


Bibliometric study about employability

Estudio Bibliométrico sobre empleabilidad

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Abstract

The current labor market demands imply new challenges that impact people's employability. This research aims to present the literature and the most prolific authors on employability, to diagnose the subject's evolution and current state. The methodology was a systematic literature review through a bibliometric analysis and meta-analysis of documents in the Scopus database, using indicators such as quantity, quality, and structure. The results show evidence of the scientific community's interest in employability, during the last twenty years. The bibliographic follow-up shows in this field of knowledge, an exponential growth of scientific production that occurs through networks of existing authors, among which Denise Jackson stands out with the largest number of published articles, and the researchers Ans De Vos, Sara De Hauw, and Beatrice IJM Van der Heijden, with the most cited co-authorship. The main research trends by the co-occurrence of keywords related to employability are skills development, higher education, professional development, human talents, human capital, labor market, work experience, sustainability, and sustainable employability, among others.

Keywords: *Higher education; Human capital; Labor market; Skills.*

JEL Code: E240, J240, O150

Resumen

Las exigencias del mercado laboral actual implican nuevos retos que impactan la empleabilidad de las personas. El objetivo de esta investigación ha sido presentar la literatura y los autores más prolíficos sobre empleabilidad, con el fin de generar un diagnóstico de la evolución y estado actual de la temática. La metodología fue una revisión sistemática de literatura a través de un análisis bibliométrico y el metaanálisis de documentos en la base de datos Scopus, utilizando indicadores como cantidad, calidad y estructura. En los resultados existe evidencia del interés de la comunidad científica sobre el tema de empleabilidad, durante los últimos veinte años; el estudio bibliométrico muestra en este campo de conocimiento un crecimiento exponencial de producción científica que se da principalmente a través de redes de autores ya existentes, entre los que destacan Denise Jackson con el mayor número de artículos publicados y los investigadores Ans De Vos, Sara De Hauw y Beatrice IJM Van der Heijden, con la coautoría más citada. En conclusión, las principales tendencias de investigación por la coocurrencia de palabras claves relacionadas con la empleabilidad son desarrollo de habilidades, educación superior, desarrollo profesional, talentos humanos, capital humano, mercado laboral, experiencia laboral, sustentabilidad y empleabilidad sustentable, entre otros.

Palabras clave: *Capital humano; Educación superior; Habilidades; Mercado laboral.*

Código JEL: E240, J240, O150



Introduction

Economic and social changes and technological innovations that affect business ecosystems and human talents also modify the structure of current work and therefore employability (Guerdis & López, 2022; Martínez et al., 2020; Mora, 2021). Thus, technological advances are changing the nature of jobs and work practices (Enríquez Martínez & Rentería Pérez, 2007); creating new types of employment and modifying the requirements for human talents to be eligible for a job (World Economic Forum, 2020), demanding from workers the training and development of different skills that are compatible with the current labor market supply (Andino-González, 2022; De Vos et al., 2021; Gajdzik & Wolniak, 2022).

In the fifties, the first publications referring to employability appeared, showing concern for the insertion of people in the labor market; in the sixties, the potential of human talents to access, integrate and remain in a job was studied, which is related to the Human Capital Theory; in the late seventies, the ability of organizations to combat unemployment is discussed (Formichella & London, 2013; Neffa, 2016; Rentería-Pérez & Malvezzi, 2008; Suárez-Lantarón, 2016). Subsequently, in the 1980s and 1990s, employability was analyzed from the perspective of human capital training and education, both at a general and specific level provided within the workplace, as well as its impact on productivity and income, linked to the skills of each employee (Formichella & London, 2013).

At the end of the 20th century, employability was defined as the possibility for a person to find a job in the labor market, considering aspects such as individual productivity resulting from education, learning the trade, health care and the worker's reputation (Suárez-Lantarón, 2016); taking into account the quality of employment according to job content, conditions, organizational culture, and income level sought; where human talents can create a career path profile suitable for labor market opportunities (Suárez-Lantarón, 2016; Neffa, 2016).

Thus, the objective of this study is to carry out a bibliometric analysis of studies on employability, in order to generate a diagnosis of the evolution and current state of the subject.

THEORETICAL FRAMEWORK

According to Harvey (2001), employability is the graduate's propensity to exhibit attributes to employers that will be necessary for the effective future functioning of their organization. For Alles (2005), employability refers to "the possibility of obtaining or keeping a job, considering that in order to do so it will be necessary to possess what the jobs require" (p.353). On the other hand, the concept that includes both personal and contextual factors is that put forward by Gamboa et al. (2007), who define employability as "the individual's perception of the opportunities available to him/her" (p.354).

nities he/she has to get a job of his/her preference, improve the one he/she has, considering that such opportunities will depend on his/her characteristics, behaviors and the contextual factors that surround him/her" (p.6).

However, employability emerges as an alternative to explain everything that allows people to enter or remain in the labor market, so Enriquez and Rentería (2007) conclude that employability is a construct that brings together a series of dynamic characteristics that evolve in relation to the context in which human talents are immersed. According to studies by Yorke (2010), employability is defined as "a set of achievements, skills, knowledge and personal attributes that make graduates more employable and successful in their choice of occupation, benefiting individuals, companies, the community and the economy" (p.5).

Within this order of ideas, employability is the set of variables that explain the employment or unemployment situation of a person, which allow him/her to access and maintain a job, satisfying his/her professional, economic, promotion and development needs (Suárez-Lantaron, 2016). As Botero Sarassa and Rentería Pérez (2019) point out, it refers to "the dynamics of insertion, permanence and mobility of people in labor markets" (p.14). In addition, employability is linked to the capabilities, knowledge, skills and competencies that an individual has to face access to the labor market (Clarke, 2008; Forrier & Sels, 2003). These elements increase workers' capacity to obtain and keep a job, improve their work, adapt to change and integrate into the labor market.

