



TOWARDS THE SUSTAINABILITY OF UNIVERSITY EDUCATION: A BIBLIOMETRIC ANALYSIS IN THE WEB OF SCIENCE

POR LA SOSTENIBILIDAD DE LA FORMACIÓN UNIVERSITARIA: UN ANÁLISIS BIBLIOMÉTRICO EN LA WEB OF SCIENCE

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ABSTRACT

Objective: To analyze the evolution of scientific research on employability, as a pillar of sustainability in university education, as perceived by higher education students during the period 2008-2023, in order to promote the development of sustainable careers in higher education institutions through comprehensive training and the strengthening of personal resources. **Design/Methodology/Approach:** This consisted of a bibliometric analysis based on information collected from the Web of Science (WoS) database, analyzed using RStudio with the Bibliometrix statistical package and its Biblioshiny web interface. A total of 210 articles obtained using the search algorithm (“perceived employability” AND (“higher education” OR “universit*”)) corresponding to the period studied were examined. **Results/Discussion:** Scientific production on the subject is distributed geographically, with a predominance in Europe (40.9%) and Asia (36.3%), followed by America (11.3%), Africa (9%), and Oceania (2.2%). Most studies are concentrated in the period 2022-2023, with an average annual growth rate of 31.38%. **Conclusions:** The findings highlight the growing importance of aligning the skills acquired in higher education with labor market requirements in order to improve the employability of graduates. This trend has intensified in recent years, as evidenced by the concentration of studies and the geographical expansion of research, reflecting the global relevance of the topic. **Originality/Value:** The work provides an updated conceptual map that highlights the global expansion and diversification of the field, offering strategic guidelines for curriculum management and the strengthening of sustainable careers in universities.

KEYWORDS: Employability; higher education; university governance; sustainability.

RESUMEN

Objetivo: Analizar la evolución de la investigación científica sobre la empleabilidad, como pilar de la sostenibilidad en la educación universitaria, tal y como la perciben los estudiantes de educación superior durante el periodo 2008-2023, con el fin de promover el desarrollo de carreras sostenibles en las instituciones de educación superior a través de una formación integral y el fortalecimiento de los recursos personales. **Diseño/Metodología/Enfoque:** Se trata de un análisis bibliométrico basado en la información recopilada de la base de datos Web of Science (WoS), analizada mediante RStudio con el paquete estadístico Bibliometrix y su interfaz web Biblioshiny. Se examinaron un total de 210 artículos obtenidos mediante el algoritmo de búsqueda («empleabilidad percibida» Y («educación superior» O «universit*»), correspondientes al período estudiado. **Resultados/Discusión:** La producción científica sobre el tema se distribuye geográficamente, con un predominio en Europa (40,9 %) y Asia (36,3 %), seguidas de América (11,3 %), África (9 %) y Oceanía (2,2 %). La mayoría de los estudios se concentran en el período 2022-2023, con una tasa de crecimiento anual promedio del 31,38 %. **Conclusiones:** Los resultados ponen de relieve la creciente importancia de alinear las competencias adquiridas en la educación superior con las exigencias del mercado laboral para mejorar la empleabilidad de los graduados. Esta tendencia se ha intensificado en los últimos años, como lo demuestra la concentración de estudios y la expansión geográfica de la investigación, lo que refleja la relevancia global del tema. **Originalidad/Valor:** El trabajo proporciona un mapa conceptual actualizado que destaca la expansión y diversificación global del campo, ofreciendo directrices estratégicas para la gestión curricular y el fortalecimiento de la sostenibilidad en las universidades.

PALABRAS CLAVE: Empleabilidad; educación superior; gobernanza universitaria; sostenibilidad

INTRODUCTION

In an increasingly uncertain work environment dominated by technology, digitalization, and the automation of work, there is growing concern for employability of university graduates, who must adapt to changing market demands (Betanzos-Díaz et al., 2019; Duggal et al., 2024; Gurung et al., 2023; Orellana, 2018), since academic credential and performance in themselves are insufficient for guaranteeing adequate employment (Chan, 2015; Pinto & He, 2019). Studies have shown that current study plans may not be endowing students with the skills needed for continual learning and professional success (Akinrinmade & Ayeni, 2017; Suleman et al., 2021), highlighting the importance of developing cross-sectional skills for better labor insertion (Gurung et al., 2023; Hui et al., 2021; Rabanal et al., 2020; Ricci et al., 2022).

Employability is defined as the capacity of people to obtain and keep a satisfactory job according to their qualification levels, and is considered a personal skill as well as an individual and social responsibility (Hernández-Fernaudo et al., 2011; Rothwell et al., 2008; Yu et al., 2021; Zhou et al., 2022). This concept includes skills, knowledge, and attitudes which are acquired and presented to employers (Martínez, 2011; Ricci et al., 2022; Van Der Heijde & Van Der Heijden, 2006).

The factors which influence employability are divided into two categories: internal and external. The internal factors include personal skills, capacities, knowledge, and attributes which foment learning, flexibility, and effective adaptation to changes and environmental demands (Aguilar et al., 2012; Betanzos-Díaz et al., 2019; Fugate et al., 2004). On the other side, external factors include elements such as the university environment, hiring criteria, public policies, the job market, and the specific skills needed for particular jobs, which fall outside direct individual influence (Álvarez-González et al., 2017; Fugate et al., 2004; Peiró & Yeves, 2017).

Employability is beneficial for both current job performance and long-term career results, including continual adaptation and learning (Betanzos-Díaz et al., 2019; Marino et al., 2022). Yorke (2006) and Sewell & Dacre Pool (2010) also conceive of employability as a set of achievements, skills, and personal attributes which increase graduates' job opportunities.

