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THEMATIC REVIEWS

Twenty-five years of research on work and organizational psychology: A bibliometric perspective

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Abstract The research aims to analyze the scientific productivity in the field of work/organizational psychology (WOP) in the last 25 years. We focus our analysis on the most influential journals and articles, generally and for 5-year periods, as well as structures of co-citation among the highest quality journals based on their *h*-index. We found that a high percentage of papers published each year receive between 5 and 10 cites. Secondly, we observe an exponential increase in the number of papers published, citations, and *h*-index. Additionally, the number of self-citations significantly increases in the last 5 years. In this sense, we consider that the most recent papers need more time to increase their level of citation and, subsequently, to correct the bias on self-citation. This research shows the status of research in the field of work/organizational psychology, analyzing the scientific journals and papers published in the Web of Science.

PALABRAS CLAVE
Psicología del trabajo y de las organizaciones;
Índice h;
Citación;
Bibliometría

Veinticinco años de investigación en psicología del trabajo y de las organizaciones: una perspectiva bibliométrica

Resumen La presente investigación tiene como objetivo analizar la producción científica en el ámbito de la psicología del trabajo y las organizaciones en los últimos 25 años. Centramos nuestro análisis en las revistas y artículos con el nivel más alto de *índice h*, en general y por períodos de 5 años, así como en las estructuras de cocitación entre ellas. Los resultados muestran que un alto porcentaje de artículos reciben entre 5 y 10 citas. En segundo lugar, se observa un aumento exponencial en el número de trabajos publicados, las citas, así como el

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índice h. Además, el número de autocitas aumenta significativamente en los trabajos publicados en los últimos 5 años. En este sentido, consideramos que los documentos más recientes necesitan más tiempo para aumentar su nivel de citación y, posteriormente, para corregir el sesgo de autocita. La presente investigación muestra el estado de la investigación en el ámbito de la psicología del trabajo y de las organizaciones a partir del análisis de las revistas y artículos científicos publicados en la Web of Science.

Introduction

Different disciplines, as psychology and management, have contributed to the development of work and organizational psychology (WOP) (König, Fell, Kellnhofer, & Schui, 2015). In this regard, Aguinis, Bradley, and Brodersen (2014) consider that the relationship between industrial and organizational psychology and management is increasing, and there is evidence of an increased presence of I–O psychologists in business schools.

The WOP interdisciplinary' has shown is present in diverse scientific journals. This is a great strength, as it contributes to sharing knowledge in various fields, but also implies a difficulty because researchers have widened the focus of analysis on conceptually and methodologically terms.

In this sense, a bibliometric study focused on the contributions of work and organizational psychology (WOP) is important in order to show the status of research in this field.

Bibliometric studies related to work and organizational psychology (WOP)

There have been various bibliometric studies in relation to the different areas of intervention of psychology: *Psychology of Personality* (Allik, 2013a; Aluja et al., 2011; Haslam et al., 2008), *Social Psychology* (Allik, 2013b; Cikara, Rudman, & Fiske, 2012; Haslam & Kashima, 2010), *Educational and Developmental Psychology* (Albayrak, Föcker, Wibker, & Hebebrand, 2012; Campanario, González, & Rodríguez, 2006; Vinluan, 2012), *Clinical and Health Psychology* (Ariza & Reina Granados, 2012; Haslam & Lusher, 2011; Lillo & Martini, 2013; Quevedo-Blasco, Zych, & Buela-Casal, 2014), or *Neuropsychology* (Lepach, Lehmkuhl, & Petermann, 2010).

However, few bibliometric studies focus on the field of WOP have been published in journals included on WoS (König et al., 2015; Viseu, de Jesus, Quevedo-Blasco, Rus, & Canavarro, 2015).

The recent decease of Dr. Robert A. Roe, founding-president (1991–1995) of the European Association of Work and Organizational Psychology (EAWOP), has inspired this research, which main objective is to analyze the research productivity in the field of WOP, focusing on the most influential journals and articles in the last 25 years (1991–2015).

Method

The utility of bibliometric studies lies in their ability to evidence the general state of research in a particular field of study (Bonilla, Merigó, & Torres-Abad, 2015). There are different indicators to indicate the degree of influence of a magazine or paper in a particular field of study. Commonly used are the inclusion of the journal in prestigious indexing databases such as the Web of Science (Merigó, Gil-Lafuente, & Yager, 2015), their annual impact factor (Garfield, 1972; Glanzer & Moed, 2002) and 5-year impact factor (Amin & Mabe, 2003; Campanario, 2011), the number of papers published in a period of time (Goldberg, Anthony, & Evans, 2015), the number of citations received (Podsakoff, MacKenzie, Podsakoff, & Bachrach, 2008), the *h*-index (Hirsch, 2005; Hirsch & Buela-Casal, 2014), the ratio cites/paper (Merigó, Mas-Tur, Roig-Tierno, & Ribeiro-Soriano, 2015), or the ratio papers/year (Goldberg et al., 2015).

In the present study, we use a combination of indicators, in order to provide the maximum information and a global perspective. Specifically, we analyze the citation structure in the past 25 years. This analysis allows the establishing of the annual diffusion pattern based on the number of citations received by papers published in a given year, as well as the evolution of that pattern.

Secondly, we analyze the ranking of the most influential journals in the field of WOP from their *h*-index, the number of papers published, citations received, the average number of citations per article, the impact factor (IF) and 5-year impact factor. Additionally, we indicate how many of the 50 most influential articles, in relation to the number of citations they receive, have been published in these journals.

Thirdly, we analyze the temporal evolution of the most important journals in the area, in periods of 5 years, in the number of published papers, the *h*-index and the number of citations (total and average per year). In addition, in order to analyze the influence of self-citation in the results, we show the longitudinal trend of the relationship between citations and self-citations in a 5-year period.

