



Contents lists available at ScienceDirect

## Journal of Business Research

journal homepage: [www.elsevier.com/locate/jbusres](http://www.elsevier.com/locate/jbusres)

## Human resources training: A bibliometric analysis

Ignacio Danvila-del-Valle<sup>a,b,\*</sup>, Carlos Estévez-Mendoza<sup>a</sup>, Francisco J. Lara<sup>c,d</sup><sup>a</sup> Department of Business Administration, Complutense University of Madrid, Economics and Business Faculty, Campus de Somosaguas, 28223, Pozuelo de Alarcón, Madrid, Spain<sup>b</sup> Business Management, Panamericana University, Augusto Rodín 498, Colonia Insurgentes Mixcoac, 03920 Ciudad de México, Mexico<sup>c</sup> Business Management, CUA, The Busch School of Business, 620 Michigan Ave. NE, 20064 Washington, D.C., United States of America<sup>d</sup> Business Management, Catholic University of Valencia, Economics and Business Faculty, c/Corona, 34, 46003, Valencia, Spain

## ARTICLE INFO

## Keywords:

Human resources  
Training  
Bibliometrics  
Citation and co-occurrence analysis  
Knowledge mapping

## ABSTRACT

Research on human resources training has been shaped by a great number of articles published in recent decades. This study contributes to the literature by examining how this research is built on the basis of different intellectual frameworks and by identifying the relevant references, authors, topics, and journals. With this aim, we used bibliometric techniques to examine over 900 articles published between 1975 and 2016. We observed three publication periods that have shaped the evolution of research in this field. In the journals that have published these articles, a wide range of disciplines have been used to address the topic of human resources. The dominant focus is on US and labor-intensive industries, giving researchers the opportunity to undertake further cross-country and cross-industry studies. By considering human capital and performance, the resource-based view provides theoretical support for the articles through which leading authors have built a core grounding for the topic.

## 1. Introduction

Over the last few decades, technological progress and market evolution have led many companies to redesign their strategies. Many studies state that intangible resources might have provided sustainable competitive advantages in this context (Galbreath, 2005; Hall, 1992, 1993; Lim, Chan, & Dallimore, 2010; Villalonga, 2004). There is some consensus in considering human resources-related intangible assets, grouped as human capital, to be among the best explanatory elements for studying improvements in company performance (Carmeli & Tishler, 2004; Edmans, 2011; Hatch & Dyer, 2004; Liu, van Jaarsveld, Batt, & Frost, 2014; Martín-de-Castro, Delgado-Verde, López-Sáez, & Navas-López, 2011; Rangone, 1999; Villalonga, 2004).

Since human capital can be generated and accumulated through training and continuous learning processes (Danvila Del Valle & Sastre Castillo, 2009; Sastre Castillo & Aguilar Pastor, 2003), the literature has sought to understand the relationship between human resources training and human capital generation, and how it may impact performance. This growing interest is soon apparent in the number of articles that endeavor to explore different elements of this relationship. Initially, the bulk of the academic research was aimed at exploring the effects of a combination of human resources practices, and led to a solid

line of inquiry (Arthur, 1994; Delaney & Huselid, 1996; Delery & Doty, 1996; Huselid, 1995; Huselid, Jackson, & Schuler, 1997; Ichniowski, Shaw, & Prennushi, 1997; Koch & McGrath, 1996; Pfeffer, 1994). Subsequently, fresh research approaches emerged addressing specific topics, among which the impact of human resources training proved particularly relevant (Aragon-Sanchez, Barba-Aragon, & Sanz-Valle, 2003; Danvila-del-Valle, Sastre-Castillo, & Rodríguez-Duarte, 2007; De Saá-Pérez & Garcia-Falcon, 2002; Lee, Phan, & Chan, 2005; Ubeda-Garcia, 2005). Given the importance and quantity of the research to emerge, it is essential to examine its characteristics and the intellectual framework on which it is based.

The objective of this study is therefore to evaluate research on human resources training. Using bibliometric techniques, the study does so by examining the literature published in leading journals. With the help of these techniques, and by analyzing the articles and citations used by researchers in their studies, we aim to identify and weigh up the relationships and impact of the main articles and contributors in this topic, and which shape the existing foundation for the topic.

As a result, our contribution identifies the most relevant authors, the theoretical grounding, the topics already covered and, consequently, new lines and perspectives for forthcoming investigation. Our study also serves as a quantitatively-supported starting point for a literature

\* Corresponding author at: Department of Business Administration, Complutense University of Madrid, Economics and Business Faculty, Campus de Somosaguas, 28223, Pozuelo de Alarcón, Madrid, Spain.

E-mail addresses: [idanvila@ucm.es](mailto:idanvila@ucm.es) (I. Danvila-del-Valle), [cestev01@pdi.ucm.es](mailto:cestev01@pdi.ucm.es) (C. Estévez-Mendoza), [laraf@cua.edu](mailto:laraf@cua.edu), [javier.lara@ucv.es](mailto:javier.lara@ucv.es) (F.J. Lara).

<https://doi.org/10.1016/j.jbusres.2019.02.026>

Received 10 June 2018; Received in revised form 12 February 2019; Accepted 13 February 2019

0148-2963/© 2019 Elsevier Inc. All rights reserved.

review in further studies that address the topic and provides a basis for conducting meta-analyses.

After reviewing the literature on bibliometrics, the following sections of this article describe the methodology adopted to examine the intellectual structure of research on human resources training. The results obtained from the study are then reported and discussed. Finally, we state our conclusions and offer suggestions for future research.

## 2. Review of the literature on bibliometrics

Bibliometrics is a set of tools that researchers may use to analyze published data, and is a field of research that applies mathematical and statistical techniques to study publishing patterns in the distribution of information (McCain, 1996). Such techniques include impact indicators, citation and co-citation analysis, as well as bibliometric mapping. Citation analysis operates on the premise that authors cite the documents they consider to be significant for the purpose of their research. Accordingly, how often these articles are cited may be linked to the impact they are felt to have on the topic (Culnan, 1987). Co-citation analysis looks at the articles that cite a certain pair of references, collecting data from databases and using analytical and graphic display techniques (McCain, 1990). This means of citation may reflect similarity of content and thus help to identify groups of topics and authors, and how they might be related (Pilkington & Liston-Heyes, 1999; Ramos-Rodríguez & Ruiz-Navarro, 2004). We use the data and results obtained to perform bibliometric mapping using VOS (van Eck, Waltman, Dekker, & van den Berg, 2010), which is particularly important when handling sources from multidisciplinary fields (Börner, Chen, & Boyack, 2005).

Use of bibliometric techniques to map and study the knowledge published in different fields has been growing for years. Several areas of research have already been explored in the management field using these methods: management (Tahai & Meyer, 1999), strategic management (Nerur, Rasheed, & Natarajan, 2008; Ramos-Rodríguez & Ruiz-Navarro, 2004), finance (Alexander & Mabry, 1994; Merigó, Yang, & Xu, 2015), operations management (Pilkington & Liston-Heyes, 1999; Pilkington & Meredith, 2009), supply chain management (Charvet, Cooper, & Gardner, 2008) or innovation (Fagerberg, Fosaas, & Sapprasert, 2012). Human resources management or organizational behavior have also been targeted (Culnan, O'Reilly III, & Chatman, 1990; Fernandez-Alles & Ramos-Rodríguez, 2009; Markoulli, Lee, Byington, & Felps, 2017).

