A bibliometric overview of marketing research: A university analysis.

Track: Marketing Management

Abstract

The purpose of this study is to identify the universities that have the greatest impact in the area of Marketing for the period between 1990 and 2014. Using bibliometric techniques, the 30 most influential universities were identified as well as a ranking broken down by five-year periods and relevant journals in the area. In particular, it shows the most productive and influential universities in this area to the scientific community, according to information found on the Web of Science (WoS). Moreover, the work also presents a graphical visualization of the leading universities by using bibliographic coupling and co-authorship analysis.

Keywords: Marketing research, University Ranking, Bibliometric.

1. Introduction

In recent times, we have witnessed an increase in interest in the Marketing area, mainly because of the impact in their actions that generate both brand value and the value for customers. Where, in general, the consideration of Marketing as a science is associated with the definition provided by Martinez (2011), who states that this corresponds to a philosophy, a tool, a number of processes and a program of action.

Much of the research results in Marketing are unrepresentative over time (Czinkota 2000; Easton and Easton 2003; Homburg 2003; Svensson 2007). The conclusions drawn from such research efforts are highly representative of a specific context and time (Svensson 2006). Thus, researchers should strive by publishing of articles and that they find proportionate findings and valid conclusions, reliable and general conclusions in the different contexts.

In particular, it is concerning the grade in which the current marketing researches promote scientific knowledge. This is because we understand Marketing as "a function of the organization and a set of processes for creating, communicating, delivering value to customers and for managing customer relationships, so that it benefits the organization and its stakeholders "(AMA 2008). In addition, there is evidence of biased use of quantitative methods to explore issues of marketing (Svensson 2006; Svensson and Wood 2007).

In fact, scientific productivity and visibility are essential for measuring the research excellence of any agent. Increasing competition demands the research and publication with quality and in quantity to maintain or improve its

professional position, not only at the individual level. Universities also see their budgets depleted as well as its possibilities for growth potential and training if they do not demonstrate a sufficient production level (Ibáñez et al. 2013).

Thus, it is interesting to analyze the research done by universities in Marketing, so that we can get a map of the state of affairs (Carpenter 1996). This is because the universities, being academic institutions, have an important role as propulsive and disseminators of new knowledge, being agents that must assess and enhance the generation of scientific advances.

The evaluation of the research activities is important to promote its value and quality (Van Raan 1996), where public relations and development units of the University can benefit from objective figures on the research achievements of their Universities. This allows such information to publicize and attract University students and researchers, as well as donors and other relevant agentsº (Thomson Reuters 2008).

Thus, the analysis of the scientific production of universities allows one to see accurate sources about the activities that occur in such institutions. Thus, on one hand, it orientates itself to the new investigations about the new themes and develop their work through a process of local knowledge. In addition, in turn, can qualify University research policies, clarifying the strengths and weaknesses of their projects as a way to determine the necessary improvements in the quality and usefulness of them for future institutional decisions and budget settings (Jiménez and Torres 2012; Quintana 2006).

With this in mind, the objective of this work provides an overview of the universities in the area of Marketing, seeking to identify the trends and directions in the scientific production of such institutions by bibliometric study between the years 1990-2014.

This article presents the following sections: in the first section are presented the thirty most influential universities of the period, according to its H index, number of citations and total papers. Then in the second section are showed the analysis proceeds to the study of institutions according to 5-year periods. Moreover, is also exhibited an analysis about the publication evolution and citations over time. Finally, the study concludes with a ranking of universities according to their publications, citations and H index in several journals in marketing area

2. Conceptual framework

Gross and Gross (1927) were the first to publish an article using the number of citations to estimate the importance of scientific work. Today, analyzing scientific publications corresponds to "a fundamental base within the research process and, therefore, has become a tool to assess the quality of the generator of knowledge process and the impact of this process in its environment "(Rueda et al. 2005). Specifically, the bibliometric analysis appears as a mean by which to assess the

scientific activity and the impact of research and sources, to provide information on the results of the research process and its volume, evolution, mass and structure (Martinez et al., 2014; Rueda et al., 2005). Hence, the preponderant role obtained by bibliometric within the scientific community is because this technique allows analyzing ample amounts of information articulated at various levels (Lemo, 2012).