Fourthly, we analyze the knowledge flows established between the top-5 journals by *h*-index in order to establish relations of co-citation among the most influential

journals in WOP. Some authors suggest that this structure of co-citations affects the prestige of a journal on account of being cited by others with high rates of reputation (Simsek, Heavey, & Jansen, 2013).

Finally, we analyze the 50 papers that have received more citations in the last 25 years, the journals that have published them, the authors and the relationships between them.

Table 1 General citation structure.

	≥100	≥50	≥10	≥5	≥1	No. of cited papers	Total
1991	67	62	189	52	78	59	507
	13.21%	12.23%	*37.28%*	10.26%	15.38%	11.64%	100%
1992	70	76	222	59	82	30	539
	12.99%	14.10%	*41.19%*	10.95%	15.21%	5.57%	100%
1993	77	86	231	64	61	32	551
	13.97%	15.61%	*41.92%*	11.62%	11.07%	5.81%	100%
1994	79	96	270	73	67	50	635
	12.44%	15.12%	*42.52%*	11.50%	10.55%	7.87%	100%
1995	75	106	290	78	99	42	690
	10.87%	15.36%	*42.03%*	11.30%	14.35%	6.09%	100%
1996	84	86	290	100	114	34	708
	11.86%	12.15%	*40.96%*	14.12%	16.10%	4.80%	100%
1997	98	101	294	98	137	116	844
	11.61%	11.97%	*34.83%*	11.61%	16.23%	13.74%	100%
1998	91	101	296	86	141	136	851
	10.69%	11.87%	*34.78%*	10.11%	16.57%	15.98%	100%
1999	107	121	344	107	149	126	954
	11.22%	12.68%	*36.06%*	11.22%	15.62%	13.21%	100%
2000	111	134	332	92	117	134	920
	12.07%	14.57%	*36.09%*	10.00%	12.72%	14.57%	100%
2001	123	145	362	95	111	128	964
	12.76%	15.04%	*37.55%*	9.85%	11.51%	13.28%	100%
2002	130	141	380	108	99	24	882
	14.74%	15.99%	*43.08%*	12.24%	11.22%	2.72%	100%
2003	111	164	381	89	96	21	862
	12.88%	19.03%	*44.20%*	10.32%	11.14%	2.44%	100%
2004	103	136	450	85	74	41	889
	11.59%	15.30%	*50.62%*	9.56%	8.32%	4.61%	100%
2005	87	167	501	140	104	19	1018
	8.55%	16.40%	*49.21%*	13.75%	10.22%	1.87%	100%
2006	103	142	482	153	112	39	1031
	9.99%	13.77%	*46.75%*	14.84%	10.86%	3.78%	100%
2007	87	131	567	189	141	38	1153
	7.55%	11.36%	*49.18%*	16.39%	12.23%	3.30%	100%
2008	44	128	671	251	207	50	1351
	3.26%	9.47%	*49.67%*	18.58%	15.32%	3.70%	100%
2009	32	117	794	319	279	69	1610
	1.99%	7.27%	*49.32%*	19.81%	17.33%	4.29%	100%
2010	29	71	739	358	389	98	1684
	1.72%	4.22%	*43.88%*	21.26%	23.10%	5.82%	100%
2011	13	47	626	448	565	146	1845
	0.70%	2.55%	*33.93%*	24.28%	30.62%	7.91%	100%
2012	2	13	445	443	769	246	1918
	0.10%	0.68%	23.20%	23.10%	*40.09%*	12.83%	100%
2013	0	5	201	394	966	389	1955
	0.00%	0.26%	10.28%	20.15%	*49.41%*	19.90%	100%
2014	0	1	56	175	977	794	2003
	0.00%	0.05%	2.80%	8.74%	*48.78%*	39.64%	100%
2015	0	0	0	18	445	1639	2102
	0.00%	0.00%	0.00%	0.86%	21.17%	*77.97%*	100%
Total	1723	2377	9413	4074	6379	4500	28,466
%	6.1%	8.4%	33.1%	14.3%	22.4%	15.8%	100.0%

Highest percentatge by row is indicated by italics.

To reach our objectives we used the database Web of Science as a source of information, since it is currently considered the most important and influential database in international scientific research (Merigó, Mas-Tur, et al., 2015; Viseu et al., 2015). The search strategy was developed in January 2016. Given the interdisciplinary nature of the field, indicated in the introduction, we decided not to focus exclusively on the journals indexed in the management or psychology categories of WoS but search by topic, regardless of the category in which the sources are placed.

Results

In January 2016 (timespan: 1991–2015), there were 37,505 papers in WoS Core Collection. If only articles and reviews are considered, the number is reduced to 28,500 (26,849 articles and 1651 reviews). The global *h*-index according to the selected papers was 285 (that is, 285 papers have received at least 285 citations).

Citation structure

An important issue when analyzing the publication and citation structure is to consider the number of papers that have surpassed a citation threshold. This indicates the level of citation that most of the papers receive and permit us to identify the number of citations that the top papers usually receive.

Results show that a high percentage of papers published each year receive between 5 and 10 cites (Table 1). This trend is maintained until 2011–2012, when the number of citations per paper decreases (reaching between 1 and 4 cites). 6.1% of articles published in the period 1991–2015 receive 100 or more citations.

Additionally, we considered it appropriate to differentiate between self-citations and citations received (Fig. 1). In this sense, we observed that in the last 5 years a significant increase in self-citations, which reaches 25% of all citations received, occurs.

Journals ranking

This section presents the ranking of the most influential WOP journals, according to the data available in WoS (Table 2). In this regard, the most influential journal in this field is the Journal of Applied Psychology (JAP). Although the JAP is in the first position of the ranking in terms of number of papers, *h*-index and citations (self-cites excluded), is the second in citations per paper (C/P), where the Journal of Consumer Behaviour (JCB) is the first. JAP is also in second position on impact factor (IF-2014) and on 5-year impact factor, being surpassed by the Journal of Management (JOM).