Consequently, studying perceived employability helps improve training, thereby fulfilling a core objective of universities today: providing the skills needed for work (Britton et al., 2017). Therefore, it is relevant for higher education institutions (HEIs) to know about their students' perceived employability in order to approach and renew their academic programs (Underdahl et al., 2023), as well as to strengthen extracurricular activities, internships, and professional practice opportunities, together with developing institutional strategies to improve the position of the university and better prepare students for the job market (Shehatta & Mahmood, 2016).

There are factors which can be linked to greater or lesser individual employability. According to Hillage & Pollard (1999), the employability of people depends on their assets, involving knowledge, skills, and attitudes like reliability, self-discipline, communication, problem solving, motivation and initiative, teamwork abilities, self-efficacy, and entrepreneurial skills.

Various authors have stated that high perceived employability levels are linked with health, well-being, commitment, and life satisfaction (Berntson & Marklund, 2007; De Cuyper et al., 2008; Nimmi et al., 2022). Recent studies indicate that employability is associated with cognitive development and self-regulated learning behavior (Bennett & Ananthram, 2022).

The objective of this study is to analyze the evolution of scientific research about perceived employability for higher education students during the period 2008-2023 to promote the development of sustainable degree programs in HEIs, via integral training and strengthening personal resources.

A bibliometric review was done which considered an advanced search of academic articles from the Web of Science (Wos) database between 2008 and 2023, using quantitative data visualization methods with RStudio software, the Bibliometrix statistical packet, and its Biblioshiny web interface (Aria & Cuccurullo, 2017).

While other authors have carried out bibliometric analyses about employability, such as Raihan & Azad (2023) or Dinh et al. (2023), while previous bibliometric reviews exist, these have not specifically focused on the intersection of perceived employability and higher education students over the extended 2008-2023 period using WoS data.

METHODOLOGY

We used a retrospective descriptive bibliometric analysis with a quantitative focus (Ávila-Toscano et al., 2018), which let us observe, integrate, and evaluate publications' data to identify patterns and flows of documentary information (López et al., 2024; Mokhnacheva & Tsvetkova, 2020).

Data were retrieved from the Web of Science (WoS) database in July 2024, covering the publication period from 2008 to 2023, given its recognized quality and prestige within the academic community (López et al., 2024). The search was performed in the WoS Core Collection using the Advanced Search interface and the Topic (TS) field. Boolean operators and relevant keywords were applied through the following search string: TS= ("perceived employability" AND ("higher education" OR "university*")). As shown in Figure 1, the initial search retrieved 253 documents. The dataset was then refined by restricting the time frame to 2008–2023, including only journal articles published in English or Spanish, and excluding specific publication types (Early Access, Proceeding Paper, and Review Article). These criteria were applied to ensure that the analysis focused on completed, peer-reviewed primary research articles, thereby reducing the final number of publications to 210.

The records were exported, selecting all information within a Plain text file format, which was then converted into Excel format to verify the presence of the keywords considered during the search and carry out an exhaustive data review. The records extracted included fields for: abstract, affiliation, author, cited references, corresponding author, journal, language, publication year, category, title, and keywords.

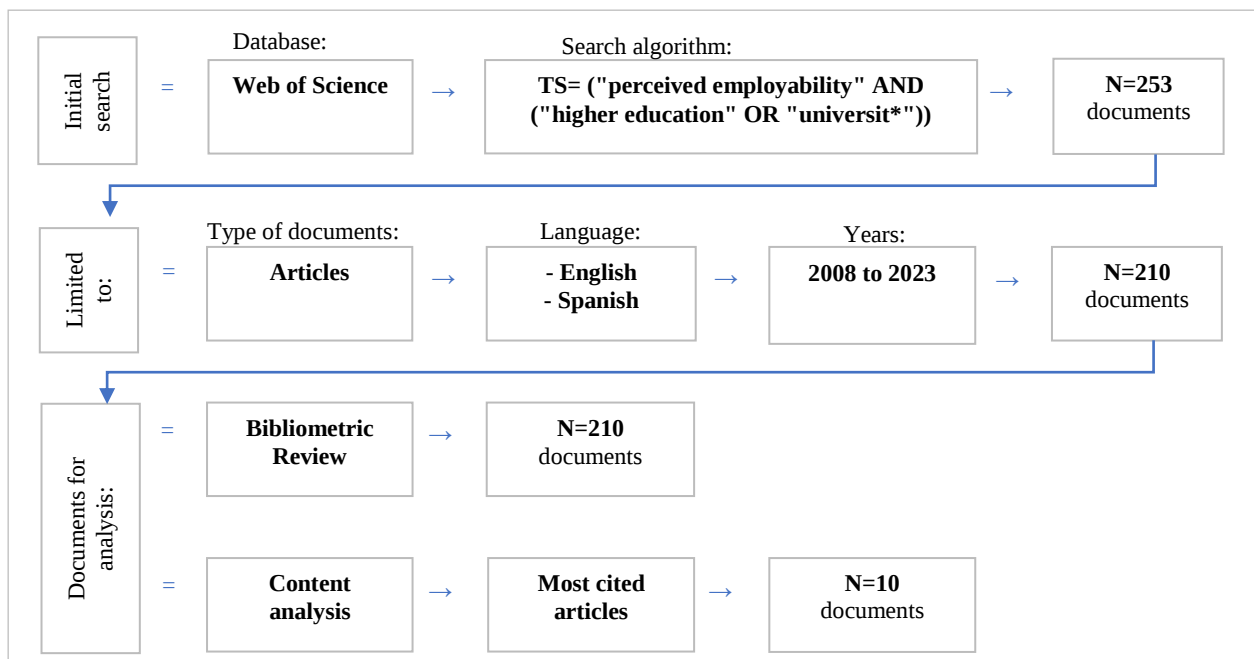
To process the bibliometric data from the 210 articles defined in the Excel database we used RStudio software along with the Bibliometrix statistical packet and its Biblioshiny web interface (Aria & Cuccurullo, 2017). We analyzed the number of articles per year, productivity by author, country, and institution, co-authorship networks, and the co-occurrence of keywords.