Bibliometric analysis of specific topics or subfields within the management arena has also been employed, with such analyses including studies on corporate social responsibility (De Bakker, Groenewegen, & Den Hond, 2005), family business (Casillas & Acedo, 2007), entrepreneurship (Etemad & Lee, 2003; Landström, Harirchi, & Åström, 2012; Schildt, Zahra, & Sillanpää, 2006), social entrepreneurship (Rey-Martí, Ribeiro-Soriano, & Palacios-Marqués, 2016; Sassmannshausen & Volkmann, 2018), environmental management accounting (Schaltegger, Gibassier, & Zvezdov, 2013), business incubators (Albort-Morant & Ribeiro-Soriano, 2016), creativity (Castillo-Vergara, Alvarez-Marin, & Placencio-Hidalgo, 2018), born global firms (Dzikowski, 2018), female entrepreneurship (Santos, Marques, & Ferreira, 2018), innovation adoption (van Oorschot, Hofman, & Halman, 2018), and absorptive capacity (Apriliyanti & Alon, 2017), etc.

Theories and intellectual frameworks, such as the resource-based theory (Acedo, Barroso, & Galan, 2006), dynamic capability view (Vogel & Güttel, 2012), transaction cost theory (Ferreira, Pinto, & Serra, 2014; Martins, Serra, Leite, Ferreira, & Li, 2010), or institutional theory (Weerakkody, Dwivedi, & Irani, 2009) have also been the focus of such methods.

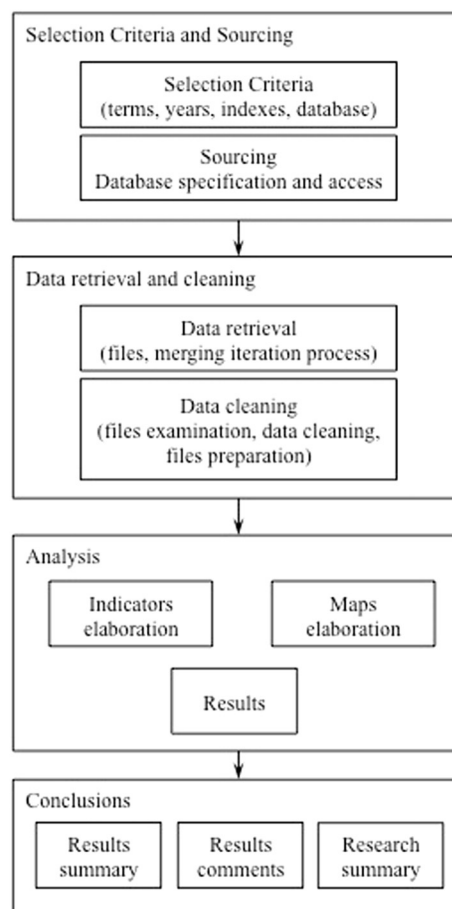


Fig. 1. Methodology.

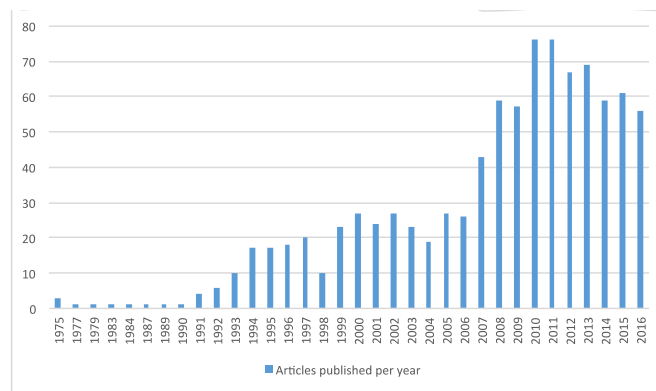


Fig. 2. Articles on human resource training per year.

## 3. Methodology

### 3.1. Unit of analysis

Bibliometric analysis examines bibliographical elements quantitatively. We decided to use articles published in journals since they are considered to be “certified knowledge” and because they emerge from an evaluation process, thus endowing the results with reliability (Callon, Courtial, & Penan, 1993; Ramos-Rodríguez & Ruiz-Navarro, 2004). Therefore, we did not consider proceedings papers, news, and other document types found in databases.

We used citation analysis and co-occurrence citation analysis. Citation analysis is based on the importance researchers attach to a

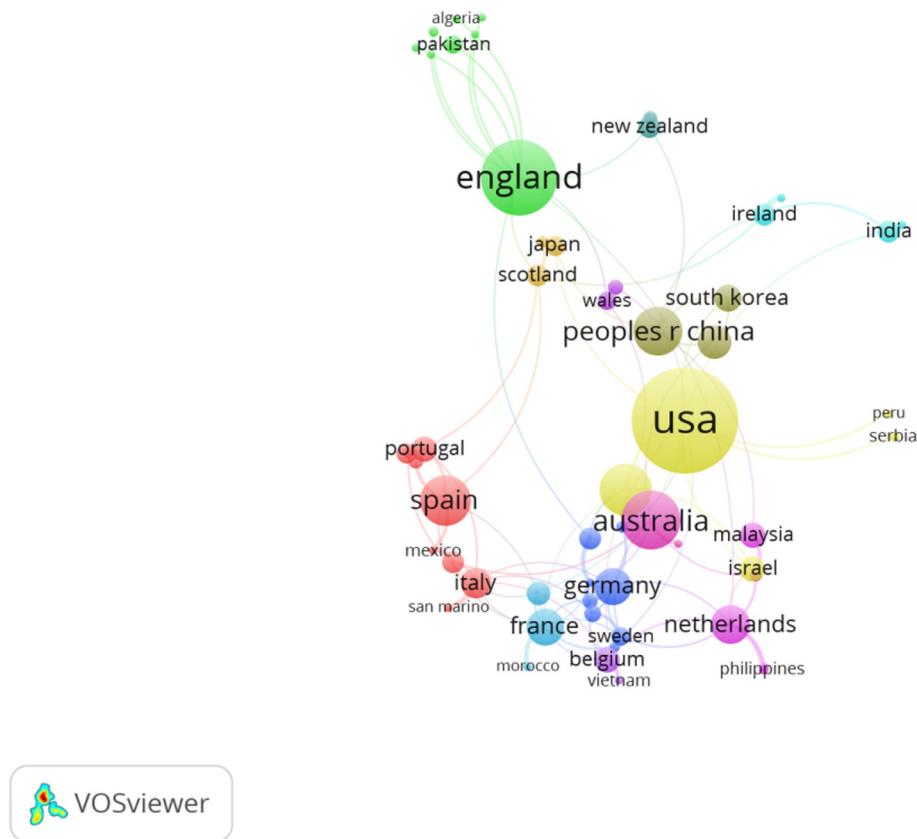


Fig. 3. Authors' nationalities map.

Note: The size shows the relative proportion of articles and the closeness shows the collaboration between authors of those countries.

publication when referring to it as a source. Consequently, it may be concluded that the more often an article is cited, the more influential it will prove to be for the research community in developing said area (Ramos & Ruiz, 2008).

### 3.2. Database sourcing and management

We collected article data from journals stored on the Clarivate Analytics Web of Science site database. As our aim was to examine the different approaches and structure of contributions, we limited the initial search to articles that included “training” and “human resource” in the title, the keywords, or the abstract. We thus tried to encompass possible combinations of words that studied our topic. After continuous checking processes, we then also filtered articles, removing those classified under unrelated categories, which were mainly those from medical disciplines. In addition, we checked the remaining articles so as to filter those related to the topic. We were therefore able to obtain the main figures and overall research configuration on boards of directors before delving into certain core intellectual nodes, subtopics or publications. Systematic filtering of registers was then carried out to ensure consistency in authors and citations. The articles obtained were published up to 2016.