Another indicator of the relevance of the JAP and the JOM in the area under study is that 12 and 7 of the 50 most cited articles of the last 25 years have been published in JAP and JOM respectively, representing 24% and 14% of the total (see Table 6 for more information).

Temporary evolution of the journals

We consider it interesting to analyze the differences in the top-5 journals segmenting by 5-year periods (Table 3).

The JAP appears again as the journal with the highest *h*-index in all periods, followed by JOM, which varies between the second and third place alternately with the Organizational Behavior and Human Decision Processes (OBHDP) journal in the first two 5-year periods, with JOB in the period 2001–2005, and Leadership Quarterly (LQ) in the last two periods.

Going into detail on other quality indicators of the journals above mentioned, as we had already seen in the previous section, there exist an alternation between the JAP and the JOM based on the average of citations per published paper. In this regard, in the first 5 years analyzed, the JOM has a higher average of citations per paper, although both have a similar average in the next period and the trend analyzed in 2001–2005 (Table 4).

Knowledge flow

In this section, we present the citations structure from among the 5 most influential journals based on their *h*-index

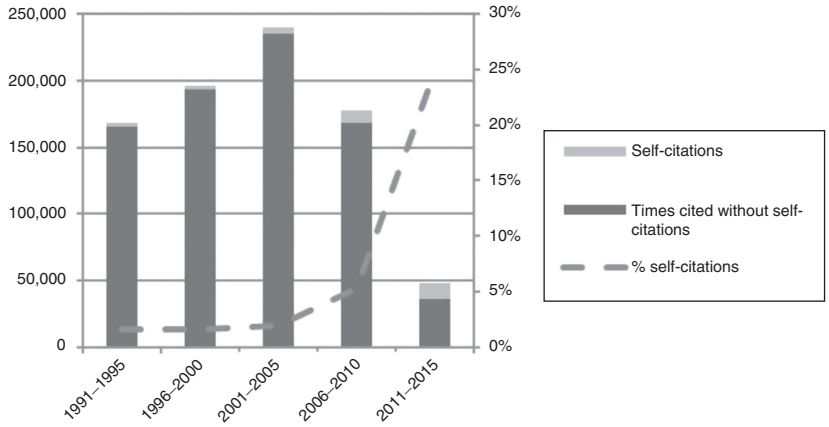

Figure 1 Citations and self-citation by 5-year periods.

Table 2 Most influencial WOP journals.

R	Source titles	Papers	*h*-index	Citations (self-cites excluded)	C/P	IF (2014)	IF5	T50
1	Journal of Applied Psychology (JAP)	2311	194	171,760	80.09	4.799	7.753	12
2	Journal of Management (JOM)	1123	136	78,802	72.66	6.071	9.238	7
3	Journal of Organizational Behavior (JOB)	1291	112	53,670	43.29	3.038	5.017	1
4	Organizational Behavior and Human Decision Processes (OBHDP)	1435	110	66,577	48.66	2.201	3.938	4
5	Personnel Psychology (PP)	680	105	41,846	64.39	4.49	6.227	3
6	Leadership Quarterly (LQ)	910	85	26,440	36.64	3.138	4.326	1
7	Journal of Occupational and Organizational Psychology (JOOP)	792	70	22,227	29.19	1.667	3.461	–
8	Organizational Research Methods (ORM)	435	62	18,656	45.1	4.148	5.465	2
9	Research in Organizational Behavior (ROB)	178	60	12,626	72.12	1.562	3.4	3
10	Journal of Consumer Research (JoCR)	134	59	12,948	97.91	3.125	5.003	2
11	Journal of Consumer Psychology (JCP)	720	54	11,860	18.57	2.243	2.561	–
12	Human Resource Management (HRM)	812	53	12,778	17.06	1.293	2.705	–
13	Organizational Dynamics (OD)	671	52	10,645	16.15	0.789	0.841	–
14	Group Organization Management (GOM)	553	52	10,545	20.53	1.40	2.869	–
15	Small Group Research (SGR)	704	51	10,937	17.27	0.794	1.612	–
16	Journal of Business and Psychology (JBP)	784	39	8266	11.06	2.075	3.015	–
17	International Journal of Selection And Assessment (IJSA)	691	38	7373	12.55	0.814	1.199	–
18	Journal of Business Research (JBR)	243	37	4695	19.67	1.48	2.324	–
19	Personnel Review (PR)	876	34	6985	8.63	0.921	1.438	–
20	European Journal of Work and Organizational Psychology (EJWOP)	380	31	3876	10.86	2.09	2.615	–
21	Psychology Marketing (PM)	158	30	2599	16.95	1.080	1.547	–
22	Journal of Business Ethics (JBE)	169	28	2411	15.2	1.326	1.915	–
23	Journal of Managerial Psychology (JMP)	366	24	2495	7.44	1.20	1.919	–
24	Journal of Organizational Behavior Management (JOBM)	300	21	1139	7.29	0.486	0.967	–
25	European Journal of Marketing (EJM)	175	20	1453	8.6	1.006	1.659	–

(Table 5). Results show that, even though the JAP is the most cited journal (62,845 cites), only 4.27% of its citations comes from the other top-5 journals. On the other hand, Personnel Psychology (PP) has the lowest number of cites (22,162), but 10.46% of them come from top-5 journals. The rank of self-citations is between 1.6% (JAP) and 4.38% (JOB).

Next, let us look into the general co-citation structure of the most representative journals in this field (Fig. 2). For doing so, we use the VOS viewer software (Van Eck &

Table 3 Ranking of the 5 most influential WOP journals by 5-year periods.