Over time, three perspectives have been identified to address the different employability approaches, firstly the societal perspective, secondly the business perspective and thirdly the worker or human talent perspective (De Cuyper et al., 2008; Thijssen et al., 2008; Vanhercke et al., 2014). The main stakeholders that are part of the employability concept recognized in this study are employers, human talents and trainers, among others (Forrier et al., 2015; Guilbert et al., 2015; McQuaid & Lindsay, 2005; Rentería-Pérez & Malvezzi, 2008; Thijssen et al., 2008).

On the other hand, the promotion of employability is an objective of social and economic policy agendas at national and international level (Llinares et al., 2020). Within this framework, employability is one of the fundamental aspects considered in the global objectives by the United Nations, also known as Sustainable Development Goals - SDGs, in fact, two of them refer directly to employability, specifically on quality education, economic growth and decent jobs (UN, 2000).

In this sense, the concern for labor market insertion, both social and professional, specifically related to the issue of employability, is currently at the basis of national and international policies and among the ultimate objectives of education (Pereira et al., 2020); in addition, of the teaching, research and university-society linkage processes, so that employability is considered a key factor within the new educational paradigm (García Manjón & Pérez López, 2008).

METHODOLOGY

In this empirical study, the methodology applied is a systematic literature review as explained by Albort-Morant et al. (2017) through the use of bibliometric analysis, which compiles a set of mathematical and statistical methods used to analyze and measure publications, including scientific articles to establish qualitative and quantitative changes within the research topic, using indicators such as quantity, quality and structure to measure scientific production, impact of publications, collaborative networks and thus determine employability research trends.

For the systematic literature review, the Scopus database was used, which was chosen because it is one of the most widely used by the scientific community, considering the key words of interest in Spanish and English as descriptors of the research. When using the employability/employability descriptor, a result of N=11,440 documents was obtained, reflecting a period of publications from 1929 to 2023.

The delimitation of the documentary search was carried out through the use of Boolean operators. The extraction was carried out in March 2023, using the employability descriptor delimiting the area of Business, Management and Accounting, and a total of n=2,500 scientific articles were obtained during the period 1970 - 2022; 1970 is considered as the starting year, which is the date of the first publication on employability in the area of interest in the Scopus database.

The PRISMA (Preferred Reporting of Items for Systematic Reviews and Meta-Analysis) approach diagram (Vega-Muñoz et al., 2021) was used to further delimit and select articles. In addition, the following search equations were applied in this research:

Equation 1:

(TITLE-ABS-KEY (employability) OR TITLE-ABS-KEY (employability)) Equation 2:

(TITLE-ABS-KEY (EMPLOYABILITY) OR TITLE-ABS-KEY (EMPLOYABILITY) AND (LI- MIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017) OR LIMIT-TO (PUBYEAR , 2016) OR LIMIT -TO (PUBYEAR , 2015) OR LIMIT -TO (PUBYEAR , 2014) OR LIMIT-TO (PUBYEAR , 2013) OR LIMIT -TO (PUBYEAR , 2012)) O LIMITED TO (PUBYEAR , 2011) O LIMITED TO (PUBYEAR , 2010) OR LIMITED TO (PUBYEAR , 2009) OR LIMITED TO (PUBYEAR , 2008) OR LIMITED TO (PUB- YEAR , 2007 b) OR LIMITED TO (PUBYEAR , 2006) OR LIMITED TO (PUBYEAR , 2005)) O LIMIT-TO (PUBYEAR , 2004) O LIMIT-TO (PUBYEAR , 2003) O LIMIT-TO (PUBYEAR , 2002) O LIMIT-TO (PUBYEAR , 2001) O LIMIT-TO (PUBYEAR , 2000) O LIMIT-TO (PUBYEAR , 1999) O LIMIT-TO (PUBYEAR , 1998) O LIMIT-TO (PUBYEAR , 1997)) OR LIMIT-TO (PUBYEAR , 1996) OR LIMIT-TO (PUBYEAR , 1996) OR LIMIT-TO (PUBYEAR ,

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 AND (LIMIT TO (SUBAREA , "BUSI")) AND (LIMIT TO (DOCTYPE , " a")))

Equation 3:

(TITLE-ABS-KEY (employability) OR TITLE-ABS-KEY (employability)) AND (
 LIMIT-TO (SUBJAREA , "BUSI")) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO
 (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR ,
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The execution of the literature review began with a bibliometric analysis of the results of the search in the Scopus database to investigate and reflect on the relevance of the topic of employability for the scientific community today. The analysis included research published for more than ninety years between 1929 and 2022, then the analysis was deepened with a second search equation for the last fifty years, which is when publication in the area of Business, Management and Accounting began, and finally, a third search equation for the last twenty years between 2002 and 2022, considering the different sites where the topic is being published, the citation impact of publications by year, publications by country and language.

To identify the main or most prolific authors, Lotka's Law, which is used in the field of bibliometrics, was applied. According to Urbizagastegui (1999), "the law describes the quantitative relationship between authors and their scientific production in a specific area within a period of time" (p.125); furthermore, it shows that there is an unequal distribution where most of the articles are concentrated in a small group of authors with a negative ratio more or less equal to two with respect to their high productivity (Coile, 1977; Rodrigues-Santana et al., 2022). The most used keywords in the set of articles are highlighted by applying Zipf's Law of Words (2013; Rodrigues-Santana et al., 2022).

Information processing and visualization of keyword highlights and networks

of the main authors were processed with VOSviewer software, using fragmentation analysis with visualization outputs of temporal and thematic trends (Perianes-Rodríguez et al., 2016). Finally, the reading of the articles with the highest citation percentage was performed and the main research findings were presented in this article.