Publication and citation metrics were used to identify the scientific journals with the largest number of articles, as well as their category, quartile, and impact factor according to *Journal Citation Reports* (2023) as developed by Clarivate Analytics. By grouping journals in descending order of productivity, we defined the three zones needed to calculate Bradford's law.

Finally, we carried out a characterization and content analysis of the abstracts from the 10 most cited articles at the global level, in order to identify the main similarities and differences regarding thematic trends, methodological patterns, key results, collaboration networks, and any existing lacunae.

Figure 1

Article search and selection criteria



RESULTS

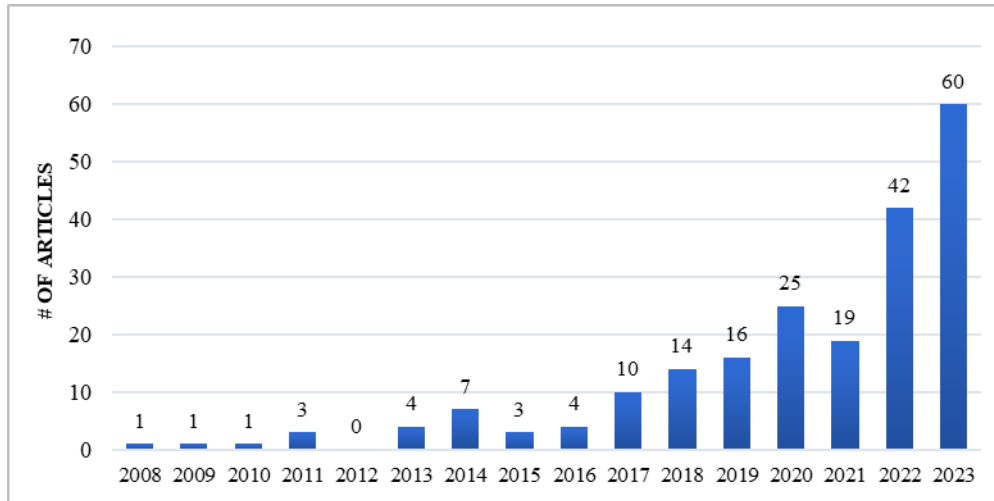
Evolution of annual scientific production

The first recorded article, considering the search algorithm, corresponds to “*Self-perceived employability: Construction and initial validation of a scale for university students*”. In this study, Rothwell et al. (2008) developed an instrument to study perceived employability for university business degree programs at three universities in the United Kingdom, identifying both internal and external dimensions.

Figure 2 provides a representation of the scientific production between 2008 and 2023, indicating that the topic of perceived employability in higher education remained constant during the first three years and saw increased growth beginning in 2017, with the largest number of publications so far in the year 2023 (60 articles). 162 of the 210 articles were published in the last 5 years of the timeframe, representing 77% of the total. The annual growth rate for the academic publications generated was 31.38%.

Figure 2

Annual scientific production on perceived employability in higher education (2008-2023)



Principal journals

88 journals were identified with publications about perceived employability in higher education, with the United Kingdom standing out as the main scientific producer in this topic. Table 1 presents the 10 principal journals, with a predominance amongst those associated with education, followed by psychology journals. All the journals were in the 1st through 3rd quartiles, with greater representation in quartile 2 (Q2). The predominant category was *Education & Educational Research*. All the journals had a JCR impact factor above 1.8.

The journal *Higher Education, Skills and Work-Based Learning* presented the largest number of publications with 15 records (7.14%), falling within the second quartile within the category *Education & Educational Research*. In the same category, it is followed by the journals *Education and Training* and *Studies in Higher Education*, with 14 and 13 articles respectively, both within the first quartile, and with impact factors of 3.2 and 3.7 respectively.

Table 1

Top 10 most productive journals regarding perceived employability, 2008-2023 period

Journal	# of Articles	Category and Quartile	Impact Factor (JCR 2023)	Country
Higher Education, Skills And Work-Based Learning	15	Education & Educational Research (Q2)	1.9	United Kingdom
Education And Training	14	Education & Educational Research (Q1)	3.2	United Kingdom
Studies In Higher Education	13	Education & Educational Research (Q1)	3.7	United Kingdom
Frontiers In Psychology	12	Psychology, Multidisciplinary (Q2)	2.6	Switzerland
Higher Education Research & Development	9	Education & Educational Research (Q1)	2.6	United Kingdom

Journal	# of Articles	Category and Quartile	Impact Factor (JCR 2023)	Country
Sustainability	9	Environmental Sciences (Q2) Environmental Studies (Q2) Green & Sustainable Science & Technology (Q3)	3.3	Switzerland
Career Development International	8	Management (Q2) Psychology, Applied (Q1)	3.4	United Kingdom
Journal Of Vocational Behavior	8	Psychology, Applied (Q1)	5.2	United States
Industry And Higher Education	6	Education & Educational Research (Q2)	1.9	United States
Journal Of Career Development	6	Psychology, Applied (Q2)	2.6	United States

According to Bradford's Law, by grouping scientific journals by productivity in descending order, these can be divided into zones. These zones include a core with a small number of journals considered essential in a given subject, and other zones which, despite having the same number of articles as the core, contain a large number of journals. For this reason, to find the majority of the articles about a specific topic, it is sufficient to seek in a small number of journals (Faba-Pérez & Cordero-González, 2015).

By applying Bradford's law (Table 2), we identified three zones, each one with a similar number of articles. The core zone consists of 6 journals, which have published about a third of all the articles considered (72). Zones two and three have 69 articles each, fitting with the provisions from Bradford, with an approximate ratio of 1: 2,8: 10,8 and an "n" close to 3.3.

