Journal of Hospitality and Tourism Management 21 (2014) 54–63

Contents lists available at ScienceDirect

Journal of Hospitality and Tourism Management

journal homepage: http://www.journals.elsevier.com/journal-of-hospitality-and-tourism-management

An insight into research performance through a citation counting analysis

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ARTICLE INFO

Article history:
Received 25 February 2014
Received in revised form
16 July 2014
Accepted 23 July 2014
Available online 1 September 2014

Keywords:
Citations
Google scholar
Ranking
Leading journals

ABSTRACT

Prior studies on academic performance predominantly concentrated on ranking universities and geographical regions using publications in selected journals. Despite general agreement on journal rankings based on the number of citations, no extant articles analyze universities or countries on the basis of citations from publications in leading hospitality and tourism journals. This paper examined the number of citations that published articles from six leading journals in hospitality and tourism received during the 10-year period from 1996 to 2005. The affiliated universities, countries/regions, and geographical continents were then ranked to determine their level of academic performance. This paper provides an alternative insight into academic performance of research universities and countries.

1. Introduction

Faculty members conduct research for a range of reasons. These reasons include job requirements, developing personal profile, contributing to new knowledge, direct or indirect compensation, and career development (Wood, 1995). Page (2003) argued that research excellence benefits universities in many ways. First, it gives universities stronger bargaining power to request funding from governments and industry. Second, it helps raise the university ranking, which can enhance its reputation among other competitive academic institutions. Third, reputable universities are more likely to attract top students and researchers internationally, which helps make the university becomes a center of knowledge transfer and development. For these reasons, universities worldwide have been, and will likely be, strongly emphasizing the importance of academic research.

It is generally agreed that research performance is determined by quality instead of quantity (McKercher, 2007), but the existing literature does not seem to have a standardized method of measuring journal quality, particularly in social science. Law, Leung, and Buhalis (2010) pointed out that an intrinsic problem with research performance measurement is how to measure it objectively. There are different ways of evaluating research performance. One of the most popular methods in the tourism field is to count the number of published articles in selected journals (Sheldon, 1991; Zhao & Ritchie, 2007), because journals can serve as a repository for intellectual work and a channel of communications for readers in a discipline.

In order to evaluate research performance fairly, researchers need to first identify a list of reputable journals. Based on a global survey of university program heads in hospitality and tourism, Law and Chon (2007) argued that publication in first-tier journals is the most important among various research metrics. Although their study did not provide a list of first-tier journals, other recent studies pointed to six hospitality and tourism journals that are generally considered to be leading journals (McKercher, Law, & Lam, 2006; Park, Philips, Canter, & Abbott, 2011). These six journals included three hospitality journals: *Cornell Hospitality Quarterly* (CQ), the *International Journal of Hospitality Management* (IJHM), and the *Journal of Hospitality & Tourism Research* (JHTR). The list also included three tourism journals: *Annals of Tourism Research* (ATR), the *Journal of Travel Research* (JTR), and *Tourism Management* (TM). With their highly perceived quality, these six journals are commonly considered the most prestigious journals in hospitality and tourism. Law, Ye, Chen, and Leung (2009) as well as McKercher

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http://dx.doi.org/10.1016/j.jhtm.2014.07.003
1447-6770/

(2012) found that articles in these journals received the most citations. The studies in these journals should thus strongly influence future research. The current study uses these six journals as prestigious journals in the fields of hospitality and tourism. However, it should be noted that there are other journals like *Journal of Sustainable Tourism* that are as highly regarded journals but excluded from analysis in this study. Journal selection for this study was based on the 10-year period from 1996 to 2005 and would be different if a different citation window is considered.

Another method of determining how researchers rate a specific publication is citation analysis, which measures the number of times particular articles have been cited. However, it is not as commonly used as counting publications in selected journals. McKercher (2008) argued that scholars' influence on research can be measured by the number of citations they have received. He further ranked the world's leading scholars in tourism research based on the number of citations on Google Scholar (GS). Similarly, some researchers in other disciplines such as medicine have argued that citation counts are equally important as publication counts and more objective than expert assessment (Opthof, 1997). Law and van der Veen (2008) introduced an approach that ranked eight highly regarded hospitality journals based on their citation counts on GS and called the approach as "popularity of prestigious journals". In their study, Law and Chon (2007) grouped 31 research activities into seven dimensions and conducted a global survey of university program heads. They found that department heads view that research output in first-tier journals and securing external grants are the most important factors for determining research performance. They also considered other factors, such as supervising graduate students and serving as editorial board members of journals, as important. However, the study did not examine impact in terms of citations.

Even though there are many published studies of research performance evaluation and even though scholars recognize the objectivity and importance of citation counts, hospitality and tourism researchers have completely overlooked analyzing universities based on citations in articles published in leading journals. To fill this research gap, this exploratory study uses citations in leading journals in hospitality and tourism to measure the institutional and regional research performance in the field of hospitality and tourism. In this study, research performance is operationalized as the number of citations received from the leading journals in tourism and hospitality. In other words, this study analyzes the performance for universities and geographical regions in terms of the citation counts that their researchers have received. Thus, the more citations a university receives, the better the university performs.

2. Literature review

2.1. Evaluation of research performance in hospitality and tourism

The importance of academic excellence has been widely documented in the existing hospitality and tourism literature (Law et al., 2010; Park et al., 2011), but no standardized method of evaluating research performance has been universally accepted. A commonly used method for evaluating research performance is to count the number of publications a university (Park et al., 2011) or individual researcher (Zhao & Ritchie, 2007) has in selected journals. Another study ranked individual researchers using citation counts from GS (McKercher, 2008).

