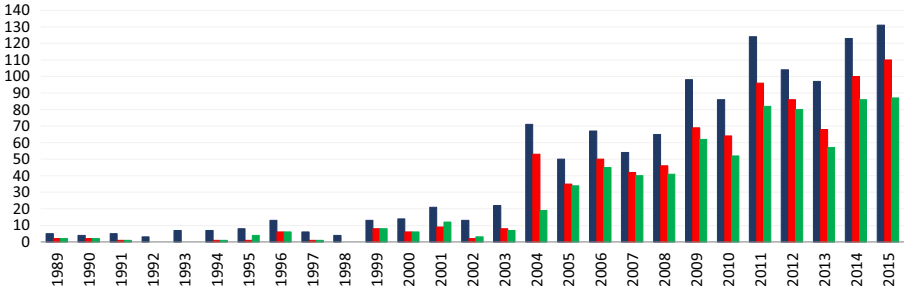

Fig. 1 Number of publications per year in International Entrepreneurship research since 1989. Note: The blue bars indicate the total number of publications per year in Scopus. Red bars indicate the number of publications in Scopus indexed in Business, Management and Accounting areas. The green bars indicate the number articles, reviews, notes and letters of the IE field found in Scopus

Table 1 General citation structure in International Entrepreneurship research in Scopus

Number of Citations	Number of papers	% of Papers
≥500 citations	3 papers	0,41%
≥250 citations	11 papers	1,49%
≥100 citations	33 papers	4,47%
≥50 citations	50 papers	6,78%
≥25 citations	72 papers	9,76%
≤25 citations	569 papers	77,10%
Total	738 papers	

Own elaboration based on Scopus 2015

According to Table 2, it is observed that the most influential journal in IE research is the Journal of International Business Studies (JIBS), with a HIE of 25 and a high number of citations. However, the Journal of International Entrepreneurship (JIE) is the most productive journal in the field because it has 78 papers, which represent 48.8% of all of the papers that have been published by the journal. However, the level of IE citations of this journal is low compared to others. Regarding the influence of journals in the IE field, some are highlighted not only for their renowned reputation or their levels of scientific productivity but for the publication of IE papers over a threshold of 100 citations. These include, the *International Business Review* (IBR), the *Journal of Business Venturing* (JBV), the *Journal of World Business* (JWB), the *International Marketing Review* (IMR), *Entrepreneurship Theory and Practice* (ETP), the *Journal of International Marketing* (JIMK), the *Journal of Small Business and Enterprise Development* (JSBED), the *Journal of International Management* (JIMG) and the *Journal of Management* (JM).

Another important aspect to consider in this section is the analysis of all the IE citations (TCIE). The JIBS again stands out for having the largest number of TCIE with 3369 citations, followed by the JBV and the IBR, with 2542 and 1772 citations, respectively. Subsequently there is a third group of journals such as the JWB, ETP and the JIMK, which have more than 1000 citations. A fourth group of journals such as the IMR, the JIE and the JM have a citations ranging between 600 and 1000. The remaining journals have a TCIE that is less than 450 citations. This marked difference between the groups of journals could be explained by several factors. The first factor is the evident quality of the journals. Note that most of the journals with a high number of IE citations have a high IF and are also well recognized in their respective fields. A second factor could be the theoretical orientation of the journals. Note for example that all of the journals that are presented in Table 3 with a TCIE indicator that is greater than 900 have a strong orientation of publishing articles that are related to the internationalization of companies or that have featured issues on Entrepreneurship and / or Small Businesses. This is because IE is a field that emerges from the intersection of International Business and Entrepreneurship (McDougall and Oviatt 2000), and therefore several of the studies that have been published in the journals of these fields give theoretical support to the IE field. However, it is interesting to note that, although it has an exclusive orientation to IE research, the JIE has failed to be sufficiently influential

Table 2 Most influential journal in IE research

R	JOURNAL	HIE	TCIE	TPIE	%PIE	T50	≥100	≥50	≥20	Q1	Q2	Q3	Q4	H	TP	TC	IF
1	JIBS	25	3369	30	2,96	11	10	7	8	1	7	13	9	132	1.013	65.228	4208
2	IBR	21	1772	51	4,97	5	5	7	11	–	9	10	32	68	1.027	21.479	1100
3	JIE	21	800	78	48,45	–	0	1	13	–	5	27	46	25	161	1.710	0,549
4	JBV	18	2542	21	2,19	9	8	5	2	6	3	2	10	143	958	69.240	4923
5	JWB	17	1138	30	4,39	4	4	6	6	–	–	19	11	71	684	19.853	1656
6	ETP	14	1053	22	3,74	2	2	3	5	–	1	7	14	83	589	22.901	4240
7	IMR	14	937	22	2,44	4	4	2	6	–	2	11	9	71	902	23.369	1076
8	JIMK	12	1097	13	3,40	5	5	2	2	4	1	4	4	63	382	13.101	2157
9	EMJ	12	345	14	0,85	–	0	1	8	1	1	11	1	74	1.641	27.059	0,816
10	SBE	8	383	13	0,95	1	0	2	4	1	7	–	5	90	1.373	34.839	2013
11	JSBED	8	285	17	3,51	1	1	–	3	–	–	5	12	31	485	4.510	0,575
12	JBR	8	154	10	0,23	–	–	1	2	–	2	–	8	131	4.420	106.459	1682
13	ERD	7	209	8	1,23	–	–	1	4	–	1	4	3	62	653	16.082	1397
14	ISBJ	7	114	10	1,52	–	–	–	2	–	–	2	8	48	660	10.365	2054
15	JIMG	6	449	7	1,65	2	2	1	1	–	4	2	1	45	425	8.569	1829
16	IEMJ	6	104	15	4,84	–	–	–	2	–	–	5	10	27	310	2.806	0,489
17	MIR	6	82	17	4,05	–	–	–	2	–	–	1	16	31	420	4.566	0,803
18	IJESB	5	103	19	2,48	–	–	–	1	–	–	6	13	17	766	2.133	0,294
19	JE	5	47	5	2,45	–	0	–	–	–	–	5	–	14	204	856	0,244
20	IJGSB	5	37	11	8,03	–	0	–	–	–	–	8	3	9	137	389	0,293
21	JM	4	633	4	0,26	3	3	–	1	–	2	2	–	160	1.540	103.142	6617
22	IJEBR	4	83	4	1,32	–	–	–	3	–	–	3	1	31	302	3.437	0,694
23	LRP	4	81	5	0,20	–	–	–	1	–	1	3	1	79	2.533	35.615	1958
24	JSBM	4	72	5	0,74	–	–	–	1	–	–	2	3	71	676	18.459	1368
25	AEFEG	4	45	12	10,17	–	–	–	–	–	11	1	–	10	118	586	0,129
26	EBR	4	38	11	2,10	–	–	–	1	–	–	2	9	23	523	2.813	0,481

Table 2 (continued)

R	JOURNAL	HIE	TCIE	TPIE	%PIE	T50	≥100	≥50	≥20	Q1	Q2	Q3	Q4	H	TP	TC	IF
27	BH	4	37	4	0,32	–	–	–	–	–	–	3	1	28	1.235	6.765	0,532
28	EJIM	4	26	9	3,21	–	–	–	–	–	–	4	5	11	280	609	0,258
29	EJM	3	133	4	0,24	–	–	2	–	–	–	2	2	65	1.662	24.128	0,933
30	RGSM	3	88	4	2,70	–	–	1	–	3	–	–	1	7	148	267	0,163
31	SIJ	3	53	4	0,22	–	–	–	1	–	–	3	1	48	1.782	17.539	0,471
32	IJE	3	24	4	5,97	–	–	–	–	–	–	2	2	5	67	105	0,167
33	TIBR	3	7	4	0,88	–	–	–	–	–	–	–	4	20	452	2.226	0,593
34	AIM	2	40	6	2,82	–	–	–	1	–	1	1	4	11	213	1.487	0,123
35	APJM	2	24	4	0,50	–	–	–	–	–	–	2	2	52	804	13.116	1676
36	IJEIM	2	18	5	0,97	–	–	–	–	–	–	2	3	15	516	1.756	0,238
37	IJBG	2	10	9	2,15	–	–	–	–	–	–	2	7	7	418	342	0,210
38	IJEV	2	9	6	4,14	–	–	–	–	–	–	1	5	7	145	212	0,213
39	TBE	2	8	4	0,69	–	–	–	–	–	–	1	3	14	580	1.268	0,242
40	PIBR	2	6	6	5,26	–	–	–	–	–	–	4	2	4	114	68	0,122

The ranking is developed according to the h-index and a minimum of 100 papers in IE field. In the case of a tie, the total IE citations are considered

R, ranking; HIE, h-index only IE; TCIE and TPIE, total citations and papers only IE; %PIE, percentage of IE papers in the journal; T50, number of papers in the top 50 list shown in Table 3; ≥100, ≥50, ≥25, number of paper with more than 100, 50 and 25 citations; Q1: 1989–2000; Q2: 2001–2005; Q3: 2006–2010; Q4: 2011–2015. H, h-index of journal; TP and TC, total papers and citations; IF, impact factor 2015; JIBS, Journal of International Business Studies; IBR, International Business Review; JIE, Journal of International Entrepreneurship; JBV, Journal of Business Venturing; JWB, Journal of World Business; IMR, International Marketing Review; ETP, Entrepreneurship Theory and Practice; EMJ, European Management Journal; JIMK, Journal of International Marketing; SBE, Small Business Economics; JSBED, Journal of Small Business and Enterprise Development; JBR, Journal of Business Research; ISBJ, International Small Business Journal; JIMG, Journal of International Management; ERD, Entrepreneurship and Regional Development; IEMJ, International Entrepreneurship and Management Journal; IJESB, International Journal of Entrepreneurship and Small Business; IJEBR, International Journal of Entrepreneurship Behaviour and Research; MIR, Management International Review; JE, Journal of Euromarketing; JM, Journal of Management; LRP, Long Range Planning; JSBM, Journal of Small Business Management; AEFEG, Advances in Entrepreneurship Firm Emergence and Growth; IJGSB, International Journal of Globalization and Small Business; BH, Business History; EJM, European Journal of Marketing; RGSM, Research in Global Strategic Management; SIJ, Service Industries Journal; EBR, European Business Review; EJIM, European Journal of International Management; IJE, International Journal of Entrepreneurship; AIM, Advances in International Marketing; APJM, Asia Pacific Journal of Management; IJEIM, International Journal of Entrepreneurship and Innovation Management; IJBG, International Journal of Business and Globalisation; IJEV, International Journal of Entrepreneurial Venturing; TIBR, Thunderbird International Business Review; PIBR, Progress in International Business Research; TBE, Transformations in Business and Economics

within the field. Note further that, although it has a good HIE indicator, it has a low number of citations compared to the other journals. We believe that this is the result of the type of indexing and indicators of journal quality, such as the impact factor (IF). There is currently an intense debate on the indicators that assess journal quality (Raj and Zainab 2012). In this sense, the existing debate on journal quality regarding indexing in both the WoS and Scopus has been inevitable. Because, although currently indicators of quality and coverage of the journal titles are similar between the WoS and Scopus (Sicilia et al. 2011), it is clear that there is a tendency to consider the WoS as the main parameter of quality in the social science research (Norris and Oppenheim 2007). It is therefore likely that the fact that the JIE has not been indexed in the WoS and thus has a low IF relative to other journals (see Table 2) has failed to attract higher quality studies so that it might position itself as a more influential journal in the field. Further, the premature age of the JIE (its release was in 2003) could adversely affect its position.