Source titles	1991–1995	1996–2000	2001–2005	2006–2010	2011–2015	Mean rank
Journal of Applied Psychology (JAP)	1	1	1	1	1	1
Journal of Management (JOM)	3	2	3	2	2	2.4
Organizational Behavior and Human Decision Processes (OBHDP)	2	3	4	5	–	3.5
Leadership Quarterly (LQ)	–	–	5	3	3	3.67
Journal of Organizational Behavior (JOB)	5	4	2	4	4	3.8
Personnel Psychology (PP)	4	5	–	–	5	4.67

Table 4 Quality indicators of top-5 journals (5-year periods).

Period	Indicators	JAP	JOM	OBHDP	LQ	JOB	PP
1991–1995	Rank	1	3	2	–	5	4
	Papers	410	205	361	–	190	145
	h	107	66	72	–	55	56
	Citations (self-cites excluded)	38,810	24,696	28,657	–	10,937	14,450
	C/P	95.37	120.98	80.04	–	57.77	100.37
1996–2000	Rank	1	2	3	–	4	5
	Papers	398	184	317	–	258	148
	h	114	78	77	–	70	61
	Citations (self-cites excluded)	42,194	20,092	19,390	–	14,679	11,010
	C/P	106.88	109.45	61.87	–	57.11	74.86
2001–2005	Rank	1	3	4	5	2	–
	Papers	504	199	225	160	250	–
	h	126	75	62	66	78	–
	Citations (self-cites excluded)	63,522	18,055	11,305	11,578	18,425	–
	C/P	127.04	91.12	50.59	73.94	74.12	–
2006–2010	Rank	1	2	5	3	4	–
	Papers	552	226	231	253	262	–
	h	98	67	48	53	50	–
	Citations (self-cites excluded)	33,683	14,007	7808	8877	9008	–
	C/P	62.27	62.56	34.19	37.11	34.82	–
2011–2015	Rank	1	2	–	3	4	5
	Papers	447	309	–	357	331	124
	h	34	33	–	22	21	22
	Citations (self-cites excluded)	4584	4204	–	1924	2336	1587
	C/P	11.32	14.21	–	7.19	7.63	13.27
Mean rank		1.00	2.40	3.50	3.67	3.80	4.67

Waltman, 2010). Recall that co-citation occurs when two documents receive a citation by the same third document (Small, 1973).

The Journal of Applied Psychology has the deepest co-citation structure. Most of the leading journals are close to the field (Journal of Personality and Social Psychology) although some management journals also have a significant position including the Academy of Management Journal and the Academy of Management Review. Some other journals in marketing and economics also appear in the map although their influence is lower.

The most influential papers

In this section, we considered of interest to researchers in the field of WOP to analyze the 50 most cited articles in the period under study (Table 6). The most influential paper in

Table 5 Citations structure among the 5 most influential journals.

		Cited journals					
		JAP	JOM	OBHDP	JOB	PP	Total row
Citing journals	JAP	*43 (1.6%)*	981 (61.5%)	906 (46.92%)	930 (52.84%)	1170 (50.5%)	3987
	JOM	642 (23.92%)	*66 (4.14%)*	368 (19.06%)	404 (22.96%)	452 (19.42%)	1866
	OBHDP	525 (19.56%)	248 (15.55%)	*43 (2.23%)*	180 (10.24%)	190 (8.2%)	1143
	JOB	922 (34.35%)	63 (3.95%)	428 (22.17%)	*77 (4.38%)*	505 (21.8%)	1918
	PP	595 (22.17%)	303 (19.0%)	229 (11.86%)	246 (13.98%)	*42 (1.81%)*	1373
	Total column	2684 (4.27%)	1595 (3.55%)	1931 (4.56%)	1760 (6.25%)	2317 (10.46%)	10,287
	Total cites	62,845	44,893	42,391	28,179	22,162	

Self-citations are indicated by italics.

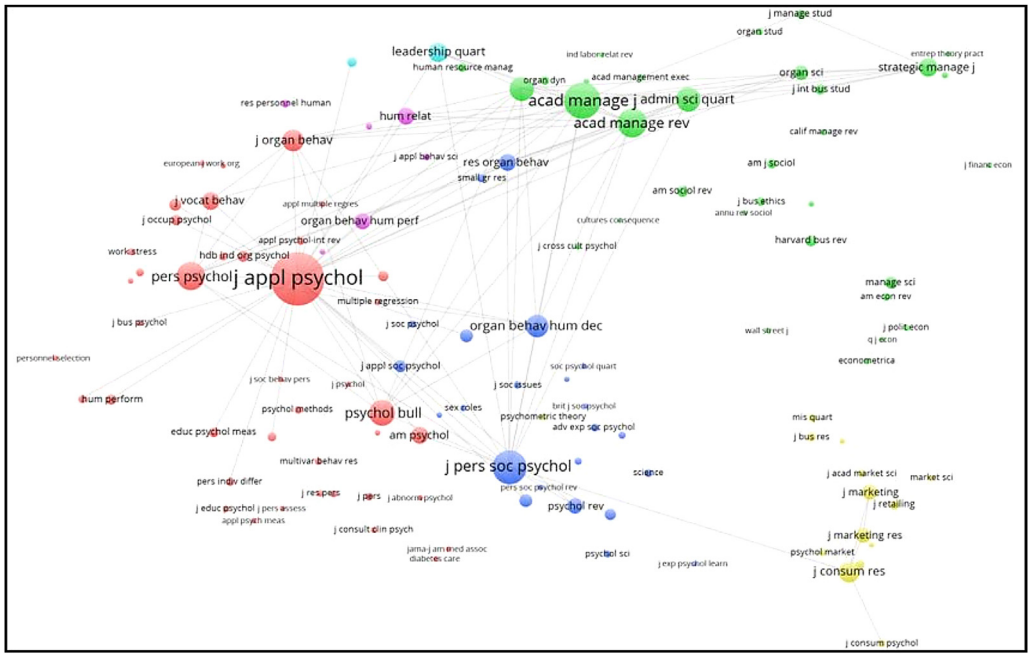

Figure 2 Co-citation structure of journals on work and organizational psychology.

this area was published by Icek Ajzen in 1991. In this paper the author developed the well-known theory of planned behavior, defined by him as, *''a useful conceptual framework for dealing with the complexities of human social behavior''* (Ajzen, 1991, p. 206).

