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ANALYSIS OF THE SCIENTIFIC PRODUCTION OF THE REGION OF ANDALUSIA IN SPAIN IN THE AREA OF SOCIAL WORK IN THE WEB OF SCIENCE

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Analysis of the Scientific Production of the Region of Andalusia in Spain in the area of Social Work in the Web of Science

Alfonso CHAVES-MONTERO¹

Abstract

Scientific research in Social Work has become increasingly important in higher education. Although this discipline's incorporation into academic research was delayed, it remains highly relevant. This article explores and analyzes the current bibliographic production in Social Work in Andalusia, using the Web of Science database. The main objective is to conduct a bibliometric analysis of this field, examining indices related to Social Work and identifying its weaknesses and strengths. The analysis will use three primary tools: SPSS, SCIMAT, and VosViewer. This bibliometric analysis will evaluate the scientific production in Social Work, offering a comprehensive overview of its scope and quality. Results may indicate that the bibliometric index of this field is below expected or potential standards. Additionally, it might be noted that higher-indexed articles are often written in English by professionals outside the specific field of Social Work. These findings suggest the need to strengthen research in Social Work by increasing scientific production and encouraging the participation of social work professionals in knowledge generation. The results also highlight the importance of interdisciplinary collaboration and establishing connections with professionals from other related research areas. This study aims to provide a detailed insight into the bibliographic production in Social Work in Andalusia through a bibliometric approach. The results will help identify strengths and weaknesses in this field, offering valuable information for future research and the development of Social Work as a scientific discipline.

Keywords: social work; bibliometric analysis; Andalusia; scientific journals; publications; Scimat.

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Introduction

Social Work is a field of knowledge in which there has been very little research in Social Work in the Andalusian region. It is necessary to increase the research culture to make Social Work more effective (Beddoe, 2011). This lack of research is motivated by a series of egalitarian characteristics at the international level, but in Spain, and therefore in Andalusia, there were special historical characteristics that have contributed to a delayed development of research (Estruch, & Güell, 1976).

After the proclamation of the Second Republic in Spain, the first school for Social Assistance studies was established in Barcelona in 1932 (Barenys & Jutglar, 1976). Its activity was interrupted during the Spanish Civil War and resumed after the conflict. At that time, the profession of Social Work was completely unknown and did not exist as such (Sarasa, 1993), instead having a religious indoctrination purpose. It was not until 1964 when the profession was officially recognized (Banda-Gallego, 2017) by the Ministry of Education and Science.

Subsequently, it was incorporated as a Diplomatura in the educational offer, and with the incorporation of degrees into the European Higher Education Area, the Diplomatura was transformed into a Licenciatura (Martín-Cano & Fuentes-Robles, 2013), opening up to undergraduate and postgraduate studies. This process implies that, like all university professors and researchers, accreditation is necessary for professional advancement.

(Holden, Rosenberg & Barker, 2005) The implementation of the European Higher Education Area (EHEA), also known as the Bologna Process, has brought about significant changes in the field of social work. One of the most prominent changes has been the transition from diploma to degree programs, which has raised the academic level and duration of social work training (Berasaluze, 2009).

In addition, the EHEA has facilitated access to master's and doctoral programs in social work, providing opportunities for more specialized and advanced training in this field. This has allowed students to delve deeper into specific areas of interest, conduct more advanced research and obtain a higher academic qualification, such as a master's or doctoral degree in social work (Ruiz-Zúñiga, 2001). These changes have redefined and enriched social work training, providing more comprehensive and robust pathways for social work education and professional development.

An important factor for this accreditation is the research papers published in scientific journals. This study aims to provide an overview of the production of Social Work in Andalusia, as documented in one of the world's reference databases, the Web of Science (WoS). Although WoS is not the only indexing database for publications, it is the most important reference used by the international academic community, operating under the same rules as any other academic discipline.

The objective of this research has been to analyze the scientific production hosted in WoS, originating from Andalusia. For this purpose, the target articles have been identified, creating a database with these publications, and subsequently analyzing them from two perspectives: first, from a statistical perspective using the SPSS statistical application, and second, from a bibliometric perspective using SCIMAT (Science Mapping Analysis Tool). Bibliometrics provides an important approach to evaluate and analyze scientific research in an area, university, journal, research group, etc. (Moed, De Bruin & Van Leeuwen, 1995), providing objective evaluation criteria and being a valuable tool for assessing academic and productive quality (Moed, De Bruin & Van Leeuwen, 1995). Additionally, bibliometrics has the capacity to evaluate progress, identify the most reliable sources of scientific publications, and the main actors and researchers, developing bibliometric indices capable of assessing performance (Chaves-Montero & Vázquez-Aguado, 2023).

In this work, a main objective is established: "To analyze the scientific production hosted in WoS that has been developed in Andalusia, in order to understand the causes that may influence this scarcity of scientific production and low impact indexes".

To achieve this general objective, the following specific objectives are proposed:

- To study bibliometric indexes of productivity, quality, and impact. The productivity index will measure the quantity of scientific articles published by each author, classifying them accordingly. The impact will measure the quality of the scientific journals in which the articles are published. The quality index (G-Index and H-Index) will measure the author's impact on the scientific production in the field.
- To determine the topics with the greatest impact. An attempt will be made to determine which topics are more dominant by analyzing density and centrality.
- To understand how the topics behave and whether the network is wellstructured. The goal is to understand how topics are distributed in twodimensional strategic diagrams.
- To identify the relationships between each of the variables in an article, such as language, publishing journals, citations, impact, etc.
- To identify the types of authors who publish and the impact of their publications.
- To identify weaknesses in the field of Social Work that influence bibliometric quality indexes.

The article "Analysis of the scientific production of the region of Andalusia in Spain in the area of Social Work in the Web of Science" presents an important contribution by providing an exhaustive and systematic evaluation of scientific production in the field of Social Work in Andalusia, using a database of recognized prestige such as the Web of Science.