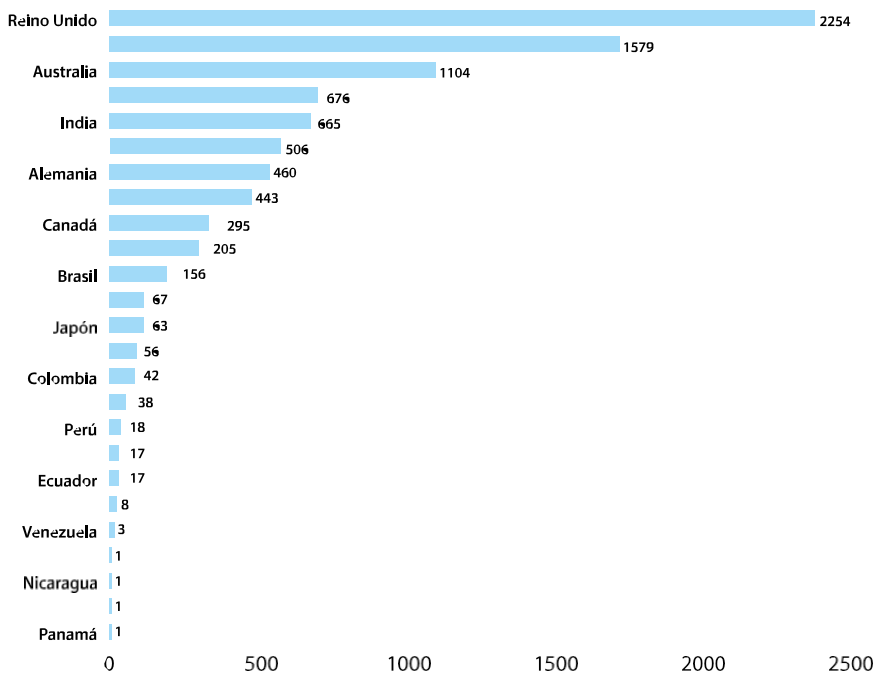
RESULTS AND DISCUSSION

The results show the accumulation of publications on employability from 1970 to 2023 with a total of N=11,440 publications, of which 8,124 are scientific articles and of these 3,576 are open access.

In this bibliometric analysis, within the quantity indicator, the countries with publications of interest on the topic of employability over the last fifty years have been identified. As can be seen in Figure 1, 25 countries are included, among which the United Kingdom stands out as the country with the most publications with 2,254. Some Latin American countries that lead in terms of research and publications on the topic are Chile, Colombia and Mexico, with 67, 42 and 38 scientific articles, respectively. Honduras appears in the list with only one publication related to the topic of employability.

Figura 1

Publicaciones sobre empleabilidad por país (1929 – 2022)



Fuente: Elaboración propia con base en resultados del análisis bibliométrico.

With regard to the language used in the different documents reviewed, Table 1 shows that English and Spanish predominate, with 10,542 and 325 publications, respectively.

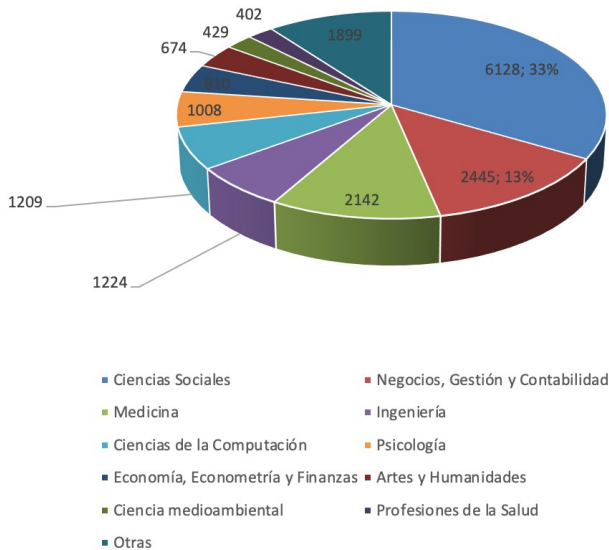
Table 1
Scientific production by language

Language	No. of published articles
English	10,542
Spanish	325
German	194
French	131
German	97
Portuguese	65
Dutch	27
Italian	27
Russian	16
Japanese	13
Chinese	3
Chinese	
Others (different languages)	

Source: Own elaboration based on results of the bibliometric analysis.

Figure 2 shows the areas of interest that have published research on the topic of employability. The areas of Social Sciences predominate with 6,128 research papers and Business, Management and Accounting with 2,445 papers representing 33% and 13%, respectively, of the total number of publications during the period from 1929 to 2022.

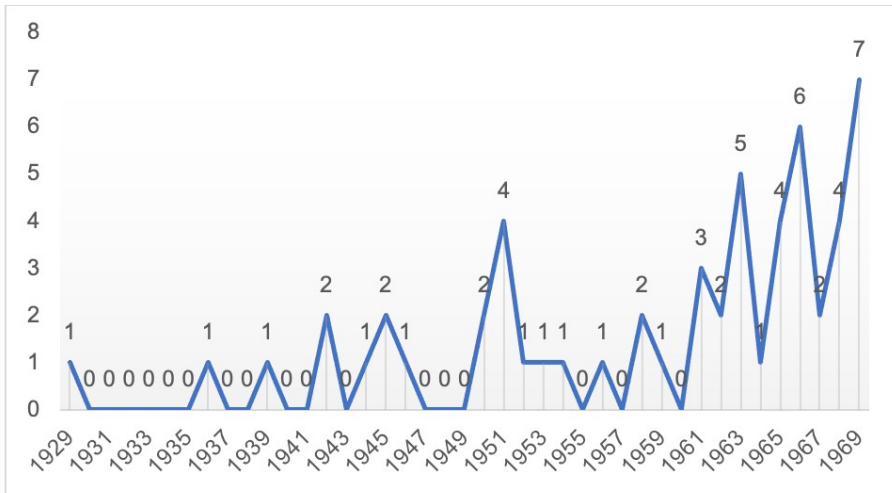
Figura 2
Cantidad de publicaciones sobre empleabilidad por áreas temáticas



Source: Own elaboration based on results of the bibliometric analysis.

This bibliometric study reveals three stages in the publication trend. The first stage can be seen in Figure 3 in a forty-year period between 1929 and 1969 with less than 10 publications per year, accumulating a total of 56 papers.

