International Journal of Hospitality Management 31 (2012) 962–971

Contents lists available at SciVerse ScienceDirect

International Journal of Hospitality Management

journal homepage: www.elsevier.com/locate/ijhosman

Influence ratio: An alternate means to assess the relative influence of hospitality and tourism journals on research

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ARTICLE INFO

Keywords:
Journal influence
Influence ratio
Citations
Bibliometrics

ABSTRACT

This paper proposes an alternative metric to assess the relative influence journals have on research by using an influence ratio measure. Hospitality and tourism journals are used as a case study. Influence ratio enables a suite of journals to be evaluated through the calculation of a score for each journal that reflects the share of citations and the share of papers it produces against all citations and all papers in the set. A higher influence ratio score signifies that a journal is proportionately more influential, for it generates a greater share of citations than the share of papers published would suggest. The study evaluated three sets of hospitality and tourism journals (17 hospitality, 41 tourism and a combined set of 54 hospitality and tourism journals). The study illustrates the efficacy of using the influence ratio metric. A small number of journals in each field play a disproportionately strong influence in informing scholarship, with a long tail of relatively less influential journals observed.

1. Introduction

This paper proposes an alternative method to evaluate the contributions of journals in informing research. The paper develops an 'influence ratio' measure derived by comparing the share of citations generated by a journal with the share of papers published by that journal, from within a defined population of journals. Hospitality and tourism journals are used as a case study. Data were derived using the *Publish or Perish* (http://www.harzing.com/pop.htm) software package that analyses the *Google Scholar* (http://GoogleScholar.com) data base. Influence ratio produces a simple to understand score that both facilitates meaningful like with like comparisons within set of journals in a field of study or discipline and also like with like comparisons among journals across disciplines. The technique also has the added advantage of controlling for the size of the journal, frequency of publication, the number of papers published and the citation tendencies within fields of study.

2. Context

The influence of a journal can be determined in one of two ways. On the one hand, journals can act as a valuable teaching and learning resource tool. Influence here is measured most commonly in the hospitality and tourism fields of study through peer evaluation, with a variety of studies published in the past 20 years (Ferreira et al., 1994; Hsu and Yeung, 2003; McKercher et al., 2006; Pechlaner et al., 2004; Ryan, 2005; Schmidgall et al., 1996; Sheldon, 1990).

On the other hand, influence can be measured by evaluating the more direct role journals play in informing research and scholarship. Influence here is measured typically through citation counts that generate a variety of bibliometric impact scores. The Thomson Reuters Journal Citation Reports (TR, 2011a) which include the science citation index (SCI), the social science citation index (SSCI) and the arts and humanities citation index (AHCI) are the best known and most widely cited examples. Recently, Elsevier Ltd. through its Science Direct—Scopus Source Database has developed alternate impact metrics including the normalized impact per paper (SNIP) and SCImago Journal Rank (SJR) indicators (SciVerse, 2011).

Essentially, impact scores are derived by calculating the number of citations a journal receives within a set time frame with the number of articles published in those same years from a network of journals covered in a data base (Amin and Mabe, 2000). The Thomson Reuters impact scales, for example, divide the number of current year citations to the source items published in that journal during the previous two years (TR, 2011b). The newer metrics devised by Science Direct vary this format somewhat. The SJR metric for example, factors in the 'prestige' of the journal (González-Pereira et al., 2009) through a complex algorithm that evaluates the number and importance of citations received from journals and then normalizes them by the number of papers a journal publishes. The SNIP method, according to Moed (2009), measures a journal's citation impact in context to the standard reference practices in the journal's subject field (i.e. average number of references in the field of study) and by the extent to which the

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doi:10.1016/j.ijhm.2011.11.004

database covers this field. The developers of each metric argue that their models provide a reliable indicator of journal importance.

While these methods have their merits, they are not without criticism. The models work best when top journals are evaluated, but as Greenwood (2007) observes, the ranking of journals with lower impact factors has less certainty attached to it. He notes the ranking of most other journals based on impact factor alone could vary by 10 or more places, without implying any meaningful change in the citation performance due to the clustering of impact scores. Amin and Mabe (2000) discussed how the value of the impact factor can be affected by three features: sociological factors such as the subject area of the journal, the type of journal (letters, full papers, reviews), and the average number of authors per paper; statistical factors relating to the size of the journal; and the size of the citation measurement window, or the period over which citations are tracked. They illustrate that journals that publish more papers and publish more frequently, publish review papers and have broad topic coverage tend to generate more citations than specialist journals or those that publish fewer papers less frequently. Vaughan and Hysen (2002) have also noted that journals with a longer web presence and those that offer more web links to their full papers, also tend to generate higher citation counts.

The size of the citation window also plays a role. Clearly, the longer the citation window, the greater the likelihood of a paper being cited and the greater the likelihood of a higher citation count per paper being generated (Jacsó, 2010; Lancho-Barrantes et al., 2010). Moed (2009) describes a longer citation window as giving a journal's impact more time to mature. A longer time frame seems particularly useful for fields of study that have traditionally long lead times between acceptance of a paper and publication and those that continue to evolve and mature. A short time frame is applicable in fields where papers tend to have short 'cited half-lives' the median age of its articles cited in the current year (Leydesdorff, 2007). As such, no hard and fast rule exists for setting citation windows, other than fitness for purpose and methodological continuity in the case of legacy citation agencies.