In fact, several authors (Pacheco and Milanes, 2009; Wiley et al., 2012) suggest that bibliometric indicators are an objective, economic and relatively simple method to obtain quantitative information about the research process. That is, the bibliometric indicators become a tool that focuses on the scientific value of certain journals, institution or author (Pulgarín et al., 2004).

In the field of Marketing, various studies have used bibliometric techniques to analyze the evolution of different topics. The focuses are the journals (Franceschini and Maisano, 2012) or areas of knowledge. For example, some issues has been of international marketing (Samiee and Chabowski, 2012); corporate brand (Fetscherin and Usunier, 2012); marketing services (Kunz and Hogreve, 2011), sustainability research in marketing (Chabowski et al., 2011), social marketing and management (Leonidou and Leonidou, 2011); anti-consumer and consumer resistance (Galvagno 2011). The most discussed topics in bibliometric studies of Marketing are: journal ranking (Hult et al., 1997; Theoharakis, 2002); content analysis to identify research topics (Nakata and Huang, 2005; Ramirez et al., 2013; Svensson and Wood, 2008); pricing decisions (Leone et al., 2012); advertising (Bakir et al., 2000; Kim and McMillan, 2008); and branding issues (Chabowski et al. 2013), among others.

3. Methodology

This study uses the Web of Science (WoS) Core Collection, which corresponds to a database included in a more general one, the WoS that is owned by Thomson and Reuters. The WoS includes more than 15,000 journals and 50,000,000 documents classified in 251 categories and 151 topics research areas. Thus, considering the information provided by it in the area of Marketing, this study proceed to do the analysis for the articles developed between 1990 and 2014.

Meanwhile, it is also important to note that this work uses various indicators to provide a complete picture of the state of the Universities (Merigó et al. 2015a). However, although it is included in the analysis in a way that the reader possesses a general idea, the general assumption is that the number of articles shows the productivity and the number of citations reflects the influence of its articles since these are the main tool in bibliometric (Buela 2005; Oliván et al., 2001).

In fact, with the counting of citations and publications, in addition to the crossing of data, we can obtain indicators such as the most cited Universities or the institution that publish most, obtaining such information on a general level,

depending on the type of journal and even, according to characteristics of each type of University (Jiménez 2004; Merigó et al., 2015b.). Previous bibliometric analyzes have determined that the main determinant of the impact of a University is the total number of articles published; where such total of publications were mainly determined by human and financial resources available at the university (Podsakoff et al. 2008).

4. Results

For our analysis of the developments that the publications have gone through in the area of marketing in the last quarter, we will begin by looking at the performance of universities in this area to demonstrate the scientific contribution of each. To do this, as noted, global performance will be studied first. Then, a five-year period level of analysis and finally an analysis will be made according to journals.

4.1. Leading universities according to their research (1990-2014)

In the development of Marketing of Universities, there are important knowledge agent managers. In particular, discuss the role that each has played in the research area helps determine the degree of importance that is given to marketing knowledge in academia in these institutions. Thus, Table 1 lists the 50 most cited universities in the market, which were ordered by their H index, along with other indicators in order to generate a wider spectrum analysis of all leading universities.

Note that the H index is a method for measuring the quality of a set of documents (Hirsch 2005). If a set of documents by an author, magazine or institution has an H index of 50 it means they have 50 works that have received at least 50 citations. (See table 1).

After analyzing Table 1, we can clearly note the preponderant role of the University of Pennsylvania in most indices. Therefore, this university is not only the one with the most publications in relation with the rest (with more citations and papers), but also the one with greater impact (as evidenced in its H Index). Something similar happens with University of Texas Austin and Michigan State University that are in second and third respectively ordering both H index as number of citations and papers.

Now, we can also analyze the impact factor by dividing the number of citations received by the total number of publications, which is the method currently accepted (Merigó et al. 2015a). Under this scenario, the Arizona State University would be located in first place, closely followed by University of Arizona and University of Colorado Boulder, while the University of Pennsylvania descends until the position twenty. However, one should consider that this methodology has some limitations (Buela and Zych 2012; Leydesdorff 2012; Stonebraker et al. 2012).