Sheldon (1991) was one of the first researchers to rank universities based on published articles in leading tourism journals during a decade from 1980 to 1989. In another study, Jogaratnam, McCleary, Mena, and Yoo (2005) ranked individual researchers and universities based on their publications in the leading tourism journals during the 10-year period from 1992 to 2001. Mason and Cameron (2006) ranked universities based on publications and editorial board representation in 20 hospitality journals, but their analysis was based on Year 2002 only, making it impossible to draw any generalizable conclusions. McKercher (2007) analyzed the most prolific authors in 25 tourism and hospitality journals over a five-year period from 2000 to 2004 and found that these authors often collaborate. Moreover, Zhao and Ritchie (2007) studied the background of the world's leading scholars based on their publications in tourism journals between 1985 and 2004 and found most of them had received their doctoral degrees in non-tourism disciplines.

However, counting publications from universities or researchers is subject to bias because it only includes selected journals. Counting publication includes no information on their impact on the society. Worse still, some authors may publish for the sake of publication, instead of reporting research findings that are actually important. A few researchers may even produce multiple papers, with each paper describing only a portion of the full study. Law and Chon (2007) thus criticized research assessment methods, arguing that most methods are primarily output oriented, largely ignoring other scholarly activities. In other words, counting publications could be biased and narrowly defined, if not misleading.

In addition, using only the number of publications in selected journals as a proxy of research performance is incomplete and possibly biased because it excludes other research activities, such as supervising graduate students and writing books. In addition, some established scholars may choose not to publish in selected journals due to personal preferences, potentially further biasing the results. Also, having more visiting professors and doctoral students can sharply increase the number of total publications generated from a particular university. However, the central reason to count publications is that relatively speaking it is an objective and easy way to evaluate performance.

In another study, Law et al. (2010) ranked universities and geographical regions based on their representation as editors, associate editors, and editorial board members in selected hospitality and tourism journals. Although their method was unique, representation of editorial membership may not have a direct relationship with research performance. Frey and Rost (2010) argued that in the discipline of economics, the more editorial boards a researcher is on, the more prestigious the researcher is. This, however, favors established scholars. Also, the selection of editorial board membership could be influenced by the need for geographical representation from different regions. More importantly, one can argue that only a small number of scholars are actually needed as editorial board members. In other words, many productive or influential scholars are excluded in the evaluation.

Another way to measure research performance is to count citations that a publication receives within a specific time period. Schmidgall, Woods, and Hardigree (2007) examined the references of publications in five hospitality journals during the 15-year period from 1989 to 2004, and analyzed the most cited scholars, articles, and universities. The effort of Schmidgall et al. (2007) on data collection and analysis was huge but the study did not examine the citations that published articles received. Murphy and Law (2008) argued that high-quality articles and journals are usually cited more often than low-quality ones. In other words, the quality of a publication or journal is related to its citation frequency. Citation counts are also subject to some limitations. For example, specialized journals are at a disadvantage, and self-citation may affect the counts (Law, 2012; Law & van der Veen, 2008). In addition, citations relate to how popular a publication is, which may not necessarily be of a significant contribution to the field.

To collect citations, hospitality and tourism researchers have often used GS. For instance, McKercher (2008) used citations from GS to rank tourism scholars. Law and van der Veen (2008) used citations from GS to rank eight hospitality journals, and Murphy and Law (2008) ranked all tourism journals based on GS citations. In addition to research articles, GS can find publications authored by policy-makers, industry practitioners, educators, and post-graduate students in different languages. Since the hospitality industry is applied in nature, it is desirable to determine the actual impact of the journals and articles on the industry, and GS can help do that.

The drawback of using GS is that its search algorithm is proprietary (Jascó, 2005). Another limitation is that GS updates its database once every few weeks, leading to slight differences between citation counts after some time. However, no prior studies have used citations from GS to rank universities and regions to provide a picture of their intellectual influence.

2.2. Evaluation of research performance in other disciplines

Researchers in other disciplines have also widely examined the topic of research performance evaluation. Educational psychology researchers ranked the most prolific individual scholars and universities in educational psychology using a weighted scoring system (Smith et al., 2003). They also ranked the popularity of different types of articles (e.g. empirical research, theoretical papers, and reviews). Similarly, business researchers measured the reputations of business schools in Europe by counting the number of articles published in selected journals in five major business disciplines, such as financial management and marketing (Baden-Fuller, Ravazzolo, & Schweizer, 2000). In another study, Valadkhani and Worthington (2005) clustered and ranked the research performance of 37 Australian universities from 1998 to 2002. Their computation was based on the audited number of PhD completions, publications, and grants. The authors analyzed the total and per-staff scores. In addition, Brooks (2002) analyzed and compared the ranking of Australian universities' research performance in economics based on number of publications and research grants received.

Sorensen and Pilgrim (2002) examined institutional contributions in eight journals of criminology and criminal justice. Their findings showed universities with doctoral programs in criminal justice dominated the top rankings. Environmental and ecological economics researchers analyzed the influence of publications, authors, and universities in terms of citations from the Thomson Reuters database (Hoepner, Kant, Scholtens, & Yu, 2012). It is interesting to note that the authors used the exact year and date to do the calculation, which is more accurate than other studies based on specific years. One limitation of the impact factors is that they use two-year and five-year windows for papers to receive citations. Another limitation is that they entirely exclude publications in other databases.

Tombazos (2005) evaluated the publication performance of European research institutions in economics. The findings showed dramatic shifts in the rankings of various European institutions over time. In another study, Sorensen (1994) evaluated institutional productivity in the top ten criminal justice journals from 1983 to 1992. Taggart and Holmes (1991) analyzed the universities of primary authors in three leading journals in criminal justice and criminology. The study is unique because its analysis was restricted to first authors only. The authors argued that dropping all co-authors but the leading one would not change the findings significantly.

Miguel-Dasit, Marti-Bonmati, and Sanfeliu (2008) conducted a bibliometric analysis of publications on magnetic resonance imaging authored by Spanish radiologists from 2001 to 2007 and found that the authors published about two-thirds of their articles in non-Spanish journals. The authors also compared research output from Spanish radiologists with German radiology departments. Results showed Spanish researchers produced about 20% of the output as compared to their German counterparts from 2001 to 2007. Likewise, Lopez-Illescas, de Moya-Anegon, and Moed (2008) examined the research performance of European countries in oncology. In addition to counting the number of publications, the authors evaluated the number of articles per million residents in the country and the average cost of producing one article. According to the authors, Sweden produced the largest number of publications per million residents but is also the most expensive country for producing publications. In contrast, Luxembourg is the least expensive country for producing publications, and India produced the smallest number of publications per million residents.