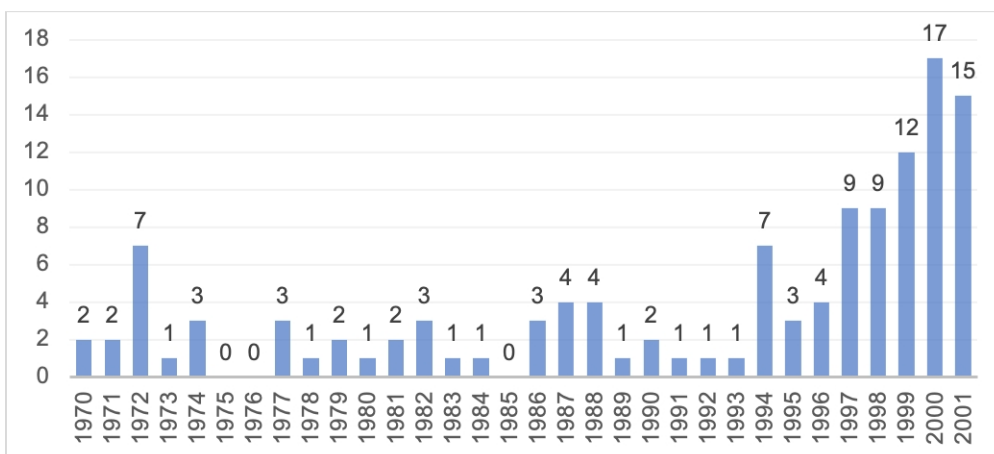
Figure 3
Publications on employability during the years 1929 to 1969



Source: Own elaboration based on results of bibliometric analysis.

Figure 4 shows the second stage, which corresponds to the period between 1970 and 2001, when the volume of studies began to show greater interest in the subject, although it was less than 20 studies per year; during this period, 122 publications were published.

Figure 4
Publications on employability during the years 1970 to 2001



Source: Own elaboration based on results of bibliometric analysis.

The third stage covers the period from 2002 to 2022, when research on employability grows exponentially. For this period the maximum volume of publications is found in the year 2022 with 1,120 research studies on the topic of employability.

Table 2 shows the results of the bibliometric indicator of quantity that reflects the data of scientific production per year, related to the subject of employability, in which it can be seen that the interest of the scientific community in this subject has been maintained during the last twenty years from 2002 to 2022, with 9,991 published documents, of which 6,231 are scientific articles of which 3,252 articles are open access. The analysis reflects that, during the year 2023, at the time of this study, 216 scientific articles on employability have been published. 56 of them in the area of Business, Management and Accounting.

Table 2

Scientific production during the period 2002-2022 on the topic of employability

Year	No. of published articles
2002	119
2003	146
2004	127
2005	176
2006	137
2007	175
2008	197
2009	238
2010	263
2011	353
2012	354
2013	444
2014	511
2015	522
2016	570
2017	713
2018	792
2019	1000
2020	1034
2021	1000
2022	1120

Source: Own elaboration based on results of the bibliometric analysis.

Specifically, when analyzing the scientific production in the database considering the area of Business, Management and Accounting, the results of the search show that there is interest in the researched topic of employability, which can be seen in Figure 5, which shows a significant trend of exponential growth with an $R^2 = 0.9291$ from 2002 to 2022, considering the years 2020 and 2022 with a maximum volume of publications, both with 253 research studies on employability.

Figure 5*Employability publications for the years 2002 to 2022*

Source: Own elaboration based on results of the bibliometric analysis.

The authors who have researched on the topic of employability, according to the analysis conducted in the Scopus database during the period between 1929 and 2022, are about 160 authors. According to Lotka's law, it was estimated that the prolific authors should be the 13 with the highest number of publications (square root of 160). Therefore, the 13 authors with the most published articles were considered prolific authors and have been included in this study.

Table 3 details the results of the bibliometric analysis reflecting the name of the top thirteen authors, considering the number of papers published on employability in all areas from 1929 to 2022. It also details the top thirteen authors in the area of interest of Business, Management and Accounting during the period 1970 - 2022.

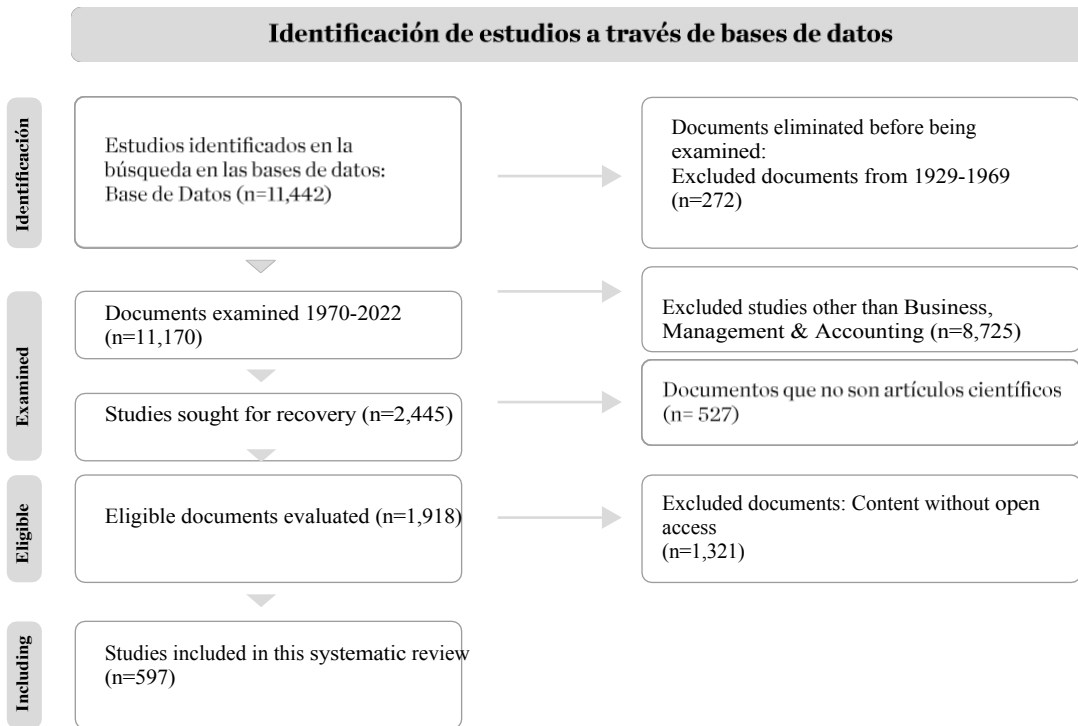
Table 3*Main authors by amount of scientific production*

