Psicothema

Thirty Years of Psicothema: A Bibliometric Analysis (1989-2018)

Miguel Barboza-Palomino[1], Gonzalo Salas[2], Maribel Vega-Arce[2], Tomás Caycho-Rodríguez[1], José Ventura-León[1]
Pablo Ezequiel Flores-Kanter[3], Edwin Salas-Blas[4], Manuel Landa-Barzola[5], and Wilson López-López[6]
[1] Universidad Privada del Norte (Perú), [2] Universidad Católica del Maule (Chile), [3] Universidad Siglo 21 (Argentina),
[4] Universidad de San Martín de Porres (Perú), [5] Universidad César Vallejo (Perú), and [6] Pontificia Universidad Javeriana (Colombia)

Abstract

Background: This study presents a bibliometric analysis of *Psicothema* as a commemoration for its 30 years of publishing (1989-2018). **Methods:** A year-, sex-, and publication language-based analysis of the journal's characteristics was carried out based on the sample of 2,396 publications. Based on that data, Lotka's law was assessed, Lawani and Subramanyam indices and cooperation networks were estimated, the Pratt index was calculated, the concentration of papers according to thematic areas and research methods was described, and citations and impact indicators were obtained according to the original articles indexed in Web of Science (1993-2018). **Results:** The results indicated greater participation by male authors, increased publication in English, compliance with Lotka's law, and a greater inter-institutional contribution in recent decades. There was a higher percentage of methodology/psychometrics-related work, and most of these publications used quantitative methods. The impact factor and the amount of citations reached its peak in 2018. **Conclusion:** The characteristics of Psicothema, which is a model of scientific communication of psychology in the international context, are discussed in this study.

Keywords: Bibliometric analysis, bibliometric indices, *Psicothema*, scientific cooperation.

Resumen

Treinta Años de la Revista Psicothema: un Análisis Bibliométrico (1989-2018). **Antecedentes:** el estudio presenta un análisis bibliométrico de la revista *Psicothema*, como una forma de conmemorar sus 30 años de labor editorial (1989-2018). **Método:** partiendo de una muestra de 2.396 publicaciones, se realizó la descripción de sus características según el año, el sexo de los autores y el idioma de publicación; se evaluó la Ley de Lotka; se estimaron los índices (Lawani y Subramanyam) y redes de colaboración; se calculó el índice de Pratt y se describió la concentración de trabajos según áreas temáticas y métodos de investigación; y, considerando los artículos originales indizados en Web of Science (1993-2018), se obtuvieron indicadores de citación e impacto. **Resultados:** se encontró una mayor participación de autores hombres, el incremento de publicaciones en inglés, el cumplimiento de la Ley de Lotka y una mayor colaboración interinstitucional en las últimas décadas. Además, se encontró un mayor porcentaje de trabajos en Metodología-Psicometría y la mayoría de las publicaciones utilizaron métodos cuantitativos. Asimismo, se halló que el factor de impacto y la cantidad de citaciones obtuvieron sus valores más altos en el 2018. **Conclusiones:** se discuten las características de una revista que es un referente de la comunicación científica en psicología en el contexto internacional.

Palabras clave: Psicothema, análisis bibliométrico, índices bibliométricos, colaboración científica.

Psicothema is a scientific journal published on a quarterly basis by the Colegio Oficial de Psicólogos del Principado de Asturias and the Universidad de Oviedo in Spain. The first edition of *Psicothema* was published in 1989 under the Directorship of Dr. José Muñiz, who continues to hold the same position. Since then, the journal has been continuously published, and the number of editions per volume has increased. Thus, during 1989-1993, two editions per volume were published. Then, between 1994 and 1998, this number increased to three editions per volume, and four editions per volume have been published since 1999. Additionally, since 2006, the journal has had an electronic version, and 31 volumes of the journal are available in the digital form.

According to the data from the 2019 edition of the Journal Citation Reports, *Psicothema* had an impact factor (IF) of 2,632 in 2019, ranking in the first quartile (Q1), which constitutes a milestone for the journal. Additionally, this journal is indexed in relevant databases such as Scopus (Q1), Web of Science (WoS), Psicodoc, and PsycINFO. In 2018, *Psicothema* celebrated its 30th anniversary (1989-2018), an event that led to the development of this study as a good opportunity to reflect on the journal's achievements during this time, alongside examining the development of scientific production in this discipline.

This bibliometric analysis is useful to perform a retrospective evaluation and identify the main trends that existed in the past and prevail in *Psicothema* today. Although most bibliometric studies are conducted to analyze academic literature and identify publication patterns of a specific area of knowledge (see Flores-Kanter, 2017; Gaviria-Marin et al., 2018; Giménez-Espert & Prado-Gascó, 2019;

Martínez-López et al., 2018; Şenel et al., 2017; Sahoo & Sahoo, 2019; Thelwall, 2008; Wei, 2019), it was possible to identify several bibliometric studies assessing the development of some psychology journals in the past decades. These journals belong to Europe (see Alfaro et al., 2019; Alonso-Arbiol & van de Vijver, 2010; Anglada-Tort & Sanfilippo, 2019; Arik, 2013; Rodríguez & Ibarzábal, 2018; Yinhue et al., 2018; Zych & Quevedo-Blasco, 2011), Latin America (see Morgado-Gallardo et al., 2018; Polanco et al., 2017; Sáez-Ibáñez et al., 2018; Salas et al., 2017; Salas et al., 2018; Salas et al., 2019), and the U.S. (see Allik, 2013; Kozlowski et al., 2017; Sánchez, 2010; Walters, 2011).