In their recent studies, Yu and Gao (2010) ranked economic research institutions in China based on Social Sciences Citation Index-listed (SSCI) journal publications from 2000 to 2009. Their findings show large ranking gaps between universities in Hong Kong and Mainland China. Pouris and Pouris (2010) used Thomson Reuters' Essential Science Indicators to rank seven universities in South Africa in nine different academic disciplines. The major limitations of this study were its small number of universities and its exclusion of non-Science Citation Index (SCI)/SSCI-listed publications.

Baden-Fuller et al. (2000) analyzed the research reputations of European business schools by counting the number of academic articles bearing the names of the schools published in top journals. Chan, Chen, and Lee (2011) provided a long-term assessment of finance research in the Asia Pacific region based on publications in selected scholarly journals. According to their study, three of the top five universities are located in Hong Kong. Likewise, Trevino, Mixon, Funk, and Inkpen (2010) ranked academic institutions and individual researchers in international business based on publications in selected journals from 1996 to 2008 and found most of the top-ranked universities are in the U.S., the U.K., and Hong Kong.

Citation analysis is also used as an indicator of research performance. However, the result varies depending on the database. For instance, Torres-Salinas, Lopez-Cozar, and Jimenez-Contreras (2009) compared citations in health science journals compiled from Scopus and Web of Science. Results showed publications received 14.7% more citations in Scopus than in Web of Science. In other words, the database of Web of Science contains fewer publications than Scopus.

Frey and Rost (2010) used a combined approach to evaluate and rank scholars in economics research. Some governments have been using citations or other bibliometric measures to determine research performance and allocate research funds. According to Frey and Rost (2010), the number of publications and citations does not matter much from the perspective of a society. Instead, the new insights that the studies produce and how valuable those insights are to a society are more important. More specifically, the society would need to know whether the research is useful, satisfies societal needs, and is not fundamentally flawed. While scholarly reputation depends on different factors, quality is certainly central.

In sum, the existing literature in general and especially in hospitality and tourism has offered different ways of evaluating research performance. To some extent, each approach has used the publication-counting methods as a proxy to measure the performance of individual universities or faculty members. However, the limitations of these methods suggest the need to develop new research evaluating approaches that go beyond the most commonly used method. In response to this pressing need, this study uses an alternative approach to analyzing research

performance, which is measured as citations in leading hospitality and tourism journals during the 10-year period from 1996 to 2005. In other words, it incorporates both quality (leading hospitality and tourism journals) and performance (citations) into the evaluation process. To collect citations, it uses GS, a search engine that covers virtually all databases on the Internet.

3. Methodology

As mentioned above, many universities around the world use Thomson Reuters' Journal Citation Record, or the famous SSCI/SCI system. Although the SSCI/SCI is well defined and commonly used, it has the drawback of only including a portion of the published journals and selected conference proceedings. Among the 70 journals in McKercher et al.'s (2006) study, fewer than 20 were listed in SSCI in 2012 (http://admin-apps.webofknowledge.com/JCR/JCR). More importantly, users without subscription are unable to access the system. In contrast, GS can search publications from all sources that can be found from Google, the world's largest search engine. In other words, GS (http://scholar.google.com) parses all computer servers that it can find, containing journals, books, proceedings, reports, government documents, consulting reports, trade magazines, professional files, newspapers, and other publications. Moreover, there is no limitation in the languages that GS indexes. In fact, GS basically covers all channels that it can find, irrespective of the nature of the sources. In addition, anyone can access GS as long as she/he has a computer that is connected to the Internet. As previously stated, tourism and hospitality scholars have used GS to analyze the popularity of hospitality journals (Law & van der Veen, 2008) and total citation counts for tourism journals (Murphy & Law, 2008).

This study selected articles published in the six leading hospitality and tourism journals (hospitality: CQ, IJHM, and JHTR; tourism: ATR, JTR, and TM) from 1996 to 2005 as the sample. Park et al. (2011) as well as McKercher et al. (2006) have both argued that these are the leading journals in the field. Citations received for the included articles from these journals were manually retrieved from GS in the period from March to August 2012. Ghosh (1975) argued that five years is a reasonable period of time for a published article to be cited. Thus, this study excluded the recently published articles, giving all articles sufficient time to be cited after being published.

During the data collection stage, we collected each author's affiliated university and country/region. Full-length research papers, research notes, rejoinders, commentaries, and reports were included for analysis. However, we excluded editorials, conference reports, book reviews, and announcements because they are not research output. Table 1 shows the number of articles included for analysis in the six journals.

Additionally, counts were divided into absolute citations and relative citations. In absolute citations, each affiliated university received the same number of citations. In relative citations, the citations were split and weighted equally among all affiliated universities. Relative counts were further split for multiple universities that were affiliated with one author. For instance, consider a paper that has two authors and where the first author is affiliated with Universities A and B, and the second author is affiliated with University C. If this paper received eight counts, the relative citation count for University C is 4, and the corresponding numbers for Universities A and B are 2 each. In contrast, each university had eight citations in terms of absolute count.

In a few instances, the author affiliation was not stated. During the study period, the latest version of a university name was used if universities had changed names (e.g., from Victoria University of Technology to Victoria University).

Using citation counts as an indicator for scientific quality is subject to some shortcomings. For instance, citations do not take into account whether the work is viewed positively, neutral, or negatively. Also, citing an article does not necessarily mean it can contribute to knowledge development. Most importantly, authors could be induced to produce articles that can attract citations, leaving other areas largely under-researched. As such, findings of this study need careful interpretation.

Table 1
Number and type of publications from 1995 to 2005.