We considered each publication as a possible contribution to research in this arena. Once the dataset had been generated, we used several software packages to examine it. In the case of specific bibliometric data management, we employed BibExcel software to analyze the data and obtain indicators, classify items, etc. We used SPSS to verify the main elements of the intellectual framework via factor analysis, and VOSviewer software as a tool to build and visualize relationships graphically, as well as to perform analyses based on the networks underlying the research on the topic (Van Eck & Waltman, 2010).

### 3.3. Indicators and results visualization

For the purpose of our study, we decided to use descriptive and relational bibliometric indicators and tools. Languages, countries, and institutions provide a certain degree of sociodemographic context explanation. Publishing year frequency helps to visualize and establish stages in the history of research into this topic. Keywords help to understand authors' self-assessment of how the concepts and studies are classified and related in this context. This clarifies which of these concepts have not been subject to sufficient analysis. Main contributors and journals show who has conducted most research and which publication has served to accumulate the majority of those studies.

Co-occurrence in authors provides a structure of research communities, and co-occurrence in citations helps to understand the intellectual framework. Finally, maps provide a clearer picture of what has been done, the communities involved, and also points to possible lines of future research.

### 3.4. Data analysis process

The figure below (Fig. 1) shows the different stages we followed when performing data analysis. We first established the selection criteria for terms, years, target indexes, and specified database before then retrieving and cleaning the information. We processed the retrieved data in order to apply homogenous criteria that would allow the proposed objective to be achieved. Data cleaning included capital letter standardization, checking authors' initials, removing duplicities in cited references, data completion, etc. This usually involves undertaking an iterative process until the researcher obtains the right information registers, which are then analyzed and subsequently cleaned. With the help of the indicators and maps mentioned, analysis is then performed to obtain the results. Some final remarks and conclusions are then put

**Table 1**  
Journals with publications on human resources training.

Rank	Journal	h-Index	Articles	Citation sum within h-core	All citations	All articles
1	International Journal Of Human Resource Management	16	130	1043	1259	66
2	International Journal Of Manpower	9	44	255	311	23
3	Human Resource Management	8	61	159	198	24
4	International Journal Of Contemporary Hospitality Management	8	16	432	443	14
5	Employee Relations	8	12	119	126	12
6	Human Resource Development Quarterly	6	13	175	184	11
7	Asia Pacific Journal Of Human Resources	6	20	109	130	18
8	Personnel Review	6	49	175	203	16
9	African Journal Of Business Management	6	14	203	215	14
10	European Journal Of International Management	5	8	105	105	5
11	Amfiteatru Economic	5	8	94	103	8
12	Cornell Hospitality Quarterly	5	12	93	98	8
13	Management Decision	4	9	29	38	7
14	Total Quality Management & Business Excellence	4	8	33	35	6
15	Asia Pacific Business Review	4	5	106	107	5
16	E & M Ekonomie A Management	3	5	58	59	4
17	Disaster Prevention And Management	3	3	78	78	3
18	Journal Of Knowledge Management	3	4	52	52	4
19	Career Development International	3	5	241	244	5
20	International Journal Of Technology Management	3	13	15	15	3
21	Human Resource Management Review	3	9	21	21	4
22	Human Resource Development Review	3	7	33	35	7
23	Technological Forecasting And Social Change	3	5	57	57	5
24	International Journal Of Operations & Production Management	3	8	25	26	4
25	Industrial Relations	2	8	37	37	3
26	Journal Of Labor Research	2	6	189	189	2
27	Inzinerine Ekonomika-Engineering Economics	2	7	28	30	4
28	International Journal Of Project Management	2	5	6	7	4
29	Industrial And Corporate Change	2	3	72	72	2
30	Journal Of Applied Psychology	2	8	58	58	2
31	Journal Of Management & Organization	2	4	39	40	3
32	Personnel Psychology	2	8	9	9	3
33	Rae-Revista De Administracao De Empresas	2	2	30	30	2
34	Management International Review	2	2	26	26	2
35	Organizational Psychology Review	2	2	20	20	2
36	Relations Industrielles-Industrial Relations	2	16	41	42	4
37	Transformations In Business & Economics	2	4	8	8	3
38	Zeitschrift Fur Personalforschung	2	4	12	13	3
39	Service Industries Journal	2	4	38	38	2
40	Technology Analysis & Strategic Management	2	3	18	18	2

forward based on the results. Limitations and lines for future inquiry are stated at the end of the process.

#### 4. Results

We applied the selection criteria to search the Web of Science main collection database, performed the previously stated data preparation tasks, and retrieved 931 articles.

##### 4.1. Publications per year

The articles we analyzed were published between 1975 and 2016. As the following figure (Fig. 2) shows, different periods can be seen, which we establish for better analysis and discussion.

There is a first period, from 1975 to 1993, when just a few articles are published indicating the usual seminal timeframe. In the second period, from 1994 to 2006, the number of papers is almost ten times the previous number, on average. The third period, from 2007 to 2016, although it displays a lower growth rate, still reflects a substantial increase in the number of articles and a solid baseline of over 43 per year, a clear indication of the research field having entered a stage of development. Within this latter period, 2010 and 2011, with 76 articles, were the years when most papers were published. The growth in the number of published articles suggests that the topic is entering a stage of development. As a result, different research directions might be undertaken: exploring new related topics, examining in greater depth thus far less studied areas, or even aiming to address “traditional issues”

through new frameworks. Exploring new international collaboration might also prove useful in an effort to widen the scope of inquiry.

##### 4.2. Countries and languages of publications

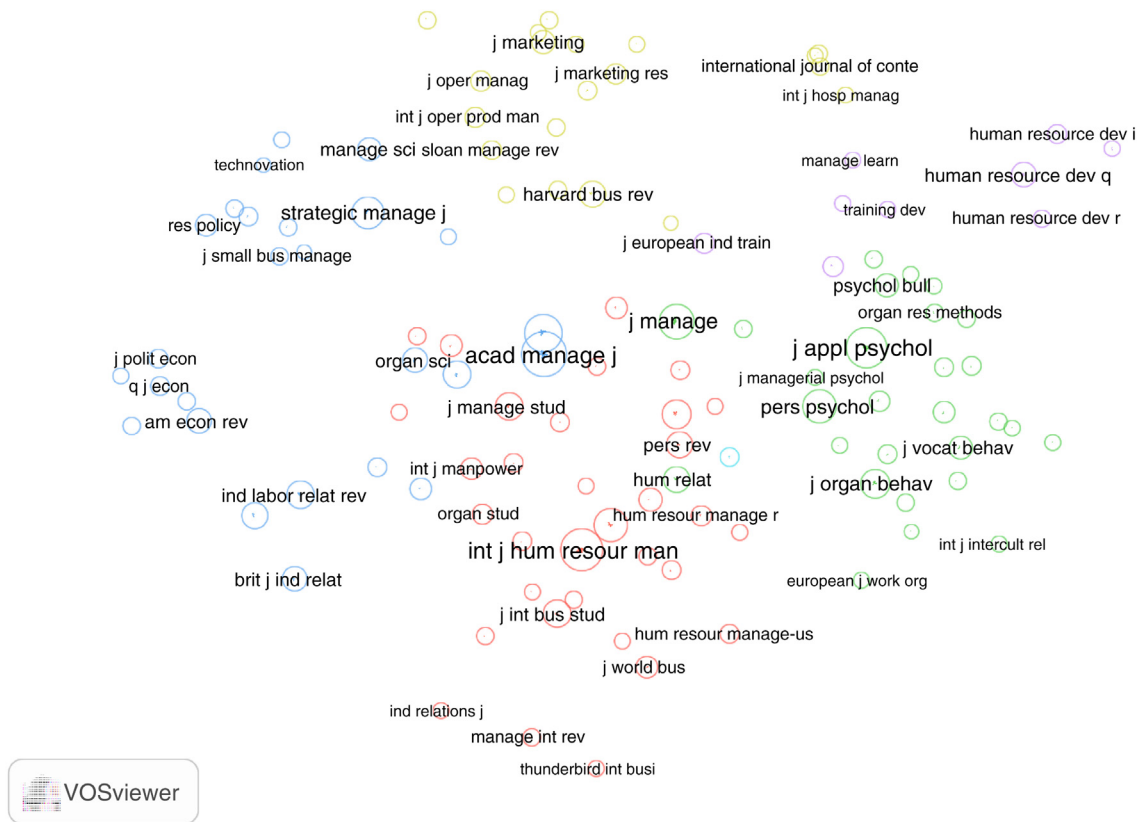
Since many journals publish solely in English, the majority of the articles (96.35%) were published in that language. There are also some articles in French, Spanish, Slovak, Czech, German, Portuguese, and Russian.