To date, three studies have been conducted on *Psicothema*. Rodríguez and Moreno (1998) conducted the first study, wherein they evaluated 342 articles published in 20 volumes, i.e., from 1989 to 1997. Results revealed that on average 17.1 articles were published during this period, most of which were signed by one or two authors (28.94% and 38.01%, respectively). Most of the authors came from universities (94.35%) and the Universidad de Oviedo and Universidad Complutense de Madrid (17.19% and 11.54%, respectively) stood out. Based on the classification suggested by the Ministry of Education and Science, it has been reported that 28.36% of the articles belonged to the field of basic psychology, wherein 23.97% corresponded to the methodology area and 23.09% were a part of the personality, assessment, and treatment area.

The second study (González-Alcaide et al., 2010) assessed the researchers' cooperation and participation of female in the articles published by *Psicothema* during 1989-2008. A total of 1,718 articles were analyzed, which were signed by 2,423 authors who were mostly male (52.45%); a total of 86 cooperation groups formed by 293 authors were identified. Furthermore, production and cooperation increased from 1999 to 2008. Despite of an increase in the number of female authors (from 35.71% in 1989 to 48.48% in 2008), differences in terms of productivity and authorship order could still be observed.

Finally, the third study (Quevedo-Blasco & Ariza, 2013) that was also a bibliometric analysis of 2,163 articles published between 1989 and 2012 was conducted; the study findings revealed that most of the articles were innovative (96.16%), written in Spanish (80.07%), and signed by two authors (28.34%). Additionally, these articles were written by authors from 32 different countries. Consequently, the three abovementioned studies strengthen the notion that *Psicothema* is a multidisciplinary journal constantly growing in terms of production and quality.

In line with the previous studies, the main objective of this study was to perform a bibliometric analysis of *Psicothema* throughout its 30 years of continuous work on scientific publication (1989-2018). The study results may be of interest to the scientific community in general, particularly for journal authors and managers and for its target audience.

Materials and Methods

Unit of Analysis and Sample

This study considered the original articles published in *Psicothema* from 1989 to 2018 as the unit of analysis. These articles were identified through the journal's website, and the final sampling included a total of 2,396 empirical and theoretical articles, distributed into 30 volumes and 105 editions. The study analysis involved regular numbers of publications and excluded additional articles and book reviews in memoriam articles and short communications.

Procedure

The search and review of number of each article published through the journal's website (http://www.psicothema.com) commenced with the identification of empirical and theoretical articles, alongside excluding the ones that did not fall in to the established study criteria. The article details were noted in a previously created excel spreadsheet, including the following data: article identification, first author's sex, name of the authors (according to their signatures in the publication), number of authors per sex, total number of authors, publication year, title of the article, publication language, national and international cooperation (if any), author's affiliation country or countries, author's affiliation institution, topic, and research methodology of the publication.

As several variations in the name of some authors, institutions, and countries were identified in the review and recording of each published article, the author's signature, the name of the institutions, and the countries were standardized. Throughout this process, institutions from England, Scotland, Wales, and Northern Ireland were grouped as the U.K. Moreover, on the basis of Rodríguez and Moreno's (1998) suggestion, the classification of articles according to their topics and research methodologies was performed (including categories such as the history of psychology and other areas). All this information was classified based on the double-blind procedure and consensus among peers (members of the research team). Therefore, the title, abstract, and method of the selected articles were read.

After completing the publications recording, the information was analyzed. Thus, the frequencies and percentages regarding the sex of all the authors and then the first authors and the language used for the publications were collated. Similarly, the number of publications per year was determined, and a list of the most productive authors, institutions, and countries was compiled. Considering the total number of authors who published their articles during the suggested time frame and prior to signatures standardization, Lotka's law (1926) was complied with the ordinary least squares model (Urbizagástegui Alvarado, 2005).

To calculate the cooperation and thematic concentration indices, the period of analysis was divided into decades. Thus, the Lawani (1981, 1986), Subramanyam (1983), and Pratt (1977) indices were calculated through the observation of their development over the years. Additionally, frequencies and percentages per topic and research methods were obtained. Finally, with original articles indexed in WoS (1993-2018) (last updated January 29, 2020), the received citations were identified, alongside the IF; the most-cited articles; and the main authors, countries, and journals citing *Psicothema* publications.

Results

The results were classified into four categories: general description of the publications, cooperation, topics and research methods, and citation and impact.

General Description of the Publications

A total of 2,396 articles were analyzed, with the participation of 7,941 signing authors. Considering the sex of the first author,

it determined that 1,043 articles (43.5%) had a female as the first author and 1,353 (56.5%) articles had a male as the first author. Based on the total number of signing authors, it was deduced that 3,653 (46%) and 4,288 (54%) were female and male, respectively; regarding language, 1,622 (67.7%) and 774 (32.3%) articles were published in Spanish and English, respectively.

As for the number of articles published per year, the smallest and the largest numbers of articles were published in 1989 (n = 11) and 2010 (n = 154), respectively. Figure 1 illustrates the distribution of articles published per year in the selected time frame. Notably, only one edition was published in 1989, and four editions per volume were published in 2010.