	ATR	TM	JTR	IJHM	CQ	JHTR
Research article	880	1097	886	547	974	497
Research note	133	46	12	25	–	14
Rejoinder	3	2	–	–	–	6
Commentary	7	3	–	–	–	–
Report	–	17	–	–	–	–

4. Findings and analysis

4.1. Hospitality journals

Based on the citation counts, top 50 performing universities are listed in Table 2. These universities received the most number of citations in the study period. In this study, all rankings are based on relative counts. As shown in Table 2, Cornell University received 4557.35 relative citations and 8868 absolute citations, and it ranked the first in hospitality journals. With a large gap between it and Cornell, The Hong Kong Polytechnic University received 1513.17 relative counts, which makes it the second highest performing universities in hospitality journals. University of Nevada at Las Vegas, Pennsylvania State University, and Virginia Polytechnic Institute and State University ranked third, fourth, and fifth. The findings of Park et al.'s (2011) study of the most productive universities are listed for comparison. Prior to further comparison, it needs to be stated that there are two major differences in the methodological approaches between Park et al.'s (2011) study and this study. Firstly, the counting method is different. Publication count was used in Park et al.'s study while citation count was used in this study. Secondly, the time frame is different. While both studies have a 10-year time frame, Park et al.'s study has it from 2000 to 2009 while this study has it from 1996 to 2005. Despite of methodological differences, the lists from both studies seemed to be closely related. The biggest discrepancy between the top five ranked universities in Table 2 was only two rungs. However, some universities listed in Table 2 were not in Park et al.'s (2011) study. An example of these universities is Sheffield Hallam University, which was 17th in this study but not ranked in Park et al.'s (2011) study.

Rankings of individual countries (and the autonomous region of Hong Kong) in hospitality journals are presented in Table 3. In total, 35 countries/regions were identified. Among these countries/regions, the U.S. had the largest numbers of absolute ($n = 35{,}131$) and relative citation counts ($n = 16{,}942.17$). The U.K. ranked second, with 2891.58 relative and 5612 absolute citations. Hong Kong ranked third, with 1903.25 relative and 3969 absolute citations. Australia and South Korea ranked the fourth and fifth. With its many universities, the U.S.'s top ranking may not be surprising. Hong Kong, a city with a handful research institutes, ranked third. The top five countries/regions are closely correlated with Park et al.'s (2011) measure of research output—no country varied more than one rung between the two studies. Unlike Park et al.'s (2011) study, which only listed the first 20 most productive countries/regions, this study presents all countries/regions.

Table 2
University ranking in hospitality journals.

Current study ranking	Park et al. (2011)	University/organization	Relative citation counts	Absolute citation counts
1	1	Cornell University	4557.35	8868
2	2	Hong Kong Polytechnic University	1513.17	3023
3	4	University of Nevada –Las Vegas	1186.08	2313
4	3	Pennsylvania State University	1058.33	1709
5	7	Virginia Polytechnic Institute and State University	998.33	2099
6	15	Iowa State University	968.33	1450
7	14	University of Surrey	581.65	1330
8	13	Oxford Brookes University	505.00	978
9	18	Michigan State University	423.08	972
10	5	Purdue University	414.75	966
11	42	Queen Margaret University	410.83	673
12	6	Griffith University	394.83	814
13	8	University of Central Florida	381.67	699
14	17	Florida State University	373.17	1193
15	16	Oklahoma State University	324.00	826
16	12	Kansas State University	318.00	626
17	N.A.	Sheffield Hallam University	273.75	637
18	9	Washington State University	259.00	514
19	36	Victoria University	214.00	452
20	20	Ben-Gurion University of the Negev	192.67	345
21	21	Ohio State University	182.42	482
22	46	Northern Arizona University	176.50	372
23	45	Texas Tech University	173.50	590
24	11	Chinese University of Hong Kong	156.17	397
25	25	University of Houston	153.58	404
26	30	Institute de Management Hotelier International	146.25	334
27	N.A.	Market Metrix	138.25	340
28	N.A.	McGill University	135.67	314
29	37	University of Western Australia	124.17	395
30	N.A.	NFO/Plog Research	121.00	121
31	N.A.	University of Otago	118.00	198
31	N.A.	EcoResorts International-Research and Development	118.00	118
33	N.A.	White Lodging Services	107.00	206
34	28	Sejong University	105.67	220
35	27	University of Strathclyde	105.67	131
36	N.A.	Adnan Menderes University	103.75	265
37	31	Seattle University	101.00	274
38	N.A.	Norwegian College of Hotel Management	98.00	294
39	N.A.	Harvard University	95.00	101
40	N.A.	University of Alabama	94.50	378
41	22	Manchester Metropolitan University	93.67	174
42	N.A.	Royal Institute of Technology	93.00	93
43	N.A.	University of North Texas	91.00	276
44	N.A.	Roosevelt University	89.50	99
45	N.A.	University of Haifa	89.00	89
46	40	University of Delaware	86.25	219
47	N.A.	University of Newcastle	84.00	168
48	26	University of Las Palmas de Gran Canaria	82.00	181
49	N.A.	DePaul University	78.67	138
50	N.A.	North Carolina A&T State University	78.00	156

Note. Park et al. (2011) listed the top 50 universities in productivity of leading hospitality journals; "N.A." means the university was not listed in Park et al.'s (2011) study.

4.2. Tourism journals

For tourism journals, Table 4 presents the top 50 universities with the most relative citation counts. The Hong Kong Polytechnic University ranked first, with 3935 relative citations and 8244 absolute citations. Texas A&M University and Griffith University had 3261.05 and 3216.42 relative citations, as the second and third highest performing universities in tourism journals. The University of Surrey and Arizona State University ranked fourth and fifth, with 2722.33 and 2310.30 relative citations, respectively. There was no change among the first four ranked universities between this study

Table 3
Ranking by country/region in hospitality journals.