Another important issue to analyze from Table 2 is the progress over time of IE research in the journals. For this, the numbers of papers that were published in these journals are grouped into periods of time, where Q1 represents the previous 2001 period; Q2 refers to the period from 2001 to 2005; Q3 includes the publications from the period from 2006 to 2010 and Q4, the publications from the period from 2011 to 2015. From an overall perspective, the results show that IE research has been progressively published in several journals. In fact, the last ten years have been very productive, and almost all of the journals published at least one document that has been associated with this research field. Regarding the early years of the field, we particularly highlight the JIBS and the JVB as the pioneer journals in this field (Autio 2005). For example, the JBV published an article by McDougall, in which he compared the new national firms that had decided to become international since inception (McDougall 1989). It is noteworthy that in this paper, McDougall proposed the first definition of the IE field. Thus, although it has published less than other journals, the JVB has not been skeptical toward the initial novelty of the field, and it has maintained a similar level of publication until recent years (Q4). However, the JIBS is another relevant journal because in 1994 it published one of the papers that has been considered to be the main driver of IE (See, Oviatt and McDougall 1994). Further, the second period (Q2) maintained a similar level of publication. However, the journals that have made the most progress in IE research are the JIE and the IBR. They currently occupy first and second place among the most productive journals. However, the IBR obtains better indicators regarding the number of citations that it receives.

An important aspect to consider is that despite the apparent growth of IE research, fifteen journals are observed that have been irregular and have decreased their level of publications in the field. Some explanations for this could be by the number of volumes that are published per year and the number of papers that are included in each volume. Similarly, the thematic interests of journals are an important barrier to explaining the irregularity of a specific issue in academic journals. However, the publications that are presented in this list have a strong orientation towards the International Business and Entrepreneurship areas, which are in a stage of maturity rather more advanced compared to the IE field. Thus, this could also be an explanation for the skepticism and irregularity of some of the journals towards IE investigations.

The most influential articles in IE research

One way to obtain a complete picture of the documents that are published in a field is through the analysis of the number of citations that are received (Merigó and Yang 2017). The number of citations reflects the popularity and influence of each article in the scientific community. Table 3 presents the 50 most cited articles in the field of IE.

It is important to note that some of the most influential papers in the IE field do not immediately appear with the keywords that we have used. Researchers that study bibliometric science refer to them as "stray citations," and they usually appear in all of the bibliographic databases (including WoS), particularly in the areas that belong to the Social Sciences (Harzing and Alakangas 2016). However, Scopus addresses these citations by an additional tab through which it is possible to examine these data in a limited way (Jacsó 2008). Therefore, this feature has allowed us to develop a manual search process to find some of the most relevant references between these documents. Table 3 presents "Other highly influential research papers in IE," so that in total 60 titles are presented that correspond to the most cited papers in the EI research. Note that the most cited and influential paper is Oviatt and McDougall (1994), which has more than 1300 citations. Although some of the previous studies up to 1994 referred to IE as a new field of research (for example, McDougall 1989; Morrow 1988), the Oviatt and McDougall (1994) study is considered by many as the starting point of the IE field (Autio 2005; Keupp and Gassmann 2009). Importantly, McDougall and Oviatt are the authors who dominate this list, with eight papers together, four of which are in the Top 10. One other couple of influential authors is Knight and Cavusgil, who together have two studies that are within the Top 10 of our list. Note that this list includes any type of publication and not only academic articles because the focus is on the number of citations.

The most productive and influential authors

Keupp and Gassmann (2009) note that the IE field started from the phenomenological research, which mainly focused on the study of rapidly internationalizing firms, which are popularly known as International New Ventures (INVs) or Born Global Firms (BGs) (McDougall et al. 2014). McDougall (1989) was one of the first researchers to provide empirical evidence for the activities of these firms. Since then, McDougall and Oviatt have jointly developed several contributions, mainly theoretical, which have sought to open new avenues of research and theoretically strengthen the IE field (Autio 2005). However, since its inception many other authors have made significant contributions. To obtain a broader view of IE research, the authors of greater presence and influence, as well as the time evolution of its publications in the field, are determined. Therefore, Table 4 presents the 40 most important authors in the research IE community. Note that the authors are decreasingly ordered according to their productivity in the field (TPIE). In the case of a tie we have taken into consideration the total number of citations in the field (TCIE).

In general terms, we note that McDougall is the most influential and productive author in IE research because she has the best bibliometric indicators that are related to the field (TPIE = 17, TCIE = 2381 and HIE = 13). Similarly, Oviatt is the second most

Table 3 The most cited papers in IE research

R	Title article	Authors	J	TC	Year	C/Y
1	Innovation, organizational capabilities, and the born-global firm	Knight G.A., Cavusgil S.T.	JIBS	659	2004	55
2	Explaining the formation of international new ventures: The limits of theories from international business research	McDougall P.P., Shane S., Oviatt B.M.	JBV	564	1994	26
3	International entrepreneurship: The intersection of two research paths	McDougall P.P., Oviatt B.M.	AMJ	518	2000	32
4	Defining international entrepreneurship and modeling the speed of internationalization	Oviatt B.M., McDougall P.P.	ETP	451	2005	41
5	The phenomenon of early internationalizing firms: What do we know after a decade (1993–2003) of scientific inquiry?	Rialp A., Rialp J., Knight G.A.	IBR	376	2005	34
6	A capabilities perspective on the effects of early internationalization on firm survival and growth	Sapienza H.J., Autio E., George G., Zahra S.A.	AMR	365	2006	37
7	Internationalisation: Conceptualising an entrepreneurial process of behaviour in time	Jones M.V., Coviello N.E.	JIBS	346	2005	31
8	Venture capitalist governance and value added in four countries	Sapienza H.J., Manigart S., Vermeir W.	JBV	305	1996	15
9	The resource-based view and international business	Peng M.W.	JM	300	2001	20
10	The network dynamics of international new ventures	Coviello N.E.	JIBS	288	2006	29
11	A theory of international new ventures: A decade of research	Zahra S.A.	JIBS	286	2005	26
12	A case for comparative entrepreneurship: Assessing the relevance of culture	Thomas A.S., Mueller S.L.	JIBS	281	2000	18
13	New venture internationalization, strategic change, and performance: A follow-up study	McDougall P.P., Oviatt B.M.	JBV	262	1996	13
14	Methodological issues in international entrepreneurship research	Coviello N.E., Jones M.V.	JBV	261	2004	22
15	The internationalization of small high-technology firms	Jones M.V.	JIMK	235	1999	14
16	International corporate entrepreneurship and firm performance: The moderating effect of international environmental hostility	Zahra S.A., Garvis D.M.	JBV	215	2000	13
17	The international market entry choices of start-up companies in high-technology industries	Burgel O., Murray G.C.	JIMK	211	2000	13
18	International venturing by emerging economy firms: The effects of firm capabilities, home country networks, and corporate entrepreneurship	Yiu D.W., Lau C., Bruton G.D.	JIBS	208	2007	23
19	A Strategic Approach to Internationalization: A Traditional Versus a “Born-Global” Approach	Chetty S., Campbell-Hunt C.	JIMK	201	2004	17

Table 3 (continued)

R	Title article	Authors	J	TC	Year	C/Y
20	'Born-again global' firms: An extension to the 'born global' phenomenon	Bell J., McNaughton R., Young S.	JIMG	201	2001	13
21	What drives new ventures to internationalize from emerging to developed economies?	Yamakawa Y., Peng M.W., Deeds D.L.	ETP	193	2008	24
22	Conceptualizing accelerated internationalization in the born global firm: A dynamic capabilities perspective	Weerawardena J., Mort G.S., Liesch P.W., Knight G.	JWB	183	2007	20
23	Creative tension: The significance of Ben Oviatt's and Patricia McDougall's article 'toward a theory of international new ventures	Autio E.	JIBS	176	2005	16
24	International versus domestic entrepreneurship: New venture strategic behavior and industry structure	McDougall P.P.	JBV	176	1989	7
25	The Born Globals A new generation of small European exporters	Moen Ø.	IMR	169	2002	12
26	The internationalisation of 'high performing' UK high-tech SMEs: A study of planned and unplanned strategies	Crick D., Spence M.	IBR	168	2005	15
27	The past and the future of international entrepreneurship: A review and suggestions for developing the field	Keupp M.M., Gassmann O.	JM	164	2009	23
28	International Entrepreneurship research (1989–2009): A domain ontology and thematic analysis	Jones M.V., Coviello N., Tang Y.K.	JBV	163	2011	33
29	The international entrepreneurial dynamics of accelerated internationalisation	Mathews J.A., Zander I.	JIBS	154	2007	17
30	SME internationalization research: Past, present, and future	Ruzzier M., Hisrich R.D., Antoncic B.	JSBED	151	2006	15
31	Ownership and the internationalization of small firms	George G., Wiklund J., Zahra S.A.	JM	148	2005	13
32	Networking capability and international entrepreneurship: How networks function in Australian born global firms	Mort G.S., Weerawardena J.	IMR	146	2006	15
33	Entrepreneurship and strategy in the international SME	Knight G.A.	JIMG	134	2001	9
34	Cognition and international entrepreneurship: Implications for research on international opportunity recognition and exploitation	Zahra S.A., Korri J.S., Yu J.	IBR	132	2005	12
35	The internationalization of entrepreneurship	Oviatt B.M., McDougall P.P.	JIBS	128	2005	12
36	How smaller born-global firms use networks and alliances to overcome constraints to rapid internationalization	Freeman S., Edwards R., Schroder B.	JIMK	127	2006	13

Table 3 (continued)

R	Title article	Authors	J	TC	Year	C/Y
37	Firms' degree of born-globalness, international entrepreneurial orientation and export performance	Kuivalainen O., Sundqvist S., Servais P.	JWB	125	2007	14
38	A framework for comparing entrepreneurship processes across nations	Baker T., Gedajlovic E., Lubatkin M.	JIBS	122	2005	11
39	Collaboration and performance in foreign markets: The case of young high-technology manufacturing firms	Shrader R.C.	AMJ	120	2001	8
40	Rapid internationalisation among entrepreneurial firms in Australia, Canada, Ireland and New Zealand: An extension to the network approach	Loane S., Bell J.	IMR	118	2006	12
41	The drivers of the early internationalization of the firm	Zucchella A., Palamara G., Denicolai S.	JWB	117	2007	13
42	Home base and knowledge management in international ventures	Kuemmerle W.	JBV	116	2002	8
43	Entrepreneurs' relationships for internationalization: Functions, origins and strategies	Harris S., Wheeler C.	IBR	113	2005	10
44	An inquiry into born-global firms in Europe and the USA	Knight G., Madsen T.K., Servais P.	IMR	113	2004	9
45	A holistic approach to internationalisation	Fletcher R.	IBR	108	2001	7
46	The competitive advantage of early and rapidly internationalising SMEs in the biotechnology industry: A knowledge-based view	Gassmann O., Keupp M.M.	JWB	101	2007	11
47	Entrepreneurial instant exporters in the Scottish arts and crafts sector	McAuley A.	JIMK	100	1999	6
48	Born global or born regional Evidence from an exploratory study in the Costa Rican software industry	Lopez L.E., Kundu S.K., Ciravegna L.	JIBS	98	2009	14
49	The effect of international venturing on firm performance: The moderating influence of absorptive capacity	Zahra S.A., Hayton J.C.	JBV	98	2008	12
50	The internationalization of small and medium-sized firms	De Clercq D., Sapienza H.J., Crijns H.	SBE	98	2005	9
Other highly influential papers in IE research						
1	Toward a theory of international new ventures	Oviatt B.M., McDougall P.P.	JIBS	1341	1994	61
2	The born global firm: A challenge to traditional internationalization theory	Knight, G.A., Cavusgil, S.T.	AIM	567	1996	28
3	Business relationship learning and commitment in the internationalization process	Johanson, J., Vahlne, J.E.	JIE	341	2003	26

Table 3 (continued)