Table 2

Zones according to Bradford's Law

Zone	# of Journals	# of Articles
Zone 1	6	72
Zone 2	17	69
Zone 3	65	69

Most productive institutions

A total of 264 universities participated in the 210 articles. Table 3 shows the 10 institutions with the most scientific production about perceived employability in higher education. Griffith University (Australia) heads the list with 18 articles, followed by University of Southampton (United Kingdom) with 13 publications and Bond University (Australia) with 10. Important contributions also came from Katholieke Universiteit Leuven (Belgium), Solent University (United Kingdom), and Universidade Do Minho (Portugal), with 9 articles each.

Table 3*Most productive institutions*

#	Institution	# of Articles	Country
1	Griffith University	18	Australia
2	University of Southampton	13	United Kingdom
3	Bond University	10	Australia
4	Katholieke Universiteit Leuven	9	Belgium
5	Solent University	9	United Kingdom
6	Universidade Do Minho	9	Portugal
7	Tampere University	8	Finland
8	Open University Netherlands	7	Netherlands
9	University of Bologna	7	Italy
10	Kingston University	6	United Kingdom

Geographical distribution

Analysis of productivity by country was done considering the institutional affiliation of the corresponding author. 44 countries were identified as having at least one publication. Geographically, the studies are concentrated in Europe (40.9%) and Asia (36.3%), followed by America (11.3%), Africa (9%), and finally Oceania (2.2%).

Table 4 presents the 10 most productive countries in this topic, led by the United Kingdom with 29 articles and followed by China with 27. Both countries show strong national participation, with 20 publications that are exclusively national in each case. The remaining 9 and 7 articles, respectively, come from international collaborations. Similarly, in Australia (21 articles) and Spain (16 articles), most publications were developed exclusively within the country. On the other hand, for South Africa and the USA, all publications are domestic. Finland has a total of 9 articles, of which only 3 have exclusively domestic production, while the other 6 come from international collaborations.

Table 4*Most productive countries*

#	Country	# of Articles	SCP	MCP
1	United Kingdom	29	20	9
2	China	27	20	7
3	Australia	21	17	4
4	Spain	16	11	5
5	Portugal	11	7	4

#	Country	# of Articles	SCP	MCP
6	India	10	8	2
7	Finland	9	3	6
8	Italy	9	5	4
9	South Africa	7	7	0
10	USA	6	6	0

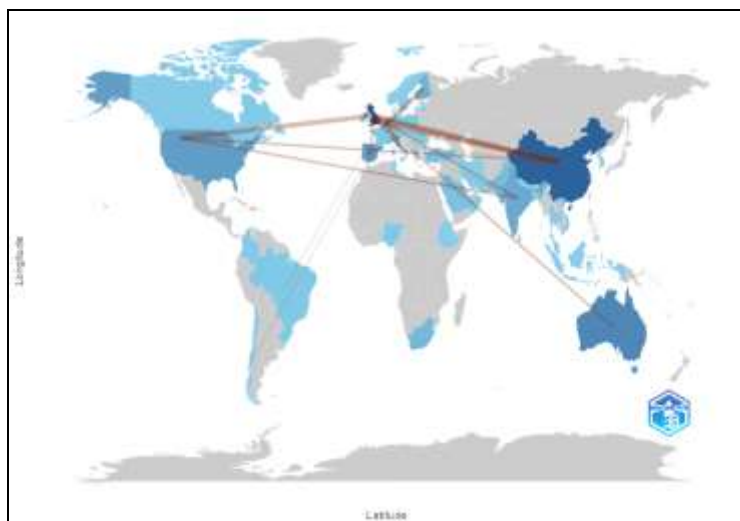
Abbreviations: SCP: Single-country publications; MCP: Multi-country publications

International Collaboration

Considering the frequency of interactions between countries, the UK leads in international collaboration due with 14 countries, with the most frequent being the Netherlands (9), China (8), and the USA (8). The UK is followed by China, whose collaborations with 16 countries include the Netherlands (6), Belgium (5), and the USA (3). The Netherlands is in third place with 8 collaborating countries, primarily Belgium (8). There are also isolated collaborations between countries with only one interaction, including Chile with Sweden (1), Bahrein with Oman (1), and Germany with Norway (1). Figure 3 shows the global distribution of investigations, with darker tones for the regions with collaboration networks, indicating that the main centers are in Europe and Asia.

Figure 3

International Collaboration



Source: Own elaboration using Bibliometrix/Biblioshiny (Aria & Cuccurullo, 2017)

Main authors and co-authorship network: The most productive authors

During the analyzed period, 491 researchers have published about perceived employability in higher education. The review let us identify the authors with the most publications on the topic, which appear in Table 5, detailing the number of articles, affiliated institution, and country.

The most productive researcher is Dr. William E. Donald, from the University of Southampton in the United Kingdom, with 10 articles. His studies mainly center on perceived employability and their influence on the

sustainability of degree programs and graduates' professional well-being. He analyzes diverse factors, including psychological capital, academic performance, stress, and leisure, as well as challenges and opportunities for improving perceived employability among students.

Table 5

Authors with the most publications

#	Author	Number of publications	Institution	Country
1	Donald WE	10	University of Southampton	United Kingdom
2	De Cuyper N	8	Katholieke Universiteit	Belgium
3	Bennett D	7	Bond University	Australia
4	Kinnunen U	7	University of Tampere	Finland
5	Nimmi PM	7	Scms Cochin School of Business	India
6	Almeida LS	6	Universidade Do Minho	Portugal
7	Monteiro S	6	Universidade Do Minho	Portugal
8	Creed PA	5	Griffith University	Australia
9	Mäkikangas A	5	University of Jyväskylä	Finland
10	Van Der Heijden Bijm	5	Open Universiteit	Netherlands

Top locally cited authors

To improve comprehension of the impact from research on perceived employability in higher education at the local level, Table 6 presents the most cited authors within the 210 articles, reflecting the contribution and recognition of the local academic community.

The top spot is held by Rothwell A., with 167 local citations. His studies consider the development and validation of an instrument to examine perceived employability among university students, exploring the relation between internal and external factors, as well as the dimensions which influence students' perceptions. His studies also stress the importance of generating strategies to improve perceived employability levels and support curricular development in HEIs.