Ajzen's paper is the most cited in absolute terms, but Podsakoff's and collaborators paper (2003) receives more citations on average (correcting the number of citations by taking into account the year of the article). This paper reviews one of the most common methodological problems of the discipline and, in general, in the social sciences, the common method variance. In this sense, this analysis is entirely relevant to researchers when designing their own research, as it provides recommendations for controlling method biases in research settings.

Although we observed that the articles published in the period 1991–1995 were the most cited, 2001 was the year when most of the top-50 papers were published (18% of total). Consistently with the previous results, in 1991seven top-50 papers were published (14%)

Additionally, we analyzed the 19 journals in which the top-50 papers have been published. Five of these exceed the median of items included in the top-50 (Md = 2). They are the Journal of Applied Psychology (with 24% of papers on the list of the most influential), the Journal of Management (14%), Organizational Behavior and Human Decision Processes (8%), the MIS Quarterly, and Personnel Psychology (6%). Finally, 15 of the most cited papers have been published in journals not included in the list of top-25 most influential (Fig. 3).

The most influential authors by number of papers published are Wilmar B. Schaufeli, with 3 papers in the Journal of Applied Psychology (2001), the Annual Review of Psychology (2001) and the Journal of Organizational Behavior (2004). Secondly, publishing two papers, we found Blake E. Ashforth (JOB, 1992; JAP, 1996), Arnold B. Bakker (JAP, 2001; JOB, 2004, with Schaufeli as a co-author in both), Jason A. Colquitt (2 papers on the JAP in 2001), Russell Cropanzano (Research in Organizational Behavior, 1996; JOM, 2005), Scott B. MacKenzie (JOM, 2000 and JAP, 2003,

Table 6 The 50 most cited papers.

R	Authors	Title	Year	Journal	Cites	C/Y
1	Ajzen	The theory of planned behavior	1991	Organizational Behavior and Human Decision Processes	11,466	477.8
2	Barney	Firm resources and sustained competitive advantage	1991	Journal of Management	9164	381.8
3	Podsakoff, Mackenzie, Lee, and Podsakoff	Common method biases in behavioral research: A critical review of the literature and recommended remedies	2003	Journal of Applied Psychology	8777	731.4
4	Barrick and Mount	The big 5 personality dimensions and job-performance – A metaanalysis	1991	Personnel Psychology	2207	92.0
5	Maslach, Schaufeli, and Leiter	Job burnout	2001	Annual Review of Psychology	2066	147.6
6	Vandenberg and Lance	A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research	2000	Organizational Research Methods	1702	113.5
7	Hevner, March, Park, and Ram	Design science in Information Systems research	2004	MIS Quarterly	1528	138.9
8	Colquitt, Conlon, Wesson, Porter, and Ng	Justice at the millennium: A meta-analytic review of 25 years of organizational justice research	2001	Journal of Applied Psychology	1352	96.6
9	Cortina	What is coefficient alpha – An examination of theory and applications	1993	Journal of Applied Psychology	1348	61.3
10	Steenkamp and Baumgartner	Assessing measurement invariance in cross-national consumer research	1998	Journal of Consumer Research	1304	76.7
11	Graen and Uhlbien	Relationship-based approach to leadership – Development of leader-member exchange (LMX) theory of leadership over 25 years – Applying a multilevel multidomain perspective	1995	Leadership Quarterly	1265	63.3
12	Locke and Latham	Building a practically useful theory of goal setting and task motivation – A 35-year odyssey	2002	American Psychologist	1256	96.6
13	Schmidt and Hunter	The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings	1998	Psychological Bulletin	1246	73.3
14	Meyer, Allen, and Smith	Commitment to organizations and occupations – Extension and test of a 3-component conceptualization	1993	Journal of Applied Psychology	1176	53.5
15	Meyer, Stanley, Herscovitch, and Topolnytsky	Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences	2002	Journal of Vocational Behavior	1150	88.5
16	Hoffman and Novak	Marketing in hypermedia computer-mediated environments: Conceptual foundations	1996	Journal of Marketing	1139	59.9

Table 6 (*Continued*)

R	Authors	Title	Year	Journal	Cites	C/Y
17	Williams and Anderson	Job-satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors	1991	Journal of Management	1135	47.3
18	Demerouti, Bakker, Nachreiner, and Schaufeli	The job demands-resources model of burnout	2001	Journal of Applied Psychology	1133	80.9
19	Lindell and Whitney	Accounting for common method variance in cross-sectional research designs	2001	Journal of Applied Psychology	1100	78.6
20	Podsakoff, Mackenzie, Paine, and Bachrach	Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research	2000	Journal of Management	1060	70.7
21	Rhoades and Eisenberger	Perceived organizational support: A review of the literature	2002	Journal of Applied Psychology	1050	80.8
22	Colquitt	On the dimensionality of organizational justice: A construct validation of a measure	2001	Journal of Applied Psychology	1039	74.2
23	Wagner, Austin, Davis, Hindmarsh, Schaefer, and Bonomi	Improving chronic illness care: Translating evidence into action	2001	Health Affairs	1030	73.6
24	Williams and O'Reilly	Demography and diversity in organizations: A review of 40 years of research	1998	Research in Organizational Behavior	1017	59.8
25	Moorman	Relationship between organizational justice and organizational citizenship behaviors – Do fairness perceptions influence employee citizenship	1991	Journal of Applied Psychology	1016	42.3
26	Bitner	Servicescapes – The impact of physical surroundings on customers and employees	1992	Journal of Marketing	999	43.4
27	Cronin, Brady, and Hult	Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments	2000	Journal of Retailing	994	66.3
28	Schaufeli and Bakker	Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study	2004	Journal of Organizational Behavior	981	89.2
29	Grimshaw et al.	Effectiveness and efficiency of guideline dissemination and implementation strategies	2004	Health Technology Assessment	981	89.2
30	Spector	Method variance in organizational research – Truth or urban legend?	2006	Organizational Research Methods	978	108.7
31	Mael and Ashforth	Alumni and their alma-mater – A partial test of the reformulated model of organizational identification	1992	Journal of Organizational Behavior	945	41.1
32	Kristof	Person-organization fit: An integrative review of its conceptualizations, measurement, and implications	1996	Personnel Psychology	940	49.5