R	Title article	Authors	J	TC	Year	C/Y
4	Challenges for internationalization process theory: The case of international new ventures	Oviatt B.M., McDougall P.P.	MIR	276	1997	15
5	International entrepreneurship: The current status of the field and future research agenda	Zahra, S.A., George, G.	SECIM	237	2002	17
6	Towards an integrative model of small firm internationalisation	Bell, J., McNaughton, R., Young, S., Crick, D.	JIE	220	2003	17
7	A comparison of international and domestic new ventures	McDougall, P.P., Oviatt, B.M., Shrader, R.C.	JIE	189	2003	15
8	Innovative internationalisation in new firms: Born globals - The Swedish case	Andersson, S., Wictor, I.	JIE	161	2003	12
9	A taxonomy of born-global firms	Knight, G.A., Cavusgil, S.T.	MIR	88	2005	8
10	International entrepreneurship research: What scope for international business theories?	Young, S., Dimitratos, P., Dana, L.P.	JIE	76	2003	6

Journal abbreviations are available in Table 3 except for: SECIM, Strategic Entrepreneurship: Creating an Integrated Mindset

Table 4 The most productive and influential authors in ie research

r	Author	Country	TPIE	TCIE	HIE	T50	Q1	Q2	Q3	Q4	H	TP	TC
1	McDougall, P.P.	USA	17	2381	13	9	5	5	2	5	24	31	3046
2	Andersson, S.	SWE	14	222	8	1	–	1	5	8	10	25	371
3	Dimitratos, P.	UK	12	192	7	1	–	3	2	7	12	53	584
4	Oviatt, B.M.	AUS	11	2059	9	8	4	5	1	1	13	19	2373
5	Saarenketo, S.	FIN	11	194	7	–	–	1	5	5	13	41	629
6	Zahra, S.A.	USA	10	1262	8	7	1	4	3	2	50	122	12,228
7	Crick, D.	CAN	10	309	6	2	1	2	5	2	12	39	846
8	Evers, N.	IRL	10	82	5	–	–	–	1	9	6	12	123
9	Jones, M.V.	UK	9	1164	7	4	2	3	2	2	12	37	1602
10	Servais, P.	DEN	9	277	4	2	–	1	3	5	8	19	1095
11	Prashantham, S.	CHI	9	112	5	–	–	–	3	6	9	17	257
12	Coviello, N.E.	CAN	8	1101	7	4	–	2	3	3	19	28	2449
13	Sapienza, H.J.	USA	8	798	5	3	1	2	2	3	26	42	5000
14	Madsen, T.K.	DEN	8	233	5	1	–	1	2	5	13	25	1204
15	Kuivalainen, O.	FIN	8	191	5	1	–	1	2	5	13	40	528
16	Loane, S.	UK	8	190	5	1	–	–	5	3	8	14	170
17	Kabst, R.	GER	8	103	5	–	–	–	3	5	12	58	310
18	Blesa, A.	ESP	8	38	3	–	–	–	3	5	6	16	82
19	Ripollés, M.	ESP	8	38	3	–	–	–	3	5	4	15	54
20	Knight, G.	USA	7	1287	5	7	–	4	1	2	19	37	3004
21	Bell, J.	UK	7	380	6	3		1	5	1	12	43	815
22	Chetty, S.	SWE	7	298	3	1	–	2	–	5	15	30	1102
23	McNaughton, R.	NZL	7	279	5	2	–	1	4	2	11	49	517

Table 4 (continued)

r	Author	Country	TPIE	TCIE	HIE	T50	Q1	Q2	Q3	Q4	H	TP	TC
24	Gabrielsson, M.	FIN	7	146	6	–	–	1	2	4	16	40	636
25	Schwens, C.	GER	7	103	5	–	–	–	2	5	9	29	174
26	Monferrer, D.	ESP	7	24	2	–	–	–	3	4	2	10	24
27	Freeman, S.	AUS	6	281	6	1	–	–	4	2	10	28	435
28	Moen, Ø.	NOR	6	272	4	1	–	2	2	2	10	18	775
29	Zhou, L.	CAN	6	187	5	–	–	–	2	4	17	27	1100
30	Zucchela, A.	ITA	6	129	4	1	–	–	3	3	8	26	370
31	Nummela, N.	EST	6	107	4	–	–	–	4	2	10	31	416
32	Etemad, H.	CAN	6	105	5	–	1	2	2	1	11	54	349
33	Khavul, S.	USA	6	96	5	–	–	1	2	3	11	19	282
34	Cesinger, B.	FRA	6	24	2	–	–	–	–	6	3	11	26
35	Cavusgil, S.T.	USA	5	784	5	3	–	1	1	3	38	125	5036
36	Musteen, M.	USA	5	130	4	–	–	–	3	2	9	21	278
37	Fernhaber, S.A.	USA	5	114	4	–	–	1	2	2	8	15	243
38	Nordman, E.R.	SWE	5	100	4	–	–	–	3	2	4	9	103
39	Gabrielsson, P.	FIN	5	93	4	–	–	–	1	4	8	14	170
40	Baum, M.	GER	5	44	4	–	–	–	–	5	5	18	55

R, rank; TPIE, TCIE and HIE, total papers, citations and H-index in International Entrepreneurship; TP50 number of papers in the Top 50 list shown in Table 4; Q1: 1989–2000; Q2: 2001–2005; Q3: 2006–2010; Q4: 2011–2015; H, H-index; TP and TC, total papers and citations

Table 5 Total papers classified by most influential journals IE

R	Name	JIBS	IBR	JIE	JBV	JWB	IMR	ETP	EMJ	JIMK	SBE	PTOP10	OtherJ	TPIE	TCIE
1	McDougall, P.P.	4	–	1	4	–	–	3	–	–	–	12	5	17	2381
2	Oviatt, B.M.	2	–	–	3	–	–	2	–	–	–	7	4	11	2059
3	Knight, G.	2	1	–	–	1	1	–	–	–	–	5	2	7	1287
4	Zahra, S.A.	2	1	–	2	–	–	1	–	–	–	6	4	10	1262
5	Jones, M.V.	1	–	–	2	1	–	2	–	1	–	7	2	9	1164
6	Coviello, N.E.	3	–	1	3	1	–	–	–	–	–	8	–	8	1101
7	Sapienza, H.J.	–	2	–	2	–	–	–	–	–	1	5	3	8	812
8	Cavusgil, S.T.	2	1	–	1	–	–	–	–	1	–	5	–	5	789
9	Bell, J.	–	1	–	–	1	2	–	–	–	–	4	3	7	380
10	Crick, D.	–	1	1	–	–	2	–	1	–	1	6	4	10	309
11	Chetty, S.	–	1	–	–	1	–	–	–	1	–	3	4	7	298
12	Freeman, S.	–	1	–	–	–	–	–	–	2	–	3	3	6	281
13	McNaughton, R.	–	1	1	–	1	2	–	–	–	–	5	2	7	279
14	Servais, P.	–	–	1	–	1	1	–	–	–	–	3	6	9	277
15	Moen, Ø	–	–	–	–	–	1	–	–	–	–	1	5	6	272
16	Madsen, T.K.	–	–	1	–	–	1	–	–	–	–	2	6	8	233
17	Andersson, S.	–	–	4	1	–	–	–	–	1	–	6	8	14	222
18	Saarenketo, S.	–	–	2	–	1	1	–	1	–	–	5	6	11	194
19	Dimitratos, P.	–	3	–	–	1	–	1	1	–	–	6	6	12	192
20	Kuivalainen, O.	–	1	2	–	1	1	–	1	–	–	6	2	8	191
21	Loane, S.	–	1	–	–	1	2	–	–	–	–	4	4	8	190
22	Zhou, L.	1	1	–	1	2	–	–	–	1	–	6	–	6	187
23	Gabrielsson, M.	–	1	2	–	–	–	–	–	–	–	3	4	7	146

Table 5 (continued)

R	Name	JIBS	IBR	JIE	JBV	JWB	IMR	ETP	EMJ	JIMK	SBE	PTOP10	OtherJ	TPIE	TCIE
24	Musteen, M.	1	–	1	–	2	–	1	–	–	–	5	–	5	130
25	Zuchella, A.	–	–	1	–	1	–	–	–	–	–	2	4	6	129
26	Prashantham, S.	1	1	–	–	–	–	1	1	–	–	4	5	9	124
27	Fernhaber, S.A.	1	–	–	1	–	–	1	–	–	–	3	2	5	114
28	Nummela, N.	–	–	–	–	1	–	–	–	–	–	1	5	6	107
29	Etemad, H.	–	–	1	–	–	–	–	–	–	2	3	3	6	105
30	Kabst, R.	–	2	1	–	1	–	–	–	–	–	4	4	8	103
31	Schwens, C.	–	2	1	–	1	–	–	–	–	–	4	3	7	103
32	Nordman, E.R.	–	1	–	–	1	–	–	1	–	–	3	2	5	100
33	Khavul, S.	–	–	–	1	–	–	–	–	1	–	2	4	6	96
34	Gabrielsson, P.	–	2	–	–	–	–	–	–	–	–	2	3	5	93
35	Evers, N.	–	–	2	–	–	1	–	–	1	–	4	6	10	82
36	Baum, M.	1	–	–	–	1	1	–	–	–	–	3	2	5	44
37	Blesa, A.	–	1	1	–	1	–	–	–	–	–	3	5	8	38
38	Ripolles, M.	–	1	2	–	1	–	–	–	–	–	4	4	8	38
39	Monferrer, D.	–	1	1	–	–	–	–	–	–	–	2	5	7	24
40	Cesinger, B.	–	–	–	–	–	–	–	–	–	–	–	6	6	24

Journal Abbreviations are available in Table 2. PTOP10, Papers published in the 10 most influential IE journals. Other J, Other Journals available in Table 2. TP-IE and TC-IE, Total papers and citations in International Entrepreneurship Research

influential author, with a HIE = 9 and more than 2000 citations, and he is also found in the top of the most productive authors in the field.

In relation to the number of documents by an author, it can be observed that there are no major differences between the first 10 authors. However, Andersson with 14 studios, is the one who obtains the second position after McDougall. Dimitratos obtains third place with 12 papers; Saarenketo and Oviatt are in fourth and fifth place with 11 papers each. By reviewing the citations record by authors, McDougall and Oviatt lead the list with citations, 2381 and 2059, respectively. Other authors with a high level of citations in the field are Knight (1287 citations), Zahra (1262 citations), Jones (1164 citations) and Coviello (1101 citations). It is notable that this listing may lack important references. This usually occurs with the use of the various bibliometric databases (Harzing and Alakangas 2016). However, to complement these citations and therefore provide a more comprehensive view, we have included a column that analyzes the total citations that have been received by each author (TC). Because most of these authors are strongly oriented to IE research, the information that is contained in this column can be considered to be an indicator of the influence of these authors in this field. By observing this column, we are surprised by the total citations that have been received by Zahra (12,228 citations) compared with other authors. Zahra is an important researcher who has worked in different disciplines of social sciences, particularly in the field of Entrepreneurship. The research that has been provided by Zahra has been diverse, ranging mainly in the three areas of Management and Strategy literatures – Entrepreneurship, International Entrepreneurship and Social Entrepreneurship (Audretsch 2015). Other authors with a high level of citation are Cavusgil and Sapienza, who, like Zahra, have made contributions in other fields of research. The remaining authors primarily focus on issues of IE.

Regarding the time evolution of publications by an author, several appear in the first period, among which we emphasize McDougall and Oviatt. Note that these authors are those who started the field and can therefore be considered the "Fathers of the International Entrepreneurship". However, other authors who have made significant contributions, such as Zahra, Jones, Crick and Sapienza, have emerged. Of these, it is Zahra in particular who, through his contributions has brought profound changes to the IE domain (McDougall et al. 2014). In the second period (Q2), there appear several equally important authors, such as Coviello, Knight and Madsen. It should be noted, however, that in the same period, McDougall and Oviatt remain the most productive authors. Periods 3 and 4 (Q3 and Q4), clearly show the emergence of all of the 40 most productive authors in the IE field.