Its relevance for the public lies in several aspects:

- Specific regional context: focusing on scientific production in Social Work specifically in Andalusia provides a detailed view of research in this area in a region with its own challenges and particularities. This is useful for understanding local dynamics and specific needs in social research.

- Rigorous bibliometric assessment: The use of bibliometric tools such as Web of Science, combined with rigorous statistical analysis, allows the identification of trends, areas of strength and weakness in scientific production, providing an objective and quantitative picture of the situation of Social Work in Andalusia.
- Information for decision making: The results of this analysis may be useful to policy makers, academics, and Social Work practitioners by providing relevant information for decision making. This could influence the direction of research, the allocation of resources, and the development of strategies to strengthen research in the area.
- Potential to foster research: By highlighting both strengths and areas requiring further attention in the scientific production of Social Work in Andalusia, the article can serve as a catalyst to foster future research. It can inspire and motivate researchers, academics and practitioners to address the identified areas to improve the quality and quantity of research in the region.

This article not only provides an in-depth and analytical look at the scientific production in Social Work in Andalusia, but also has the potential to influence the growth and direction of research in the field, providing valuable information for a variety of audiences interested in this field in the region (Magadán-Díaz & Rivas-García, 2022).

In summary, this article focuses on studying the scientific production of a specific area (Social Work) and a specific region (Andalusia). Therefore, the theoretical framework will address those elements that influence scientific production (Martín-Cano, & Fuentes-Robles, 2013). In the methodology section, the entire process followed to identify the articles under study will be explained, as well as the analytical process applied to the collected data. Subsequently, the results obtained from the analyses will be presented and discussed, leading to the presentation of the most important conclusions reached.

Methodology

Unit Analysis

For the search of the articles included in the study, the indexed database WoS (Web of Science) is used. The selection of the target population is based on the following parameters:

An advanced search is conducted by combining the following elements: "Social Work," each of the provinces that make up the autonomous community of Andalusia, and "Spain." The first term determines a search focused on that specific area of knowledge, excluding any other areas. The second term specifies each of the provinces within the autonomous community of Andalusia, with the possible values limited to Almería, Cádiz, Córdoba, Granada, Huelva, Jaén, Málaga, and Sevilla. The third element is used to delimit the geographical area to Spain.

Within the advanced search function of WoS, the main collection (Web of Science Core Collection) is selected, and the following field tags and boolean operators are entered into the advanced search bar: WC = "SOCIAL WORK" AND \hat{AD} = "SPAIN" AND CI = "@PROVINCE." The WC field tag determines the selection of one of the categories in which all Social Work articles are classified within WoS. Among these categories, the specific area of study (SOCIAL WORK) is targeted. The second field tag used is AD, which identifies the author's address. It takes the static value "SPAIN" to delimit the geographical area to Spain, excluding other locations outside this geographic scope. Finally, the third field tag is CI, which searches within the author's address field for the city or region. This field is represented by the variable @PROVINCE, where it takes the values of each of the provinces that make up the autonomous community, represented by their English names, which are the same as in Spanish, except for Sevilla, which is "SEVILLE." All these tags are connected by the boolean operator "AND," which means that for the statement to be true, each of the operators must be true, satisfying all three conditions. Unfortunately, there is no value within the author's address field that refers to our autonomous community, so searches have to be conducted for each of the provinces that compose it.

The time period selected is from 1900 to 2022. The year 2023 is not considered due to it not being a complete year.

The search is limited within the Web of Science Core Collection to the following databases: (1) Science Citation Index Expanded (SCI-EXPANDED); (2) Social Science Citation Index (SSCI); (3) Arts & Humanities Citation Index (A&HCI); (4) Emerging Source Citation Index (ESCI).

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Within the advanced search function of WoS, the main collection (Web of Science Core Collection) is selected, and the following field tags and boolean operators are entered into the advanced search bar: WC = "SOCIAL WORK" AND

AD = "SPAIN" AND CI = "@PROVINCE". The WC field tag determines the selection of one of the categories in which all Social Work articles are classified within WoS. Among these categories, the specific area of study (SOCIAL WORK) is targeted. The second field tag used is AD, which identifies the author's address. It takes the static value "SPAIN" to delimit the geographical area to Spain, excluding other locations outside this geographic scope. Finally, the third field tag is CI, which searches within the author's address field for the city or region. This field is represented by the variable @PROVINCE, where it takes the values of each of the provinces that make up the autonomous community, represented by their English names, which are the same as in Spanish, except for Sevilla, which is "SEVILLE". All these tags are connected by the Boolean operator "AND," which means that for the statement to be true, each of the operators must be true, satisfying all three conditions. Unfortunately, there is no value within the author's address field that refers to our autonomous community, so searches have to be conducted for each of the provinces that compose it.

The time period selected is from 1900 to 2022. The year 2023 is not considered due to it not being a complete year.

The obtained data is refined by selecting only the articles and excluding other works such as editorials and book reviews. From this search, a total of 291 indexed articles are returned, which will be the population for analysis, distributed according to Table 1.

Year	No of Publications
1995	1
2000	1
2003	1
2005	3
2006	5
2007	2
2008	3
2009	7
2010	12
2011	7
2012	13
2013	17
2014	16
2015	10

Table 1. Production of articles by year of publication

2016	17
2017	29
2018	20
2019	38
2020	41
2021	27
2022	21
Full	291

Source: created by the authors.

In the search on WoS, we do not have information about citations and indexing of journals in the Scopus database. Therefore, a manual search of all articles is conducted, recording the relevant information in the additional fields of the instrument.