Despite having article contributions from 70 countries, over half of the authors are from the US, the UK, Australia, China, and Canada, and come from a wide array of institutions. Fig. 3 shows the nationalities of the authors and how close they are to the others with whom they cooperated. The closer they are, the more they cooperated. It reveals geographical and cultural clusters around the US, the UK, several Asian or European countries, as well as the countries that provide the focus for the origin of their studies.

In our view, the high concentration of articles in terms of countries has two consequences. First, it helps to provide more in-depth research subjects, and second, it opens up a window of opportunity to involve new countries in collaboration; in other words, to engage other authors and institution partnerships to work in these matters.

##### 4.3. Journal productivity

The articles were published in 209 journals, although only 37 of them accounted for over 63%. Table 1 shows a list of these journals, the



**Fig. 4.** Journals co-occurrence map.  
 Note: The size of the nodes (journals) indicates the relative number of citations. The distance between the nodes (journals) represents the relative strength in the relationship between them. We limited the visualization to 117 journals that accounted for 50 citations at least.

**Table 2**

Most prolific authors.

Note: The Left list is ranked by h-index and the right list is ranked by citations.

Author	h-Index	Citation sum within h-core	No. citations	No. articles	Author	h-index	Citation sum within h-core	No. citations	No. articles
Aguinis H	5	108	118	7	MacDuffie JP	3	1227	1227	3
Bacon N	4	80	80	4	Ichniowski C	2	1008	1008	2
Chambel MJ	4	54	54	4	Shaw K	2	1008	1008	2
McPhail R	4	51	51	4	Prennushi G	1	870	870	1
MacDuffie JP	3	1227	1227	3	Delaney JT	1	798	798	1
Budhwar PS	3	135	135	3	Huselid MA	1	798	798	1
Klaas BS	3	114	114	3	Osterman P	1	675	675	2
Karatepe OM	3	107	107	3	Luthans F	2	384	384	2
Burke MJ	3	97	97	3	Lee DMS	1	224	224	1
Bjorkman I	3	93	93	3	Trauth EM	1	224	224	1
Warner M	3	60	60	3	Farwell D	1	224	224	1
Tabassi AA	3	53	53	4	Laurson K	1	211	211	1
Boselie P	3	50	50	3	Foss NJ	1	211	211	1
D'Netto B	3	35	35	3	Sarkis J	1	185	185	1
Kulkarni M	3	28	30	4	Adenso-Diaz B	1	185	185	1
Mabey C	3	29	29	3	Gonzalez-Torre P	1	185	185	1
Kumpikaite V	3	28	28	3	Scullion H	2	180	180	2
Shen J	3	21	22	4	Tzafrir SS	2	178	178	2
Cai ZY	3	17	17	3	Morley MJ	1	178	178	1
Fisher R	3	17	17	3	Collings DG	1	178	178	1
Singh S	3	15	15	4	Daily BF	2	173	173	2
Ichniowski C	2	1008	1008	2	Simmering MJ	1	170	170	1
Shaw K	2	1008	1008	2	Colquitt JA	1	170	170	1
Luthans F	2	384	384	2	Huang SC	1	148	148	1
Scullion H	2	180	180	2	Michie J	2	142	142	2

number of articles they published, the percentage they represent, the Hirsch-index (Hirsch, 2005) we calculated, and the citations they received from their studies.

A look at how approaches to the research topic have evolved may

help us to understand these figures. As in other disciplines, the oldest and most topic-focused journals rank at the top. This is the case with *International Journal of Human Resource Management*, with 130 articles, *Human Resource Management*, with 61 articles, *Personnel Review*, with 49

**Table 3**  
Most cited articles.

Article	Cites
Huselid, 1995	143
Barney, 1991	96
Macduffie, 1995	90
Delery & Doty, 1996	86
Arthur, 1994	72
Delaney & Huselid, 1996	71
Becker & Gerhart, 1996	64
Pfeffer, 1994	58
Podsakoff Pm, 2003	57
Ichniowski et al., 1997	56
Youndt Ma, 1996	50
Wright et al., 2001	46
Osterman P, 1994	41
Batt R, 2002	40
Baron Rm, 1986	39
LepakDp, 1999	39
Becker & Huselid, 1998	36
Guest D. E., 1997	36
Fornell C, 1981	36
Wright P. M., 1994	35
Huselid et al., 1997	35
Appelbaum et al., 2000	35
Wright Pm, 1992	34
Eisenhardt, 1989	34
Blau P. M., 1964	33
LadoAa, 1994	33
Schuler R. S., 1987	32
Hofstede G., 1980	32
Snell Sa, 1992	31
Podsakoff Pm, 1986	30
Bowen De, 2004	30
Becker, 1964	29
Guthrie Jp, 2001	29
Koch & McGrath, 1996	29
BartelAp, 1994	28
Miles Re, 1984	28
Anderson JC, 1988	28
Arthur J.B. 1992	28
Pfeffer J, 1998	26
Wright Pm, 1998	26
Jackson & Schuler, 1995	25
Aiken L. S., 1991	25
Nonaka I., 1995	25

articles, or *International Journal of Manpower*, with 44 articles published. The h-index indicator strengthens the ranking position of these journals. Since they constitutively embrace diverse points of view, other journals provide different perspectives in the arena. This is the case with articles published in journals such as *Management Decision* or *Personnel Psychology*.

Accordingly, the classification of articles shows how, beyond the “Business & Economics” type, almost one in five (183 articles) were tagged with “Psychology.” Developed topics allow a core group of journals that mainly focus on the principal field (e.g. business, management, human resources) to be combined, together with another group that approach the topic from a different perspective.

The map in Fig. 4 helps to visualize these findings on journals and their categorization. Co-citation analysis for journals was performed, enabling us to draw a map so as to understand closeness and the relationship among them, and to pinpoint where the articles that structure the knowledge on this topic are located. Given the high number of publications and citations, management journals are mainly located at the center of the map. Journals from different fields, such as psychology, are related to this core group, and specific journals pivot around them. Closeness indicates how they are co-cited; that is, how articles highlight relevant silos of knowledge for their studies. This allows us to visualize the core of sources that explore the topic in greater depth and serves as a point of reference for multiple viewpoints.

#### 4.4. Authors' productivity

There are 1922 single authors in the sample of articles analyzed. Table 2 shows who the most prolific were. In order to classify and understand their importance, we ranked them based on their h-index for each author (list on the left) as well as the total number of citations (right-hand list). We used both ranks since they give different perspectives of their contributions and may indicate collaboration in their production.