Another interesting aspect to observe is the influence of the researchers through their publications in the nucleus of the IE community. Therefore, Table 5 presents a classification of documents that were published by the top 40 authors in the ten major journals in the field of IE. Note that the presented journals are ordered from left to right according to their level of influence in the field (HIE). Similarly, the authors are ordered decreasingly according to their level of citations in the field (TCIE).

According to Table 5, the author who has more publications in these journals is McDougall, with 12 papers. The second place is for Coviello with 8 papers. Oviatt and Jones continue with 7 papers. McDougall is also notable for publishing more at the JIBS (4 items). In the same journal, followed Coviello with three papers, and subsequently Oviatt, Knight, Zahra and Cavusgil with 2

Table 6 The most productive and influential institution according to Scopus 2015

R	Institution name	Country	HIE	TPIE	TCIE	PCIE	ACIE	T50	≥100	≥50	≥20	ARWU	QS
1	Georgia State University	USA	13	16	2700	168,8	1653	7	8	4	2	–	701
2	Indiana University	USA	12	18	1377	76,5	1022	3	3	3	2	101–150	291
3	University of Glasgow	UK	12	21	1117	53,2	768	3	3	3	2	101–150	63
4	University of Strathclyde	UK	10	13	644	49,5	548	2	2	4	2	–	272
5	Aalto University	FIN	10	16	345	21,6	299	–	1	1	4	401–500	133
6	Lappeenranta Uni. of Tech.	FIN	9	18	338	18,8	257	–	1	1	2	–	356
7	Univ. of Southern Denmark	DEN	8	19	390	20,5	293	2	2	1	1	301–400	390
8	Stockholm School of Econ.	SWE	8	13	332	25,5	289	1	1	1	4	401–500	–
9	University of Nottingham	UK	8	11	268	24,4	262	–	–	2	3	–	–
10	Halmstad University	SWE	8	17	236	13,9	180	–	–	1	3	–	–
11	University of Auckland	NZL	7	8	1061	132,6	782	3	3	2	–	151–200	81
12	University of Queensland	AUS	7	7	419	59,9	381	2	2	1	2	55	51
13	Monash University	AUS	7	7	304	43,4	260	1	1	2	1	79	65
14	University of Turku	FIN	7	15	193	12,9	175	–	–	–	1	401–500	234
15	The University of Sydney	AUS	7	9	188	20,9	166	–	–	1	3	82	46
16	Florida State University	USA	6	6	1432	238,7	1014	5	4	–	1	201–300	431–440
17	Univ. Autònoma de Barcelona	ESP	6	8	487	60,9	440	–	1	1	1	301–400	203
18	Ulster University	UK	6	9	387	43,0	352	2	2	–	2	–	–
19	University of Adelaide	AUS	6	8	204	25,5	185	–	–	2	1	101–150	125
20	University of Giessen	GER	6	8	115	14,4	89	–	–	–	2	301–400	651–700
21	University of Waterloo	CAN	5	7	283	40,4	267	1	1	–	1	201–300	152
22	University of Ottawa	CAN	5	6	245	40,8	209	–	1	1	–	201–300	291
23	Uppsala University	SWE	5	10	203	20,3	197	1	1	–	1	60	98
24	Univ. of New South Wales	AUS	5	6	168	28,0	150	–	–	–	5	101–150	–

Table 6 (continued)

R	Institution name	Country	HIE	TPIE	TCIE	PCIE	ACIE	T50	≥100	≥50	≥20	ARWU	QS
25	Univ. of Texas at Arlington	USA	5	8	150	18,8	133	–	–	2	–	–	301–400
26	San Diego State University	USA	5	7	149	21,3	143	–	–	2	1	301–400	–
27	University of Pavia	ITA	5	8	141	17,6	135	1	1	–	–	301–400	551–600
28	University of Vaasa	FIN	5	8	106	13,3	98	–	–	1	–	–	–
29	Universidad Jaume I	ESP	5	9	96	10,7	87	–	–	–	2	–	–
30	University of Groningen	NED	5	7	92	13,1	88	–	–	1	–	72	113
31	Nat. Univ. of Ireland Galway	IRL	5	11	88	8,0	64	–	–	–	2	301–400	249
32	Vienna Univ. of Econ. and Bus.	AUT	5	8	78	9,8	78	–	–	–	3	151–200	–
33	Economics Uni. of Athens	GRE	5	6	69	11,5	60	–	–	–	1	301–400	701
34	QLD Univ. of Tech. QUT	AUS	5	8	63	7,9	62	–	–	–	1	201–300	276
35	Norg. Teknisk-Nat. Univ.	NOR	4	8	256	32,0	227	1	1	1	–	101–150	259
36	University of Otago	NZL	4	11	227	20,6	225	1	1	–	–	201–300	169
37	Universidad de Sevilla	ESP	4	7	159	22,7	148	–	–	2	1	401–500	601–650
38	Brock University	CAN	4	6	117	19,5	102	–	–	1	2	–	–
39	University of Twente	NED	4	6	47	7,8	45	–	–	–	2	301–400	177
40	University of Oulu	FIN	4	10	43	4,3	39	1	–	–	–	301–400	411–420
Other highly cited universities in the IE field													
41	Babson College	USA	5	5	583	116,6	537	3	3	–	2	–	–
42	University of Minnesota	USA	4	5	536	107,2	484	2	2	1	–	–	137
43	Iowa State University	USA	4	5	153	30,6	149	–	–	2	1	66–78	421
44	Georgia Institute of Technology	USA	4	4	931	232,8	817	2	2	1	1	52–65	71
45	Imperial College London	UK	3	4	404	101	384	1	1	–	2	23	9

Elaborated based on Scopus 2015. R: Ranking; C; Country; HIE: H index only with IE research; TPIE: Total Papers in IE research; TCIE: Total citation in IE research; PCIE: Average of cites by article in IE research; ACIE: Number of articles in which the papers produced by the University are cited; T50: Articles within Top 50; ≥100, ≥50, ≥20, articles with more 100, 50 and 20 citations; ARWU, World ranking of the university according to ARWU (only the top 500); QS = World ranking according to QS (only the top 800)

papers. Interestingly, the authors generally tend to publish their articles in three journals: the IBR, the JIE and the JWB. However, the five most cited authors in the field generally published either in the JIBS, the JBV or ETP. These journals are of great importance in the fields of International Business and Entrepreneurship. They also have high rates of IF after the JM. An example of the above is that, of the 12 papers that are published by McDougall in TP10IE, four of them are published in the JIBBS, three articles in the JBV and three more in ETP. Similarly, of the 8 papers that are published by Oviatt, two of them are published in the JIBS, three articles in the JBV and two in ETP. Knight, Zahra and Jones are similar cases.

The most productive and influential institutions

The phenomena that are associated with the International Entrepreneurship field, such as the rapid internationalization of firms, has drawn attention in various institutional sectors, including numerous universities around the world. These institutions are primarily responsible for the development of the various research fields in all of the knowledge areas. Table 6 presents the 40 most productive and influential universities in IE research. Furthermore, an additional list is included with other universities of lower productivity, but that also are influential in the IE field. To obtain a complete overview of the research that is conducted at these institutions, some indicators are considered such as the HIE, the total volume of IE publications (TPIE) and the number of citations (TCIE); however, we have also included other indicators such as ratio citations/studios (PCIE) as well as a classification by several thresholds concerning the number of citations (100, 50 and 20 citations). Table 6 also presents the current global ranking of these institutions according to the Academic Ranking of World Universities (ARWU) and the Quacquarelli Symonds (QS) World University Rankings. The aim of the last two indicators is to determine the world ranking of the leading universities in the IE field.

According to the above, Georgia State University is the most influential institution in IE, with a HIE = 13 and high productivity. It is also noteworthy that this institution has 7 studies within the 50 most cited papers of the field, which is presented in Table 3. One of the reasons why Georgia State University obtains good indicators in this field is due to the authorship of leading researchers in the field, such as McDougall, Oviatt, Zahra and Coviello. However, Indiana University and the University of Glasgow occupy the second and third place, respectively, both with HIE = 12. In this case, the tiebreaker was performed according to the TCIE indicator. Next are the University of Strathclyde and Aalto University with the fourth and fifth place, respectively, and as in the previous cases, the tiebreaker in HIE was performed using the TCIE indicator. The other universities are similarly ordered. Regarding scientific productivity in the field, the University of Glasgow is the most productive with 21 published studies, followed closely by the University of Southern Denmark with 19 papers. In the third and fourth place are Indiana University and Lappeenranta University of Technology, both with 18 papers. It is notable that only five American institutions appear on this list, which is surprising compared to other disciplines where the USA can obtain almost all of the top 50 positions (Merigó et al. 2015a). The European universities are very well positioned in this field, with 24 institutions in the top 40 (60%). In this sense, Finland is the European

country with most universities on the list (5 universities), followed by UK with 4 universities, and so on. However, Australia attracts attention as the country with most universities in the top 40 (6 universities). In general, in the analysis of the origin of universities, it can be observed that many universities come from Nordic countries. Countries such as Sweden, Finland and Denmark are characterized by a small domestic market. This coincides with what some authors have noted regarding some of the phenomena that are associated with this field, such as the rapid internationalization of firms, because they occur frequently in countries with these characteristics (Cavusgil and Knight 2009). However, it is important to emphasize that the major universities in IE research come from specific geographical areas, such as North America (the USA and Canada), Europe and Oceania. Therefore, from this perspective, although research has been conducted at several universities around the world, we should note that the most influential studies of IE come from a particular geographically grouped set of universities. Finally, with regard to the quality indicators of universities (ARWU and QS), we should note that only five of these universities appear in the top 100 of the world university rankings, of which none are in the top 50. Approximately ten universities are usually not in the top 500. From this perspective, IE research is quite diverse and has influences other than the world leading universities.

Other interesting issues are the temporal evolution of the publications that are produced by institutions and the productivity of these in the nucleus of IE research. This will provide a specific picture of the progress of each institution in IE research and their participation in the fifteen most influential journals in this field. Moreover, this will prevent the examination of long records of citations and publications in less relevant journals. The results are shown in Table 7. Note that universities are ordered according to their influence in the field (HIE). In case of a tie the total number of citations in the field (TCIE) are considered, and then the number of papers (TPIE). These indicators appear shaded because those that are shown in the above table are used for reference only.