Instrument

Once the target population for the study is obtained, the WoS database provides us with a series of fields that are extremely useful for the study. However, they are not sufficient to achieve the objective of the study, so they need to be supplemented with additional data that must be manually searched and entered into a database created for this purpose. Table 2 shows the fields contained in this database. The manually collected data will be divided into the following categories: (1) Article data: province, WoS citations, Scopus citations, methodology; (2) Journal data: database in which it is indexed (JCR, SCOPUS, ESCI), JCR quartile, Scopus quartile, JCR impact, Scopus impact; (3) Author data: number of authors, their gender, nationality, author type.

Fields retu	Added fields	
Publication Type	Since 2013 Usage Count	Province
Authors	Publisher	JCR Indexing
Book Authors	Publisher City	Scopus Indexing
Book Editors	Publisher Address	ESCI indexing
Book Group Authors	ISSN	JCR Quartile
Author Full Names	elSSN	SCOPUS Quartile
Book Author Full Names	ISBN	JCR Impact
Group Authors	Journal Abbreviation	SCOPUS Impact

Table 2. Data storage fields in the own database.

Article Title	Journal ISO Abbreviation	Wos citations
Source Title	Publication Date	SCOPUS citations
Book Series Title	Publication Year	Author gender
Book Series Subtitle	Volume	Author type
Language	Issue	Number of authors
Document Type	Part Number	Methodology
Conference Title	Supplement	Nationality of author
Conference Date	Special Issue	
Conference Location	Meeting Abstract	
Conference Sponsor	Start Page	
Conference Host	End Page	
Author Keywords	Article Number	
Keywords Plus	DOI	
Abstract	DOI Link	
Addresses	Book DOI	
Affiliations	Early Access Date	
Reprint Addresses	Number of Pages	
Email Addresses	WoS Categories	
Researcher Ids	Web of Science Index	
ORCIDs	Research Areas	
Funding Orgs	IDS Number	
Funding Name Preferred	Pubmed Id	
Funding Text	Open Access Designations	
Cited References	Highly Cited Status	
Cited Reference Count	Hot Paper Status	
Times Cited, WoS Core	Date of Export	
Times Cited, All Databases	UT (Unique WOS ID)	
180 Day Usage Count	Web of Science Record	

Source: created by the authors.

Regarding the author type, authors have been classified into the following groups: (1) A-TSA: This group includes authors who are academics in the field of Social Work in Andalusia; (2) A-TS: This group includes authors who are academics in the field of Social Work in Spain, but not in Andalusia; (3) A-TSE: This group includes academics who belong to the field of Social Work and are

foreigners; (4) A-NTSA: This group includes authors who are academics not affiliated with Social Work and are from Andalusia; (5) A-NTS: This group includes authors who are academics not affiliated with Social Work and publish from Spain, but not in Andalusia; (6) A-NTSE: This group includes authors who are academics not affiliated with Social Work and are foreigners; (7) I-A: This group includes researchers outside the academic field who are from Andalusia; (8) I-E: This group includes researchers outside the academic field who are from Spain, but not from Andalusia; (9) I-EX: This group includes researchers outside the academic field who are from Spain, but not from Andalusia; (10) OTHERS: Any individual who cannot be classified into the above groups.

The determination of the category in which each author falls under the field of "author type" is based on the information provided by the authors themselves in WoS. If the information is unclear, a search is conducted in ORCID.

Once the data is obtained and properly stored in the dedicated database, a preliminary analysis is conducted. The data is processed using the statistical program IBM SPSS (Statistical Package for the Social Sciences). The data is subjected to basic descriptive statistics (frequency, mean, median, and mode) and measures of dispersion (standard deviation and variance).

In a second analysis, the data is processed again to examine different bibliometric quality indices. For this purpose, the SCIMAT software is used. SCIMAT is a tool for creating scientific maps that integrate performance and quality measures of the maps (Holden, Rosenberg & Barker, 2005). The key indicators are the keywords of each article and the citations received. The steps followed for the study with SCIMAT are as follows:

Normalization of article keywords: Similar keywords in terms of singular and plural forms and those with the same meaning are combined and assigned the same value.

Construction of the co-occurrence matrix: A square matrix of co-occurrence is constructed, with N x N values, where N represents the keywords, excluding the keyword itself. If two keywords appear together in articles, they are assigned an equivalence index of 1; otherwise, 0 (Holden, Rosenberg & Barker, 2005).

The co-occurrence matrix is processed with SCIMAT using the following values:

- Minimum data frequency: 2. Normally, it is 3, but it is lowered due to the scarcity of data.
- Selection of network construction: term co-occurrence.
- Minimum co-occurrence frequency: 1. Normally, it is 2, but it is lowered due to the scarcity of documents.
- Selection of the similarity measure used to normalize the network: equivalence index.
- Selection of the clustering algorithm: simple centers algorithm, with maximum network size = 6 and minimum size = 3.

- Selection of document assigner: core mapper and secondary mapper.

- Selection of bibliometric quality measure: g-index and sum citations.

The analysis concludes with a study of the bibliometric networks constructed using the VosViewer (software tool used for constructing and visualizing bibliometric networks) tool. This allows us to examine the networks by identifying the relationships among authors, institutions, and topics.

Analysis strategy

For the statistical analysis, in the study of descriptive statistics, we proceed with the individual study of the statistics in the following order:

- Frequency analysis: which includes absolute frequencies, percentages, and cumulative relative frequencies.
- Central tendency analysis: which examines the mean, median, maximum and minimum values, and the standard error of the mean.
- Dispersion analysis: which examines the standard deviation, variance, maximum and minimum range, and the standard error of the mean.
- Distribution analysis: which examines skewness and kurtosis coefficients.

Next, we conduct pairwise analysis of the variables by cross-tabulating the tables. Independent chi-square tests are conducted to determine if there is an association between the variables. Bivariate correlation analysis is then performed to determine whether the variables are independent or not. The ultimate goal of the statistical study with SPSS is to identify relationships between variables that reveal patterns within the research area. This statistical analysis aims to measure bibliometric production indicators.