Table 1 exhibits the most productive authors and affiliation institutions and countries. Initially, to identify the real number of contributions, the author names of each category were standardized.

Further, compliance with Lotka's law was assessed in relation to the scientific production by authors who published their work in *Psicothema*. Thus, 2,901 (69.22%) authors participated in 1 publication, 1,214 (28.97%) authors participated in 2–9 publications, and 76 (1.81%) authors contributed to 10 or more publications (Figure 2). Because a small number of researchers contributed to a higher number of publications and a higher number of authors provided a lower number of works, compliance with Lotka's law could be proved.

Cooperation

Recently, an increase in the cooperation with the participation of a growing number of authors, institutions, and countries has been observed. To analyze cooperation through the years, the time frame selected for the study was divided into three decades. Works having one or two authors progressively decreased over the years, whereas works having more than three authors increased from the second decade onward (Table 2).

The abovementioned aspect can be proved with the values obtained from the calculation of the Lawani and Subramanyam indices (Figure 3). The former revealed the weighted mean of authors signing an article, which showed that this value progressively increased in the past two decades, whereas the latter revealed the proportion of publications with multiple authors, with 1 being the highest value. Figure 3 also illustrates that the works signed by two or more authors increased during the past two decades.

Based on the cooperation between the countries of the institutions to which *Psicothema's* signing authors are affiliated with, the progressive increase in the cooperation networks can be noted. During the first decade (1989-1998), the participation of five countries from the U.S. and seven from Europe can be observed in Figure 4a, with Spain articulating all international cooperation works. In the second decade (1999-2008), a significant increase in the scientific cooperation was observed, with eight countries from the U.S., the addition of three more Latin American countries and more European, Asia, and Oceania countries (Figure 4b). In addition to Spain, during this period the, following countries were included as countries articulating relations in and out of their regions: the U.S., Canada, Chile, Argentina, Colombia, the U.K., the Netherlands, and Germany. Regarding the 2009-2018 period, the highest number of contributions are from Spain, followed by the U.S., Portugal, the U.K., the Netherlands, Mexico, and Chile (Figure 5). More Latin American countries (five new countries) and countries from other regions of the world (East Asia, South East Asia, and Africa) joined the list of participating countries.

Theme Categories

The classification of the first bibliometric study on *Psicothema* (Rodríguez & Moreno, 1998) has been considered for the analysis of the published works by area. The history of psychology category and other areas were added; all works related to emerging topics
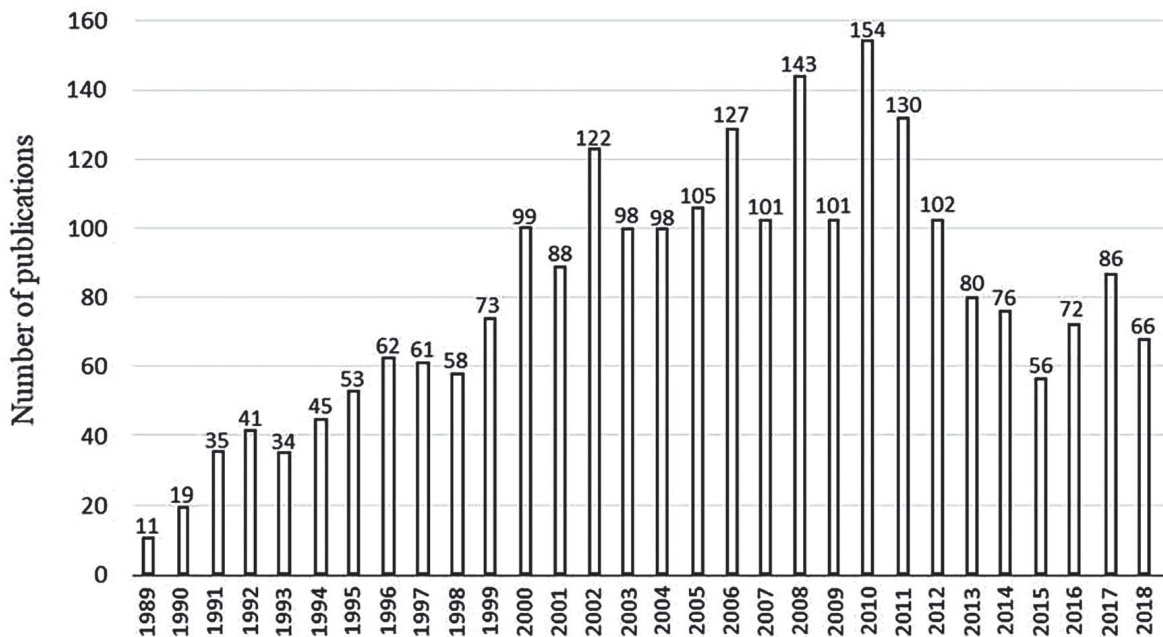

Figure 1. Number of Publications per Year (1989-2018)

Miguel Barboza-Palomino, Gonzalo Salas, Maribel Vega-Arce, Tomás Caycho-Rodríguez, José Ventura-León, Pablo Ezequiel Flores-Kanter, Edwin Salas-Blas, Manuel Landa-Barzola, and Wilson López-López