To perform a temporal analysis of publications by institution, the amount of papers from each university have been classified in four successive periods of time as was done in Tables 2 and 4. Thus, the results show a growing interest of institutions in the IE field. Several of these universities are pioneers in IE research, such as Georgia State University, Indiana University, the University of Strathclyde and Monash University. Note that the most regular universities in time are the most influential in the field. This makes sense because the main documents that began the IE field emerged from this institution through McDougall. Coupled with the regularity of publications, this has enabled it to be the most recognized and influential institution in the IE field. Similarly, Indiana University has been equally important not only for its participation in the beginning of IE research but because it has maintained an increasing trend in the number of contributions. A special mention is deserved by the Georgia Institute of Technology, which, although it has not been the most productive institution, it stands out as one of the pioneers in the development of the field. In the second period (Q2), other universities begin to publish relevant papers and complete the TOP 10 of the most influential institutions in IE research. Among them are the University of Glasgow and the University of Southern Denmark, which are currently the most productive universities in this field of research. In the last period (Q4), other

Table 7 The most productive and influential institution according to Scopus 2015

R	Institution name	country	HIE	TCIE	TPIE	Q1	Q2	Q3	Q4	TPIE15	HIE15	TCIE15	PCIE15	ACIE15
1	Georgia State University	USA	13	2700	16	6	4	2	4	13	13	1864	143,4	1330
2	Indiana University	USA	12	1377	18	2	2	5	9	11	10	782	71,1	658
3	University of Glasgow	UK	12	1117	21	–	3	6	12	17	12	1117	65,7	768
4	University of Strathclyde	UK	10	644	13	1	7	4	1	9	9	605	67,2	524
5	Aalto University	FIN	10	345	16	–	2	5	9	9	7	263	29,2	241
6	Lappeenranta Uni. of Tech.	FIN	9	338	18	–	1	8	9	9	8	263	29,2	200
7	Univ. of Southern Denmark	DEN	8	390	19	–	1	4	14	9	5	261	29,0	221
8	Stockholm School of Econ.	SWE	8	332	13	–	1	8	4	7	5	120	17,1	93
9	University of Nottingham	UK	8	268	11	–	2	3	6	6	5	165	27,5	159
10	Halmstad University	SWE	8	236	17	–	1	5	11	10	6	198	19,8	159
11	University of Auckland	NZL	7	1061	8	–	3	4	1	7	7	1061	151,6	782
12	University of Queensland	AUS	7	419	7	–	–	4	3	4	4	338	84,5	311
13	Monash University	AUS	7	304	7	1	–	5	1	3	3	257	85,7	216
14	University of Turku	FIN	7	193	15	–	–	8	7	7	6	151	21,6	138
15	The University of Sydney	AUS	7	188	9	–	–	7	2	7	7	179	25,6	158
16	Florida State University	USA	6	1432	6	–	4	1	1	6	6	1435	239,2	1017
17	Univ. Autònoma de Barcelona	ESP	6	487	8	–	2	3	3	3	3	463	154,3	426
18	Ulster University	UK	6	387	9	–	1	5	3	5	3	170	34,0	154
19	University of Adelaide	AUS	6	204	8	–	–	6	2	2	2	104	52,0	100
20	University of Giessen	GER	6	115	8	–	–	3	5	5	5	94	18,8	77
21	University of Waterloo	CAN	5	283	7	–	1	4	2	7	5	283	40,4	267
22	University of Ottawa	CAN	5	245	6	–	1	3	2	3	3	221	73,7	191
23	Uppsala University	SWE	5	203	10	–	–	4	6	5	4	173	34,6	170
24	Univ. of New South Wales	AUS	5	168	6	–	–	3	3	5	5	168	33,6	150

Table 7 (continued)

R	Institution name	country	HIE	TCIE	TPIE	Q1	Q2	Q3	Q4	TPIE15	HIE15	TCIE15	PCIE15	ACIE15
25	Univ. of Texas at Arlington	USA	5	150	8	–	–	3	5	5	4	120	24,0	113
26	San Diego State University	USA	5	149	7	–	–	4	3	5	4	132	26,4	128
27	University of Pavia	ITA	5	141	8	–	–	4	4	3	2	120	40,0	119
28	University of Vaasa	FIN	5	106	8	–	–	2	6	3	2	24	8,0	23
29	Universidad Jaume I	ESP	5	96	9	–	–	5	4	4	4	64	16,0	56
30	University of Groningen	NED	5	92	7	–	–	–	7	6	5	92	15,3	88
31	Nat. Univ. of Ireland Galway	IRL	5	88	11	–	–	1	10	7	5	75	10,7	58
32	Vienna Univ. of Econ. and Bus.	AUT	5	78	8	–	1	3	4	5	4	47	9,4	47
33	Economics Uni. of Athens	GRE	5	69	6	–	–	3	3	4	4	63	15,8	54
34	QLD Univ. of Tech. QUT	AUS	5	63	8	–	–	4	4	2	2	33	16,5	33
35	Norg. Teknisk-Nat. Univ.	NOR	4	256	8	–	1	2	5	2	2	166	83,0	166
36	University of Otago	NZL	4	227	11	–	1	3	7	6	4	207	34,5	206
37	Universidad de Sevilla	ESP	4	159	7	–	–	3	4	4	3	137	34,3	134
38	Brock University	CAN	4	117	6	–	–	1	5	6	4	117	19,5	102
39	University of Twente	NED	4	47	6	–	–	1	5	3	3	42	14,0	41
40	University of Oulu	FIN	4	43	10	–	–	1	9	7	3	27	3,9	25
Other highly cited universities in the IE field														
41	Babson College	USA	5	583	5	–	3	1	1	3	3	437	145,7	404
42	University of Minnesota	USA	4	536	5	–	–	3	2	3	3	179	59,7	175
43	Iowa State University	USA	4	153	5	–	–	3	2	2	2	111	55,5	106
44	Georgia Institute of Technology	USA	4	931	4	2	1	1	–	3	3	895	298,3	778
45	Imperial College London	UK	3	404	4	–	–	1	3	3	2	51	17,0	51

R: Ranking; HIE, H index only with IE research; TPIE, Total Papers in IE research; Q, Quinquennial; Q1: 1989–2000; Q2: 2001–2005; Q3: 2006–2010; Q4: 2011–2015; TPIE, total papers, in International Entrepreneurship research; HIE15, TPIE15 and TCIE15: H-index and total papers and citations in 15 most influential journals in International Entrepreneurship research; 15 Journals: JIBS + IBR + JIE + JBV + JWB + IMR + ETP + EMJ + JIMK + SBE + JSBED + JBR+ ISBJ + JIMG + ERD = 241 papers

Table 8 The most influential countries in IE research

R	Country	HIE	TCIE	TPIE	PCIE	ACIE	T50	≥100	≥50	≥20	Pob	TPIE/Pob	TCIE/Pob
1	USA	46	8934	170	52,6	5030	27	24	19	29	320,897	0,53	27,84
2	UK	32	3699	123	30,1	2139	9	8	14	26	65,129	1,89	56,79
3	Australia	22	1550	57	27,2	1097	5	5	5	15	23,789	2,40	65,16
4	Canada	16	1171	53	22,1	824	3	3	4	7	35,849	1,48	32,66
5	Finland	16	841	62	13,6	586	2	2	2	9	5480	11,31	153,47
6	China	15	810	32	25,3	606	2	4	3	6	1,374,620	0,02	0,59
7	Sweden	15	747	51	14,6	583	2	2	2	7	9799	5,20	76,23
8	New Zealand	14	1449	33	43,9	1028	4	4	3	4	4596	7,18	315,27
9	Spain	14	826	42	19,7	668	1	1	4	6	46,448	0,90	17,78
10	Germany	13	371	41	9	320	0	–	–	6	81,687	0,50	4,54
11	Netherlands	11	309	28	11	276	0	–	2	4	16,940	1,65	18,24
12	Denmark	9	432	31	13,9	324	2	2	1	2	5684	5,45	76,00
13	Italy	9	387	26	14,9	349	2	1	2	1	60,731	0,43	6,37
14	Ireland	8	326	17	19,2	293	1	1	–	3	4677	3,63	69,70
15	Austria	8	191	14	13,6	189	0	–	1	3	8633	1,62	22,12
16	Israel	6	316	11	28,7	288	0	–	3	2	8380	1,31	37,71
17	Norway	6	281	15	18,7	249	1	1	1	–	5189	2,89	54,15
18	Greece	6	135	7	19,3	120	0	–	1	1	10,821	0,65	12,48
19	Switzerland	5	491	13	37,8	409	3	3	–	2	8282	1,57	59,29
20	Belgium	5	215	5	43	207	1	–	2	1	11,274	0,44	19,07
21	Singapore	5	107	7	15,3	105	0	–	1	–	5535	1,26	19,33
22	France	5	60	19	3,2	58	0	–	–	1	66,624	0,29	0,90
23	Taiwan	4	63	6	10,5	62	0	–	–	1	23,492	0,26	2,68

Table 8 (continued)

R	Country	HIE	TCIE	TPIE	PCIE	ACIE	T50	≥100	≥50	≥20	Pob	TPIE/Pob	TCIE/Pob
24	Costa Rica	3	95	3	31,7	94	1	–	1	–	4807	0,62	19,76
25	Turkey	3	92	5	18,4	87	0	–	1	1	78,272	0,06	1,18
26	South Africa	3	85	6	14,2	81	0	–	1	–	55,012	0,11	1,55
27	South Korea	3	42	8	5,3	39	0	–	–	1	51,015	0,16	0,82
28	Liechtenstein	3	42	5	8,4	41	0	–	–	2	37	135,14	1135,14
29	India	3	30	11	2,7	29	0	–	–	–	1,309,054	0,01	0,02
30	Saudi Arabia	3	12	5	2,4	12	0	–	–	–	31,557	0,16	0,38
31	Iceland	3	10	3	3,3	10	0	–	–	–	330	9,09	30,30
32	Russian Fed.	2	45	3	15	44	0	–	–	–	144,097	0,02	0,31
33	Malaysia	2	28	11	2,5	26	0	–	–	–	30,723	0,36	0,91
34	Brazil	2	26	5	5,2	25	0	–	–	1	205,962	0,02	0,13
35	Lithuania	2	20	5	4	23	0	–	–	–	2905	1,72	6,88
36	Portugal	2	13	5	2,6	13	0	–	–	–	10,358	0,48	1,26
37	Estonia	2	10	4	2,5	11	0	–	–	–	1315	3,04	7,60
38	Chile	2	7	3	2,3	9	0	–	–	–	17,763	0,17	0,39
39	United Arab Etes.	2	3	3	1	3	0	–	–	–	9154	0,33	0,33
40	Colombia	1	1	4	0,25	1	0	–	–	–	42,228	0,09	0,02

HIE, h-index of the country in International Entrepreneurship research; TPIE and TCIE, total papers and citations of the country in International Entrepreneurship research; PCIE, Average of citation by articles produced in each country in IE research; ACIE: Number of articles in which the papers produced by the country are cited T50, papers in the Top 50 of the most cited papers; ≥100, ≥50, ≥20, number of papers with more than 100, 50 and 20 citations; Pop, Population in thousands; TPIE/Pop and TCIE/Pop, total of papers and citations by person multiplied by one million

institutions arise, between which are included Halmstad University, the National University of Ireland Galway and Lappeenranta University of Technology due to high scientific productivity in this period.

With regard to the productivity of these universities in the nucleus of IE research, it is observed in general terms that approximately 60% of the papers that have been produced in these institutions have been published in this journal group. Although the data in the table do not reflect it, these universities tend to publish in the JIE and the IBR with 45 and 41 papers, respectively. In terms of universities, Georgia State University again stands as the most influential institution in accordance with the considered criteria, despite not having all of its papers published in these journals. However, the University of Glasgow has 17 studies that have been published in the top 15 of the most influential journals. However, its HIE15 indicator is still lower compared to Georgia State University. The third place is occupied by Indiana University, which has published 18 papers, of which 11 may be published in these journals. The rest continue as is shown in Table 7.

Analysis by country

Because research is one of the most essential elements that determine the advancement of knowledge and economic growth, countries are getting involved and increasingly investing in these activities (Becker 2015; Wang 2010). The aim of this section is to analyze IE research according to geographical distribution. This section emphasizes the importance of the emergence of researchers who move from one country to another (Merigó et al. 2015b). Therefore, an author may have two or more publications in different countries. In this regard, the analysis by country refers to the country in which the author was working at the time of publication. We have used similar indicators for the analysis by university, but it also considers the total population of the countries to monitor productivity per million inhabitants. The results are shown in Table 8. Note that the 40 countries are ordered according to their HIE. As in the previous tables, the tiebreaker total citation in the field (TCIE) is taken into account, following the productivity of the countries (TPIE). Note that the 40 countries are ordered according to their HIE. As in the previous tables, the tiebreaker will be held through the total number of citations in the field (TCIE), followed by the productivity of the countries (TPIE).