Moreover, an important fact is that Ranking of Thirty Universities consists mostly of American institutions. In fact, the first exception is Tilburg University, which is a Dutch university, located in 27th according to its H index and is followed by Erasmus University Rotterdam and the University of Groningen in the Netherlands (places 32 and 41). Finally, Insead Business School in France and Hong Kong University of Science and Technology of China are listed in places 43 and 48 respectively.

However, an important observation is that the previously generated ranking aims to provide a framework for analysis, but not for a strict classification. Depending on the considered perspectives, different universities may get different positions.

In turn, we can observe that most of the documents submitted by the universities in the ranking receive less than 50 citations. In fact, of the 4,285 articles present, only 96 papers have received more than 500 citations (2.24%) versus the 2,616 that have received 50 or less (61.05%). This number is very low when compared with other fields such as physics and chemistry (Merigó et al. 2015b) (See table 2).

4.2. Principal Universities according to 5 year periods (1990-2014)

As noted above, in addition to the identification of the most influential universities during the past 25 years, it is also interesting to examine changes in its influence over time. Therefore, this section will focus on the evolution of the leading universities in the field over time. From tables 3 to 7, five periods between 1990 and 2014 are considered and a ranking of the first 10 places is established. In particular, for each period, a list of the twenty Universities with the highest H index is performed based on its published articles in the area of Marketing. The analysis considers similar indicators to those mentioned in Table 1 that are ordered by their H index (See tables 3,4,5,6, and 7).

Thus, the analysis allows us to observe small changes in the positions between universities over time, although both the University of Pennsylvania and University of Texas Austin and Michigan State University, remain among the top five. However, depending on the period of analysis we can see that the location between them varies and seems to not to be a permanent dominance, even giving time periods in which other universities seem to prevail before these three mentioned to once again be overtaken by others in periods following.

In turn, it is possible to observe a steady increase in the number of publications over the time periods within the Universities present in each of the rankings in parallel to the decrease occurred in the number of citations in each of these documents. In particular, for the first five years the total number of publications amounted to 974, while the total citations reached 104,372. Meanwhile, for the last five years the rates had increased to 2,580, while the total citations had dropped to 24,563. Thus, the Figure 1 reveals the tendency that the number of citations has had over time. It is interesting to note that

the last period has a big drop in the average number of citations each university receives, topic that will be discussed in more detail in the following points. (See figure 1).

This inverse relationship between increasing number of publications by each institution and the sustained decline (except for the period 2000-2004) makes sense if we think that increasing the number of publications within the framework of choice, expands number of papers that a new author can cite in their future work. For this reason, decreases the number of citations that each of the texts possesses.

In turn, it is interesting to note the dramatic decline in the rate of growth of publications that occurred in the last five years versus the large increase in the rate of citations. However, before making any conclusion about what happens we must analyze the subsequent periods, so that there can be certainty in this trend and not just an isolated effect. Remember that this study analyzes the universities from the point of view of their research in the area of Marketing, so that a decrease in the rate of growth in this area can lead to increases in the growth rates of other thematic publications.

4.3. Principal Universities according to publication journals (1990-2014)

In the above lists, Universities have been determined based on their performance in a wide range of journals. In this section, we will focus on the publishing trends within each of the most influential scientific journals. In this line, many bibliometric studies have been conducted to generate rankings of influential journals (Baki et al., 2000; Hult et al., 1997; Kurtz and Boone, 1988; Mort et al., 2004; Theoharakis and Hirst 2002; Urbancic, 2005). Thus, the main marketing journals observed correspond to Journal of Marketing (JM), Journal of Consumer Research (JCR), Journal of Marketing Research (JMR), Marketing Science (MS), Journal of the Academy of Marketing Science, and Journal of Retailing. In particular, Table 8 considers publications by the various universities in the Journal of Marketing, Consumer Research, Marketing Research, Marketing Science, Journal of the Academy of Marketing Science, and Journal of Business Research. The analysis considers indicators already mentioned in Table 1, also sorted based on their H Index. (See table 8)

Conducting an analysis based on institutions, we can see that the University of Pennsylvania is within the top five for all journals except the Journal of the Academy of Marketing Science and Journal of Business Research, where the institution does not appear within the top 10.