Table 6 (*Continued*)

R	Authors	Title	Year	Journal	Cites	C/Y
33	Griffeth, Hom, and Gaertner	A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium	2000	Journal of Management	937	62.5
34	Bhattacherjee	Understanding information systems continuance: An expectation-confirmation model	2001	MIS Quarterly	916	65.4
35	Cohen and Bailey	What makes teams work: Group effectiveness research from the shop floor to the executive suite	1997	Journal of Management	899	49.9
36	Wanous, Reichers, and Hudy	Overall job satisfaction: How good are single-item measures?	1997	Journal of Applied Psychology	898	49.9
37	Muniz and O'Guinn	Brand community	2001	Journal of Consumer Research	874	62.4
38	Chan	Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models	1998	Journal of Applied Psychology	862	50.7
39	Lee and Ashforth	A meta-analytic examination of the correlates of the three dimensions of job burnout	1996	Journal of Applied Psychology	859	45.2
40	Cohen-Charash, and Spector	The role of justice in organizations: A meta-analysis	2001	Organizational Behavior and Human Decision Processes	856	61.1
41	Hogg and Terry	Social identity and self-categorization processes in organizational contexts	2000	Academy of Management Review	853	56.9
42	Gist and Mitchell	Self-efficacy – A theoretical-analysis of its determinants and malleability	1992	Academy of Management Review	851	37.0
43	Organ and Ryan	A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior	1995	Personnel Psychology	807	40.4
44	Aaker	Dimensions of brand personality	1997	Journal of Marketing Research	793	44.1
45	Conner	A historical comparison of resource-based theory and 5 schools of thought within industrial-organization economics – do we have a new theory of the firm	1991	Journal of Management	791	33.0
46	Bandura	Social cognitive theory of self-regulation	1991	Organizational Behavior and Human Decision Processes	782	32.6
47	Cropanzano and Mitchell	Social exchange theory: An interdisciplinary review	2005	Journal of Management	781	78.1
48	Loewenstein	Out of control: Visceral influences on behavior	1996	Organizational Behavior and Human Decision Processes	780	41.1
49	Venkatesh and Morris	Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior	2000	MIS Quarterly	774	51.6
50	Weiss and Cropanzano	Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work	1996	Research in Organizational Behavior	761	40.1

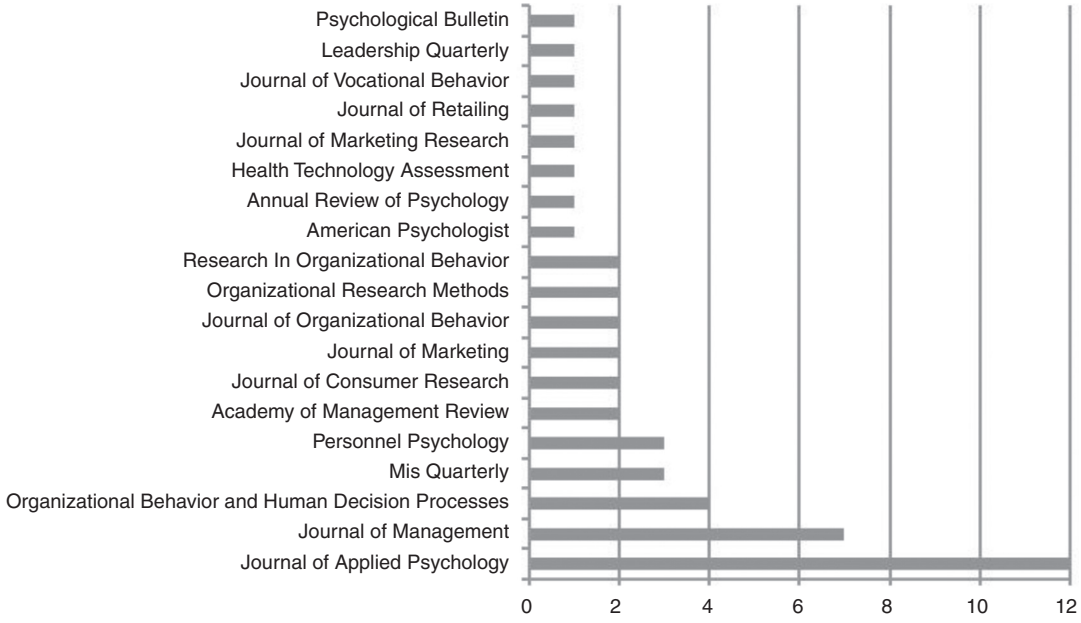

Figure 3 Top-50 papers by journal.

with Philip M. Podsakoff as a co-author in both), John P. Meyer (JAP, 1993 and the Journal Vocational Behavior, 2002), Philip M. Podsakoff (JOM, 2000 and JAP, 2003, with Scott B. MacKenzie as a co-author in both), and Paul E. Spector (OBHDP, 2001 and Organizational Research Methods, 2006).