Table 1 Most Productive Authors, Institutions, and Countries that Published Articles in Psicothema
Rk	**Author**	**N**	**Institution**[2]	**N**	**Country**	**N**
1	Núñez Pérez, JC	33	Univ. Oviedo	265	Spain	2,267
2	Vallejo Seco, G	28	Univ. Complutense de Madrid	179	The U.S.	113
3	Muñiz Fernández, J	27	Univ. Valencia	169	Portugal	51
4	González-Pienda, J	26	Univ. Autónoma de Madrid	165	The U.K.[3]	43
5	Arias, JL	23	Univ. Granada	106	Chile	35
6	Buela-Casal, G	23	Univ. Nac. EducaciónDistancia	103	Mexico	35
7	Lemos-Giraldez, S	23	Univ. Santiago de Compostela	100	The Netherlands	26
8	Vigil-Colet, A	23	Univ. La Laguna	96	Argentina	17
9	Becoña Iglesias, E	20	Univ. Málaga	92	Germany	13
10	Luciano Soriano, C	20	Univ. Barcelona	77	Italy	13
11	Navarro, JF	20	Univ. País Vasco	71	Belgium	12
12	Valle Arias, A	20	Univ. Murcia	63	Colombia	10
13	Blanca Mena, MJ	19	Univ. Autónoma Barcelona	56	Brazil	10
14	Labrador Encinas, F	18	Univ. Almería	55	Canada	10
15	Betancor Rodríguez, V	17	Univ. Salamanca	47	France	8
16	BriñolTurnes, P	17	Univ. RoviraiVirgili	47	Venezuela	5
17	Hidalgo Montesinos, MD	17	Univ. Islas Baleares	36	Austria	3
18	OleaDíaz, J	17	Univ. Jaime I	35	Costa Rica	3
19	Colom Marañón, R	16	Univ. Sevilla	34	Israel	3
20	ElosuaOliden, P[1]	16	Univ. La Coruña	32	Switzerland	3

Note:
[1] Graña Gómez, J. and Lorenzo Seva, U. also contributed to 16 articles.
[2] The first author's affiliation institution was considered.
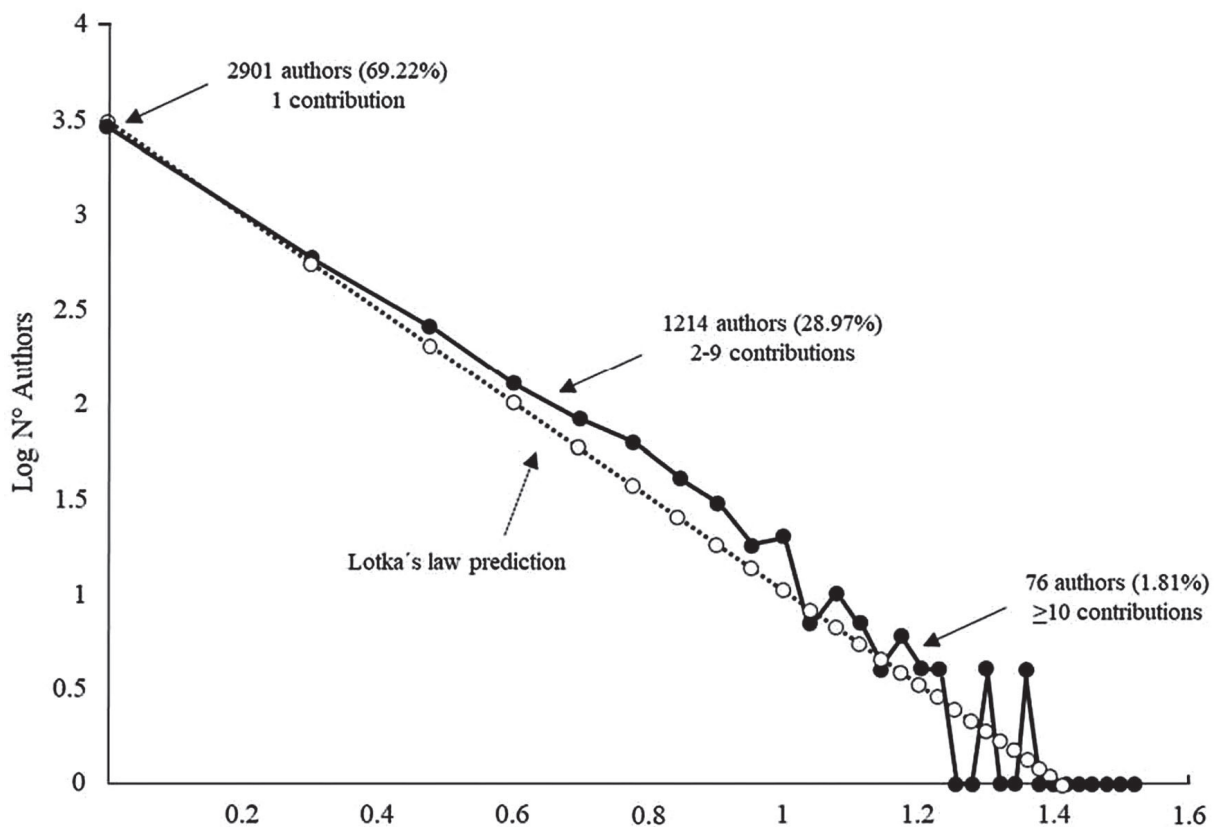[3] England, Wales, Scotland, and Northern Ireland are grouped into the U.K.