The study using SPSS focuses on three fundamental axes: journals and their relationships with other variables in Table 2, authors and their relationship with other variables, and finally, keywords and their relationship with other variables.

The variables associated with the journal study axis include: Journal name, JCR indexing, JCR quartile, JCR impact, SCOPUS indexing, SCOPUS quartile, SCOPUS impact, ESCI indexing, WoS category 1 and 2. The variables associated with the article study axis include: Publication date, Article language, Article research area, WoS citations received, SCOPUS citations received, Article type, Methodology type, Number of authors, Author name, Author gender, Author type, Author country.

To study bibliometric impact and visibility indicators, a completely different analysis strategy is employed. Scientific bibliometric mapping is used to reveal aspects of the structure of scientific production. This is done using the SCIMAT (Science Mapping Analysis Software Tool) software. SCIMAT generates scientific maps with bibliometric impact measures, such as the well-known h-index and g-index. These indices are constructed based on the number of citations received by scientific articles, measuring not only the quantity but also the quality of scientific production (Cobo, López-Herrera, Herrera-Viedma & Herrera, 2012).

The h-index, proposed by (Hirsch, 2005) from the University of California, is commonly used in bibliometrics to evaluate the scientific production of authors, journals, etc. It measures both the quality (number of citations received) and the quantity of scientific production, giving significant importance to the number of publications by an author, reflecting their sustained scientific effort throughout their academic career. The h-index is calculated by ordering publications by the number of citations received in descending order and identifying the point where the order number matches the number of citations received per publication.

On the other hand, the g-index, proposed by (Egghe, 2006), is an index that quantifies bibliometric productivity based on the publication history and citations received, making it similar to the h-index. The g-index is calculated by ordering publications according to the number of citations received in descending order and generating two columns: one for the cumulative number of citations received and one for the squared position number. The index is the position number at which the cumulative number of citations is equal to or greater than the squared position number (Lorente, 2001).

In this work, the g-index will be used instead of the h-index, which is widely accepted in all publications and existing literature on bibliometric analysis. The reason for this decision is that, following (Costas & Bordons, 2008), for the study of bibliographic productions with few documents or a low number of citations, it is advisable to use another index that better weighs this scarcity (Callon, Courtial, Turner & Bauin, 1983) conclude that the g-index presents two important improvements compared to the h-index. The first is that it considers the weighting of citations received by documents in its calculation, and the second is that, for a given researcher, it is not limited by the total number of publications. The collected data reveals two problems that can be improved by this index. The first is the second is that the bulk of the production is concentrated in a very short range of years, from 2010 to 2022, with very scarce bibliographic production from 1995 to 2010. Due to this problem, SCIMAT will not be able to create thematic evolution maps.

Once the self-developed database is included in SCIMAT, using the cooccurrence matrix of words, an algorithm is applied to cluster the articles and determine their topics. Therefore, each topic is represented by a cluster, which is a set of keywords that are related and interconnected. Once these topics or clusters are identified, two values are calculated for each cluster: centrality and density. As indicated by (Callon, Courtial, & Laville, 1991), the combination of these two values yields four categories of topics: Quadrant 1: (Motor topics) These represent topics with high centrality and high density. They constitute well-developed topics that are important for the construction of the scientific field.

Quadrant 2: (Peripheral topics) These are topics with low centrality and high density. They are highly developed topics but lack interconnection with other topics and remain isolated. These topics have marginal importance in the development of the scientific field.

Quadrant 3: (Emerging or declining topics) These are topics with low centrality and low density. They are underdeveloped and marginal topics, representing emerging or disappearing topics.

Quadrant 4: (Basic topics) These consist of topics with high centrality and low density, representing important topics for the scientific field that are not welldeveloped. They encompass cross-cutting and generic topics.

Based on these values, a strategic diagram is created (Chaves-Montero & Vázquez-Aguado, 2023).

This strategic diagram can be defined as a two-dimensional space where topics are placed according to their centrality and density values along two axes: the centrality axis (X-axis) and the density axis (Y-axis). This diagram allows us to analyze the structure of the network based on the number of topics in each quadrant. According to (Costas & Bordons, 2008), three types of data organization can be observed:

Type 1: Topics are distributed around the bisector passing through quadrants 1 to 3. This distribution indicates that the network is organized around a core of well-developed and interconnected topics, accompanied by a set of emerging topics.

Type 2: Topics are distributed around the bisector passing through quadrants 2 to 4. This distribution suggests that the network is undergoing disintegration, as there are no motor topics, and the existing topics are distributed between peripheral and cross-cutting topics.

Type 3: Topics are uniformly distributed across all quadrants. This indicates that the network is well-structured and complex, encompassing motor topics, emerging topics, peripheral topics, and cross-cutting topics. This type of organization suggests a well-functioning scientific field.

Results

According to the information presented in section regarding the analysis strategy, the study begins with the statistical analysis, which is organized around the following axes: journal analysis, author analysis, keyword analysis, topic analysis, network analysis, and bibliometric networks (Donthu, Kumar, Mukherjee, Pandey & Lim, 2021).

Characteristics of Journals

A total of 291 articles have been retrieved from WoS, spanning from the first article published in 1995 to the year 2022. These 291 articles have been published in a total of 47 journals.

Number of Publications

The number of publications varies across the years. As shown in table 3, during the period from 1995 to 2009, only 23 articles were published. The number of publications starts to gradually increase from 2010 onwards, reaching its peak in 2017, where the number of articles published jumps from 17 in 2016 to 29 in 2017. This trend can be observed in Figure 1.

01	21
Province	No of Publications
Almería	17
Cádiz	22
Córdoba	27
Granada	50
Huelva	38
Jaén	37
Málaga	50
Sevilla	50
Full	291

Table 3. Production of published articles by province

Source: created by the authors.