Meanwhile, both University of Michigan and University of Texas Austin are in different places according to the corresponding magazine. In particular, University of Michigan highlights within the main fifteen in the Journal of Marketing, Consumer Research and Marketing Research, but has no presence in the ranking of Marketing Science, Journal of the Academy of Marketing Science, and Journal of Business Research. Keying on the University of Texas Austin, we can see that it is in first place for Journal of Marketing, within the first fifteen for Consumer Research in Marketing Research

and Journal of the Academy of Marketing Science, but no presence in Journal of Business Research. Meanwhile, in general, it is possible to show clear differences between the total number of publications in each journal and number of citations of the present documents.

If we analyze based on number of articles published by the universities in each of these journals, we can see that the Journal of Business Research will be located in the first place as the most published university with 1,117 publications. As a counterpart, in the Journal of the Academy of Marketing Science it will be located in last place with 458 publications of the universities in the Ranking.

In turn, an analysis on the number of citations that other researchers have conducted on articles published in these journals by universities on marketing topics such as journals sheds different results. As noted, in the Journal of Business Research it drops to last place while in the Journal of the Academy of Marketing Science it amounts to fifth.

Thus, we must remember that the number of articles is presented as a proxy of productivity, while the number of citations seeks to reflect the influence of their articles. Thus, in view of the results we can consider the Journal of Business Research presents itself as the platform with the highest productivity-influence, while the Journal of Marketing would have the worst ratio of productivity-influence.

5. Conclusions

The article has put its focus of analysis on the role of universities in the area of Marketing through a bibliometric research for the period from 1990 to 2014.

In general, it can be seen that in a ranking of the 30 most important universities (See table 1), the University of Pennsylvania excels in most indices (H Index, total citations and total publications), obtaining a lower place only in citations to papers (impact factor). Something similar happens with the University of Texas Austin and Michigan State University, which are in second and third place respectively. Ranked both by H index and by number of citations and papers. However, a five-year analysis reveals some modifications of positions between universities over time, although these universities are always in the top five places. On another issue, the ranking of the 30 most relevant universities (See table 1) also reveals that most of the documents submitted by universities receive 50 citations or less (59.5%), while only a 2, 5% have more than 500 citations. On the geographical location of the universities presented on the list, most institutions are American, with the exception of Tilburg University, a Dutch university located in the twenty-eighth place by H. Index

Considering the developments that have taken publications of the 20 most outstanding universities during a five-year period, within the established period (1990-2014), it is possible to observe a steady increase in the number of

publications, with a growth rate around 28.3%, which goes hand in hand with a decrease in the number of citations of each of these documents (except the ones occurred between 2000 to 2004, where the number of citations increased) having a value of variation average of 24.1%. It is believed that this relationship is generated by the fact that, by increasing the number of circulating documents, authors have a higher range of papers to cite and therefore diminish individual citations for each work.

Now, on this same point, a decrease is observed in the rate of growth of publications occurred in the last five years versus an increase that the rate had of citations for the same period (2010-2014). This result remains an issue that should be analyzed in the future so that it can accurately determine the existence of a trend (See table 8).

If we analyze the relative positions of universities according to the total publications that universities have made and the total number of citations that such publications have obtained, we can consider the Journal of Business Research is presented as the platform highest productivity-influence. While the Journal of Marketing would be the worst in productivity-influence, being the one with the smallest number of publications and citations.

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Table *1:* Ranking of the most influential universities in the period of 1990-2014.