Figure 2. Lotka's Law on the Contribution of Authors who Published Articles in *Psicothema*

Table 2
Number of Articles Distributed per Decade According to the Number of Signatory Authors

N° authors	Decade			Total
	1989-1998	1999-2008	2009-2018	
1	111 (26.5%)	80 (7.6%)	43 (4.7%)	234
2	159 (37.9%)	296 (28.1%)	170 (18.4%)	625
3	84 (20%)	314 (29.8%)	219 (23.7%)	617
>3	65 (15.5%)	364 (34.5%)	491 (53.2%)	920
Total	419	1,054	923	2,396

related to the fields of environmental psychology, legal psychology, traffic psychology were included in the latter. The areas with the highest amount of works published are methodology/psychometrics and personality, assessment, and treatment (Table 3). In the case of methodology/psychometrics, a percentage increase can be observed in the amount of articles published by the journal in the past two decades. In the case of personality, assessment, and treatment, a quite similar percentage distribution can be observed in the analyzed three decades, which represents less than a quarter (23.75%) of the total publications. The two abovementioned areas together represented 56.88% of the publications during 2009-2018.
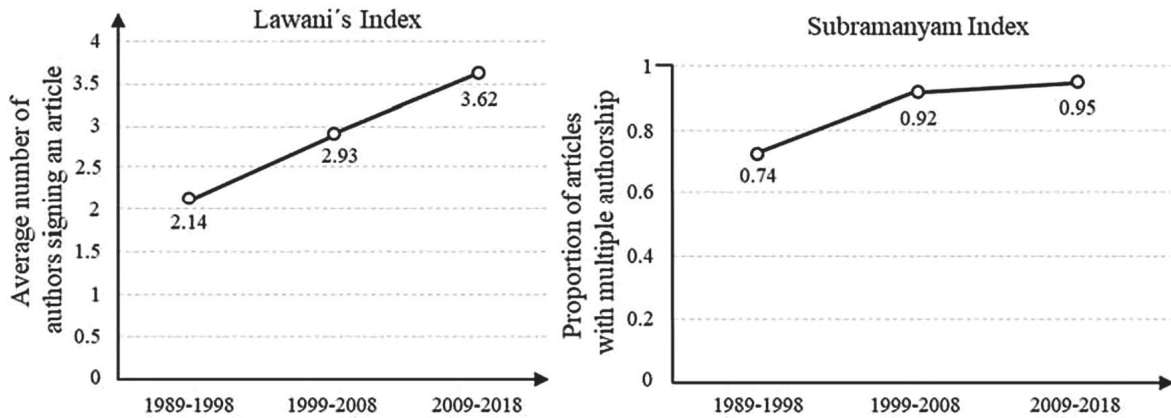

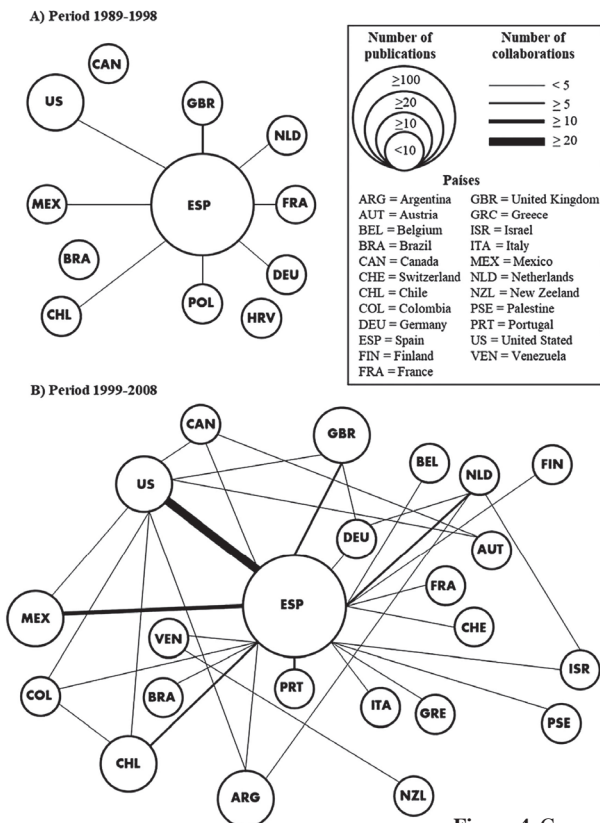**Figure 3.** Lawani and Subramanyam Cooperation Indices
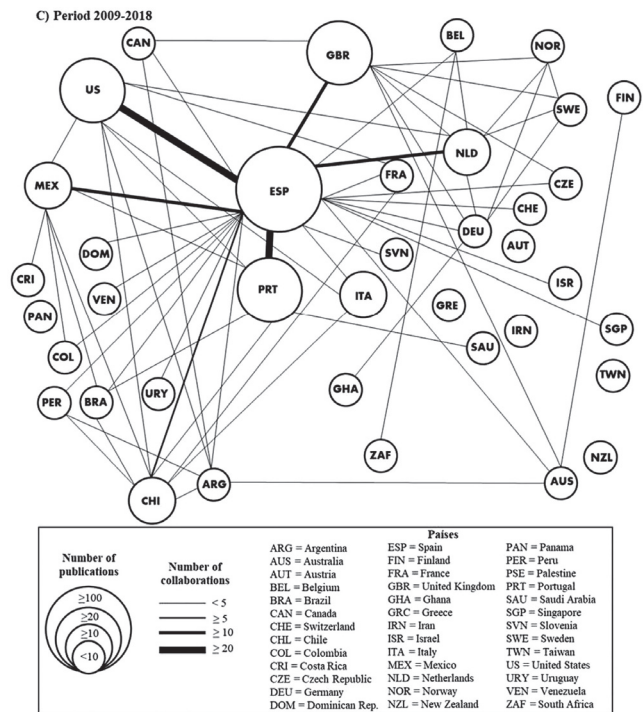