Current study ranking	Park et al. (2011)	Country/region	Relative citation counts	Absolute citation counts
1	1	U.S.	16,942.17	35,131
2	3	U.K.	2891.58	5612
3	2	Hong Kong	1903.25	3969
4	4	Australia	1171.75	2431
5	6	South Korea	352.00	763
6	11	Israel	324.67	477
7	9	Canada	251.83	516
8	10	France	234.00	546
9	8	Turkey	231.75	443
10	N.A.	Spain	214.00	400
11	5	Taiwan	209.92	639
12	13	New Zealand	190.00	291
13	12	Norway	161.67	485
14	16	Singapore	148.00	303
15	17	Greece	121.33	185
16	18	Sweden	94.33	97
17	15	Switzerland	88.50	240
18	20	Germany	80.50	81
19	N.A.	Ireland	76.00	146
20	18	Portugal	69.00	138
21	N.A.	Russia	63.00	63
22	N.A.	Croatia	57.00	76
23	N.A.	Thailand	43.42	138
24	N.A.	Italy	38.75	101
25	N.A.	Finland	31.00	43
26	14	China	30.83	77
27	N.A.	Yugoslavia	29.75	119
28	N.A.	Denmark	27.00	54
29	N.A.	Netherlands	9.00	9
30	N.A.	Belgium	7.75	31
31	N.A.	Costa Rica	6.75	13
32	N.A.	Saudi Arabia	6.50	13
33	N.A.	Philippines	5.25	21
34	N.A.	India	4.00	4
35	N.A.	Austria	3.25	13

Note: The U.K. includes Northern Ireland, Scotland, and England; Park et al. (2011) listed the top 20 countries/regions in productivity in leading hospitality journals; "N.A." means the country/region was not listed in Park et al.'s (2011) study.

Table 4
University ranking in tourism journals.

Current study ranking	Park et al. (2011)	University/organization	Relative citation counts	Absolute citation counts
1	1	Hong Kong Polytechnic University	3935.00	8244
2	2	Texas A&M University	3261.05	6708
3	3	Griffith University	3216.42	5029
4	4	University of Surrey	2722.33	6025
5	16	Arizona State University	2310.30	5325
6	11	Virginia Polytechnic Institute and State Univ.	2269.33	4790
7	7	University of Illinois at Urbana–Champaign	1836.50	4496
8	N.A.	University of Westminster	1807.08	1840
9	N.A.	Sheffield Hallam University	1563.17	2560
10	N.A.	Massey University	1431.50	2132
11	23	University of Calgary	1410.42	2820
12	28	University of Nevada –Las Vegas	1397.25	2437
13	21	James Cook University	1374.40	2589
14	22	University of Otago	1353.67	2433
15	8	Purdue University	1206.27	2462
16	5	University of Queensland	1167.67	2071
17	14	Pennsylvania State University	1160.05	2608
18	15	University of Central Florida	1151.92	2262
19	12	University of Waikato	1092.66	1746
20	N.A.	Tilburg University	989.00	1289
21	N.A.	Mugla University	919.00	1167
22	N.A.	University of Valencia	826.33	2050
23	N.A.	University of Las Palmas de Gran Canaria	788.00	1553
24	13	Sejong University	761.33	1569
25	24	Victoria University	753.50	1534
26	20	Hebrew University of Jerusalem	743.33	1313
27	6	Ben-Gurion University of the Negev	714.09	1388
28	N.A.	Simon Fraser University	688.33	983
29	N.A.	Sun Yat-sen University	687	687
30	N.A.	University of Luton	678.00	868
31	N.A.	University of Western Australia	673.83	1074
32	25	Washington State University	668.33	1529
33	17	La Trobe University	666.17	1181
34	N.A.	University of Sunderland	663.00	1315
35	N.A.	Northern Arizona University	662.17	1586
36	N.A.	University of Wollongong	649.17	1052
37	N.A.	University of Plymouth	634.83	1359
38	N.A.	Chinese Culture University	624.13	1863
39	10	University of Waterloo	612.67	1109
40	26	Monash University	603.67	1396
41	N.A.	University of Texas at San Antonio	591.50	1183
42	N.A.	Erasmus University Rotterdam	583.00	1040
43	N.A.	University of Victoria	566.50	1284
44	N.A.	University of Brighton	565.00	733
45	N.A.	Lincoln University	540.25	1336
46	N.A.	Australian National University	538.33	591
47	N.A.	University of Florida	535.83	1071
48	N.A.	Clemson University	531.17	1286
49	N.A.	Buckinghamshire Chilterns University Coll.	526.00	782
50	N.A.	University of Hawaii	522.83	1463

Note. Park et al. (2011) listed the top 50 universities in leading tourism journals. "N.A." means the university was not listed in Park et al.'s (2011) study.

and Park et al.'s (2011) study both in terms of citation counts and number of publications (as shown in the first two columns of Table 4). However, Arizona State University ranked fifth in this study while it ranked 16th in Park et al.'s measure of research output. Similarly, Virginia Polytechnic and State University ranked sixth in this study, but 11th in Park et al.'s (2011) study. These two

Table 5
Ranking by country/region in tourism journals.

Current study ranking	Park et al. (2011)	Country/region	Relative citation counts	Absolute citation counts
1	1	U.S.	33,204.22	68,002
2	2	U.K.	21,546.83	35,924
3	3	Australia	14,426.90	26,499
4	6	Canada	7709.33	13,955
5	8	New Zealand	6725.83	10,993
6	5	Hong Kong	4687.17	9632
7	4	Spain	4197.92	9818
8	11	Turkey	2628.17	3359
9	9	South Korea	2579.39	5559
10	7	Taiwan	2402.17	5748
11	10	Israel	2001.76	3739
12	12	Netherlands	1945.42	3062
13	18	Denmark	1140.50	1457
14	13	Singapore	942.75	1764
15	15	China	865.00	939
16	16	Austria	859.50	1537
17	17	Greece	803.75	1124
18	14	Norway	648.17	1366
19	20	Sweden	585.17	817
20	N.A.	Cyprus	415.17	796
21	N.A.	Kenya	407.00	566
22	N.A.	South Africa	388.42	729
23	N.A.	Switzerland	340.50	596
24	N.A.	Belgium	316.00	454
25	N.A.	Slovakia	288.59	414
26	N.A.	Indonesia	265.33	274
27	N.A.	Portugal	244.67	367
28	N.A.	Barbados	241.83	506
29	19	Germany	204.09	324
30	N.A.	Italy	198.34	619
31	N.A.	Japan	191.83	462
32	N.A.	Brazil	188.00	251
33	N.A.	India	168.00	168
34	N.A.	Finland	158.50	332
35	N.A.	France	158.00	168
36	N.A.	Thailand	154.00	328
37	N.A.	Croatia	139.00	171
38	N.A.	Belize	138.00	414
39	N.A.	Botswana	111.00	111
40	N.A.	Ireland	103.84	225
41	N.A.	Poland	71.00	213
42	N.A.	Aruba	64.00	128
43	N.A.	Dominican Republic	64.00	192
43	N.A.	Mexico	59.50	163
45	N.A.	Uganda	58.50	81
46	N.A.	Mauritius	56.50	113
47	N.A.	Macau	51.50	84
48	N.A.	Hungary	49.50	99
49	N.A.	Bulgaria	46.00	46
50	N.A.	Czech Republic	43.67	131