According to the above table, we clearly show that the USA is the most influential and productive country with HIE = 46 and 170 papers that have been published. This is reasonable considering the size of the USA. It is noteworthy that this country includes the universities and authors who began IE research. In addition, it has received more than twice the citations compared to the second country, and it has published more than half of the most cited papers. In second place is the United Kingdom, with its bibliometric indicators well below those of the USA. However, these indicators are considerably higher compared to the remaining countries. According to HIE, the third and fourth positions are Australia and Finland, respectively. Many European countries appear on this list. In fact, ten of these countries dominate the top fifteen positions. Note also that only one Asian country, China, appears in the top 15. However, it is important to highlight the poor productivity in Latin American countries. In fact, there are only

Table 9 The most influential countries in IE research

R	Country	HIE	TCIE	TPIE	Q1	Q2	Q3	Q4	HIE15	TP15IE	TCIE15	ACIE15
1	United States	46	8934	170	12	25	60	73	41	98	6973	3714
2	United Kingdom	32	3699	123	2	19	46	56	31	79	3057	1692
3	Australia	22	1550	57	2	2	30	23	20	29	1288	927
4	Finland	16	841	62	–	3	18	41	15	33	645	476
5	Canada	16	1171	53	1	5	16	31	17	37	1136	799
6	China	15	810	32	–	–	5	27	14	18	769	583
7	Sweden	15	747	51	–	2	17	32	12	24	492	370
8	Spain	14	826	42	–	2	15	25	11	15	719	594
9	New Zealand	14	1449	33	–	5	12	16	12	20	1359	941
10	Germany	13	371	41	–	–	15	26	9	14	150	122
11	Netherlands	11	309	28	1	–	7	20	11	15	269	241
12	Italy	9	432	26	–	–	8	18	9	13	342	313
13	Denmark	9	334	31	–	1	6	24	6	14	288	242
14	Austria	8	326	14	–	1	6	7	5	7	135	134
15	Ireland	8	191	17	–	1	4	12	6	9	297	272
16	Norway	6	281	15	2	1	4	8	3	4	174	171
17	Greece	6	316	7	–	1	3	3	5	5	133	118
18	Israel	6	135	11	1	1	3	6	5	5	285	268
19	France	5	60	19	–	–	3	16	4	6	36	36
20	Switzerland	5	491	13	–	2	3	8	4	5	337	304
21	Belgium	5	107	5	1	1	2	1	5	5	220	212
22	Singapore	5	215	7	–	1	2	4	3	4	97	95
23	Taiwan	4	63	6	–	1	–	5	3	5	54	54

Table 9 (continued)

R	Country	HIE	TCIE	TPIE	Q1	Q2	Q3	Q4	HIE15	TP15IE	TCIE15	ACIE15
24	India	3	30	11	–	1	1	9	3	3	14	14
25	South Korea	3	42	8	–	–	1	7	2	4	28	28
26	Saudi Arabia	3	85	5	–	–	–	5	2	2	12	12
27	South Africa	3	92	6	–	–	2	4	3	3	73	73
28	Turkey	3	42	5	–	–	1	4	3	3	95	90
29	Costa Rica	3	12	3	–	–	1	2	3	3	99	98
30	Liechtenstein	3	95	5	–	–	1	4	1	1	21	21
31	Iceland	3	10	3	–	–	–	3	3	3	10	10
32	Malaysia	2	28	11	–	–	1	10	1	3	15	15
33	Russian Federation	2	26	3	–	1	–	2	1	2	17	17
34	Lithuania	2	20	5	–	–	1	4	0	0	0	0
35	Portugal	2	13	5	–	–	2	3	0	1	0	0
36	Estonia	2	10	4	–	–	1	3	2	2	9	9
37	Brazil	2	45	5	–	–	2	3	2	4	24	23
38	Chile	2	7	3	–	–	1	2	1	1	3	3
39	United Arab Emirates	2	3	3	–	–	–	3	1	2	1	1
40	Colombia	1	1	4	–	–	–	4	0	0	0	0

HIE, TPIE; h-index and total papers in International Entrepreneurship research. Q, Quinquennial; Q1: 1989–2000; Q2: 2001–2005; Q3: 2006–2010; Q4: 2011–2015; TPIE15, HIE15 and TCIE15: Total papers, h-index and citations in 15 most influential journals in International Entrepreneurship research; ACIE15: Number of documents in which are cited the papers published in the 15 most influential journals. 15 Journals: JIBS, IBR, JIE, JBV, JWB, IMR, ETP, EMJ, JIMK, SBE, JSBED, ISBJ, JBR, JIMG, ERD

three South American countries (Brazil, Chile and Colombia) in this classification and one Central American country (Costa Rica). This is similar to the case of African countries, of which only South Africa appears.

On the other hand, the most productive country by person is Liechtenstein, although this result is less significant given the small size of the country. In this sense, Finland, Sweden, New Zealand and Denmark are the countries that receive the most notable results. With regard to citations per person, ruling Liechtenstein out of this analysis, Finland and New Zealand again obtain the most outstanding results, although Australia, Sweden, Denmark and Ireland obtain remarkable records. Finally, the thresholds citation shows that the USA has published most of the main articles in the IE field.

As in the analysis of universities, we analyze the temporal evolution of IE publications for each country and their productivity in the nucleus of IE research. The results are shown in Table 9. As in the previous tables, this list is ordered according to the country's influence in the field (HIE), and the tiebreakers are conducted through TCIE and TPIE indicators.

According to the time evolution of publications by country, an increasing trend of IE research is clearly observed in most countries, with the exception of Australia and Belgium, which are the only countries that have reduced their productivity in recent years. However, the growing trend of productivity at a general level agrees with McDougall et al. (2014) when they state that countries are showing a growing interest in the phenomena that are associated with IE. However, Table 9 shows that several countries have studied IE almost from the start. As expected, countries such as the USA and the UK stand out as the countries that started the field of research, and they have maintained a growing trend in productivity in the field. However, many of the most influential countries that appear in the period Q2 mainly come from Europe, North America and Oceania. The rest of the countries appear in the last decade. It is notable that in the recent periods, there has been marked growth in IE research in Asian countries. For example, China, from a single publication in Q3, published 23 articles in the period Q4. Overall, it is noteworthy that in the last five years, many countries around the world have expanded in the field. In addition, given the economic importance that is associated with the phenomena of IE, expectations of higher growth of the research will continue in the future, mainly in the emerging countries.

Regarding the publication of the countries at the nucleus of IE research, the USA appears to be the most productive and influential country in these journals. In fact, more than half of the papers in this country (57.6%) are published in these journals. Similarly, the vast majority of their citations come from USA publications in this group of journals. In second place again is the United Kingdom with more than 64% of articles published in these journals. The citations that are received by papers from this country in this group of journals represent more than 82% of the total of citations of their papers. Canada and Finland are the third and fourth places, respectively; however, the number of citations that were received by Canadian papers in these journals is significantly higher than those of Finland. With regard to the amount of papers that cite papers that have been published in these journals (ACIE15), it should

Table 10 Most cited documents among papers published on IE field

R	Cited reference	Citations	Total link strength
1	Oviatt, B., McDougall, P., (1994). Toward a theory of international new ventures. Journal of International Business Studies, 25 (1), pp. 45–64	322	312.91
2	Johanson, J., Vahlne, J., (1977). The internationalization process of the firm: a model of knowledge development and increasing foreign market commitments. Journal of International Business Studies, 8 (1), pp. 23–32	168	168.00
3	Oviatt, B., McDougall, P., (2005). Defining international entrepreneurship and modeling the speed of internationalization. Entrepreneurship Theory and Practice, 29 (5), pp. 537–553	167	162.73
4	McDougall, P., Oviatt, B., (2000). International entrepreneurship: the intersection of two research paths. Academy of Management Journal, 43 (5), pp. 902–908	157	154.00
5	Johanson, J., Vahlne, J., (1990). The mechanism of internationalization. International Marketing Review, 7 (4), pp. 11–24	153	151.00
6	Rennie, M., (1993). Born Global. McKinsey Quarterly, 4, pp. 45–52	136	131.00
7	Zahra, S., Ireland, R.D., Hitt, M.A., (2000). International expansion by new venture firms: international diversity, mode of market entry, technological learning, and performance. Academy of Management Journal, 43 (5), pp. 925–950	134	129.00
8	McDougall, P., Shane, S., Oviatt, B., (1994). Explaining the formation of international new ventures: the limits of theories from international business research. Journal of Business Venturing, 9 (6), pp. 469–487	114	112.00
9	Zahra, S., (2005). A theory of international new ventures: a decade of research. Journal of International Business Studies, 36 (1), pp. 20–28	106	103.91
10	Madsen, T., Servais, P., (1997). The internationalization of born globals: an evolutionary process?. International Business Review, 6 (6), pp. 561–583	95	95.00
11	Knight, G., Cavusgil, S., (2004). Innovation, organizational capabilities, and the born-global firm. Journal of International Business Studies, 35 (2), pp. 124–141	90	90.00
12	Coviello, N., (2006). The network dynamics of international new ventures. Journal of International Business Studies, 37 (5), pp. 713–731	89	88.00
13	Rialp, A., Rialp, J., Knight, G., (2005). The phenomenon of early internationalizing firms: what do we know after a decade (1993–2003) of scientific inquiry?. International Business Review, 14 (2), pp. 147–166	82	81.91
14	Coviello, N., Munro, H., (1997). Network relationships and the internationalization process of small software firms. International Business Review, 6 (4), pp. 361–386	78	78.00
15	Barney, J., (1991).Firm resources and sustained competitive advantage. Journal of Management, 17 (1), pp. 99–120	77	72.91
16	Jones, M., Coviello, N., (2005). Internationalization: conceptualizing an entrepreneurial process of behavior in time. Journal of International Business Studies, 36 (3), pp. 284–303	76	74.00
17	Coviello, N., Jones, M., (1994). Methodological issues in international entrepreneurship research. Journal of Business Venturing, 19 (4), pp. 485–508	74	74.00
18	Johanson, J., Vahlne, J., (2009). The uppsala internationalization process model revisited: from liability of foreignness to liability of outsidership. Journal of International Business Studies, 40 (9), pp. 1411–1431	71	70.00
19	Eisenhardt, K., (1989). Building theories from case study research. Academy of Management Review, 14 (4), pp. 532–550	66	66.00

Table 10 (continued)