Source: created by the authors. Figure 1. Evolution of publications in Andalusia

Language of Publications

Regarding the language of the published articles, the study reveals that while at the overall level of the autonomous community of Andalusia, the percentages of English and Spanish articles are nearly equal, around 49.14% and 49.83% respectively, at the provincial level, significant differences can be observed. Provinces like Almería and Córdoba have over 80% of publications in English, whereas the situation is reversed in Granada and Jaén, where Spanish publications dominate. When comparing these percentage values with the national level in Spain (English 62.01% and Spanish 37.19%), it can be seen that the proportion of English publications is lower in Andalusia compared to the Spanish average. The percentage represents the weight of each language in the total number of articles published per province.

Regarding the journals, table 4 displays the main journals with the highest number of published articles. It can be observed that the three Spanish journals (Cuadernos de Trabajo Social, Trabajo Social Global, and Trabajo Social) primarily publish in Spanish, with English publications being minimal or nonexistent. On the other hand, all the foreign journals only publish in English.

Province	English	%	Spanish	%	Portuguese	%
Almería	14	82.35	3	17.65		
Cádiz	11	50.00	11	50.00		
Córdoba	23	85.19	4	14.81		
Granada	13	26.00	37	74.00		
Huelva	20	52.63	18	47.37		
Jaén	13	35.14	23	62.16	1	2.70
Málaga	26	52.00	22	44.00	2	4.00
Sevilla	23	46.00	27	54.00		
FULL	143	49.14	145	49.83	3	1.03

Table 4. Distribution of publications according to the language of the article

Source: created by the authors using WoS data.

Citations of the publications

Regarding the citations received per article, it is evident at first glance that articles published in English receive significantly more citations both in terms of the number of citations and the percentage. This can have a significant impact on bibliometric quality indices, as they are constructed based on the citations received by articles.

If we consider the indexing databases, we find that articles can be indexed in ESCI or JCR, which are mutually exclusive for a given year. However, this does

not exclude the possibility of being indexed in SCOPUS, as it is an independent database. The data shown in table 5 indicate, first of all, that articles indexed in ESCI receive a considerably lower number of citations. As for other major indexing databases, it can be observed that articles indexed in SCOPUS receive significantly higher values than those indexed in JCR (see tables 6 and 7).

	English	Spanish	Portuguese	Full
CUADERNOS DE TRABAJO SOCIAL	3	58	2	63
TRABAJO SOCIAL GLOBAL-GLOBAL SOCIAL WORK		49		49
EUROPEAN JOURNAL OF SOCIAL WORK	23			23
CHILDREN AND YOUTH SERVICES REVIEW	18			18
TRABAJO SOCIAL		16		16
BRITISH JOURNAL OF SOCIAL WORK	12			12
HEALTH & SOCIAL CARE IN THE COM- MUNITY	7			7

Table 5. Journals with the most publications by language of publication

Source: created by the authors using WoS data.

Province	English	No of Quotes	%	Spanish	No of Quotes	%	Portuguese	No of Quotes	%
Almería	14	152	10.86	3	2	0.67			
Cádiz	11	168	15.27	11	10	0.91			
Córdoba	23	462	20.09	4	9	2.25			
Granada	13	31	2.38	37	46	1.24			
Huelva	20	82	4.10	18	21	1.17			
Jaén	13	75	5.77	23	21	0.91	1	0	0
Málaga	26	284	10.92	22	7	0.32	2	0	0
Sevilla	23	115	5.00	27	25	0.93			
FULL	143	1369	9.57	145	141	0.97	3	0	0

Table 6. Citations received per article according to language

Source: created by the authors using WoS data.

Database	No of Articles	Quotes
ESCI	149	131
JCR	142	1350
SCOPUS	141	1419

Table 7. Citations received per article in indexing base.

Source: created by the authors using WoS data.

If we analyze the citations received by the journals with the highest number of articles published in each language, we can observe that the journals with the highest number of articles in Spanish are only indexed in ESCI, while the journals with the highest number of articles in English are indexed in JCR and SCOPUS. Additionally, we can notice that the number of citations received is higher in the English journals that are indexed in JCR and SCOPUS, as shown in tables 8 and 9.

Table 8. Citations received by indexation of the journals with the most articles in Spanish

Journal	ESCI	JCR	SCOPUS
CUADERNOS DE TRABAJO SOCIAL	55		
TRABAJO SOCIAL GLOBAL-GLOBAL SOCIAL WORK	54		
TRABAJO SOCIAL	6		

Source: created by the authors using WoS data.

Table 9. Citations received by indexation of the journals with the most articles in English

Journal	ESCI	JCR	SCOPUS
EUROPEAN JOURNAL OF SOCIAL WORK		79	177
CHILDREN AND YOUTH SERVICES REVIEW		148	178
BRITISH JOURNAL OF SOCIAL WORK		131	146

Source: created by the authors using WoS data.

The first journal in the field of Social Work with publications primarily in Spanish and indexed in one of the two reference databases is "Alternativas," which is indexed in SCOPUS with 6 articles. However, its classification is in Quartile 4 (Q4) only from the year 2020.

Journal Quartile

Focusing on the quartile in which the journal was positioned at the time of article publication, we find that articles indexed in JCR show an almost homogeneous distribution, whereas those indexed in SCOPUS exhibit a predominance of Quartiles Q1 and Q2. The values are shown in tables 10 and 11.

Database	Q1	Q2	Q3	Q4	Total
JCR	34	36	40	32	142
SCOPUS	55	58	14	14	141

Table 10. Quartiles by indexing base according to year of publication

Source: created by the authors using WoS data.