Table 6

Most locally cited authors

#	Author	Local Citations	Institution	Country
1	Rothwell A.	167	Coventry University	UK
2	Herbert I.	94	Loughborough University	UK
3	Rothwell F.	94	Nottingham Trent University	UK
4	Donald WE.	79	University of Southampton	UK
5	Baruch Y.	71	University of Southampton	UK

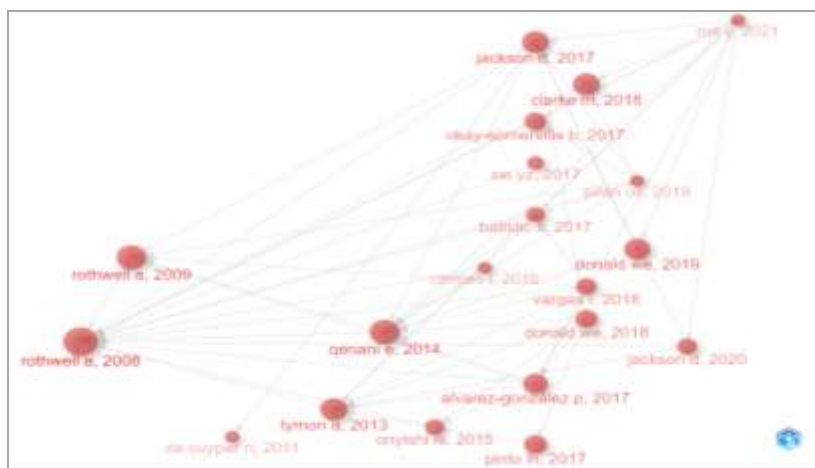
#	Author	Local Citations	Institution	Country
6	Macdougall N.	59	California Polytechnic State University	USA
7	Qenani E.	59	California Polytechnic State University	USA
8	Sexton C.	59	California Polytechnic State University	USA
9	Jackson D.	58	Edith Cowan University	Australia
10	Tymon A.	58	University of Portsmouth	UK

Top globally cited authors

The studies by Rothwell A. (2008, 2009) about constructing and validating perceived employability scales make him a pioneering author in the topic (Figure 4). His studies laid the frame for the academic community to carry out empirical studies with students from various disciplines. The most notable participation is from Qenani et al. (2014), Tymon (2013), Jackson & Wilton (2017), and Clarke (2018) with the largest nodes behind Rothwell A., as the most cited authors. There was a notable rise in research on this topic in 2017, leading to a larger number of connections and demonstrating how the studies carried out from 2008 to 2016 have significantly influenced the development of new studies. Recent publications by Donald (2018, 2019) align with many other studies, positioning him as an influential author who has contributed new perspectives to investigation.

Figure 4

Historiograph



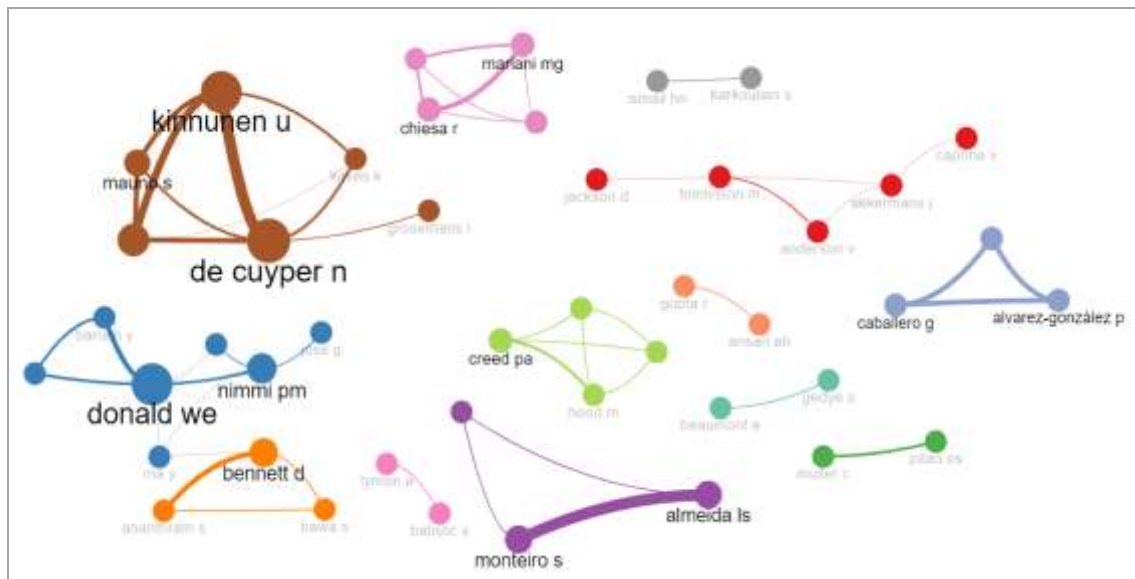
Source: Own elaboration using Bibliometrix/Biblioshiny (Aria & Cuccurullo, 2017)

Collaboration between authors

Figure 5 shows the co-authorship networks with 13 collaboration groups. Each cluster is represented by a different color. The nodes' size represents the influence of each author. The participation by Kinnunen U. and De Cuyper N. makes them stand out as central researchers in the brown group. Donald WE. Is in the blue cluster, with an important level of collaboration with Nimmi PM., Baruch Y., Jose G. and Ma Y.