Conclusion

The main objective of our research was to analyze the scientific productivity in one of the specific areas of psychology, the WOP, in the last 25 years (1991–2015). To do so, our bibliometric study focuses on the most influential journals and articles, generally and for 5-year periods, as well as structures of co-citation among the highest quality journals based on their *h*-index on the Thompson Reuters Journal Citation Reports (JCR).

Similarly to the results of other authors focusing on other disciplines, we found that a high percentage of papers published each year receive between 5 and 10 cites. On the other hand, the number of papers that receive 100 or more citations is above the usual number of citations in other areas (Merigó, Mas-Tur, et al., 2015).

Secondly, we observe an exponential increase in the number of papers published, citations, and *h*-index. Several authors have noted this increasing in various fields of knowledge (e.g., Bonilla et al., 2015; Goldberg et al., 2015; Simsek et al., 2013), pointing out it may be causing bias on indexes commonly used to determine the impact of a journal (Goldberg et al., 2015).

Additionally, the number of self-citations significantly increases in the last 5 years. It is likely that the observed trends will be corrected in the future, due to the consolidation process of the papers. In this sense, we consider that the most recent papers need more time to increase their level of citation and, subsequently, to correct the bias on self-citation. Other studies pointed out that the percentage of self-citation is usually around 10% (Krampen, 2010; Krampen, Becker, Wahner, & Montada, 2007) and consider that ''self-references should not only be viewed as self-marketing strategies of scientists, but as indicators of the continuity of the research they have undertaken (representing central themes of their work) as well'' (Krampen, 2010, p. 513). Additionally, social science papers need more than 5 years to increase their number of cites, while this time is around three years for natural sciences papers (Salgado & Páez, 2007).

Related to the journals, the Journal of Applied Psychology (JAP) is the most influential journal in WOP field, based on its *h*-index. It is on the second position (of 76) in the WoS ''Psychology – Applied'' category and on the sixth position (of 185) in ''Management''. When we analyze citations per paper (C/P), the Journal of Consumer Behaviour (JCB) is the first one. If we compare the JAP with the JCB we can see that, although both journals have the same number of annual volumes in recent years, the number of papers they include is substantially different (around 20 in JAP and less than 10 in JCB).

The JAP is also in second position on impact factor (IF-2014) and on 5-year impact factor, being surpassed by the Journal of Management (JOM). In this sense, the JOM can also be considered as one of the most influential journal in the field of WOP.

If we only consider the number of papers published, the result is affected by the number of volumes and papers published in them (around 20 papers in each of the six annual volumes in the JAP compared to 11 papers in the 7 annual volumes in the JOM). Finally, another indicator of the relevance of the JAP and the JOM in the area under study is that 12 and 7 of the 50 most cited articles of the last 25 years have been published in JAP and JOM respectively (a total of 38% of the top-50 most influential papers). The knowledge flow shows that, being the JAP the most cited

journal, only 4.27% of its citations comes from the other top-5 journals. Related to co-citation, the Journal of Applied Psychology is again the leading journal, although some other psychology and management journals also have a significant position, as the Journal of Personality and Social Psychology, the Academy of Management Journal, or the Academy of Management Review.

The most influential papers of the top-50 list is ''The theory of planned behavior'' (Ajzen, 1991). This is the most cited in absolute terms, but ''Common method biases in behavioral research. A critical review of the literature and recommended remedies'' (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) receives more citations on average (citations/year). The first paper has an epistemological sense, developing one of the most important conceptual frameworks to explain individuals thinking and behaviors. On the other hand, Podsakoff's paper analyzes critically one of the most common methodological problems, the common method variance. In this sense, his analysis is entirely relevant to researchers when designing their own research, as it provides recommendations for controlling method biases in research settings.

Schaufeli is the author with more papers in the top-50 (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Bakker, 2004). His papers analyze the causes and consequences of one of the most important and controversial syndrom for researchers and practitioners, the burnout (Maslach, 1978).

Due to the interdisciplinary nature of work and organizational psychology, researchers publish their results in diverse scientific journals of different knowledge areas, mainly psychology and management (König et al., 2015). This is a great strength, as it contributes sharing knowledge in various fields, but also implies a difficulty because researchers have to open the focus of analysis in conceptually and methodologically terms. An important object of interest for research is the analysis of the scientific journals and articles included on the Web of Science (Viseu et al., 2015). In this, the present study contributes to analyze a specific area of Psychology that has been scarcely studied.

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References

Aguinis, H., Bradley, K. J., & Brodersen, A. (2014). Industrial–organizational psychologists in business schools: Brain drain or eye opener? *Industrial and Organizational Psychology, 7*, 284–303.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179–211.

Albayrak, Ö., Föcker, M., Wibker, K., & Hebebrand, J. (2012). Bibliometric assessment of publication output of child and adolescent psychiatric/psychological affiliations between 2005 and 2010 based on the databases PubMed and Scopus. *European Child & Adolescent Psychiatry, 21*, 327–337.

Allik, J. (2013a). Personality psychology in the first decade of the new millennium: A bibliometric portrait. *European Journal of Personality, 27*, 5–14.

Allik, J. (2013b). Bibliometric analysis of the journal of cross-cultural psychology during the first ten years of the new millennium. *Journal of Cross-Cultural Psychology, 44*, 657–667.

Aluja, A., Becoña, E., Botella, C., Colom, R., Echeburúa, E., Forns, M., ..., & Vila, J. (2011). Indicadores de calidad de la producción en la Web of Science de diez profesores del Área de Personalidad, Evaluación y Tratamiento Psicológico: aportaciones adicionales al estudio de Olivas-Ávila y Musi-Lechuga. *Psicothema, 23*, 267–273.