Figure 5. Cooperation between Countries (2009-2018)

Figure 4. Cooperation between Countries (1989-1998 and 1999-2008)

	Decade			
Area	**1989-1998**	**1999-2008**	**2009-2018**	**Total**
Basic	77 (18.38%)	147 (13.95%)	36 (3.9%)	260 (10.85%)
Met./psychometrics	99 (23.63%)	272 (25.81%)	317 (34.34%)	688 (28.71%)
Pers., assess., and treat.	100 (23.87%)	261 (24.76%)	208 (22.54%)	569 (23.75%)
Psychobiology	57 (13.6%)	103 (9.77%)	104 (11.27%)	264 (11.02%)
Soc./Com./Pol./Org.	22 (5.25%)	132 (12.52%)	118 (12.78%)	272 (11.35%)
Evolutionary and Education	20 (4.77%)	64 (6.07%)	31 (3.36%)	115 (4.8%)
History of psychology	34 (8.11%)	16 (1.52%)	6 (0.65%)	56 (2.34%)
Other areas	10 (2.39%)	59 (5.6%)	103 (11.16%)	172 (7.18%)

Table 3
Number of Articles Distributed per Decade According to the Topics

Note: Met. = Methodological; Pers. = Personality; Assess. = Assessment; Treat. = Treatment; Soc. = Social; Com. = Communitarian; Pol. = Political; Org. = Organizational

The Pratt index was calculated (with 1 being the highest value) for every publication decade to analyze the thematic concentration. Thus, 0.41 (1989-1998), 0.42 (1999-2008), and 0.51 (2009-2018) values were obtained, revealing that although there were areas with a larger number of publications (see methodology/psychometrics and personality, assessment and treatment), *Psicothema* is not topic-specific and is characterized by the publication of works from varied psychology fields or areas.

In contrast, when analyzing the distribution according to the research methods, it was found that 2,017 (84.18%) articles used quantitative methods, 361 (15.07%) were theoretical studies, 14 (0.58%) were research studies that use qualitative methods, and 4 (0.17%) were mixed studies.

Citation and Impact

The articles published by *Psicothema* began to be cited by indexed journals in WoS in 1994, presenting a steady increase from 2003 to date (Figure 6). The IF of the journal includes records from 1997 and has reached its peak from 2015, when the IF began to increase steadily, to date. In 2018, the journal had the largest number of citations (2,744) and the highest IF (1,551), demonstrating the impact of the published articles and the current visibility of the journal. Overall, the journal articles have an H-index of 55 and have been cited 25,157 times (including author's own citations), reaching an average of 10.9 citations per article.

Further, the 20 most-cited articles were written by 53 authors with 1-7 signing authors. Peter Salovey (with three articles), Marc Brackett, Paula Elosua, and Darío Díaz (with two articles each) were the most-cited authors. The most-cited article is the Bar-On (2006) publication. According to the citations registered only during 2019 and considering the average citations per year, Muñiz et al. (2013) is the most-cited article. Table 4 shows the details of the 20 most-cited articles published in *Psicothema*.
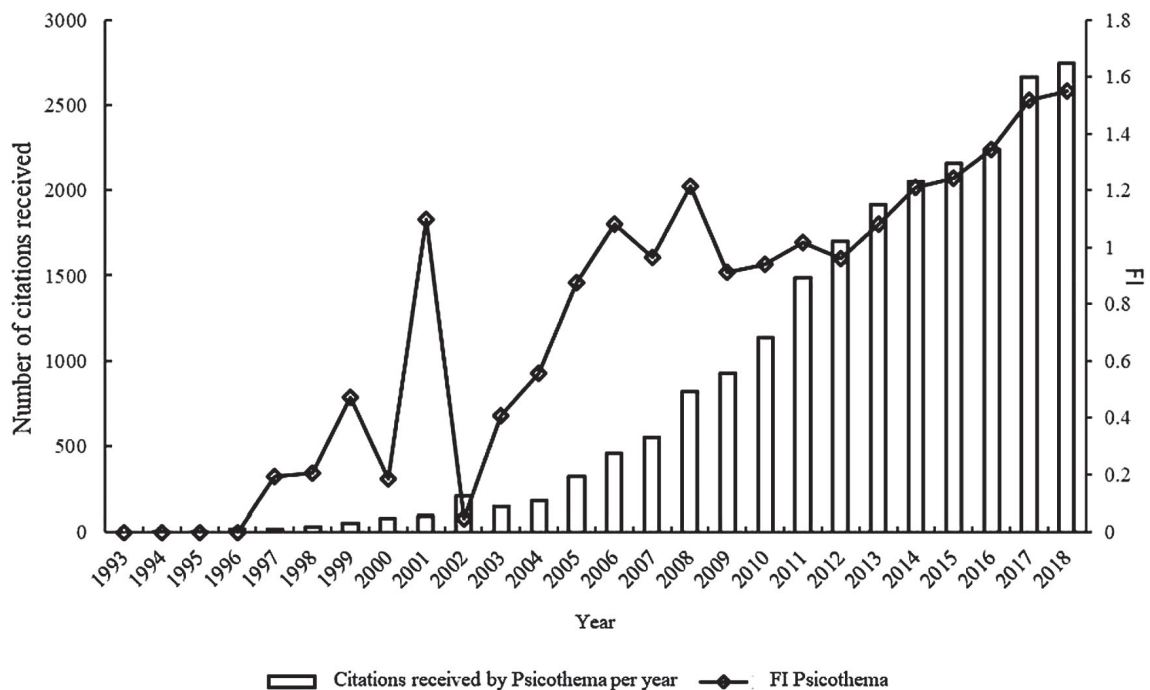