Table 11. Quartiles by indexing base according to year of publication and language

Language		Q1	Q2	Q3	Q4
English	JCR	33	35	40	24
	SCOPUS	53	58	14	8
Fananiah	JCR	1	1	0	8
Espanish	SCOPUS	2	0	0	6

Source: created by the authors using WoS data.

If we now divide the indexing quartiles of journals based on the year of article publication and the language of the article, we once again observe that articles published in English are found in journals with a higher quartile, while those published in Spanish are only published in journals indexed in the lowest quartile (Q4) and in very few cases.

Of the total articles indexed in JCR and SCOPUS and written in English, it is observed that, for the same article, JCR quartiles are higher than SCOPUS quartiles by 43.48%, while JCR quartiles are lower than SCOPUS quartiles by 35.51% in 35.51% of cases, and they are equal in 21.01% of cases. In contrast, for articles written in Spanish, the trend is reversed: the percentage of JCR quartiles is higher than SCOPUS quartiles by 37.50%, while JCR quartiles are lower than SCOPUS quartiles by 56.25% in 56.25% of cases, and they are equal in 6.25% of cases. Therefore, articles written in Spanish and indexed in SCOPUS have a better positioning in quartiles, meaning they are in higher quartiles.

Research Areas

The Web of Science database classifies scientific articles into different categories based on the field of study they belong to. Each article is assigned one or more categories based on the main subject of the article and the research area it belongs to. Of the articles studied, although they all share the same field (Social Work), it can appear in the first place or in other secondary categories, which will determine the exact research area.

In table 12, it can be observed that although the main research area "Social Work" has a large number of publications (102 articles), the percentage of citations per article in JCR and SCOPUS is very low (7.63% and 7.84%, respectively). In contrast, other articles with a primary research area of "Criminology & Penology," "Family Studies," or "Education & Educational Research," with a smaller number of articles, receive a higher percentage of citations in both indexing databases.

Main Area	No of Art.	Quotes JCR	% JCR	Quotes SCOPUS	% SCOPUS
Criminology & Penology	3	122	40.67%	145	48.33%
Family Studies	3	213	71.00%	250	83.33%
Education & Educational Research	3	194	64.67%	262	87.33%
Family Studies	31	78	2.52%	84	2.71%
Psychiatry	1	4	4.00%	4	4.00%
Public Administration	4	29	7.25%	37	9.25%
Public, Environmental & Occupational Health	15	92	6.13%	114	7.60%
Social Work	102	778	7.63%	800	7.84%

Table 12. Citations by indexing base according to main research area

Source: created by the authors using WoS data.

Article Type and Research Methodology

Table 13 shows the articles divided according to their methodology: theoretical review, research, and intervention. In turn, research articles have been further categorized based on the type of methodology used (quantitative, qualitative, and mixed). It can be observed that research articles predominate in English, while theoretical review articles are more prevalent in Spanish. As for the methodology employed in research articles, qualitative methodology is predominant in Spanish (see Tables 14, 15 and 16).

	Theoretical Review		Research		Intervention		Full
Language	No of Art.	%	No of Art.	%	No of Art.	%	
English	39	27.27%	78	54.55%	26	18.18%	143
Spanish	65	44.83%	52	35.86%	28	19.31%	145
Portuguese	0	0.00%	1	33.33%	2	66.67%	3
	104		131		56		291

Table 13. Type of article according to method by language

Source: created by the authors using WoS data.

Table 14. Type of article according to research methodology by language

	Quanti	tative	Qualitative		Mixed		Full
Language	No of Art.	%	No of Art.	%	No of Art.	%	
English	33	42.31%	41	52.56%	4	5.13%	78
Spanish	14	26.92%	36	69.23%	2	3.85%	52
Portuguese	0	0.00%	1	100.00%	0	0.00%	1
							131

Source: created by the authors using WoS data.

Table 15. Publications in indexed databases by sex of the main autor

Gender	JCR	SCOPUS	ESCI
Women	58.62%	56.99%	55.79%
Men	41.38%	43.01%	44.21%

Source: created by the authors using WoS data.

Table 16. Publications in databases indexing by sex of all authors

Gender	JCR	SCOPUS	ESCI
Women	56.73%	55.45%	59.03%
Men	43.27%	44.55%	40.97%

Source: created by the authors using WoS data.

Analysis of Variables Related to Authors

Number of Authors

Regarding the authors who sign each article, it varies from 1 to 17 authors, but the average is 2.79 with a variance of 3.838. The majority of the authors are women, accounting for 57.07% of the total, and when considering the corresponding first author, women represent 57.13%. Regarding the articles published based on the indexing database and focusing on the first author, table 14 shows that women outnumber men in terms of percentages in all the studied indexing databases. Furthermore, if we consider not only the first author but all the authors involved in the article, the percentages indicate that women continue to surpass men, with a notable increase of women in the ESCI indexing database (see Table 17).

Typology of the author	Percentage
A-TSA	29%
A-TS	5%
A-TSE	3.6%
A-NTSA	39%
A-NTS	9%
A-NTSE	1%
I-A	0.5%
I-E	0.5%
I-EX	0.4%
OTHER	12%

Table 17. Publications by type of author

Author Typology

As stated in the instrument, authors have been classified into groups based on whether they are Social Work academics or not, whether they are of Spanish nationality or not, etc. From the results presented in Table 16, it can be observed that the majority of articles are contributed by authors who are Social Work academics. They account for 37.6% (A-TSA+A-TS+A-TSE), while authors who are not Social Work academics constitute 49% (A-NTSA + A-NTS + ANTSE).

On the other hand, when considering the language of publication based on author typology, we find that among Social Work academics from Andalusia and Spain (A-TSA and A-TS), publications in Spanish prevail. In contrast, the publication in English is higher among foreign Social Work academics (A-TSE), as well as among all non-Social Work academics (A-NTSA, A-NTS, and A-NTSE) (see Table 18).

Source: created by the authors.