R	Autores	No. De Investigaciones Publicadas 1929-2022	Autores Área de Negocios, Gestión y Contabilidad	No. De Investigaciones Publicadas 1970-2022
1	Jackson, D.	53	De Cuyper, N	35
2	De Cuyper, N.	35	Van der Heijden, B.L.J.M.	26
3	Bennett, D.	32	Forrier, A.	19
4	Lindsay, C.	29	Jackson, D.	18
5	Van der Heijden, B.L.J.M.	26	De Witte, H.	17
6	Tomlinson, M.	23	Van Vuuren, T.	10
7	Pham, T.	20	Beausaert, S.	9
8	Forrier, A.	19	Akkermans, J.	8
9	Coetzee, M.	18	Billet, S.	8
10	Billett, S.	17	Bennet, D.	7
11	De Witte, H.	17	Berntson, E.	7
12	Tran, L.T.	17	De Vos, A.	7
13	Beausaert, S.	16	Froehlich, D.E.	7

Source: Own elaboration based on results of the bibliometric analysis.

When performing the meta-analysis of data with the VOSviewer tool, for the bibliometric indicator of quantity, quality and structure, a total of 597 open access scientific articles were considered, in the area of business, management and accounting, during the period 1970 - 2022, through a PRISMA approach; the findings are shown in Figure 6.

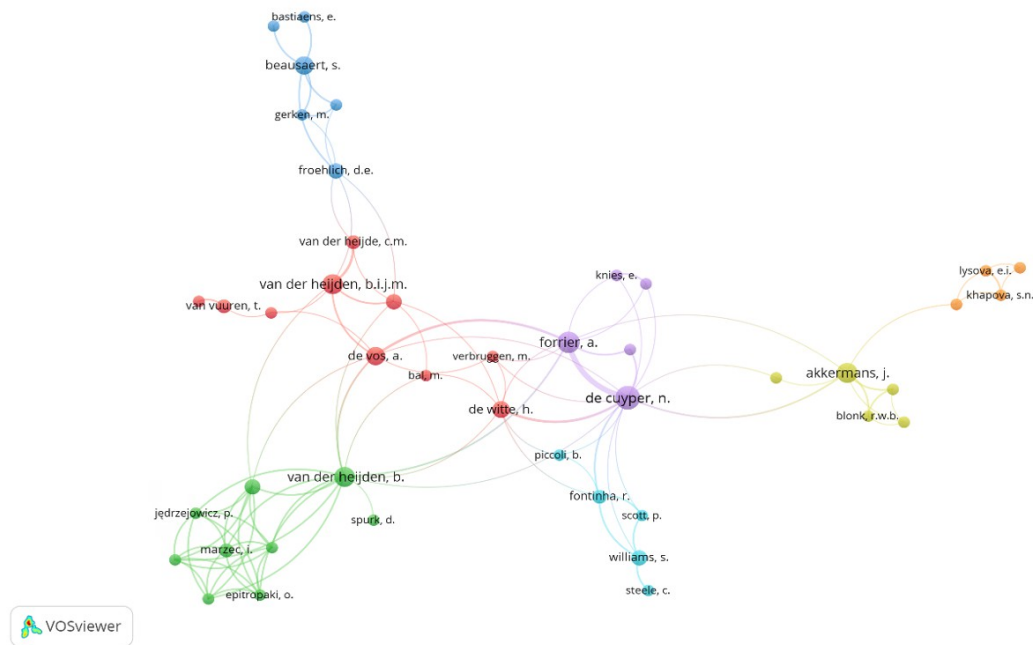
Figure 6
PRISMA Flowchart for selection of scientific papers



Source: Own elaboration based on PRISMA (Haddaway et al., 2022).

Figure 7 shows seven clusters that have been identified with the main authors and the connection networks on the topic of employability, based on the quality indicator that considers the number of citations of each author, through the fractional counting method and the association strength normalization method.

Figure 7
Graph of main authors detected in the Scopus database on employability



Fuente: Elaboración propia, a través de la herramienta VOSviewer

Table 4 lists the 13 authors within the scientific production on the topic of employability with the highest number of citations at the time of this study, between 1970 and 2022. In the

Table 4

Scientific production of authors with the most citations in the subject of employability (1970-2022)