When considering relevance in terms of the h-index, leading the ranking were authors such as Aguinis, Bacon, Champel, McPhail or MacDuffie. Studies by Aguinis, deeply rooted in the area of psychology, explore topics such as organizational performance improvement through human capital development, the outcomes of people's training and development within organizations and society, or associated performance management or team leadership. Bacon deals with the topic of training in SMEs, team-working, and employee relations. Chambel's studies focus on temporary workers, whereas McPhail addresses several matters such as job quality or job satisfaction, mainly in labor-intensive industries.

The articles published by MacDuffie rank high in both classifications, evidencing the relevance of his research. His investigation of HR systems, where training plays a key role in practice, is a key reference. Ichniowski, Shaw, and Prensushi collaborated in articles studying the relationship between HRM and firm performance and productivity.

It should be pointed out that a high ranking in this category merely reflects the effort put into the subject matter, and might not necessarily be related to the relevance it has earned in the literature. This point is explored in greater detail later on via cited references.

#### 4.5. References analysis

In addition to an analysis of authors, a study of the references they used in their papers helps to draw the discipline's intellectual map. There are 49,683 references from 36,745 unique articles in our sample. The top referenced citations are ranked in Table 3.

The most cited study (Huselid, 1995) was referred to in 143 articles. It evaluates the links between high performance work practices and firm results. It also states that these practices have a statistically significant impact on the volume of sales, employee productivity, and financial performance, both in the short and long term. Huselid claims that increased training leads to sustained growth in productivity. Papers by Barney, MacDuffie, Delery, and Arthur follow the above-mentioned article in the ranking. Barney (1991) is a key reference since he is a key contributor to the development of the resource-based view, a theory that focuses on the firm's internal resources and capabilities. Barney asserts that resources which are scarce, valuable, hard to imitate, and hard to replace are the ones that provide sustained competitive advantages which lead to long-term company income. A detailed definition of resources and their characteristics were described in the mentioned article. Macduffie (1995) uses empirical research to evidence that applying a combination of high performance work practices such as recruiting, employment security, variable compensation, training, promotion, and quality systems implementation, positively influences company performance. Similarly, Delery and Doty (1996) show a positive relationship between employee in-company training and obtained returns, measured by ROA and ROE. The study also demonstrates that an increase in training is linked to better employee behavior indicators. Arthur (1994) conducted research that provides evidence of the positive impact of training on employee loyalty to the company, and his study shows that training diminishes employee turnover.

It is worth noting that the top ranked citations were published many years ago. In fact, only four of the top 35 were published after 2000, with most of them having been written during the “building stage” defined in our analysis. Accordingly, recent articles tend to suffer from a lack of citations, although if they explore new areas and receive

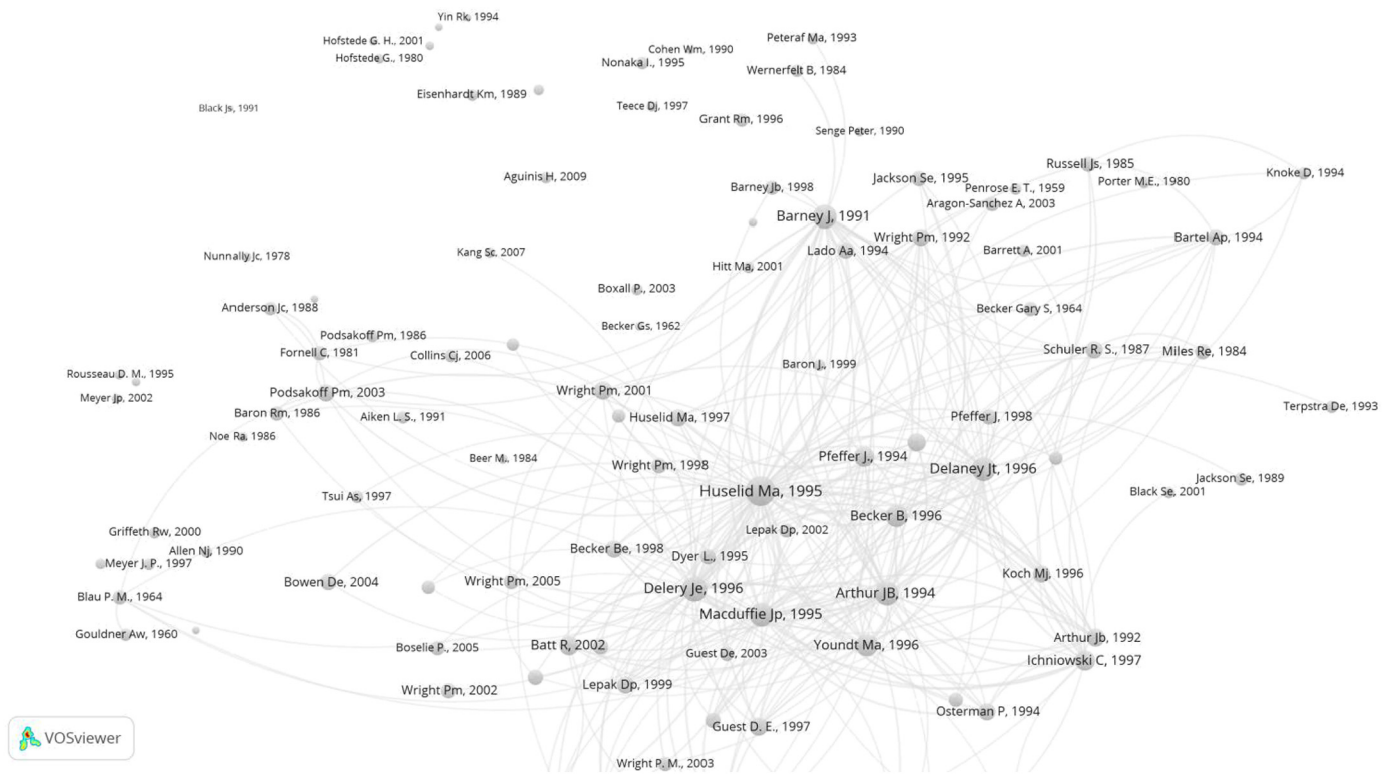


Fig. 5. Co-citation. Map of cited references.

frequent citations, it might be a sign they are beginning to be considered relevant contributions. Such is the case with [Aguinis & Kraiger, \(2009\)](#).

As regards co-citation analysis for the cited references, we analyzed articles cited at least 20 times (66) in order to pinpoint the core foundation that provides the intellectual structure supporting research on the topic. A co-citation map for references ([Fig. 5](#)) helps visualize the results.

We performed principal component analysis to study the network of co-cited references in [Fig. 5](#). Results show how three factors explain over 96% of variance, enabling us to consider them as the axes that shape the focus of the literature. For this purpose, we took into account studies with higher loadings in each of the components.

The first component includes studies from [Barney, Jackson, Gerhart, Dyer, Becker, Koch, and Combs](#). Their articles seek to provide a grounding for the relationship between human resources and performance, based on generating competitive advantage. There is, therefore, a framework for analyzing competitive strategy ([Porter, 1980](#)), where human resources are a key factor in generating competitive advantages ([Barney & Wright, 1998](#)). Based on this, and occasionally determined by external factors ([Jackson & Schuler, 1995](#)), human resource strategies may be designed to obtain firms' results ([Dyer & Reeves, 1995](#)), through practices ([Koch & McGrath, 1996](#)) or by offering a link between human resources and their outcomes ([Becker & Gerhart, 1996; Ulrich, 1997](#)). In this context, human resources and performance relationship can be measured ([Combs, Liu, Hall, & Ketchen, 2006; Eisenhardt, 1989; Gerhart, Wright, McMahan, & Snell, 2000](#)). This factor also contains a review of the research on this rationale as well as managerial implications ([Becker & Huselid, 1998](#)).