Note. Park et al. (2011) listed the top 20 countries/regions in leading tourism journals; "N.A." means the country/region was not listed in Park et al.'s (2011) study.

Table 6
University ranking in hospitality and tourism journals.

Current study ranking	Park et al. (2011)	Law et al. (2010)	University/organization	Relative citation counts	Absolute citation counts
1	2	1	Hong Kong Polytechnic University	5448.17	11,267
2	1	11	Cornell University	4785.02	9543
3	4	17	Griffith University	3611.25	5843
4	7	3	University of Surrey	3303.98	7355
5	8	7	Virginia Polytechnic Institute and State University	3267.67	6889
6	9	21	Texas A&M University	3262.72	6713
7	5	2	University of Nevada –Las Vegas	2583.33	4750
8	28	39	Arizona State University	2341.97	5409
9	3	6	Pennsylvania State University	2218.38	4317
10	12	27	University of Illinois at Urbana–Champaign	1896.50	4665
11	45	28	Sheffield Hallam University	1836.92	3197
12	82	N.A.	University of Westminster	1807.08	1840
13	6	4	Purdue University	1621.02	3428
14	10	4	University of Central Florida	1533.59	2961
15	31	23	University of Otago	1471.67	2631
16	26	N.A.	Iowa State University	1444.83	2083
17	38	15	University of Calgary	1437.42	2874
18	61	N.A.	Massey University	1431.50	2132
19	32	15	James Cook University	1403.90	2644
20	13	28	University of Queensland	1172.17	2080
21	19	23	University of Waikato	1120.66	1774
22	20	39	Oxford Brookes University	996.00	1713
23	N.A.	N.A.	Tilburg University	989.00	1289
24	59	N.A.	Mugla University	980.50	1236
25	30	13	Victoria University	967.50	1986
26	14	13	Washington State University	927.33	2043
27	11	42	Ben-Gurion University of the Negev	906.76	1733
28	81	N.A.	Queen Margaret University	894.17	1762
29	27	N.A.	University of Las Palmas de Gran Canaria	870.00	1734
30	54	N.A.	University of Valencia	869.33	2117
31	16	N.A.	Sejong University	867.00	1789
32	51	28	Northern Arizona University	838.67	1958
33	34	N.A.	University of Western Australia	798.00	1469
34	37	N.A.	Hebrew University of Jerusalem	786.33	1356
35	22	7	Michigan State University	771.17	1653
36	25	28	La Trobe University	743.50	1259
37	18	N.A.	Kansas State University	694.75	1212
38	N.A.	N.A.	Simon Fraser University	688.33	983
39	N.A.	N.A.	Sun Yat-sen University	687.00	687
40	N.A.	N.A.	University of Luton	678.00	868
41	70	N.A.	University of Sunderland	663.00	1315
42	59	N.A.	University of Wollongong	649.17	1052
43	N.A.	N.A.	University of Plymouth	634.83	1359
44	64	N.A.	Chinese Culture University	624.13	1863
45	68	N.A.	University of Brighton	624.00	792
46	41	48	Monash University	615.67	1420
47	21	17	University of Waterloo	612.67	1109
48	N.A.	N.A.	University of Texas at San Antonio	602.33	1217
49	79	48	Erasmus University Rotterdam	583.00	1040
50	98	N.A.	Clemson University	576.50	1410
51	53	42	Brock University	576.08	430
52	N.A.	N.A.	University of Victoria	566.50	1284
53	34	N.A.	University of Hawaii	561.00	1550
54	51	N.A.	University of Florida	558.83	1123
55	87	N.A.	Northumbria University	548.75	642
56	67	N.A.	Lincoln University	540.25	1336
57	N.A.	N.A.	Australian National University	538.33	591
58	94	N.A.	University of Wales	536.25	1236
59	94	N.A.	Buckinghamshire Chilterns University College	526.00	782
60	74	N.A.	University of Hong Kong	516.08	1014
61	N.A.	N.A.	University of Portsmouth	511.00	582
62	63	N.A.	George Washington University	508.00	707
63	57	11	University of Strathclyde	506.33	843
64	36	42	Florida State University	502.67	1557
65	N.A.	N.A.	Mustafa Kemal University	501.00	512
66	N.A.	N.A.	Waiariki Polytechnic	500.50	613
67	40	N.A.	Manchester Metropolitan University	500.17	728
68	23	36	Oklahoma State University	497.67	1269
69	N.A.	N.A.	Waiariki Institute of Technology	489.00	521
70	42	N.A.	Kyunghee University	474.67	1138
71	17	N.A.	Universitat de les IllesBalears	473.67	1227
72	N.A.	N.A.	California State University	470.33	817
73	47	N.A.	Victoria University of Wellington	469.50	726
74	64	N.A.	University of Guelph	468.00	867
75	56	9	Bournemouth University	463.50	912
76	N.A.	N.A.	University of Canterbury	463.33	534
77	N.A.	N.A.	University of Aberdeen	450.00	523
78	50	N.A.	University of Nottingham	445.83	917
79	69	N.A.	Ming Chuan University	444.67	1116
80	N.A.	21	Southern Cross University	443.67	828
81	44	N.A.	Nanyang Technological University	443.00	659
82	77	N.A.	Colorado State University	414.00	928
83	N.A.	N.A.	University of Nebraska	411.50	435
84	N.A.	N.A.	Moi University	407.00	566
85	N.A.	N.A.	Swansea University	405.00	547
86	29	N.A.	College of Charleston	384.00	832
87	N.A.	N.A.	Staffordshire University	381.75	548
88	N.A.	N.A.	State University of New York	377.58	411
89	N.A.	N.A.	McGill University	363.58	1023
90	N.A.	N.A.	Charles Sturt University	362.00	661
91	N.A.	17	University of the Aegean	360.75	393
92	33	N.A.	University of Stirling	359.42	695
93	55	23	University of Houston	358.42	766
94	49	9	University of South Carolina	355.33	449
95	N.A.	N.A.		352.50	479