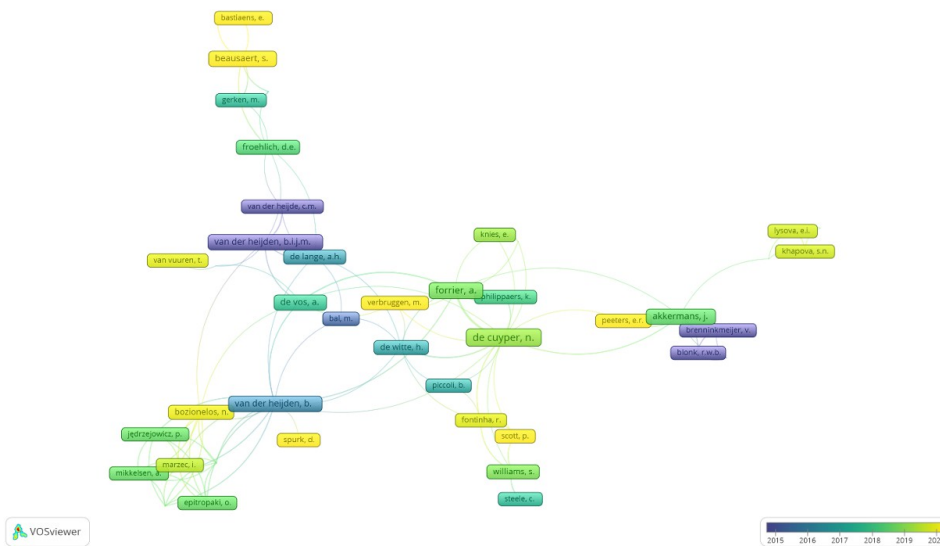
R	Autores	Año	Título del Artículo	No. De Citas	Revista	Referencia
1	Van Der Heijde, C.M., Van Der Heijden, B.I.J.M.	2006	A competence-based and multidimensional operationalization and measurement of employability	616	Human Resource Management	(Van Der Heijde & Van Der Heijden, 2006a)
2	McKeever E., Jack S., Anderson A.	2015	Embedded entrepreneurship in the creative re-construction of place	280	Journal of Business Venturing	(McKeever et al., 2015)
3	De Vos A., De Hauw S., Van der Heijden B.I.J.M.	2011	Competency development and career success: The mediating role of employability	268	Journal of Vocational Behavior	(De Vos et al., 2011)
4	Tomlinson M.	2007	Graduate employability and student attitudes and orientations to the labour market	200	Journal of Education and Work	(Tomlinson, 2007)
5	Schaufeli W.B.	2015	Engaging leadership in the job demands-resources model	193	Career Development International	(Schaufeli, 2015)
6	Tomlinson M.	2017	Forms of graduate capital and their relationship to graduate employability	185	Education and Training	(Tomlinson, 2017)
7	Helyer R.	2015	Learning through reflection: the critical role of reflection in work-based learning (WBL)	143	Journal of Work-Applied Management	(Helyer, 2015)

R	Autores	Año	Título del Artículo	No. De Citas	Revista	Referencia
8	Chen D.J.Q., Lim V.K.G.	2012	Strength in adversity: The influence of psychological capital on job search	142	Journal of Organizational Behavior	(Chen & Vivien, 2012)
9	Van Der Heijden, B., Boon, J., Van Der Klink, M., Meijis, E.	2009	Employability enhancement through formal and informal learning: An empirical study among Dutch non-academic university staff members	128	International Journal of Training and Development	
10	Caputo A., Marzi G., Pellegrini M.M.	2016	The Internet of Things in manufacturing innovation processes: Development and application of a conceptual framework	107	Business Process Management Journal	(Caputo et al., 2016)
11	Williams S., Dodd L.J., Steele C., Randall R.	2016	A systematic review of current understandings of employability	102	Journal of Education and Work	(Williams et al., 2016)
12	Bridgstock R.	2011	Skills for creative industries graduate success	101	Education + Training	(Bridgstock, 2011)
13	Jackson D.	2014	Testing a model of undergraduate competence in employability skills and its implications for stakeholders	94	Journal of Education and Work	(Jackson, 2014)

Source: Own elaboration based on results of the bibliometric analysis.

Figure 8 shows seven clusters identified with the main authors considering the years in which they have published, based on the quality indicator that considers the number of citations of each author and the timeliness of their research according to the year of publication. The most recent publications for the last three years are displayed in yellow and those of the last five years in green. In all clusters, authors who have published in the last five years were found as: Spurk, D., Beusaert, S., Scott, P., Verbruggen, M., Peeters, E.R., Fontinha, R., De Cuyper, N., Van Harten, J., Lysova, E.I., Khapova, S.N., Knies, E. and, Van Vuuren, T.

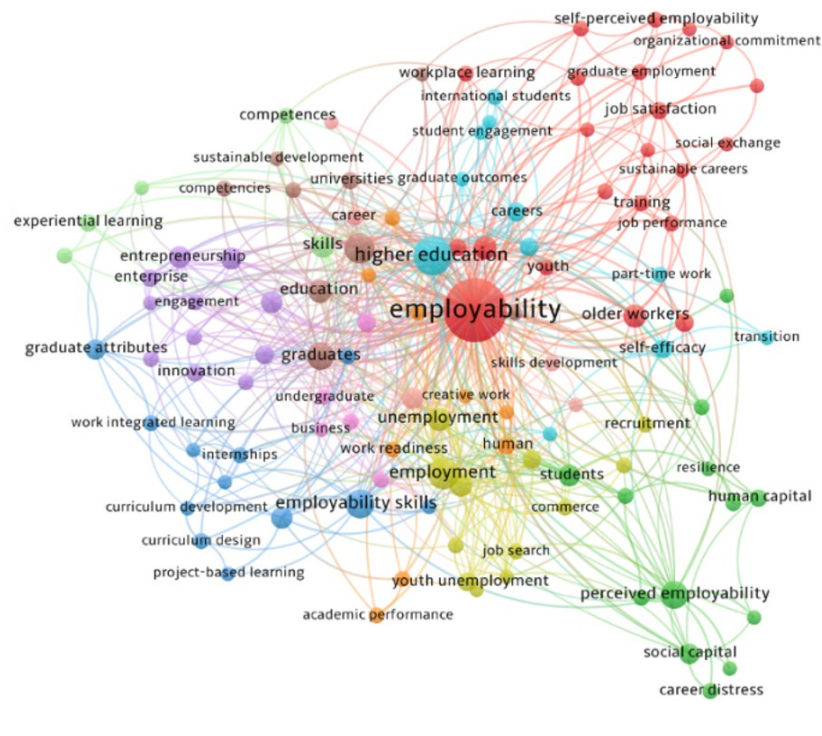
Figure 8
Graph of main authors considering the year of their publications



Source: Own elaboration using the VOSviewer tool.

Figure 8 shows seven clusters identified with the main authors considering the years in which they have published, based on the quality indicator that considers the number of citations of each author and the timeliness of their research according to the year of publication. The most recent publications for the last three years are shown in yellow and those of the last five years in green. In all clusters, authors who have published in the last five years were found as: Spurk, D., Beusaert, S., Scott, P., Verbruggen, M., Peeters, E.R., Fontinha, R., De Cuyper, N., Van Harten, J., Lysova, E.I., Khapova, S.N., Knies, E. and, Van Vuuren, T.