Typology of the author	English	Spanish	Portuguese
A-TSA	38.7%	57.3%	4%
A-TS	39.6%	58.2%	2.2%
A-TSE	50%	44.7%	5.3%
A-NTSA	57.4%	42.1%	0.5%
A-NTS	62%	38.2%	0%
A-NTSE	88.1%	11.9%	0%
I-A	49.8%	50.2%	0%
I-E	50.1%	49.9%	0%
I-EX	100%	0%	0%
OTHER	55%	45%	0%

Table 18. Publications according to type of author and language of publication

Source: created by the authors using WoS data.

Regarding the journals where each typology of authors predominantly publish, we find that both Social Work academics from Andalusia and the rest of Spain (A-TSA and A-TS) mainly publish in Spanish journals, as shown in table 19.

Table 19. Journals where A-TSA and A-TS publish the most

Journal	A-TSA	A-TS
CUADERNOS DE TRABAJO SOCIAL	25.40%	24.81%
TRABAJO SOCIAL GLOBAL-GLOBAL SOCIAL WORK	13.91%	13.01%
TRABAJO SOCIAL	12.03%	9.98%
INTERACCION Y PERSPECTIVA	6.02%	5.28%
EUROPEAN JOURNAL OF SOCIAL WORK	6.40%	6.00%
BRITISH JOURNAL OF SOCIAL WORK	4.60%	2.71%

Source: created by the authors using WoS data.

On the other hand, we find that academics who are not from the field of Social Work (A-NTSA and A-NTS) predominantly publish in foreign journals, with the first Spanish journal appearing in the third position (see tables 20 and 21).

Journal	A-NTSA	A-NTS
EUROPEAN JOURNAL OF SOCIAL WORK	15.40%	16.03%
CHILDREN AND YOUTH SERVICES REVIEW	9.90%	3.22%
CUADERNOS DE TRABAJO SOCIAL	7.30%	8.10%
BRITISH JOURNAL OF SOCIAL WORK	4.00%	4.60%
INTERNATIONAL SOCIAL WORK	4.20%	5.00%
TRABAJO SOCIAL GLOBAL-GLOBAL SOCIAL WORK	3.50%	1.50%

Table 20. Journals where A-NTSA and A-NTS publish the most

Source: created by the authors using WoS data.

Table 21. Cluster or themes with centrality ranks, density and bibliometric measures

Cluster	Centrality	Centrality range	Density	Density range
EXPERIENCES	5.85	0.67	5.84	0.5
HEALTH-CARE	5.23	0.5	18.17	1
META-ANALYSIS	4.72	0.33	4.55	0.17
PARENTS	6.55	0.83	12.19	0.67
STEREOTYPE	2.92	0.17	14.81	0.83
YOUTH	6.83	1	5.47	0.33

Source: created by the authors using SciMAT data.

This implies that A-TSA and A-TS authors publish more articles in journals primarily indexed in ESCI, while A-NTSA and A-NTS authors publish in journals indexed in JCR and SCOPUS.

Analysis of topics

For the analysis of topics and two-dimensional bibliometric scientific maps, the SCIMAT software will be used. It will not be possible to conduct a temporal study of topic evolution due to two insurmountable problems: the scarcity of documents (291) and the majority of them being from 2015 onwards. Therefore, a single period covering all the documents from 1995 to 2022, inclusive, will be considered. SCIMAT will provide a series of clusters as topics, with each topic composed of a series of nodes.

The first values that appear and are most important for constructing the scientific map are centrality and density. Centrality, or external cohesion index, indicates that a topic with high centrality is located in the center of the network and is strongly connected to other topics. Density, or internal cohesion index, indicates the intensity of associations within a topic and represents its level of development. The network structure is homogeneous, distributed across all quadrants, indicating a well-functioning scientific field, albeit with a scarcity of themes due to few publications and a low level of citations.

Production Indicators

Production indicators are used to assess the quantity of scientific publications by an author or research area. Therefore, in this section, we will focus on the number of documents or articles generated in the scientific maps shown in the images of Figure 2A and 3A. Between the two document mappers (coreDocuments and SecondaryDocuments), a significant jump is observed, indicating that there are few articles or documents that share more than one node in the same cluster. For example, in the "parents" cluster, the "core" document mapper has 6 documents, while the SecondaryDocuments mapper has 2, and the same applies to the "experiences" cluster. It is noteworthy that the increase in clusters between the two document mappers is proportionally higher in the two motor themes, "parents" and "experiences" (Chaves-Montero, A., & Vázquez-Aguado, 2021).



Source: created by the authors using SciMAT data. Figure 2. CoreDocuments - No. of documents



Source: created by the authors using SciMAT data. Figure 3. SecondaryDocuments - No. of Documents.

Visibility and Impact Indicators

Visibility and impact indicators are used in bibliometrics to assess the quality and dissemination of scientific production. In this case, they will be constructed based on the g-index and the sumcitation indicator, which measures the total sum of citations received by all publications in the cluster. For the calculation of this indicator, citations received are summed without considering the average between publications and citations, as the g-index does. For example, if an author has 10 publications and has received the following citations: 10, 9, 8, 6, 5, 5, 4, 3, 2, 1, their g-index would be 6, and their sumcitation would be 53.

Examining the bibliometric maps in figure 4A and 5A, which belong to the first document mapper (coredocuments), it can be observed that in the "parents" cluster, the g-index is 4, and the sumcitation is 19. Meanwhile, in the "experiences" cluster, the relationship between the two is 5 and 134. A significantly high difference between these two indicators, as in the case of "experiences," indicates a large number of publications with a low number of citations. Although the sumcitation is high, the quality is low due to the low g-index. On the other hand, in the "parents" cluster, this difference is not observed, indicating a smaller number of publications but a higher number of citations, indicating higher quality. The same applies to the second document mapper (secondaryDocuments).