Table 6 (*continued*)

Current study ranking	Park et al. (2011)	Law et al. (2010)	University/organization	Relative citation counts	Absolute citation counts
			University of Western Ontario		
96	N.A.	N.A.	University of Kent	347.00	591
97	N.A.	N.A.	University of Haifa	346.33	583
98	66	100	Ohio State University	334.17	855
99	N.A.	N.A.	University of Manitoba	326.08	708
100	N.A.	N.A.	Northern Territory University	325.00	618

Note. Park et al. (2011) listed the top 100 universities in leading hospitality and tourism journals; Law et al. (2010) listed the top 50 universities in 57 hospitality and tourism journals; "N.A." means the university was not listed in Park et al.'s (2011) study or Law et al.'s (2010) study.

universities show that less productive universities can produce highly cited publications.

Table 5 displays the citation count rankings by country/region in tourism journals. According to the table, the U.S. ranked first, with 33,204.22 relative and 68,022 absolute citations. The U.K. and Australia ranked second and third, with 21,546.83 and 14,426.90 relative citations respectively. As was the case for hospitality journals, the U.S. and the U.K., being traditional research-oriented countries, continue to perform well in terms of citations, strongly influencing knowledge development in the tourism research field. Canada and New Zealand ranked fourth and fifth with 7709.33 and 6725.83 relative citations (Table 5). The first two columns in Table 5 show that there is no difference in the leading positions in research of the U.S., the U.K., and Australia in this study and Park et al.'s (2011) study. In other words, the best performing countries are the same as the most productive countries in leading tourism journals. Hong Kong ranked higher than Canada and New Zealand in productivity, but it was outperformed by these two countries in terms of citation counts.

4.3. Hospitality and tourism journals

This study also analyzed the combined citation counts for the six leading hospitality and tourism journals. Table 6 presents the universities that received the most number of citations in the six journals, along with their corresponding rankings in productivity (Park et al., 2011) and in terms of editors, associate editors, and editorial board members (Law et al., 2010).

As shown in Table 6, The Hong Kong Polytechnic University ranked first, with 5448.17 relative and 11,267 absolute citations. Cornell University ranked second with 4785.02 relative and 9543 absolute citations. Although The Hong Kong Polytechnic University's ranking based on citations matches its rankings in productivity and editorial leadership, Cornell University ranked only 11th in terms of editorial leadership. Cornell University seems to use a different strategy for providing academic contributions to hospitality and tourism. In addition, Griffith University and the University of Surrey ranked third and fourth in citations. Similar to Cornell University, Griffith University did not rank high in journal representations. The University of Surrey and the fifth-ranked Virginia Polytechnic Institute and State University had similar rankings in citations, publications, and journal representation. It is interesting to note that quite a few universities with good citations were not listed in Park et al.'s (2011) study on productivity. In other words, a highly productive university may not necessarily produce well cited publications.

Table 7 lists the citation ranking by countries/regions in the leading hospitality and tourism journals. The U.S., the U.K., and

Table 7
Ranking by country/region in hospitality and tourism journals.

Current study ranking	Park et al. (2011)	Country/region	Relative citation counts	Absolute citation counts
1	1	U.S.	50,146.39	103,133
2	2	U.K.	24,438.42	41,536
3	3	Australia	15,598.65	28,930
4	7	Canada	7961.17	14,471
5	9	New Zealand	6915.83	11,284
6	4	Hong Kong	6590.42	13,601
7	5	Spain	4411.92	10,218
8	8	South Korea	2931.39	6322
9	10	Turkey	2859.92	3802
10	6	Taiwan	2612.08	6387
11	11	Israel	2326.42	4216
12	13	Netherlands	1954.42	3071
13	20	Denmark	1167.50	1511
14	14	Singapore	1090.75	2067
15	18	Greece	925.08	1309
16	15	China	895.83	1016
17	16	Austria	862.75	1550
18	12	Norway	809.83	1851
19	21	Sweden	679.50	914
20	19	Switzerland	429.00	836
21	N.A.	Cyprus	415.17	796
22	N.A.	Kenya	407.00	566
23	17	France	392.00	714
24	24	South Africa	388.42	729
25	N.A.	Belgium	323.75	485
26	25	Portugal	313.67	505
27	N.A.	Slovakia	288.59	414
28	22	Germany	284.59	405
29	N.A.	Indonesia	265.33	274
30	N.A.	Barbados	241.83	506
31	23	Italy	237.09	720
32	28	Thailand	197.42	466
33	N.A.	Croatia	196.00	247
34	26	Japan	191.83	462
35	27	Finland	189.50	375
36	30	Brazil	188.00	251
37	N.A.	Ireland	179.84	371
38	N.A.	India	172.00	172
39	N.A.	Belize	138.00	414
40	N.A.	Botswana	111.00	111
41	N.A.	Russia	96.33	190
42	N.A.	Poland	71.00	213
43	N.A.	Dominican Republic	64.00	192
43	N.A.	Aruba	64.00	128
45	N.A.	Mexico	59.50	163
46	N.A.	Uganda	58.50	81
47	N.A.	Mauritius	56.50	113
48	N.A.	Macau	51.50	84
49	N.A.	Hungary	49.50	99
50	N.A.	Bulgaria	46.00	46
51	N.A.	Czech Republic	43.67	131
52	N.A.	Puerto Rico	38.00	114
53	N.A.	Malaysia	32.50	65
54	N.A.	Yugoslavia	29.75	119
55	N.A.	Jamaica	29.33	88
56	N.A.	Sri Lanka	20.25	81
57	N.A.	Romania	19.59	76
58	N.A.	Peru	18.50	37
59	N.A.	Tanzania	14.33	43
60	N.A.	Slovenia	11.00	22
61	N.A.	Saudi Arabia	10.00	20
62	N.A.	Zimbabwe	7.50	15
63	N.A.	Costa Rica	6.75	13
64	N.A.	Fiji	6.00	6
65	N.A.	Cuba	5.50	11
66	N.A.	Philippines	5.25	21
67	N.A.	Gabon	4.09	45
68	N.A.	Chile	2.67	8
69	N.A.	Bosnia-Herzegovina	1.00	2