| R	University	Country	TP	TC	H	C/P	≥500	≥200	≥100	≥50
1.	U Pennsylvania	USA	441	21610	74	49.00	5	14	50	112
2.	U Texas Austin	USA	363	20371	73	56.12	4	17	47	100
3.	U Wisconsin Madison	USA	236	15847	68	67.15	4	18	51	80
4.	Texas Tech U	USA	104	7026	67.56	31	2	3	7	20
5.	U Michigan	USA	345	16612	67	48.15	4	12	41	88
6.	Columbia U	USA	347	14547	65	41.92	2	10	39	85
7.	Northwestern U	USA	329	16225	64	49.32	2	14	46	85
8.	Duke U	USA	278	15040	63	54.10	5	14	32	82
9.	U Chicago	USA	246	13540	63	55.04	2	13	36	79
10.	U Southern California	USA	286	13242	62	46.30	0	14	34	72
11.	Stanford U	USA	234	13797	61	58.96	5	11	30	73
12.	Michigan State U	USA	354	13680	58	38.64	1	8	32	70
13.	New York U	USA	320	10075	58	31.48	0	2	21	67
14.	U Florida	USA	265	11741	57	44.31	2	8	25	67
15.	U Minnesota Twin Cities	USA	301	13400	56	44.52	3	14	32	66
16.	Georgia State U	USA	279	9632	53	34.52	0	7	30	56
17.	Arizona State U	USA	226	15846	53	70.12	7	16	31	59
18.	Penn State U	USA	334	10878	52	32.57	1	7	25	54
19.	U Illinois Urbana Champaign	USA	244	9134	52	37.43	1	7	22	56
20.	U California Los Angeles	USA	209	9051	52	43.31	1	5	21	55
21.	Harvard U	USA	202	11874	52	58.78	3	14	28	54
22.	U Arizona	USA	190	13140	52	69.16	4	13	30	52
23.	U Colorado Boulder	USA	187	12905	52	69.01	6	13	28	52
24.	U California Berkeley	USA	183	9709	52	53.05	3	11	21	55
25.	U North Carolina Chapel Hill	USA	160	9493	50	59.33	2	7	27	52
26.	MIT	USA	175	8682	49	49.61	1	2	26	47
27.	Tilburg U	HOL	217	7273	48	33.52	0	3	18	42
28.	U Maryland College Park	USA	212	11404	48	53.79	2	12	19	45
29.	Rutgers State U	USA	194	6421	48	33.10	0	2	15	46
30.	Texas A M U College Station	USA	170	11221	48	66.01	4	17	24	47
31.	Indiana U Bloomington	USA	207	8698	47	42.02	1	8	15	41
32.	Erasmus U Rotterdam	HOL	299	7867	46	26.31	0	2	14	43
33.	Ohio State U	USA	224	7238	46	32.31	1	6	14	43
34.	Cornell U	USA	195	7073	45	36.27	0	4	20	42
35.	U South Carolina Columbia	USA	199	6095	44	30.63	0	3	11	41
36.	Emory U	USA	130	7807	44	60.05	1	11	20	41
37.	U Miami	USA	176	10147	43	57.65	3	9	21	37
38.	U Washington Seattle	USA	143	8562	43	59.87	3	5	15	40
39.	Dartmouth College	USA	126	7916	43	62.83	4	6	15	40
40.	Louisiana State U	USA	156	6392	42	40.97	1	5	13	36
41.	U Groningen	HOL	193	5308	41	27.50	0	2	7	31
42.	U Pittsburgh	USA	165	6194	41	37.54	0	3	15	35
43.	INSEAD Business School	FRA	136	6185	40	45.48	0	6	18	34
44.	Florida State U	USA	156	8679	39	55.63	3	7	15	30
45.	Virginia Polytechnic Ins State U	USA	156	5538	39	35.50	1	2	12	29
46.	Yale U	USA	128	5982	39	46.73	1	5	17	32
47.	U Georgia	USA	226	5488	38	24.28	0	4	9	24
48.	Hong Kong U Science Tec	CHN	156	4954	38	31.76	1	1	6	31
49.	U Virginia	USA	133	4751	38	35.72	0	2	14	32
50.	North Carolina State U	USA	102	3799	37.25	28	0	4	11	16

Table 2: Data of publications from the most influential universities, period 1990-2014.

TC	Number of publications according to sections of TC	% Publications according to Total
≥500	96	2.24%
≥200	403	9.4%
≥100	1.170	27.3%
≥50	2.616	61.05%
Total	4.285	100.0%

Source: Elaboration based on WoS.