Figure 5

Co-authorship network



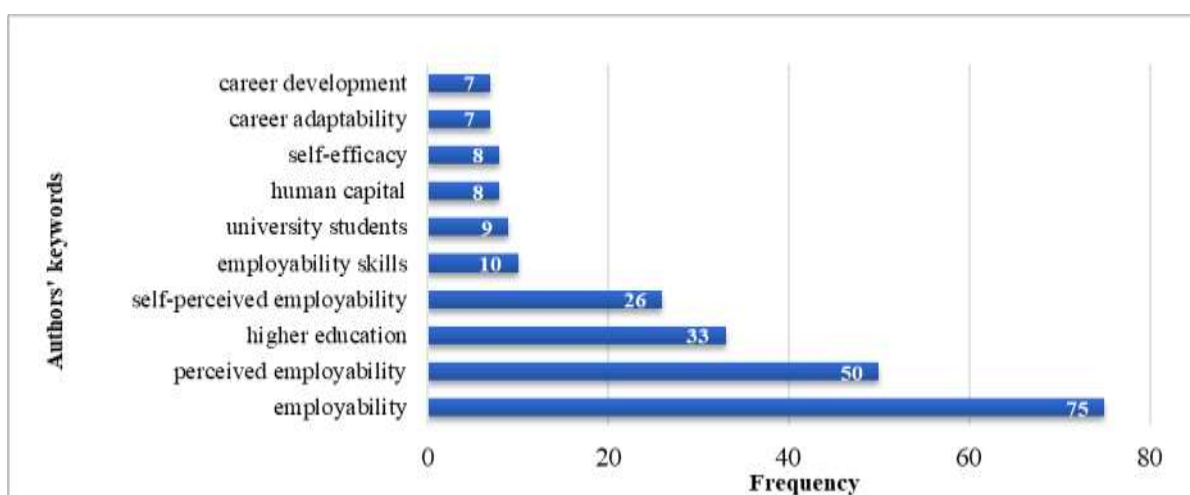
Source: Own elaboration using Bibliometrix/Biblioshiny (Aria & Cuccurullo, 2017)

Principal keywords

The bibliometric review identified 634 keywords used by the authors, of which 518 were mentioned only once. Figure 6 presents the most commonly recurring keywords, with the top places being taken by those used in constructing the search algorithm.

Figure 6

Principal keywords



Conceptual structure

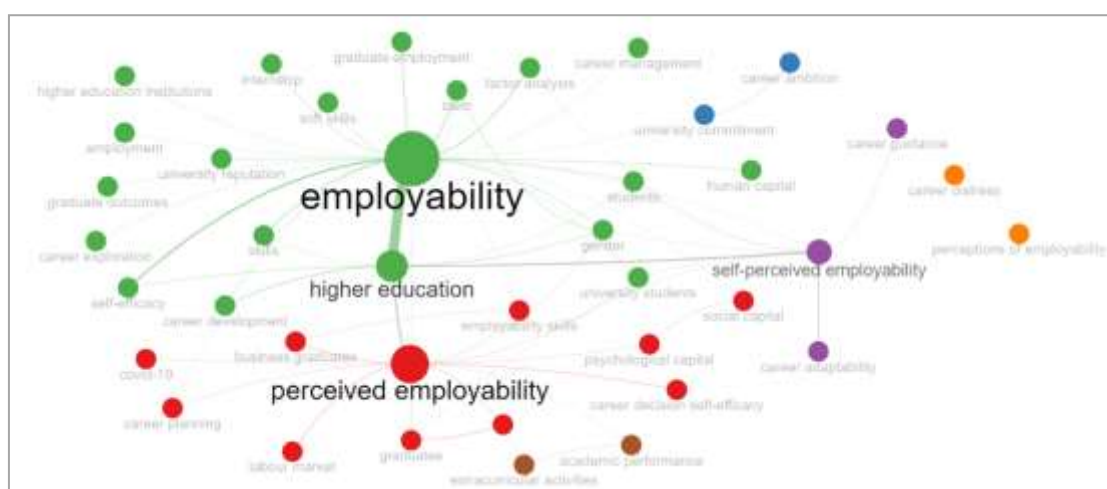
Based upon the authors' keywords, we generated a co-occurrence network for graphic visualization of the relations between the words. The condition established was a minimum of two appearances, resulting in a total of 40 nodes and 6 conglomerates, represented in the co-occurrence network appearing in Figure 7. The

size of each tag is proportional to the number of records, and the nodes associated with each cluster significantly represent the findings from the literature review.

The first keyword cluster includes perceived employability, employability skills, graduates, job market, social capital, and self-efficacy in making professional decisions. The second group has two words: university commitment and professional ambition. The third group incorporates concepts such as employability, higher education, university students, human capital, self-efficacy, professional development, and gender. The fourth group has 3 words: self-perceived employability, professional adaptability, and professional orientation. The fifth group is represented by professional distress and perceptions of employability. Finally, the sixth group consists of academic performance and extracurricular activities.

Figure 7

Co-occurrence network for authors' keywords



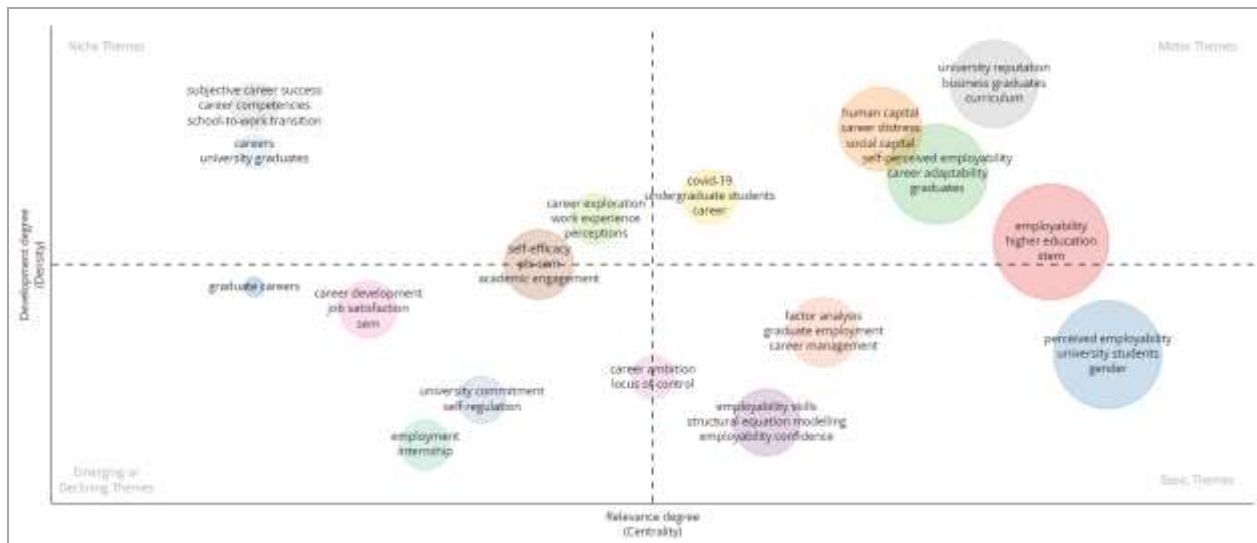
Source: Own elaboration using Bibliometrix/Biblioshiny (Aria & Cuccurullo, 2017)