Figure 9
Graph of main trends and research keywords



Source: Own elaboration based on results of bibliometric analysis.

Table 5 shows the different clusters with the research topics related to employability in each of them, based on the keywords associated with each published study. This analysis shows the main research trends for each cluster, using the fractional counting method, considering three times the minimum number of occurrences of each word and, as a normalization method, association strength.

Table 5
Research trends by clusters based on key words

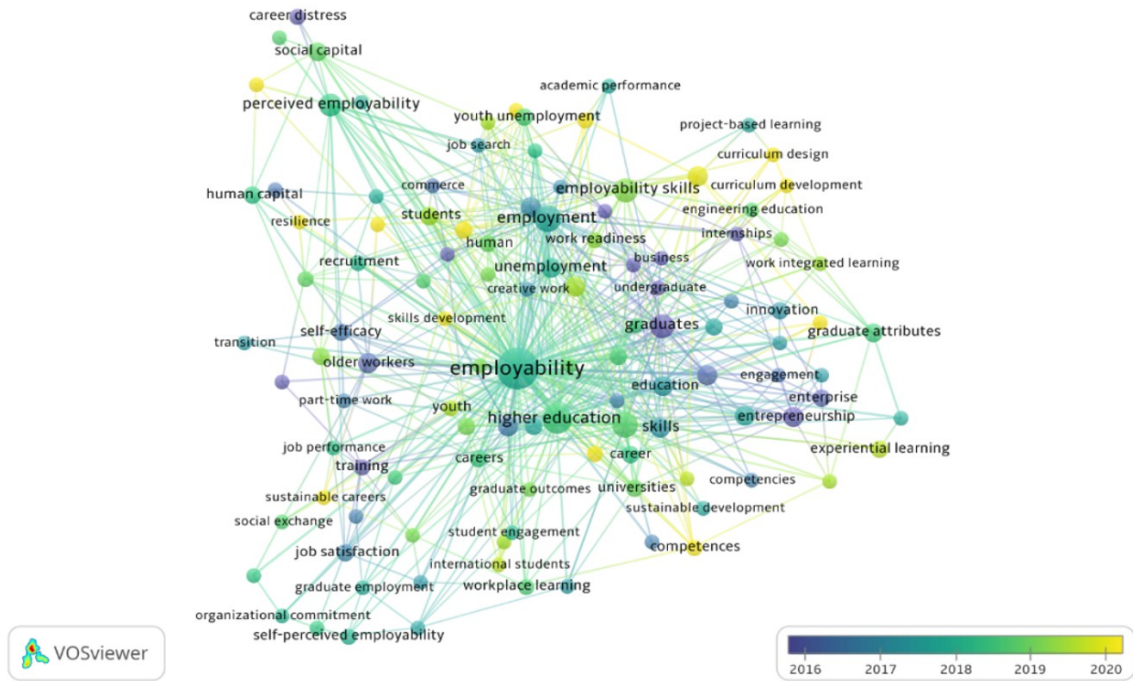
No. De Clúster	Tendencias de Investigación sobre Empleabilidad
1	Desarrollo de carrera, Satisfacción laboral, Sustentabilidad profesional, Entrenamiento, Aprendizaje, Intercambio social
2	Competencias, Capital humano, Resiliencia, Capital social, Estudiantes, Competencias profesionales, Estrés laboral, Bienestar
3	Mercado laboral, Políticas laborales, Búsqueda de empleo, Talentos humanos, Reclutamiento, Habilidades Laborales, Experiencia laboral
4	Educación, Acreditación, Desarrollo Curricular, Habilidades para la Empleabilidad, Atributos profesionales, Prácticas Profesionales, Habilidades Blandas, Aprendizaje basado en el trabajo
5	Educación Superior, Carreras, Habilidades de Comunicación, Empleos de medio tiempo, Eficiencia, Transición de la academia al mercado laboral
6	Competencias, Educación, Empleabilidad de los graduados, Habilidades, Universidades, Productividad, Sustentabilidad, Tecnologías de la Información
7	Emprendimiento, Competencias, Formación Emprendedora, Innovación, Aprendizaje para la Vida, Desarrollo de Habilidades, Innovación Social
8	Negocios, Hojas de vida, Compromiso, Habilidades genéricas, Profesionales, Egresados
9	Desempeño Académico, Actitudes, Creatividad laboral, Transición de la academia al mercado laboral, Procesos de enseñanza
10	Formación emprendedora, Comercio, Finanzas, Habilidades, Aprendizaje basado en la experiencia, Empleabilidad sustentable
11	Carrera, Seguridad laboral, Mercado laboral, Desarrollo de Habilidades, Educación vocacional

Source: own elaboration based on the results of the bibliometric analysis.

Figure 10 shows the 11 clusters identified with the main keywords considering the years in which they have published, based on the quality indicator that considers the number of citations and the timeliness of the research according to the year of publication. The most recent publications for the last three years are shown in yellow and those of the last five years in green.

In all the clusters, words that have been published in the last five years have been found that set the trend in employability research, including: employability skills development, labor market, sustainable careers, resilience, competencies, higher education, human capital, and universities.

Figure 10
Graph of main current research trends



Source: own elaboration based on the results of the bibliometric analysis.

The research with the highest citation rates identified in this study, within the area of Business, Management and Accounting, show the main trends on the topics of interest related to employability as shown in Table 6.

Table 6
Most cited trends in the area of Business, Management and Accounting

Tendencias de investigación	Autores con mayor grado de citación
Empleabilidad, gestión de recursos humanos y extensión de la vida laboral.	(Williams, et al., 2016; De Vos et al., 2017; Forrier et al., 2018; Pak et al., 2019)
Retos y cambios a raíz de la pandemia por Covid-19 relacionados con la educación, la resiliencia y las necesidades de la fuerza laboral.	(Hite & McDonald, 2020; Dyki et al., 2020)
Empleabilidad, sostenibilidad y sustentabilidad de las carreras para el empleo.	(De Vos et al., 2020; Van Dan et al., 2017; Blokker et al., 2019; Ritchie et al., 2020; Ybema, et al., 2020).