Figure 6. Citations Received and Psicothema's Impact Factor (1993-2018) (Web of Science)

		Table 4			
		20 Most-cited Articles Published in Psicothema			
R	**CT$_{2019}$**	**Title**	**Year of Pub.**	**Aver. per year**	**C$_{2019}$**
1	422	The Bar-On model of emotional-social intelligence (ESI).	2006	28.1	68
2	382	Guidelines for tests translation and adjustment: Second edition.	2013	47.7	84
3	337	Testing for multigroup equivalence of a measuring instrument: A walk through the process.	2008	25.9	55
4	323	PANAS scales on positive and negative effects: Factorial validation and transcultural convergence.	1999	14.6	53
5	270	Psychometric properties on the Satisfaction Scale in Adolescents Lives.	2000	12.8	44
6	201	Spanish adaption of the Ryff psychological well-being scales.	2006	13.4	34
7	178	Reliability, validity and regulation data on the Beck depression inventory.	1998	7.74	7
8	169	The 12-Item General Health Questionnaire (GHQ-12): Reliability, external validity, and factor structure in the Spanish population.	2008	13	29
9	151	Evidence that emotional intelligence is related to job performance and effects and attitudes at work.	2006	10	18
10	146	An application of an empirical Bayes' theorem to increase reliability on partial scores.	2008	11.2	28
11	122	Social well-being: Concept and measurement.	2005	7.63	7
12	118	Spanish version of the Mayer-Salovey-Caruso emotional intelligence test (MSCEIT). Version 2.0: Reliabilities, age, and sex differences.	2006	7.87	10
13	116	Measuring emotional intelligence with the MSCEIT.	2006	7.73	11
14	112	Relating emotional intelligence to social competence and academic achievement in high school students.	2006	7.47	19
15	111	Psychometric properties of the Life Orientation Test to measure optimism.	2002	5.84	10
16	108	Family socialization consequences in the Spanish culture.	2004	6.35	12
17	106	Assessment on the quality of scientific articles and journals: Weighted impact factor and quality index suggestion.	2003	5.89	6
18	100	Predicting resistance to stress: Incremental validity of trait emotional intelligence over alexithymia and optimism.	2006	6.67	11
19	98	Empathy measurement: Interpersonal Reactivity Index analysis.	2004	5.76	12
20	95	Validation of two brief scales to assess Internet addiction and mobile phones overuse.	2009	7.92	15

Note: R = Range; TC$_{2019}$ = Total citations received up to 2019; C$_{2019}$ = Total citations received in 2019. 1 = Bar-On; 2 = Muñiz et al.; 3 = Byrne; 4 = Sandín et al.; 5 = Atienza et al.; 6 = Díaz et al.; 7 = Sanz and Vázquez; 8 = Sánchez-López and Dresch; 9 = Lopes et al.; 10 = Elosua; 11 = Blanco and Díaz; 12 = Extremera et al.; 13 = Brackett and Salovey; 14 = Gil-Olarte et al.; 15 = Ferrando et al; 16 = Musitu and García; 17 = Buela-Casal; 18 = Mikolajczak et al.; 19 = Mestre et al.; 20 = Beranuy et al

Finally, Table 5 presents the main authors, countries, and journals that cited articles published by the *Psicothema* throughout its 30 years of scientific productivity.

Discussion

This study conducted a bibliometric analysis of *Psicothema* as the commemoration of its 30 years of editorial work. The study results provided the identification of the main characteristics of the journal's publications in terms of the authors' sex, the language of publication, the distribution of authors based on their productivity, the main themes, and the research methods. The increase in the number of collaborative works and networks between the countries of the signatory authors' affiliated institutions was also observed. The IF development and the citations of the published articles, the important aspects to assess the value of scientific research studies, were also recorded.

By comparing the present study findings with previous studies (González-Alcaide et al., 2010; Rodríguez & Moreno, 1998; Quevedo-Blasco & Ariza, 2013), it was possible to determine the trends and aspects that have been consolidated over time and that have changed, respectively. For instance, the Universidad de Oviedo and the Universidad Complutense de Madrid have been consolidated as the affiliation institutions of the first or the corresponding authors that contributed the most in the past 30 years. This finding was reported by Rodríguez and Moreno (1998), and thus, five Spanish universities joined this group (Universidad de Valencia, Universidad Autónoma de Madrid, Universidad de Granada, Universidad

Nacional de Educación a Distancia, and Universidad Santiago de Compostela), thereby contributing to 100 or more publications.