Amin, R., & Mabe, M. (2003). Impact factor: Use and abuse. *Medicina, 63*, 347–354.

Ariza, T., & Reina Granados, M. (2012). Bibliometric analysis of the most relevant Iberoamerican journals related to Clinical and Health Psychology of the journal citation reports. *Terapia Psicológica, 30*, 89–102.

Bonilla, C. A., Merigó, J. M., & Torres-Abad, C. (2015). Economics in Latin America: A bibliometric analysis. *Scientometrics, 105*, 1239–1252.

Campanario, J. M. (2011). Empirical study of journal impact factors obtained using the classical two-year citation window versus a five-year citation window. *Scientometrics, 87*, 189–204.

Campanario, J. M., González, L., & Rodríguez, C. (2006). Structure of the impact factor of academic journals in the field of Education and Educational Psychology: Citations from editorial board members. *Scientometrics, 69*, 37–56.

Cikara, M., Rudman, L., & Fiske, S. (2012). Dearth by a thousand cuts? Accounting for gender differences in top-ranked publication rates in social psychology. *Journal of Social Issues, 68*, 263–285.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*, 499–512.

Garfield, E. (1972). Citation analysis as a tool in journal evaluation. *Science, 178*, 471–479.

Glanzel, W., & Moed, H. F. (2002). Journal impact measures: Their role in research policy and scientific information management. *Scientometrics, 53*, 169–170.

Goldberg, S. R., Anthony, H., & Evans, T. S. (2015). Modelling citation networks. *Scientometrics, 105*, 1577–1604.

Haslam, N., Ban, L., Kaufmann, L., Loughnan, S., Peters, K., Whelan, J., & Wilson, S. (2008). What makes an article influential? Predicting impact in social and personality psychology. *Scientometrics, 76*, 169–185.

Haslam, N., & Kashima, Y. (2010). The rise and rise of social psychology in Asia: A bibliometric analysis. *Asian Journal of Social Psychology, 13*, 202–207.

Haslam, N., & Lusher, D. (2011). The structure of mental health research: Networks of influence among psychiatry and clinical psychology journals. *Psychological Medicine, 41*, 2661–2668.

Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences of the United States of America, 102*, 16569–16572.

Hirsch, J. E., & Buela-Casal, G. (2014). The meaning of the h-index. *International Journal of Clinical and Health Psychology, 14*, 161–164.

König, C. J., Fell, C. B., Kellnhofer, L., & Schui, G. (2015). Are there gender differences among researchers from industrial/organizational psychology? *Scientometrics, 105*, 1931–1952.

Krampen, G. (2010). Acceleration of citing behavior after the millennium? Exemplary bibliometric reference analyses for psychology journals. *Scientometrics, 83*, 507–513.

Krampen, G., Becker, R., Wahner, U., & Montada, L. (2007). On the validity of citation counting in science evaluation: Content analyses of references and citations in psychological publications. *Scientometrics*, *71*, 191–202.

Lepach, A. C., Lehmkuhl, G., & Petermann, F. (2010). Neuropsychologische Themen in der Kinderpsychologie und Kinderpsychiatrie. *Praxis der Kinderpsychologie und Kinderpsychiatrie*, *59*, 576–587.

Lillo, S., & Martini, N. (2013). Principales Tendencias Iberoamericanas en Psicología Clínica. Un Estudio Basado en la Evidencia Científica. *Terapia Psicológica*, *31*, 363–371.

Maslach, C. (1978). The client role in staff burn-out. *Journal of Social Issues*, *34*, 111–124.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, *52*, 397–422.

Merigó, J. M., Gil-Lafuente, A. M., & Yager, R. R. (2015). An overview of fuzzy research with bibliometric indicators. *Applied Soft Computing*, *27*, 420–433.

Merigó, J. M., Mas-Tur, A., Roig-Tierno, N., & Ribeiro-Soriano, D. (2015). A bibliometric overview of the Journal of Business Research between 1973 and 2014. *Journal of Business Research*, *68*, 2645–2653.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879–903.

Podsakoff, P. M., MacKenzie, S. B., Podsakoff, N. P., & Bachrach, D. G. (2008). Scholarly influence in the field of management: A bibliometric analysis of the determinants of university and author impact in the management literature in the past quarter century. *Journal of Management*, *34*, 641–720.

Quevedo-Blasco, R., Zych, I., & Buela-Casal, G. (2014). Sleep apnea through journal articles included in the Web of Science in the first decade of the 21st century. *Revista Iberoamericana de Psicología y Salud*, *5*, 39–53.

Salgado, J. F., & Páez, D. (2007). La productividad científica y el índice h de Hirchs de la psicología social española: convergencia entre indicadores de productividad y comparación con otras áreas. *Psicothema*, *19*, 179–189.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, *25*, 293–315.

Simsek, Z., Heavey, C., & Jansen, J. J. (2013). Journal impact as a diffusion process: A conceptualization and the case of the Journal of Management Studies. *Journal of Management Studies*, *50*, 1374–1407.

Small, H. (1973). Co-citation in the scientific literature: A new measure of the relationship between two documents. *Journal of the American Society for Information Science*, *24*, 265–269.

Van Eck, N. J., & Waltman, L. (2010). Software survey: VOS viewer, a computer program for bibliometric mapping. *Scientometrics*, *84*, 523–538.

Vinluan, L. R. (2012). Research productivity in education and psychology in the Philippines and comparison with ASEAN countries. *Scientometrics*, *91*, 277–294.

Viseu, J. N., de Jesus, S. N., Quevedo-Blasco, R., Rus, C. L., & Canavarro, J. M. (2015). Motivação docente: estudo bibliométrico da relação com variáveis individuais, organizacionais e atitudes laborais. *Revista Latinoamericana de Psicología*, *47*, 58–65.