Figure 1: Tendency average of the number of citations per 5-year periods, period 1990-2014.
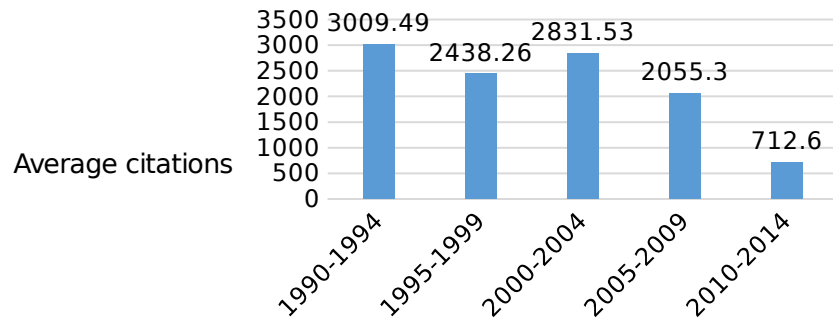
Source: Elaboration based on WoS.

Table 3: Ranking of the most influential universities, period 1990-1994.

R	Universities period 1990-1994	TP	TC	H
1	U Texas Austin	59	7568	36
2	U Pennsylvania	52	7072	34
3	U Florida	40	4379	32
4	U Chicago	34	4980	31
5	Northwestern U	37	5209	30
6	Columbia U	39	3202	26
7	U Southern California	39	3100	26
8	New York U	41	2333	24
9	Stanford U	32	5854	24
10	U Michigan	35	4791	23
11	U Minnesota Twin Cities	30	4185	23
12	Arizona State U	34	5922	22
13	Rutgers State U	35	1856	22
14	U Wisconsin Madison	30	4311	21

Table 5: Ranking of the most influential universities, period 2000-2004.

R	Universities period 2000-2004	TP	TC	H
1	Columbia U	72	4912	40
2	U Texas Austin	70	4595	36
3	Michigan State U	74	4989	34
4	Northwestern U	54	4044	34
5	U Pennsylvania	70	3592	34
6	Duke U	51	3570	34
7	U Michigan	60	3400	34
8	Penn State U	62	3708	33
9	Tilburg U	41	3270	33
10	U North Carolina Chapel Hill	41	3906	32
11	U Florida	56	2886	32
12	New York U	55	2417	32
13	Erasmus U Rotterdam	53	3426	31
14	U Southern California	50	3249	30
15	U California Berkeley	48	2121	30

Table 7: Ranking of the most influential universities, period 2010-2014.

R	Universities period 2010-2014	TP	TC
1	U Michigan	104	1
2	U Pennsylvania	121	1
3	Northwestern U	110	1
4	U Texas Austin	105	1
5	Erasmus U Rotterdam	129	1
6	Arizona State U	69	
7	Michigan State U	103	
8	U Maryland College Park	60	
9	Duke U	79	1
10	U Arizona	68	
11	Penn State U	126	
12	Tilburg U	95	
13	U Houston	69	
14	U Southern California	73	1
15	U Minnesota Twin Cities	83	
16	New York U	86	
17	Columbia U	101	
18	Stanford U	72	
19	U British Columbia	70	
20	U Florida	70	
21	Georgia State U	102	
22	U Manchester	86	
23	U Groningen	81	
24	Indiana U Bloomington	67	
25	Harvard U	63	
26	City U Hong Kong	89	
27	Ohio State U	81	
28	Lancaster U	78	
29	U Illinois Urbana Cham	72	
30	Hong Kong Polytechnic U	68	
31	U New South Wales	68	
32	Aalto U	65	
33	U South Carolina Columbia	64	
34	U Melbourne	63	
35	KU Leuven	62	

Table 4: Ranking of the most influential universities, period 1995-1999.

R	Universities period 1995-1999	TP	TC	H
1	U Pennsylvania	65	5664	41
2	U Wisconsin Madison	54	6111	36
3	U Texas Austin	49	4365	31
4	U Chicago	40	3811	30
5	U Southern California	42	3292	30
6	U Michigan	52	4004	28
7	Northwestern U	44	3288	28
8	Columbia U	44	2305	27
9	Michigan State U	49	3496	26
10	Rutgers State U	40	2066	26
11	New York U	44	2057	26
12	Duke U	27	3785	25
13	Stanford U	28	2111	25
14	U Colorado Boulder	34	3587	23
15	U Minnesota Twin Cities	40	2921	23

Table 6: Ranking of the most influential universities, period 2005-2009.