The second component relates training to outcomes and to antecedents or the underlying rationales that support it. Formal and informal training is studied in the context of manufacturing industries in the US as a key element vis-à-vis enhancing workforce skills and, as a result, plant performance ([Appelbaum, Bailey, Berg, Kalleberg, & Bailey, 2000](#)). The study by [Aguinis and Kraiger](#) reviews the literature

on training and development from a multidisciplinary perspective ([Aguinis & Kraiger, 2009](#)). Training motivation meta-analysis provides the basis for research that examines elements which affect training or its results in terms of performance ([Colquitt, LePine, & Noe, 2000](#)). Many studies support methods for carrying out research that is applied to organizational behavior ([Nunnally, 1978](#)), the need to generate human capital ([Becker, 1964](#)), and how investing in human capital may have a positive impact positive on productivity ([Black & Lynch, 1996, 2001](#)), where management decisions such as a buy-out can help these practices ([Bruining, Boselie, Wright, & Bacon, 2005](#)).

The third component frames the relationship between HR practices and their outcomes in the strategic context, under the resource dependence theory. Human capital in general, and training in particular, are presented as a source of competitive advantage ([Barney, 1991](#)) and play a key role in the strategic management of human resources ([Wright, Dunford, & Snell, 2001](#)). Although the literature points to a positive effect of HR practices, certain authors advocate taking a close look at causal relationships ([Wright, Gardner, Moynihan, & Allen, 2005](#)).

#### 4.6. Topics on human resources training

The authors of the research papers in our sample used 3562 different keywords to classify their studies. [Fig. 6](#) shows the 210 terms referred to as keywords at least nine times. The size of the nodes in the map is used to reflect the weight of each word. The closeness of words, as well as lines, indicates the strength of their relationship.

The first two keywords in the rank and in the co-occurrence data give the expected results, since they were among the selection criteria. The link to human capital and performance appears highly ranked, taken as such, as well as under words like “development.” The role played by development, knowledge management or job satisfaction as relevant study topics also proves relevant. It should be pointed out that this is consistent with the intellectual framework found, the most relevant authors, and the cited references on HR practices. As regards the





resource management to performance or productivity, to the link to strategy, or the impact of industry on HR practices. The reference citations show that research on this topic is articulated around studies that highlight resource-based view approaches. Human capital also emerges as a relevant concept for grounding and relating studies. The results obtained when analyzing the components confirm these findings. Components show a clear interest in reflecting the link between human resources management and performance aimed at generating a competitive advantage. In this vein, training emerges as one of the key elements that may produce outcomes in terms of performance, and suggests that the contribution clearly fits into the positive effect of investing in human capital. The significant presence of references that provide an intellectual foundation based on the above-mentioned theory thus makes full sense.

This main stream in literature, approached from different angles such as the universalistic or contingency theories, has proved successful in explaining the positive relationship between human resources training and performance. Despite this, we found there to be much room for future development in other approaches, i.e. ethics or stakeholders, which are underrepresented in the development process of research into the topic.

### 5.1. Limitations and future research

Our study has certain limitations. Although we examined contributions for the whole study period, it may be helpful to perform the same type of analysis for each of the stages identified. This could provide a different perspective on the evolution of indicators and offer a different way to understand possible trends.

As regards the placement of cited references, it would be interesting to use accurate natural language programming, once it becomes available, in order to add meaningful results to these techniques.

Future research on human resources training could aim to fill some of the gaps we highlight. It would be interesting to gain further insights into a broader range of industries and to perform more analyses from an international perspective. Finally, we think that our contribution provides a resourceful foundation on which to develop meta-analyses on this topic.

### Declarations of interest

None.