Following the frequency analysis for authors' keywords, we obtained the thematic map presented in Figure 8 showing the main study areas about perceived employability in higher education, by density (development level) and centrality (relevance level).

17 nodes were identified across four quadrants: motor themes, niche themes, emerging or declining themes, and basic themes. The upper right quadrant contains motor themes including employability, perceived employability, university reputation, human capital, and COVID-19. The upper left quadrant, with a high development level but low centrality, includes topics like subjective professional success, careers, and exploitation of the degree program. The lower left quadrant contains emerging themes like internships, university commitment, self-regulation, and professional development. Finally, the lower right quadrant presents the basic themes related with perceived employability in higher education, such as employability habits, factorial analysis, career management, university students, and gender.

Figure 8

Thematic map



Source: Own elaboration using Bibliometrix/Biblioshiny (Aria & Cuccurullo, 2017)

Analysis of the most cited articles

Table 7 presents the characterization of the 10 articles with the largest number of recorded citations. Our analysis indicates that nine of the ten articles are empirical studies. In these studies, the authors reinforce the idea that employability has diverse definitions, coinciding that in general terms, it refers to the capacity to find or keep a job in line with graduates' qualifications.

The most cited author is Clarke (2018), with 323 citations for the article "*Rethinking graduate employability: the role of capital, individual attributes and context*", analyzing the factors which influence perceived employability for an individual, and proposing an integrated employability model for graduates. At 322 citations, the second position is held by Tymon (2013) with the article "*The student perspective on employability*", highlighting the importance of considering students' perspective in employability studies, which is often an unconsidered vision.

The studies by Rothwell (2008, 2009), with 239 and 146 citations respectively, have been very influential in the scientific community. In these studies, Rothwell developed and validated a scale for self-perceived employability among university students. These studies open opportunities for future research which could broaden the sample to students from various degree programs, as well as longitudinal studies to evaluate perceptions before and after studying.

Although the methodological focuses and specific themes of these studies vary, they share a common interest in key factors like human and social capital, university reputation, and behavior in networks. Some studies have focused on validation of instruments to evaluate perceived employability, while others examine the disconnect between the skills taught in universities and job market demands, highlighting employers' concerns over graduates' lack of preparation. There is also varying attention for internal factors, such as self-confidence and proactivity, vis-à-vis external factors such as the state of the job market and the reputation of the university. Financial barriers are a recurring theme, since they influence perceptions of employability and students' motivation for investing in their education.

These studies coincide in the importance of aligning the skills developed in higher education with job market demands. All agree that graduates' employability depends greatly on how universities prepare students, not

only with technical knowledge, but also for practical skills, professional networks, and other types of capital, along with stressing the need for greater coherence between what is taught and what employers actually demand, suggesting that educational institutions should collaborate more closely with the business sector to close this gap and improve graduates' labor results.

Finally, HEIs' role should be centered not only on preparing students in the academic sphere, but also for their professional success, by developing skills, offering internship opportunities, and strengthening human and social capital. These institutions also have the responsibility to maintain and constantly improve their reputation, which significantly influences students' perceptions of employability, motivating and committing them with their professional development.

Table 7

Ten most cited articles

#	Title and autor	Journal	TC	Objective	Keywords	Sample, Method y Country	Main results
1	Rethinking graduate employability: the role of capital, individual attributes and context. (Clarke, 2018)	Studies in Higher Education	323	Identify and redefine central dimensions upholding graduates' employability and present a new integrated model.	Graduate, employability, skills, capital, job market.	Students from the UK and Australia; Literature review.	An integrated model for graduate employability was presented, using six dimensions: human capital, social capital, individual attributes, individual behaviors, perceived employability, and job market factors.
2	The student perspective on employability. (Tymon, 2013)	Studies in Higher Education	322	Exploring undergraduate students' opinions about employability and evaluating their commitment to developing skills for employability.	Employability, postgraduate skills, development, proactive personality, committed learning.	First, second, and final-year students in business administration, human resources, and marketing; United Kingdom; Focus Group and survey.	Students tend to perceive employability in a restricted way, centering on immediately getting a job more than on long-term professional sustainability.

#	Title and autor	Journal	TC	Objective	Keywords	Sample, Method y Country	Main results
3	Self-perceived employability: construction and initial validation of a scale for university students. (Rothwell et al., 2008)	Journal of Vocational Behavior	239	Developing a scale for self-perceived employability in university students.	Employability, university commitment, graduate employment, positional conflict theory.	Business administration students at three universities; United Kingdom; Principal Components Analysis (PCA) and confirmatory factorial analysis.	The scale showed satisfactory internal reliability and identified internal and external employability dimensions.
4	Self-perceived employability: investigating the responses of post-graduate students. (Rothwell et al., 2009)	Journal of Vocational Behavior	146	Examining the reliability and factorial composition of the employability self-perception scale in university students, developed in 2008, with data from a postgraduate sample.	Employability, graduate, career management, factorial analysis.	A multicultural group of postgraduate business administration students; United Kingdom; Principal Components Analysis (PCA).	Perceived employability are influenced by both individual attributes and external factors.
5	An empirical study of self-perceived employability: improving the prospects for student employment success in an uncertain environment. (Qenani et al., 2014)	Active Learning in Higher Education	136	Exploring students' self-awareness regarding their expectations about getting a job.	Job perspectives, personal capital variables, self-confidence, self-managing behavior, self-perceived employability.	Undergraduate engineering and agriculture students; United States; Survey.	Increased self-awareness and self-efficacy in students can significantly improve their employability prospects in a competitive labor market.