R	Universitites period 2005-2009	TP	TC	H
1	U Pennsylvania	133	3790	37
2	Duke U	103	3417	32
3	Columbia U	91	3411	32
4	Michigan State U	94	2877	32
5	U Texas Austin	80	2777	32
6	Northwestern U	84	2594	31
7	Stanford U	70	2512	31
8	U Minnesota Twin Cities	97	2921	30
9	U Michigan	94	3312	29
10	Erasmus U Rotterdam	101	2892	29
11	U Southern California	82	2536	29
12	New York U	94	2534	29
13	U Chicago	78	2538	28
14	Arizona State U	58	2226	28
15	U California Los Angeles	59	1955	28

Source: Elaboration based on WoS.

Table 8: Ranking of Universities in the Journals JMK, JCR, JMR, MS, JAMS and JBR period 1990-2014.

R	JMK	TP	TC	H
1	U Texas Austin	56	8196	37
2	U Southern California	32	2879	28
3	U Wisconsin Madison	35	5077	25
4	U Pennsylvania	28	5039	23
5	U Minnesota Twin Cities	28	4023	23
6	Indiana U Bloomington	31	2584	21
7	Texas A M U Coll Sta	28	5331	21
8	Emory U	26	4291	21
9	U Mannheim	28	1743	20
10	U Michigan	21	4629	20
11	Penn State U	27	1776	19
12	Michigan State U	23	2712	19
13	Arizona State U	23	6354	19
14	Northwestern U	21	4391	18
15	Duke U	21	2358	18

R	JCR	TP	TC	H
1	U Pennsylvania	83	5019	39
2	U Florida	73	3867	38
3	New York U	69	3351	35
4	Columbia U	71	3464	34
5	U Wisconsin Madison	46	4055	34
6	Northwestern U	77	3805	32
7	U Chicago	55	3345	32
8	Duke U	52	4333	32
9	U Minnesota Twin Cities	56	3210	30
10	U Michigan	51	2501	27
11	Arizona State U	36	3651	27
12	Stanford U	43	3068	26
13	U Illinois Urbana Cham	34	3367	24
14	U South Carolina Col	40	2052	23
15	U Texas Austin	34	2366	23

R	JMR	TP	TC	H
1	Stanford U	60	4076	35
2	Columbia U	69	3835	33
3	U Pennsylvania	81	3792	32
4	Northwestern U	66	3733	32
5	U Texas Austin	53	3883	32
6	U Chicago	54	2738	29
7	Duke U	57	3519	28
8	U Cal Los Ang	54	3264	27
9	U Southern Cal	49	2776	26
10	U California Ber	36	2779	25
11	U Florida	40	2809	24
12	Yale U	42	2548	23
13	U Minnesota T C	37	2249	23
14	U Wisconsin Mad	30	3782	23

R	JAMS	TP	TC	H
1	U North Carolina C H	10	1498	10
2	Michigan State U	27	1112	17
3	U Texas Austin	20	1390	14
4	Indiana U Bloo	20	828	13
5	Colorado State U	17	1258	13
6	U Mississippi	15	510	13
7	Texas A M U Coll Sta	17	1127	12
8	Georgia State U	15	916	11
9	Texas Tech U	13	538	11
10	U Oklahoma	13	737	10
11	Queens U Canada	13	715	10
12	Emory U	12	780	10
13	U Mannheim	18	463	9
14	U Arizona	14	1326	9
15	U South Carolina Col	13	335	9

R	JBR	TP	TC	H
1	Georgia State U	61	2088	25
2	U Montreal	42	923	18
3	Louisiana State U	39	854	18
4	HEC Montreal	38	878	17
5	Concordia U Canada	44	841	16
6	U Alabama Tuscaloosa	41	1085	16
7	Oklahoma State U Still	35	579	15
8	Mississippi State U	29	748	15
9	Florida State U	26	910	15
10	Virginia Pol Ins State U	32	654	14
11	U Memphis	29	904	14
12	Michigan State U	29	709	14
13	U Mississippi	28	716	14
14	Boston College	38	702	13
15	Yonsei U	30	492	13

Source: Elaboration based on WoS.