Tendencias de investigación	Autores con mayor grado de citación
Empleabilidad, educación y el desarrollo de habilidades necesarios para el mercado laboral	(Van Der Heijde & Van Der Heijden, 2006; De Vos et al., 2011; Bridgstock, 2011; Jackson, 2013; Teijeiro-Álvarez et al., 2013; Jackson, 2014; Helyer, 2015; Jackson, 2016; Tomlinson, 2017; Orellana, 2018; Donald et al., 2018; Nwajiuba et al., 2020; Kornelakis & Petrakaki, 2020; Nikitas et al., 2021; Goulart, et al, 2022; Presti et al., 2022; Mainga et al., 2022; Mühlböck et al., 2022)
Empleabilidad y habilidades en un contexto hacia la Industria 4.0	(Clares et al., 2019; Rampersad, 2020) (Peeters et al., 2019; Rodrigues et al., 2019)
Empleabilidad y Desarrollo del Capital Social	(McKeever et al., 2015; Bell, 2016; Huq & Gilbert, 2017; Guerrero et al., 2020)
Empleabilidad y emprendimiento	(Batistic & Tymon, 2017)
Empleabilidad y Networking	

Source: own elaboration based on the results of the bibliometric analysis.

In this study, 157 journals have been identified that have published articles on the subject of employability in the Scopus database. Figure 14 shows the 15 journals with the largest number of articles published on the subject in the last ten years, detailing the impact index according to the best quartile, as well as the citation indicator according to the SCImago Journal & Country Rank - SJCR (SCImago, 2022). The three journals that stand out for having the highest number of published articles, with a Q2 impact index, are Journal of Teaching and Learning for Graduate Employability, with 43 articles, Education and Training and Journal of Education and Work with 34 articles published in each respectively.

Table 7
Journals that are publishing on employability issues

R	Journals	Impact Index and Best Quartile	SJCR Indicator - 2021	No. Articles	Link
1	Journal Of Teaching and Learning for Graduate Employability	Q2 - Education	0.40	43	https://ojs.deakin.edu.au/index.php/jtldge
2	Education And Training	Q2 - Business, Management and Accounting	0.61	34	https://www.emeraldgrouppublishing.com/journal/et
3	Journal Of Education and Work	Q2 - Education	0.40	34	https://www.tandfonline.com/loi/cjew20
4	Industry And Higher Education	Q2 - Business and International Management	0.40	17	https://journals.sagepub.com/home/ihe
5	Journal Of Vocational Behavior	Q1 - Applied Psychology	2.81	14	https://www.elsevier.com/journals/journal-of-vocational-behavior/0001-8791/guide-for-authors
6	International Journal of Human Resource Management	Q1 - Business and International Management	1.54	12	https://www.tandfonline.com/journals/rijh20

R	Journals	Impact Index and Best Quartile	SJCR Indicator - 2021	No. Articles	Link
7	International Journal of Recent Technology and Engineering	Not assigned	0	12	https://www.ijrte.org/
8	Career Development International	Q1 - Social Sciences (Miscellaneous)	0.94	11	https://www.emerald.com/insight/publication/issn/1362-0436
9	Work Employment and Society	Q1 - Accounting	2.41	8	https://journals.sagepub.com/home/wes
10	Accounting Education	Q1 - Education	0.74	7	https://www.tandfonline.com/toc/raed20/current
11	Intangible Capital	Q3 - Accounting	0.34	7	https://www.scimagojr.com/journalsearch.php?q=17700156749&tip=sid&clean=0
12	Journal Of Career Development	Q2 - Applied Psychology	0.61	7	https://journals.sagepub.com/home/jcd
13	Nordic Journal of Working Life Studies	Q2 - Industrial Relations	0.39	7	https://tidsskrift.dk/njwls
14	Journal of Psychology of Work and Organizations	Q2 - Organizational Behavior and Human Resources	0.80	7	https://journals.copmadrid.org/jwop/
15	Administrative Sciences	Q2 - Business, Management and Accounting	0.48	6	https://www.mdpi.com/journal/admsci

Source: Own elaboration, with metrics based on Scopus and Scimago Journal & Country Rank (SCImago, 2022).

CONCLUSIONS

According to the quantity, quality and structure indicators of this scientometric study on employability, the interest of the scientific community in the subject is evident, reflected in an exponential increase in research during the last ten years, as evidenced by the amount of scientific production with more than 11,440 documents identified in this bibliometric analysis.

There are about 160 authors who have published on the subject in the period 1929 - 2022, in various areas of knowledge, highlighting the Social Sciences and Management, Business and Accounting, in 26 different languages worldwide, among which English and Spanish predominate. Among the sites where the research has been published, more than 150 journals with citation impact have been found, indexed in the Scopus database.

On the other hand, the most cited articles on the subject of employability within the area of Management, Business and Accounting in the last twenty years are related to research focused on the development of competencies and skills for job success, entrepreneurship, leadership, human capital, psychological aspects of job search, experiential learning, and the development of skills and competencies for job search.

The company's activities are focused on the labor market, the processes of technological innovation, education and the development of new skills to face changes in the labor market.

In addition, these themes show the main trends in current research. A cross-sectional look at the clusters analyzed in this study reveals that the employability of human talents is related to education as a product of training processes and also to the development of skills.

The growing importance of employability studies is due to the need to reflect on and understand the dynamics of business ecosystems, as well as the changes in the current labor market, which requires human talents to develop skills, where university education plays a fundamental role in preparing new professionals to meet the demands of employers and companies, in accordance with the requirements of the changes in the environment inherent to the fourth industrial revolution.

Finally, this study is the starting point for the selection of topics and variables for new research that could include other databases and types of scientific documents, for example, theses, book chapters, conferences, among others. This study can be complemented with bibliometric analyses, systematic reviews and specific meta-analyses on the different related topics that are trends of interest and that have been identified in this research.

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