Note. Park et al. (2011) listed the top 30 countries/regions in leading tourism and hospitality journals; "N.A." means the country/region was not listed in Park et al.'s (2011) study.

Australia ranked first, second, and third. Their rankings are identical to the productivity rankings in Park et al.'s (2011) study. In particular, the disproportionately large numbers of relative and absolute citations from the U.S. is likely due to the large number of hospitality and tourism programs in the country, leading to a critical mass of many world-class researchers who can produce publications that attract numerous citations. Canada and New Zealand ranked fourth and fifth in terms of relative citation counts. Hong Kong ranked sixth.

5. Discussion and implications

The increasing resource constraints that many universities face and the demand for improving faculty research performance and public accountability have presented unprecedented challenges to universities worldwide. These challenges, coupled with stiff global and regional competitions for research grants, impose a direct pressure on universities to achieve a high level of research performance.

The findings of this study, with a few exceptions, are not surprising, as the universities that received the most number of citations are also the ones that produce the most publications. In other words, the number of publications in leading hospitality and tourism journals produced by the top research-based universities and the number of citation counts that these universities received are in general closely related. The same observation applied to the countries and regions that received the most citations. In other words, these top-notch universities and regions produce the most cited publications.

This study identified the performing status of the universities with the largest number of citations from publications in leading hospitality and tourism journals during the 10-year period between 1996 and 2005. The most cited researchers, whose publications in leading journals receive many citations, are valuable assets to their employing universities. Universities can use citation counts to evaluate grant allocation, promotion, and tenure for their faculty members. Universities can also use citation counts for external uses, such as to demonstrate their contributions to the academic community, industry, governments, education, and other stakeholders. These rankings to certain extent represent intellectual contributions in academia and outside of academia because GS citation counts cover a wide range of publication channels that Google can find.

The demand for resources is larger than the supply in most, if not all, universities. As such, universities and other funding authorities around the world need to prioritize and allocate their available resources to programs that have demonstrated academic performance. Additionally, demonstrated research performance may be useful for some candidates to decide which university to pursue their postgraduate research degrees in. As such, the number of citations in leading hospitality and tourism journals does serve a purpose. Likewise, industry leaders can use the findings of this study to determine the highly performing universities, which pushes the creation of new products and services.

Due to the potential limitations of publication counts, alternative methods for evaluating academic performance are needed to supplement the productivity counting method. Findings of this study thus make a direct contribution to this emerging need. In other words, this study does add new knowledge to the existing dimensions of academic performance evaluation. Decision makers can then use findings of this study and future studies to assist their decision-making.

6. Conclusions, limitations, and future research

The primary contribution of this study is the confirmation that research performance should go beyond counting journal articles. In the U.K.'s research assessment exercise, universities are required to submit several different types of metrics, such as research output, research grants, indicators of esteem, and research student supervision for evaluation (Law & Chon, 2007). Because citation counts also contribute to knowledge transfer and development, governments or senior university administrators may need to include citations when making judgmental decisions. Although citation counts cannot serve as the sole measure of research performance, they should be considered as a major factor when developing a comprehensive performance evaluation method. Additionally, hospitality and tourism researchers and graduate students can better understand the distribution of citations. Individual researchers can use citation counts in leading journals as a part of their decisions of which university or region to work with.

Universities worldwide have been, and will likely be, attempting to improve their research performance. So far, counting publications from selected journals has been the commonly used method for measuring academic excellence. We do not oppose this method of measuring performance. In fact, this method is easy to understand and simple to carry out. What this paper advocates is that a more comprehensive approach to better reveal the academic performance of a university or a geographical region is needed. On the basis of the findings from this research, universities can establish more realistic and focused plans that fit the needs of society.

A major limitation of this study is the exclusion of number of researchers that are affiliated with each institute. For instance, the Hong Kong Polytechnic University has more than 60 faculty members and many postgraduate programs such as PhD, D.HTM in Hong Kong and Mainland China, which will naturally have more publications and citation. In this study, we were unable to collect the total number of researchers including faculty members and postgraduate students for each institute. As such, a future research direction would be to compute the per capita citation counts. Another limitation is the choice of an arbitrary time frame from 1996 to 2005. While a 10-year time frame was set to match with that of Park et al.'s (2011) study along with the consideration of a five-year window for a publication to be cited (Ghosh, 1975), a different time frame may provide a different result.

Additionally, future research can extend the journal coverage and time frame to verify the rankings of universities and countries/regions. Also, as citation counts change continuously, it would be beneficial to carry out the research longitudinally. Other directions for future research would be the consideration of author position in joint publications, minimizing the effect of adjunct/visiting professors, and the elaboration of citing sources, and comparing GS findings with other databases. Beyond citation counting, future research can examine the relationship between the regional representation of editorial board members and publication topic.

Acknowledgment

This project was partially supported by a research grant funded by the Hong Kong Polytechnic University (1-ZV77).

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