#	Title and autor	Journal	TC	Objective	Keywords	Sample, Method y Country	Main results
6	The undergraduate self-perception of employability: human capital, careers advice, and career ownership. (Donald et al., 2019)	Studies in Higher Education	128	Exploring university students' self-perceptions of employability, the impact of human capital, professional counselling, and career ownership.	Employability, human capital, Protean career, career management, conceptual model.	University students; United Kingdom; Exploratory factorial analysis and hierarchical regression.	Human capital, career advice, and career ownership all significantly influence self-perceptions of employability.
7	Perceived employability among undergraduates and the importance of career self-management, work experience and individual characteristics. (Jackson & Wilton, 2017)	Higher Education Research & Development	119	Exploring university students' perceptions of employability, career management skills' influence, work experience, and individual characteristics.	Career management skills, employment, perceived employability, job experience.	University business students; United Kingdom and Australia; Hierarchical regression analysis.	University students showed reasonably high physical education levels. Developing employability should include various focuses, given demographic and educational variables.
8	Students' perceptions of education and employability: facilitating career transition from higher education into the labor market. (Donald et al., 2018)	Career Development International	102	Understanding how students perceive their future careers and how university has prepared them to enter the global job market.	Professional development, higher education, education, individual development.	Final-year university students; United Kingdom; Semi-structured interviews.	University students perceived that their investment in higher education offers a net financial gain. However, this is falling due to rising enrollment fees, the associated student debt, and paying interests which erode income premiums.

#	Title and autor	Journal	TC	Objective	Keywords	Sample, Method y Country	Main results
9	The role of job resources in the relation between perceived employability and turnover intention: a prospective two-sample study. (De Cuyper et al., 2011)	Journal of Vocational Behavior	100	Exploring the relation between perceptions of employability and turnover intention, focusing on how job resources influence this relation.	Ease of movement, work control, job resources, perceived employability, perceived job alternatives, social support, rotation cognition.	University workers and health care workers; Finland; Hierarchical regression analysis.	Perceived employability is not a direct cause of turnover intention. Job resources and social support from colleagues can reduce turnover intention. Lack of job resources can make highly employable workers more likely to quit.
10	Networking behaviour, graduate employability: a social capital perspective. (Batistic & Tymon, 2017)	Education and Training	83	Exploring perceptions about employability among undergraduate students, mainly centering on how these perceptions vary by academic year and the impact from networking behavior on employability results.	Employability, social capital, networks, orientation towards learning goals when seeking work.	University business school students; United Kingdom; Confirmatory factorial analysis.	A negative relation is observed between the students' academic year and their external perception of employability, indicating that final-year students tend to be more worried about their employability due to being close to graduating.

Abbreviations: TC, total citations. Source: Author's own elaboration

CONCLUSIONS

Based upon the bibliometric review carried out in the WoS database for the 2008-2023 period, we can observe a notable rise in the volume of publications over the last 7 years, with the years 2022 and 2023 standing out in particular. Europe (40%) has the largest number of publications, followed by Asia (36%). The most notable institutions and most frequently published journals come from countries such as the UK and Australia.

The rise in research about perceived employability reflects the global importance of this theme and stresses the need to implement educational strategies which effectively prepare students for current professional challenges.

The review of the 10 most cited articles suggests that graduates' employability is closely tied to the alignment between the skills developed in higher education and labor market demands. However, there is a persistent disconnection between what is taught and what the job market requires, generating the perception that graduates are not fully prepared to face work challenges.

There is a consensus about the need to update university curricula together with the corporate sector, to guarantee that the skills being taught fit employers' demands. Universities must play a key role, not only by providing technical knowledge, but also encouraging transferrable skills like communication and critical thinking which are essential for professional success.

It is fundamental for universities to establish collaborative networks with corporate sector actors to identify job market needs, allowing them to adjust study plans and develop programs for mentoring, networking, internships, and job practice which can improve students' perceived employability, strengthening their social and human capital.

Universities' reputation also emerges as a determining factor in perceived employability, meaning that universities must work to keep and improve their images, as this influences their graduates' job opportunities.

Knowing about perceived employability in higher education helps HEIs to encourage developing sustainable careers via integral training and the strengthening of personal resources. Driving a positive perception of employability will let future professionals make more informed decisions when seeking jobs, benefiting graduates, employers, and HEIs alike.

The bibliometric analysis was centered on perceived employability in higher education, exclusively using the WoS database. Future studies could thus benefit from expanding into more databases and including studies from various languages.

There is also a notable lack of longitudinal studies addressing university students' perceived employability across their schooling and during their first years in the job market. Future studies could explore this line and analyze the statistical methods which universities use to measure graduates' employability, examining how these indicators are related with perceived employability among students and graduates.

Future lines of research must enter on improving instruments to measure perceived employability, exploring the interaction between human, social, and cultural capital, and coherence between the skills being taught and market demands. It is also key to know how universities' reputations and networking behavior affect employability, and the impact from financial barriers on perceived employability and students' career choices.

Finally, the literature review and content analysis indicate the importance of understanding how higher education students perceive employability, since according to empirical studies, they tend to have a simplistic view of the concept, suggesting that HEIs should have a more integral approach to this topic and help students develop the skills needed to improve their employability, thereby fostering their professional development and career sustainability.

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