R	Cited reference	Citations	Total link strength
20	Sharma, D.D., Blomstermo, A., (2003). The internationalization process of born globals: a network view. International Business Review, 12 (6), pp. 739–753	65	64.91
21	Autio, E., Sapienza, H., Almeida, J., (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. Academy of Management Journal, 43 (5), pp. 909–924	61	60.00
22	Lu, J.W., Beamish, P., (2001). The internationalization and performance of smes. Strategic Management Journal, 22 (6–7), pp. 565–586	61	59.91
23	Eriksson, K., Johanson, J., Majkgard, A., Sharma, D.D., (1997). Experiential knowledge and cost in the internationalization process. Journal of International Business Studies, 28 (2), pp. 337–360	59	59.00
24	Shane, S., Venkataraman, S., (2000). The promise of entrepreneurship as a field of research. Academy of Management Review, 25 (1), pp. 217–226	59	56.00
25	Keupp, M.M., Gassmann, O., (2009). The past and the future of international entrepreneurship: a review and suggestions for developing the field. Journal of Management, 35 (3), pp. 600–633	58	58.00
26	Oviatt, B., McDougall, P., (1995). Global start-ups: entrepreneurs on a worldwide stage. Academy of Management Executive, 9 (2), pp. 30–43	57	57.00
27	Mcdougall, P., Oviatt, B., Shrader, R.C., (2003). A comparison of international and domestic new ventures. Journal of International Entrepreneurship, 1 (1), pp. 59–82	55	55.00
28	Sapienza, H., Autio, E., George, G., Zahra, S., (2006). A capabilities perspective on the effects of early internationalization on firm survival and growth. Academy of Management Review, 31 (4), pp. 914–933	54	54.00
29	Johanson, J., Vahlne, J., (2003). Business relationship learning and commitment in the internationalization process. Journal of International Entrepreneurship, 1 (1), pp. 83–101	52	52.00
30	Teece, D.J., Pisano, G., Shuen, A., (1997). Dynamic capabilities and strategic management. Strategic Management Journal, 18 (7), pp. 509–533	51	50.00
31	Knight, G., Cavusgil, S.T., (1996). The born global firm: a challenge to traditional internationalization theory. Advances in International Marketing, 8, pp. 11–26	48	48.00
32	Jones, M., Coviello, N., Tang, Y., (2011). International Entrepreneurship research (1989–2009): a domain ontology and thematic analysis. Journal of Business Venturing, 26 (6), pp. 632–659	44	44.00
33	Lumpkin, G.T., Dess, G.G., (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21 (1), pp. 135–172	44	43.00
34	Coviello, N., Munro, H., (1995). Growing the entrepreneurial firm: networking for international market development. European Journal of Marketing, 29 (7), pp. 49–61	43	43.00
35	Westhead, P., Wright, M., Ucbasaran, D., (2001). The internationalization of new and small firms: a resource-based view. Journal of Business Venturing, 16 (4), pp. 333–358	41	41.00
36	Jones, M., (1999). The internationalization of small high-technology firms. Journal of International Marketing, 7 (4), pp. 15–41	40	40.00
37	Zaheer, S., (1995). Overcoming the liability of foreignness (1995). Academy of Management Journal, 38 (2), pp. 341–363	40	39.00

Table 10 (continued)

R	Cited reference	Citations	Total link strength
38	Burgel, O., Murray, G.C., (2000). The international market entry choices of start-up companies in high-technology industries. Journal of International Marketing, 8 (2), pp. 33–62	39	39.00
39	Crick, D., Jones, M., (2000). Small high-technology firms and international high-technology markets. Journal of International Marketing, 8 (2), pp. 63–85	39	39.00
40	McDougall, P., Oviatt, B., (1996). New venture internationalization, strategic change, and performance: a follow-up study. Journal of Business Venturing, 11 (1), pp. 23–40	36	36.00
41	Moen, O., Servais, P., (2002). Born global or gradual global? examining the export behavior of small and medium-sized enterprises. Journal of International Marketing, 10 (3), pp. 49–72	35	35.00
42	Knight, G., (2000). Entrepreneurship and marketing strategy: the sme under globalization. Journal of International Marketing, 8 (2), pp. 12–32	32	31.91
43	Oviatt, B., McDougall, P., (1997). Challenges for internationalization process theory: the case of international new ventures. Management International Review, 37 (2), pp. 85–99	32	32.00
44	Shrader, R.C., Oviatt, B., McDougall, P., (2000). How new ventures exploit trade-offs among international risk factors: lessons for the accelerated internationalization of the twenty-first century. Academy of Management Journal, 43 (6), pp. 1227–1247	31	31.00
45	Covin, J., Slevin, D., (1989). Strategic management of small firms in hostile and benign environments. Strategic Management Journal, 10 (1), pp. 75–87	30	29.91
46	Andersen, O., (1993). On the internationalization process of firms: a critical analysis. Journal of International Business Studies, 24 (2), pp. 209–231	28	28.00
47	Knight, G., Madsen, T., Servais, P., (2004). An inquiry into born-global firms in Europe and the USA. International Marketing Review, 21 (6), pp. 645–665	28	28.00
48	Mudambi, R., Zahra, S., (2007). The survival of international new ventures. Journal of International Business Studies, 38 (2), pp. 333–352	27	27.00
49	Reuber, A.R., Fischer, E., (1997). The influence of the management team's international experience on the internationalization behaviors of smes. Journal of International Business Studies, 28 (4), pp. 807–825	27	27.00
50	Ellis, P., (2000). Social ties and foreign market entry. Journal of International Business Studies, 31 (3), pp. 443–469	26	26.00

Obtained from VOS viewer software

be noted that there is a strong tendency to cite works that have been produced both in the USA and the United Kingdom. This is reasonable because these countries are home to the main authors of this field.

Bibliometric mapping of the IE field

The previous section provides a bibliometric performance analysis of the IE field. However, in order to complement these results, it is interesting to graphically map the bibliographic material from a general point of view. This will allow identifying the main documents, as well as presenting and analyzing the most representative connections between the elements that make up this interesting field of study. Note that this

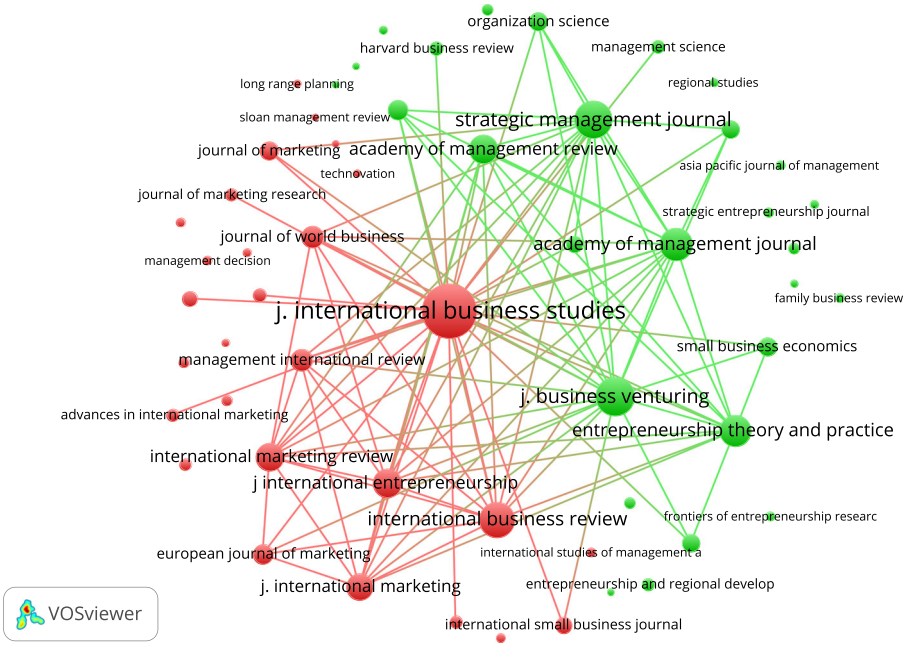

Fig. 2 Co-citation of journal cited in IE field

analysis is developed taking into account some indicators such as co-citation, bibliographic coupling and co-occurrence of keywords.

To start the graphic mapping, the co-citation of the bibliographic references of the IE field is analyzed. Note that the co-citation studies the cited documents and occurs when two documents receive a citation from a third document that has been published. Table 10 presents the co-citation of the most cited references in the IE field.

The most cited document in the field of IE is that of Oviatt and McDougall (1994). According to Keupp and Gassmann (2009), this article is considered the starting point of this field of study and therefore, it is reasonable that they obtain this position. Note also that this result is also consistent with that obtained in Table 3. In the second place continues the work of Johanson and Vahlne (1977) and later, the document by Oviatt and McDougall (2005). This last work is important because it provides one of the most cited IE definitions in the field (Baier-Fuentes et al. 2018). Finally, keep in mind that Oviatt and McDougall are the authors with the most documents in the Table.

Another interesting topic to analyze is the co-citation structure of journals in the IE field. This allows analyzing those journals that have received a greater number of citations in the IE field. Figure 2 presents the results with a threshold of twenty citations and one hundred links, and shows how journals are connected within this field.

Note that Fig. 2 confirms the clustering of the journals according to their orientation focused mainly on the fields of International Business, Entrepreneurship and Management. Of all, *Journal of International Business Studies* is the leading journal in the IE field with the largest number of citations received and, consequently, with a wider network of connections. This makes sense given that several of the most cited articles

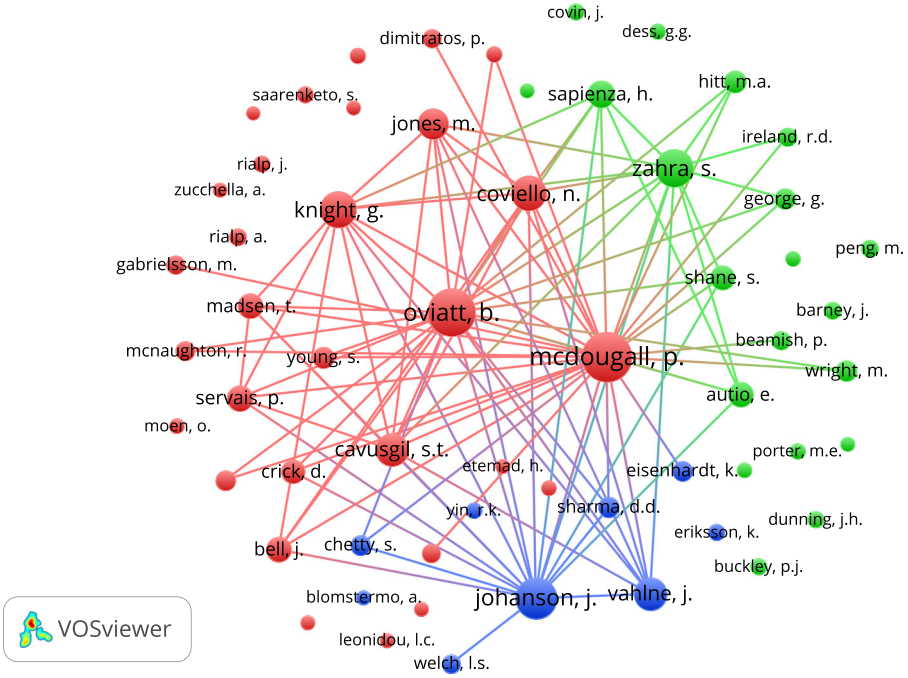

Fig. 3 Co-citation of authors cited in IE field

in this field have been published in JIBS. Also note that there are other highly cited and well-connected journals, such as *Journal of Busines Venturing*, *Strategic Management Journal*, *International Business Review*, *Entrepreneurship Theory and Practice*, among others.

The co-citation of authors is also analyzed, that is, the authors who have received the highest number of citations in the IE field. In addition, through Fig. 3, we will analyze how your profile is connected to other authors. Figure 3 presents the main authors co-cited in the IE field.

As mentioned above, Fig. 3 corroborates the important role of Oviatt and McDougall in the field of research. Remember that these are the most influential and productive authors in the field, and are considered the parents of IE (Baier-Fuentes et al. 2018). However, it is possible to observe other important researchers, such as Johanson and Vahlne (1977), who developed the traditional model of the internationalization process. Note that the inability of this model to explain entrepreneurial internationalization has produced an important debate in the IE field, and as a result is a frequently cited document in the field. Also note that there are other authors strongly connected in the field such as Coviello, Jones, Knight, Zahra, among others.

IE is a research field that has grown rapidly in recent decades and evidence of the phenomena associated with IE come from many countries in the world. However, the literature of this field tends to be concentrated in a small group of countries. Figure 4 shows the most productive countries of the IE, using a bibliographic coupling analysis with a threshold of five documents and one hundred links.