### References

- Acedo, F., Barroso, C., & Galan, J. L. (2006). The resource-based theory: Dissemination and Main trends. *Strategic Management Journal*, 27(7), 621–636. <https://doi.org/10.2307/20142363>.
- Aguinis, H., & Kraiger, K. (2009). Benefits of training and development for individuals and teams, organizations, and society. *Annual Review of Psychology*, 60(1), 451–474. <https://doi.org/10.1146/annurev.psych.60.110707.163505>.
- Albort-Morant, G., & Ribeiro-Soriano, D. (2016). A bibliometric analysis of international impact of business incubators. *Journal of Business Research*, 69(5), 1775–1779. <https://doi.org/10.1016/j.jbusres.2015.10.054>.
- Alexander, J. C., & Mabry, R. H. (1994). Relative significance of journals, authors, and articles cited in financial research. *The Journal of Finance*, 49(2), 697. <https://doi.org/10.2307/2329169>.
- Appelbaum, E., Bailey, T., Berg, P. B., Kalleberg, A. L., & Bailey, T. A. (2000). *Manufacturing advantage: Why high-performance work systems pay off*. Cornell University Press.
- Apriliyanti, I. D., & Alon, I. (2017). Bibliometric analysis of absorptive capacity. *International Business Review*, 26(5), 896–907. <https://doi.org/10.1016/j.ibusrev.2017.02.007>.
- Aragon-Sanchez, A., Barba-Aragón, I., & Sanz-Valle, R. (2003). Effects of training on business results. *International Journal of Human Resource Management*, 14(6), 956–980. <https://doi.org/10.1080/0958519032000106164>.
- Arthur, J. B. (1994). Effects of human resource systems on manufacturing performance and turnover. *Academy of Management Journal*, 37(3), 670–687.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. B., & Wright, P. (1998). On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management*, 37, 31–46. [https://doi.org/10.1002/\(SICI\)1099-050X\(199821\)37:1<31::AID-HRM4>3.0.CO;2-W](https://doi.org/10.1002/(SICI)1099-050X(199821)37:1<31::AID-HRM4>3.0.CO;2-W).
- Becker, B. E., & Gerhart, B. (1996). The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal*, 39(4), 779–801. <https://doi.org/10.2307/256713>.
- Becker, B. E., & Huselid, M. A. (1998). *Human resources strategies, complementarities, and firm performance*. (Manuscript).
- Becker, G. S. (1964). *Human capital theory*. Columbia, New York 1964.
- Black, S. E., & Lynch, L. M. (1996). Human-capital investments and productivity. *The American economic review*, 86.
- Black, S. E., & Lynch, L. M. (2001). How to compete: The impact of workplace practices and information technology on productivity. *The Review of Economics and Statistics*, 83(3), 434–445.
- Börner, K., Chen, C., & Boyack, K. W. (2005). Visualizing knowledge domains. *Annual Review of Information Science and Technology*, 37(1), 179–255. <https://doi.org/10.1002/aris.1440370106>.
- Bruining, H., Boselie, P., Wright, M., & Bacon, N. (2005). The impact of business ownership change on employee relations: Buy-outs in the UK and the Netherlands. *International Journal of Human Resource Management*, 16(3), 345–365. <https://doi.org/10.1080/0958519042000339543>.
- Callon, M., Courtial, J.-P., & Penan, H. (1993). *La scientométrie. Vol. 2727*. Presses universitaires de France.
- Carmeli, A., & Tishler, A. (2004). The relationships between intangible organizational elements and organizational performance. *Strategic Management Journal*, 25(13), 1257–1278. <https://doi.org/10.1002/smj.428>.
- Casillas, J., & Acedo, F. (2007). Evolution of the intellectual structure of family business literature: A bibliometric study of FBR. *Family Business Review*, 20(2), 141–162.
- Castillo-Vergara, M., Alvarez-Marín, A., & Placencio-Hidalgo, D. (2018). A bibliometric analysis of creativity in the field of business economics. *Journal of Business Research*, 85(March 2017), 1–9. <https://doi.org/10.1016/j.jbusres.2017.12.011>.
- Charvet, F. F., Cooper, M. C., & Gardner, J. T. (2008). The intellectual structure of supply chain management: A bibliometric approach. *Journal of Business Logistics*, 29(1), 47–73. <https://doi.org/10.1002/j.2158-1592.2008.tb00068.x>.
- Colquitt, J. A., LePine, J. A., & Noe, R. A. (2000). Toward an integrative theory of training motivation: A meta-analytic path analysis of 20 years of research. *Journal of Applied Psychology*, 85(5), 678–707. <https://doi.org/10.1037//0021-9010.85.5.678>.
- Combs, J., Liu, Y., Hall, A., & Ketchen, D. (2006). How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology*, 59, 501–528. <https://doi.org/10.1111/j.1744-6570.2006.00045.x>.
- Culnan, M. J. (1987). Mapping the intellectual structure of MIS, 1980–1985: A co-citation analysis. *MIS Quarterly*, 341–353.
- Culnan, M. J., O'Reilly, C. A., III, & Chatman, J. A. (1990). Intellectual structure of research in organizational behavior, 1972–1984: A cocitation analysis. *Journal of the American Society for Information Science*, 41(6), 453–458. [https://doi.org/10.1002/\(SICI\)1097-4571\(199009\)41:6<453::AID-AS113>3.0.CO;2-E](https://doi.org/10.1002/(SICI)1097-4571(199009)41:6<453::AID-AS113>3.0.CO;2-E).
- Danvila Del Valle, I., & Sastre Castillo, M. A. (2009). Human capital and sustainable competitive advantage: An analysis of the relationship between training and performance. *International Entrepreneurship and Management Journal*, 5(2), 139–163. <https://doi.org/10.1007/s11365-008-0090-3>.
- Danvila-del-Valle, I., Sastre-Castillo, M.Á., & Rodríguez-Duarte, A. (2007). Capital humano y ventaja competitiva sostenible: un análisis de la relación entre la formación y los resultados empresariales. *Esic Market*, 30(128), 145–223. <https://doi.org/10.1108/01437720910973070>.
- De Bakker, F. G. A., Groenewegen, P., & Den Hond, F. (2005). A bibliometric analysis of 30 years of research and theory on corporate social responsibility and corporate social performance. *Business & Society*, 44(3), 283–317.
- De Saá-Pérez, P., & García-Falcon, J. M. (2002). A resource-based view of human resource management and organizational capabilities development. *International Journal of Human Resource Management*, 13(1), 123–140.
- Delaney, J. T., & Huselid, M. A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal*, 39(4), 949–969. <https://doi.org/10.2307/256718>.
- Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 39(4), 802–835. <https://doi.org/10.2307/256713>.
- Dyer, L., & Reeves, T. (1995). Human resource strategies and firm performance: What do we know and where do we need to go? *International Journal of Human Resource Management*, 6(3), 656–670.
- Dzikowski, P. (2018). A bibliometric analysis of born global firms. *Journal of Business Research*, 85(January), 281–294. <https://doi.org/10.1016/j.jbusres.2017.12.054>.
- Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, 101(3), 621–640. <https://doi.org/10.1016/j.jfineco.2011.03.021>.
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14(1), 57–74. <https://doi.org/10.5465/AMR.1989.4279003>.
- Etemad, H., & Lee, Y. (2003). The knowledge network of international entrepreneurship: Theory and evidence. *Small Business Economics*, 20(1), 5–23. <https://doi.org/10.1023/A:1020240303332>.
- Fagerberg, J., Fosaas, M., & Sapparasert, K. (2012). Innovation: Exploring the knowledge base. *Research Policy*, 41(7), 1132–1153. <https://doi.org/10.1016/j.respol.2012.03.008>.
- Fernandez-Alles, M., & Ramos-Rodríguez, A. (2009). Intellectual structure of human resources management research: A bibliometric analysis of the journal human resource management, 1985–2005. *Journal of the American Society for Information Science and*