Source: created by the authors using SciMAT data. Figure 4. CoreDocuments - g-index.Graphic



Source: created by the authors using SciMAT data. Figure 5A. CoreDocuments - sumCitations

Limitations of the study

A bibliometric analysis study, involving the application of quantitative techniques to analyze patterns and trends in scientific literature, has several limitations that should be considered. Some of the most common limitations include:

- Delay in data availability: The collection of bibliometric data may take time, and the results may not immediately reflect the most recent trends in scientific research.
- Difficulty in evaluating originality and innovation: Bibliometric metrics can measure how often an article is cited, but they cannot directly assess the originality, innovation, or methodological quality of the research.
- Lack of context: Bibliometric metrics alone may lack context. It is important to consider the scientific environment, collaborations, and other external factors that could influence the results.
- Excessive self-citations: Some researchers may artificially inflate the impact of their work through excessive self-citations. This can bias the results of the bibliometric analysis.
- Neglect of other types of impact: Bibliometric studies primarily focus on academic impact measured through citations. However, they do not capture other types of impact, such as social, economic, or political impact.

It is important to approach these limitations with caution and complement bibliometric analysis with qualitative and contextualized assessments to gain a more comprehensive and accurate understanding of the scientific landscape.

Conclusions

The conclusions we can draw from the research field of Social Work in Andalusia hosted in WoS are as follows:

- Scientific production in Andalusia, compared to the national average in Spain, is lower in both quantity and quality. Not only are there fewer publications, but the ones that are published receive a higher number of citations (Castillo, 2011).
- Prior to 2012, the production of articles remains low, but it increases significantly from that year onwards. Among the Andalusian provinces, Granada, Málaga, and Sevilla have the highest production, while Almería has the lowest.
- Spanish journals predominantly publish articles in Spanish, with a low number of publications in English. On the other hand, international journals exclusively publish in English.

- Publishing articles in Spanish is equivalent to having no chance of being indexed in reference databases such as JCR and SCOPUS since the main Spanish journals are not in-dexed in these databases, although they may be indexed in ESCI. The exception is the journal Alternativas, which has been indexed in Q4 of SCOPUS since 2020.
- Within Andalusia, there are differences between provinces regarding citations, con-firming the correlation between publications in English and the number of citations re-ceived. Córdoba has the highest proportion of English publications and receives the most citations for articles published in English.
- Among the three analyzed databases (JCR, SCOPUS, and ESCI), SCOPUS receives more citations than JCR, and the number of citations from ESCI is minimal in relation to the publications.
- The quartiles in which JCR and SCOPUS are indexed are higher for SCOPUS than for JCR, with SCOPUS having more articles indexed in Q1 and Q2.
- Authors who primarily publish in research areas other than Social Work receive more citations with a smaller number of articles than those in the field of Social Work. Women slightly outnumber men as the primary authors of articles indexed in WoS. Additionally, women have a higher percentage of articles indexed in SCOPUS compared to other databases.
- The majority of authors publishing in the research field of Social Work are academics from other areas unrelated to this field.
- Academics who are not from the field of Social Work (A-NTSA and A-NTS) primarily publish in English, while those from this field publish more in Spanish. The journals where they publish are international.
- Bibliometric quality indices (g-index) are very low due to the low number of citations received.

Topics with higher bibliometric quality indices are located in quadrant 1, indicating "core" topics. Although they are scarce, some of them achieve this through a large number of articles and a low citation coefficient.

To encourage greater scientific production in the area of social work and motivate authors to write more, especially in impact journals, the following strategies can be con-sidered (Borrego, & Orgambídez, 2023):

- Interdisciplinary collaboration: encourage collaboration between social work pro-fessionals and experts from other related disciplines. This could broaden the knowledge base and improve the quality of research, attracting the attention of higher impact jour-nals.
- Facilitate Resources and Access: Provide access to resources, databases and bibli-ometric analysis tools to facilitate research. The availability of adequate resources can en-courage authors to explore and publish in more prestigious journals.

- Promotion of Dissemination: Raise awareness of the importance of knowledge dissemination among the social work community. This can be done through conferences, events and publications that highlight the relevance of sharing research findings.
- Creation of Collaborative Networks: Establish research networks and communities within the social work field, promoting the exchange of ideas, collaborations, and mutual support among researchers.

By implementing these strategies, a more conducive environment could be created to increase scientific production in the field of social work and encourage authors to contrib-ute more publications in impact journals (Bueno, 2013).

Research on a particular region, such as Andalusia in the field of social work, can generate multiple benefits for the research stream beyond recognizing the lack of explora-tion in that specific area. Here are some reasons why this type of research can be valuable:

- Contextualized Understanding: By studying a specific region, one can gain a deep-er and more contextualized understanding of the particular challenges, social, political, and cultural dynamics that impact social work in that location. This enriches the overall understanding of the discipline by recognizing the diversity of contexts in which social work is practiced.
- Identification of Local Needs: This allows for the identification and understanding of the specific social needs and issues of that region. This is crucial for the development of more effective social intervention strategies and policies adapted to local realities.
- Knowledge Transfer: Research on an underexplored region can generate valuable knowledge that can be transferable to other geographic areas with similar challenges. Successful approaches used in one region can inspire and be applied in similar contexts.
- Stimulus for Future Research: By highlighting the lack of research in a specific re-gion, other researchers may be motivated to further explore that territory, which would contribute to filling knowledge gaps and developing a stronger foundation in that area.
- Development of Innovative Practices: By understanding the unique needs and challenges of a region, innovative and specific practices can be developed that could be useful not only locally, but also in other similar contexts.

Finally, while recognizing the lack of research in a specific region is important, re-search in that area goes further by providing an enriched understanding of local needs, allowing for the development of tailored strategies and providing opportunities for innovation and advancement in the field of social work.

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