The results are consistent with those observed in Table 8. It is clear that the USA together with the United Kingdom lead the IE field extensively. Note that these

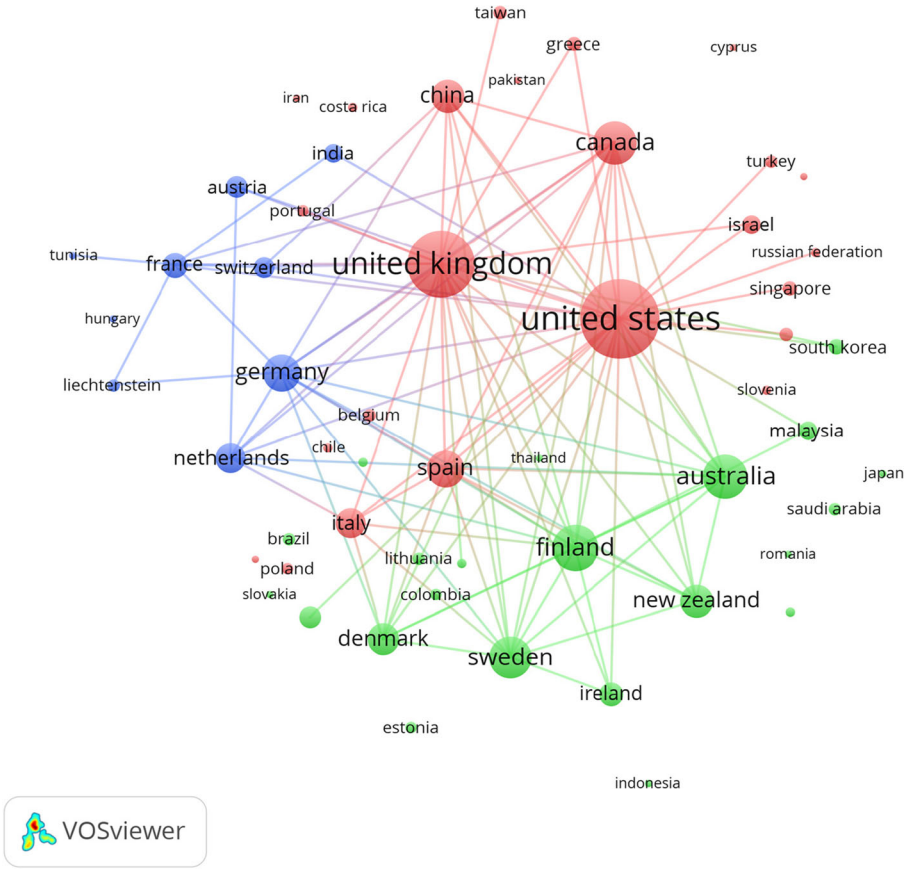

Fig. 4 Bibliographic coupling of countries that publish in IE field

countries are positioned in the center of the Figure and are strongly connected to the rest of the countries. It is also possible to observe a strong presence of European countries, which have a strong connection between them. Although they are expected to have a greater presence, the emerging countries still do not appear well represented in the Figure.

Finally, a co-occurrence analysis of keywords of IE field is developed. From this analysis, it is possible to identify the most used topics in the field. Figure 5 presents the main keywords of the IE field considering a threshold of five occurrences and one hundred more frequent co-occurrences.

The main keyword used in this field is International Entrepreneurship. This keyword represents a field of research that involves three research streams (For more information see, Jones et al. 2011), and logically, the authors tend to identify their research with the field of study that represents these currents, namely IE. Obviously, Internationalization and Entrepreneurship are keywords that appear in the center of the figure, since IE field arises from the intersection of these areas of knowledge (McDougall and Oviatt 2000). Remember also that IE studies internationalization from the perspective of entrepreneurship. In addition, it is possible to observe other keywords that are relevant in the IE

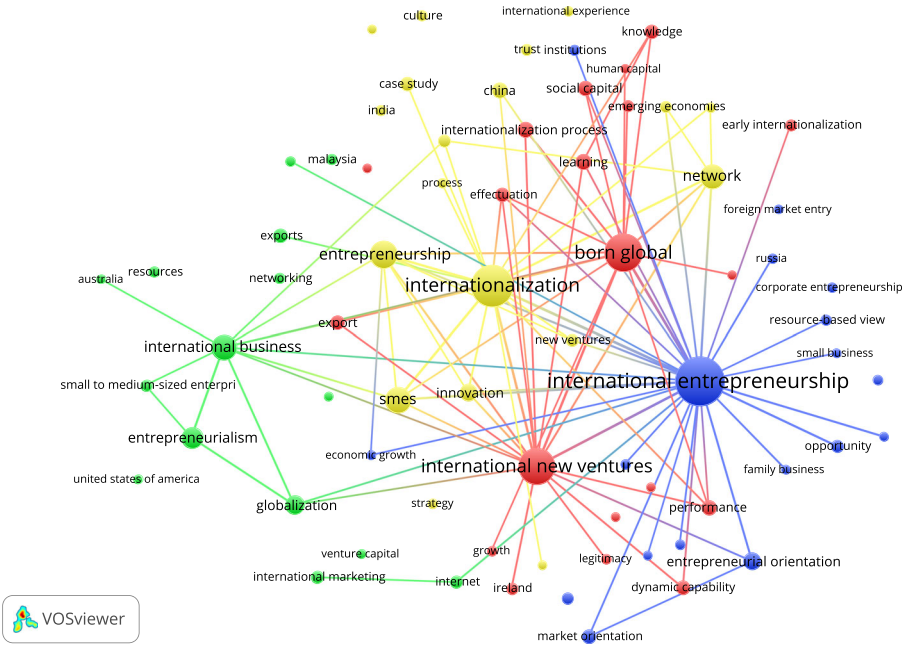

Fig. 5 Co-occurrence of authors keywords of documents published in the IE field

field, such as International New Ventures and Born Global. These keywords represent to new companies that are rapidly internationalized and have a central role in the field since, from the beginning, research IE has tended to focus especially on this type of companies (Baier-Fuentes et al. 2018; Keupp and Gassmann 2009). Finally, other keywords that appear strongly connected to the mentioned keywords, represent the different theoretical frameworks that are normally used in the IE literature to explain the phenomena associated with this interesting field of research.

Conclusions

A comprehensive bibliometric view of the International Entrepreneurship field has been presented. The analysis was carried out using two bibliometric approaches, which involves a bibliometric performance analysis and a graphic mapping of the IE field, through which it is possible to understand how literature has developed in this field of research. Taking into account the graphic mapping and some indicators such as the index h, the total number of citations and productivity, IE research is analyzed from different points of view based on journals, articles, authors, institutions and countries.

From an overall perspective, the results show that IE research has had a significant increase in recent years. The papers provide evidence from various parts of the world. However, both bibliometric performance analysis and graphic mapping allow to observe that the vast majority of the research of IE field is concentrated in only a small group of countries of which the USA is the absolute leader with the best indicators of influence and productivity. This result was expected for two reasons, first, because the USA generally dominates scientific research in other areas, and second because this

country contains both the universities and the authors who are pioneers in the IE field. However, we have found that the United Kingdom is another important country in the field, and it mainly stands out for its good indicators of productivity. Other countries that also stand out in the results of this study are Finland, Sweden and Denmark in northern Europe, as well as Australia and New Zealand in Oceania. Asian countries in recent years appear more strongly than the Latin American countries, but they are still far from the top positions. However, expectations are that these countries will expand research in all areas of science, including the IE field. Nevertheless, it is expected that these countries will expand research in all areas of science, including the IE field.

The findings on the institutions are similar to the analyses by country because the USA and the United Kingdom contain the most influential universities in this field. It is noteworthy that Georgia State University and Indiana University - both of which are American institutions - have hosted the leading researchers in the IE field (for example, Oviatt, McDougall, Zahra, Cavusgil), which has enabled them to position themselves as the most influential institutions in this field. Among the institutions in the United Kingdom, the University of Glasgow is particularly highlighted as the institution of higher productivity in the IE field.

At the regional level, it is important to emphasize that the European institutions have provided a significant amount of attention to the IE field. In fact, twenty-four European universities are among the 40 most influential universities, among which they stand out as having a good representation, along with universities of Nordic countries. With regard to the institutions by continents, the American and Oceanic universities appear at a relatively lower level. Further, note that although studies of Asian and Latin American universities have appeared in recent years, none of these institutions appear among the most productive and influential. It should be noted, therefore, that at the regional level, Europe is the great dominator in IE research. In addition, this is consistent with the graphic mapping presented in this study, which shows a strong connection between European countries.

Another interesting question to consider is that a vast majority of the most influential institutions do not appear in the top 100 of the general classification of universities that are available to the public, except for Utrecht University, Uppsala University, the University of Groningen, the University of Queensland and Monash University, all of which are in the top 100 (See the Academic Ranking of World Universities (ARWU) and the Quacquarelli Symonds (QS) World University Rankings, as is shown in Table 6). Even if we focus on the more specialized classifications in the fields of Economics and Business, we find similar results, with only Indiana University appearing in the top 30, and, at a lower level, the University of New South Wales and University of Groningen in the top 100. Therefore, it is clear that among the top ranked universities, there is a fairly significant skepticism towards IE research.

Focusing on researchers, both performance analysis and graphic mapping find that the main exponents in this research field are Benjamin Oviatt and Patricia McDougall. Their paper, which was published in 1994, entitled "Toward a Theory of International New Ventures," was named the paper of the decade in the JIBS. This paper is relevant because some authors (Autio 2005; Keupp and Gassmann 2009) consider that this was the paper that laid the groundwork for the development of the IE field. Nevertheless, our analysis enables us to identify McDougall as the most influential and productive researcher.

However, there are other researchers who have made significant contributions to this field. Among them we found, for example, Knight, Zahra Jones, Servais and Coviello, who are well positioned in the most influential journals in the field. Predictably, most of the most influential and productive researchers are Americans and Europeans.

Given the origin of the IE field (McDougall and Oviatt 2000), it was expected that the journals with higher productivity and influence in IE would have a clear focus on the fields of *International Business* and *Entrepreneurship*. The results of the bibliometric performance analysis indicate that the *Journal of International Business Studies* is the most influential journal. This is also corroborated by the graphic mapping of the field. This makes sense because, as discussed above, this journal is oriented towards internationalization issues (Cantwell et al. 2014), and it also published the main document that drove the development of IE research (Oviatt and McDougall 1994). Moreover, because JIBS is a recognized top level journal that publishes the greatest exponents of the IE field. Another equally important journal within the IE field is IBR. This journal is more productive than JIBS and has a similar level of influence. It is also worth mentioning JIE, which shows a good level of influence and is also the most productive magazine in the field. In the particular case of JIE, we believe that its early age, its divulging character and its absence in other databases in which it could be indexed at a recognized level (for example the Web of Science), are factors that have adversely affected its attraction of the most renowned authors, which could - hypothetically - improve its position of influence. Other journals to highlight are the *Journal of Business Venturing* (JBV), *Entrepreneurship Theory and Practice* (ETP), *International Business Review* (IBR) and the *Journal of World Business* (JWB), which obtain excellent indicators in this field.

Finally, we mention some of the limitations that must be considered. First, the information that is presented in this study is meant to be of a complementary and informative nature, and it is only intended to provide general guidance of the most productive and influential research in the field. However, we have conducted our analysis by considering only the number of publications (articles, reviews, letters and notes) and citations. This could involve the exclusion of other papers and records that may be equally influential in this field. Moreover, we performed this analysis based on information that was obtained from Scopus. One of the strengths of this database is its comprehensive coverage on research from the social sciences (Mongeon and Paul-Hus 2016). However, a significant amount of information may have been excluded through the occurrence of "*stray citations*," which is endemic to all bibliometric databases (Jacsó 2008). However, according to our common knowledge of the IE field, we are certain that the information that was retrieved from Scopus provided us with a comprehensive set of the most relevant research that IE has produced to date. It is also important to note that the information that is provided in this study may change over time depending on the thematic trends that are considered by IE investigators.

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