On the contrary, changes are observed in relation to the first and second list of authors who mostly contributed (González-Alcaide et al., 2010; Rodríguez & Moreno, 1998). In addition to what has been previously reported, signatures were standardized and compliance with Lotka's law, which states that a small group of authors provide the highest number of articles, was proved in this study. This finding is similar to the findings of previous bibliometric studies that analyzed different psychology journals (see Morgado et al., 2018; Salas et al., 2017; Salas et al., 2018; Salas et al., 2019); hence, in practical terms, this information may be useful to study variables and characteristics associated with large groups of scientific information producers.

Regarding the female participation in publications, González-Alcaide et al. (2010) had initially addressed this issue, and their findings are proved, i.e., differences between male and female contribution in *Psicothema*'s scientific production still exist. Probably, this aspect will be leveled or changed in the upcoming years, considering that currently the highest number of psychology students comprises females (Osca-Lluch & González-Sala, 2017). According to Quevedo-Blasco and Ariza (2013), it can be observed that most of the works were published in Spanish, but a decline from 80.07% to 67.70% (1989 to 2012) was noticed because *Psicothema's* management has decided to publish articles exclusively in English since 2013.

Cooperation between authors has gradually increased over the past years (González-Alcaide et al., 2010; Quevedo-Blasco & Ariza,

Table 5
Main Authors, Countries, and Journals Citing Psicothema

R	Authors$_1$	Institutions$_2$	Journals$_3$	TP$_1$	TP$_2$	TP$_3$
1	Núñez, JC	Spain	*Psicothema*	109	9257	1
2	Fonseca-Pedrero, E	The U.S.	*Anales de Psicología*	106	1.787	458
3	Muñiz, J	England	*Frontiers in Psychology*	101	730	362
4	Buela-Casal, G	Chile	*Spanish Journal of Psychology*	98	643	332
5	Calvete, E	Mexico	*Universitas Psychologica*	75	538	275
6	Rosário, P	Portugal	*Behavioral Psychology/Psicología Conductual*	72	471	167
7	Inglés, CJ	Germany	*Revista de Psicología Del Deporte*	61	440	162
8	García-Fernández, JM Valle, A	Colombia	*Plos One*	60	424	161
9	Sierra, JC	Italy	*Revista Latinoamericana de Psicología*	59	410	147
10	Echeburúa, E	Holland	*International Journal of Environmental Research and Public Health*	55	379	145
11	Vigil-Colet, A	Australia	*International Journal of Clinical and Health Psychology*	51	375	143
12	Fernández-Berrocal, P Paino, M	Canada	*Revista Iberoamericana de Diagnóstico y Evaluación Psicológica*	50	355	120
13	Ortega-Ruíz, R	Brazil	*Personality and Individual Differences*	49	344	119
14	Extremera, N Gámez-Guadix, M Rodríguez, C	Argentina	*Revista de Psicología Social*	47	310	118
15	Navarro, JF Vallejo, G	China	*Revista de Psicodidáctica*	46	296	97
16	Salvador, A	Belgium	*Revista Mexicana de Psicología*	44	207	93
17	Arias, JL Fernández-Río, J	France	*Adicciones*	43	198	92
18	González-Pienda, JA Lemos-Giraldez, S Méndez-Giménez, A Moreno-Jiménez, B	Turkey	*Terapia Psicológica*	41	147	81
19	Becoña, E	Peru	*Retos: Nuevas Tendencias en Educación Física, Deporte y Recreación*	40	125	80
20	Ortuno-Sierra, J Pérez-Fuentes, MD	Sweden	*Psychiatry Research*	39	121	77

Note: R = Range; TP = Total publications; TP$_1$ = Authors; TP$_2$ = Institutions; TP$_3$ = Journals

2013). During the first decade, a network with 12 countries can be observed wherein Spain (*Psicothema)* is the cooperation center. During the second decade, this number increased to 23 countries, and new peripheral centers were incorporated. Finally, during the third decade, which is the focus of this study, the network involved 38 countries with more dynamic and decentralized networks in several continents. Based on these results and on the values of Lawani and Subramanyam cooperation indices, a tendency for continuous growth with respect to cooperation was observed, which constitutes an opportunity for further analysis (Hall et al., 2018; López-López, 2019).

Further, the analysis related to themes in *Psicothema* was reported by Rodríguez and Moreno (1998); in contrast to their findings, this study identified a larger amount of articles in the methodology/psychometrics areas. This finding can be explained through the current information available in relation to the methodological/psychometric studies whose characteristics have been explained in different articles (see Ato et al., 2013; Montero & León, 2007). Regarding citation and impact, findings of Quevedo-Blasco and Ariza (2013) have been updated by this study's findings, as an increase in the IF and the amount of citations of *Psicothema*

publications was observed. This aspect could be the subject in the future research studies wherein other databases such as Scopus can be considered.

The limitations of this study include the exclusion of special editions (supplements), including an edition that published works presented in the methodology congress in the conference paper format. Only empirical and theoretical articles published in regular editions were selected in this study, and the selection criteria included topics determined and methodologies used. Moreover, the double-blind criterion and the consensus among researchers (two members of the team) were employed. No statistical coefficients were used at this stage to assess the proportion in terms of consensus between the reviewers; this aspect can be included in future bibliometric studies.

This study is of great significance for the journal and the scientific community. In the case of *Psicothema* and based on a retrospective viewpoint of the journal's scientific production, the study results may be useful for the editorial team to make future decisions. In turn, the study findings may guide other editors who wish to position their journals as reference of scientific communication and researchers interested in the bibliometric analysis.

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