- Technology, 60(1), 161–175. <https://doi.org/10.1002/asi.20947>.
- Ferreira, M. P., Pinto, C. F., & Serra, F. R. (2014). The transaction costs theory in international business research: A bibliometric study over three decades. *Scientometrics*, 98(3), 1899–1922. <https://doi.org/10.1007/s11192-013-1172-8>.
- Galbreath, J. (2005). Which resources matter the most to firm success? An exploratory study of resource-based theory. *Technovation*, 25(9), 979–987. <https://doi.org/10.1016/j.technovation.2004.02.008>.
- Gerhart, B., Wright, P. M., McMahon, G. C., & Snell, S. A. (2000). Measurement error in research on human resources and firm performance: How much error is there and how does it influence effect size estimates? *Personnel Psychology*, 53(4), 803–834.
- Hall, R. (1992). The strategic analysis of intangible resources. *Strategic Management Journal*, 13(2), 135–144.
- Hall, R. (1993). A framework linking intangible resources and capabilities to sustainable competitive advantage. *Strategic Management Journal*, 14(8), 607–618.
- Hatch, N. W., & Dyer, J. H. (2004). Human capital and learning as a source of sustainable competitive advantage. *Strategic Management Journal*, 25(12), 1155–1178. <https://doi.org/10.1002/smj.421>.
- Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences of the United States of America*, 102(36), 16569–16572.
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38(3), 635–672. <https://doi.org/10.2307/256741>.
- Huselid, M. A., Jackson, S. E., & Schuler, R. S. (1997). Technical and strategic human resources management effectiveness as determinants of firm performance. *Academy of Management Journal*, 40(1), 171–188.
- Ichniowski, C., Shaw, K., & Prennushi, G. (1997). The effects of human resource management practices on productivity: A study of steel finishing lines. *American Economic Review*, 87(3), 291–313.
- Jackson, S. E., & Schuler, R. S. (1995). Understanding human resource management in the context of organizations and their environments. *Annual Review of Psychology*, 46, 237–264. <https://doi.org/10.1146/annurev.ps.46.020195.001321>.
- Koch, M. J., & McGrath, R. G. (1996). Improving labor productivity: Human resource management policies do matter. *Strategic Management Journal*, 17(5), 335–354. [https://doi.org/10.1002/\(SICI\)1097-0266\(199605\)17:5<335::AID-SMJ814>3.0.CO;2-R](https://doi.org/10.1002/(SICI)1097-0266(199605)17:5<335::AID-SMJ814>3.0.CO;2-R).
- Landström, H., Harirchi, G., & Åström, F. (2012). Entrepreneurship: Exploring the knowledge base. *Research Policy*, 41(7), 1154–1181. <https://doi.org/10.1016/j.respol.2012.03.009>.
- Lee, S. H., Phan, P. H., & Chan, E. (2005). The impact of HR configuration on firm performance in Singapore: A resource-based explanation. *The International Journal of Human Resource Management*, 16(9), 1740–1758. <https://doi.org/10.1080/09585190500239465>.
- Lim, L. K., Chan, C. A., & Dallimore, P. (2010). Perceptions of human capital measures: From corporate executives and investors. *Journal of Business and Psychology*, 25(4), 673–688. <https://doi.org/10.1007/s10869-009-9150-0>.
- Liu, X., van Jaarsveld, D. D., Batt, R., & Frost, A. C. (2014). The influence of capital structure on strategic human capital: Evidence from U.S. and Canadian firms. *Journal of Management*, 40(2), 422–448. <https://doi.org/10.1177/0149206313508982>.
- Macduffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 48(2), 197. <https://doi.org/10.2307/2524483>.
- Markoulli, M. P., Lee, C. I. S. G., Byington, E., & Felps, W. A. (2017). Mapping human resource management: Reviewing the field and charting future directions. *Human Resource Management Review*, 27(3), 367–396. <https://doi.org/10.1016/j.hrmr.2016.10.001>.
- Martín-de-Castro, G., Delgado-Verde, M., López-Sáez, P., & Navas-López, J. E. (2011). Towards “an intellectual capital-based view of the firm”: Origins and nature. *Journal of Business Ethics*, 98(4), 649–662. <https://doi.org/10.1007/s10551-010-0644-5>.
- Martins, R., Serra, F. R., Leite, A. L. D. S., Ferreira, M. M. P., & Li, D. (2010). Transactions cost theory influence in strategy research: A review through a bibliometric study in leading journals. *Journal of Strategic Management Education*, 6(3), 177–197.
- McCain, K. W. (1990). Mapping authors in intellectual space: A technical overview. *Journal of the American Society for Information Science*, 41(6), 433–443. [https://doi.org/10.1002/\(SICI\)1097-4571\(199009\)41:6<433::AID-AS111>3.0.CO;2-Q](https://doi.org/10.1002/(SICI)1097-4571(199009)41:6<433::AID-AS111>3.0.CO;2-Q).
- McCain, K. W. (1996). Dictionary of bibliometrics - Diodato, V. *Journal of the American Society for Information Science*, 47, 716–717 (ST-Dictionary of bibliometrics-Diodat).
- Merigó, J. M., Yang, J.-B., & Xu, D.-L. (2015). A bibliometric overview of financial studies. In J. Gil-Aluja, A. Terceño-Gómez, J. C. Ferrer-Comalat, J. M. Merigó-Lindahl, & S. Linares-Mustarós (Vol. Eds.), *Scientific methods for the treatment of uncertainty in social sciences SE - 20*. Vol. 377. *Scientific methods for the treatment of uncertainty in social sciences SE - 20* (pp. 245–254). Springer International Publishing. [https://doi.org/10.1007/978-3-319-19704-3\\_20](https://doi.org/10.1007/978-3-319-19704-3_20).
- Nerur, S. P., Rasheed, A. A., & Natarajan, V. (2008). The intellectual structure of the strategic management field: An author co-citation analysis. *Strategic Management Journal*, 29(3), 319–336. <https://doi.org/10.2307/20142019>.
- Nunnally, J. (1978). *Psychometric methods*. New York: McGraw-Hill.
- Pfeffer, J. (1994). Competitive advantage through people. *California Management Review*, 36(2), 9–28.
- Pilkington, A., & Liston-Heyes, C. (1999). Is production and operations management a discipline? A citation/co-citation study. *International Journal of Operations & Production Management*, 19(1), 7–20. <https://doi.org/10.1108/01443579910244188>.
- Pilkington, A., & Meredith, J. (2009). The evolution of the intellectual structure of operations management—1980–2006: A citation/co-citation analysis. *Journal of Operations Management*, 27(3), 185–202. <https://doi.org/10.1016/j.jom.2008.08.001>.
- Porter, M. E. (1980). *Competitive strategy: Techniques for analyzing industries. Competitors*. New York: The Free Press.
- Ramos, A., & Ruiz, J. (2008). Base intelectual de la investigación en creación de empresas: un estudio bibliométrico. .... *Europea de Dirección Y Economía de La Empresa*, 17(1), 13–37.
- Ramos-Rodríguez, A. R., & Ruiz-Navarro, J. (2004). Changes in the intellectual structure of strategic management research: A bibliometric study of the strategic management journal, 1980–2000. *Strategic Management Journal*, 25, 981–1004. <https://doi.org/10.1002/smj.397>.
- Rangone, A. (1999). A resource-based approach to strategy analysis in small-medium sized enterprises. *Small Business Economics*, 12(3), 233–248. <https://doi.org/10.1023/A:1008046917465>.
- Rey-Martí, A., Ribeiro-Soriano, D., & Palacios-Marqués, D. (2016). A bibliometric analysis of social entrepreneurship. *Journal of Business Research*, 69(5), 1651–1655. <https://doi.org/10.1016/j.jbusres.2015.10.033>.
- Santos, G., Marques, C. S., & Ferreira, J. J. (2018). A look back over the past 40 years of female entrepreneurship: Mapping knowledge networks. *Scientometrics*, 115(2), 953–987. <https://doi.org/10.1007/s11192-018-2705-y>.
- Sassmannshausen, S. P., & Volkman, C. (2018). The Scientometrics of social entrepreneurship and its establishment as an academic field. *Journal of Small Business Management*, 56(2), 251–273. <https://doi.org/10.1111/jsbm.12254>.
- Sastre Castillo, M. A., & Aguilar Pastor, E. M. (2003). *Dirección de recursos humanos: un enfoque estratégico*. McGraw-Hill Interamericana de España.
- Schaltegger, S., Gibassier, D., & Zvezdov, D. (2013). Is environmental management accounting a discipline? A bibliometric literature review. *Meditari Accountancy Research*, 21(1), 4–31.
- Schildt, H. A., Zahra, S. A., & Sillanpää, A. (2006). Scholarly communities in entrepreneurship research: A co-citation analysis. *Entrepreneurship Theory and Practice*, 30(3), 399–415.
- Tahai, A., & Meyer, M. J. (1999). A revealed preference study of management journals' direct influences. *Strategic Management Journal*, 20(3), 279–296.
- Ubeda-García, M. (2005). Training and business performance: The Spanish case. *International Journal of Human Resource Management*, 16(9), 1691–1710. <https://doi.org/10.1080/09585190500239341>.
- Ulrich, D. (1997). Measuring human resources: An overview of practice. *Human Resource Management*, 36(3), 303–320.
- van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. <https://doi.org/10.1007/s11192-009-0146-3>.
- van Eck, N. J., Waltman, L., Dekker, R., & van den Berg, J. (2010). A comparison of two techniques for bibliometric mapping: Multidimensional scaling and VOS. *Journal of the American Society for Information Science and Technology*, 61(12), 2405–2416. <https://doi.org/10.1002/asi.21421>.
- van Oorschot, J. A. W. H., Hofman, E., & Halman, J. I. M. (2018). A bibliometric review of the innovation adoption literature. *Technological Forecasting and Social Change*, 134(April), 1–21. <https://doi.org/10.1016/j.techfore.2018.04.032>.
- Villalonga, B. (2004). Intangible resources, Tobin's q, and sustainability of performance differences. *Journal of Economic Behavior and Organization*, 54(2), 205–230. <https://doi.org/10.1016/j.jebo.2003.07.001>.
- Vogel, R., & Güttel, W. H. (2012). The dynamic capability view in strategic management: A bibliometric review. *International Journal of Management Reviews*, 15(4), <https://doi.org/10.1111/ijmr.12000> (n/a-n/a).
- Weerakkody, V., Dwivedi, Y. K., & Irani, Z. (2009). The diffusion and use of institutional theory: A cross-disciplinary longitudinal literature survey. *Journal of Information Technology*, 24(4), 354–368. <https://doi.org/10.1057/jit.2009.16>.
- Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). Human resources and the resource based view of the firm. *Journal of Management*, 27(6), 701–721.
- Wright, P. M., Gardner, T. M., Moynihan, L. M., & Allen, M. R. (2005). The relationship between HR practices and firm performance: Examining causal order. *Personnel Psychology*, 58, 409–446.