Both Amin and Mabe (2000) and Grzybowksi (2009) note that the impact scores for journals vary significantly by discipline making direct comparisons of journals across disciplines difficult. Impact scores depend on the volume of papers published per journal page (benefiting disciplines that publish many, short papers and disadvantaging those that publish longer works); the number of journals included in a data base (here hospitality and tourism have been notoriously under-represented), the citation tendencies of disciplines (typically many or few citations per paper) and cross-disciplinary citation practices (benefiting broad discipline research, while disadvantaging so called 'silo' discipline studies) (Lancho-Barrantes et al., 2010). What is included in the calculation may also affect both the numerator and denominator, with Jacsó (2010) noting that the same raw data can produce substantially different results, depending on the method used. Again, he highlights that some journals can change their place by 10 or more positions in ranking systems.

Perhaps, the greatest challenges, though, lie in difficulties inherent in interpreting the results. To begin, impact factor scores are reported simply as an absolute number divorced from the context of other journals in the field (Wagner, 2009). Thus, one does not know whether an impact factor of 3.00 is good, average, or poor without assessing the norms for the field. A further issue rests with the often simplistic and inaccurate interpretation of scores, with the belief being that they represent scale differences in quality. Thus, the higher scoring journal can be interpreted, wrongly, as being *x* times better than the lower ranked journal. Table 1 illustrates the inherent fallacy of this point using the 13 hospitality and tourism journals monitored by Thomson Scientific in 2010 as reported by Buhalis (2011). Using simplistic analysis, one could argue that *Tourism Management* is three to five times 'better' than some other journals, even though that is not how impact factors are measured.

Wagner (2009) proposed a "percentile-based journal impact factor" score to address this specific interpretive challenge. He used the *Excel PERCENTRANK* function to evaluate rank ordered lists of journals to determine which are more influential than others. The function ascribes a score of 100% to the top journal in the list and 0% to the journal at the bottom of the list. All other journals are then accorded a score based on their relative position on the list based one a percentage of the number of journals below it. Again, using Table 1 as an example, *Tourism Management* would be assigned a score of 100% and the *Journal of Hospitality, Leisure Sport and Tourism Education* would be given a score of 0%. The score of 75% for the *International Journal of Hospitality Management* signifies that nine of the remaining 12 journals in the list ranked lower. Wagner (2009) argues that "one can instantly see from the percentile rank whether a journal is above average (50% or more) or below average (below 50%) within a given discipline." He makes two other assertions. The first is the ability to compare journals across disciplines or fields of studies, with the leading journal in a field generating a score of 100% regardless of its impact factor, or the number of journals in the set. Additionally, he argues it is possible to recognize instantly the relative rank of a journal within a discipline by the simplest of all measurements, the common percentile: a journal in the 90th percentile must by definition, be a leading journal.

This method has some merits but also has a number of significant limitations. To begin, it does not address the concerns raised by Greenwood (2007) and Jacsó (2010) about how minor and insignificant differences in impact scores may result in apparently large differences in rankings. This issue is less problematic in fields of studies with a large population of journals but is clearly an issue where small populations of journals are considered. Wagner (2009) used Chemistry journals as a case study. The field has more than 300 journals. The top 3 ranked journals each scored 100%, while the next four generated scores of 99%. These seven journals ranked at the top of the list, even though their impact factors ranged from 22.8 to 9.6. In this case, a percent rank flattens the apparent effect of seemingly large variability in impact scores. But, the opposite situation exists when small sets of journals are considered. Again, let's use the same set of 13 journals highlighted in Table 1. Three journals recorded impact scores of between 0.61 and 0.65, indicating that for all intents and purposes, they are equivalent. Yet, because of these small differences, one is rated at 50%, while the other earn 'below average' scores of 41.6% and 33.3%, respectively. These scores imply great divergence in quality, when none exists. A further issue with this metric is how to judge a journal rated at or near '0%'. Such a score would send the erroneous message that a journal has little credibility or value.

3. Influence ratio

The influence ratio represents and alternate measure that has the potential to provide an easy to understand, meaningful comparison between and among journals within a population, without being as value laden as the percent rank approach. Influence ratio is a technique that assesses the relative influence of a given journal in relation to the suite of journals within a discipline or field of study. It does so in a holistic manner by developing a score for each journal based on its share of total citations generated by the set of journals against the share of papers published by that journal from among the set. The following steps are involved:

1. define the set of journals to be assessed;
2. establish a citation window;

Table 1
Impact factor of hospitality and tourism journals, 2010.

Title	Impact factor[a]	PERCENT rank score[b]
Tourism Management	2.620	100.00
Annals of Tourism Research	1.949	91.60
Journal of Sustainable Tourism	1.539	83.30
International Journal of Hospitality Management	1.382	75.00
Journal of Travel and Tourism Marketing	0.835	66.60
International Journal of Tourism Research	0.802	58.30
Journal of Hospitality and Tourism Research	0.653	50.00
Tourism Geographies	0.633	41.60
Tourism Economics	0.614	33.30
Cornell Hospitality Quarterly	0.549	25.00
Current Issues in Tourism	0.542	16.60
Scandinavian Journal of hospitality and Tourism	0.282	8.30
Journal of Hospitality, Leisure Sport and Tourism Education	0.250	0.00

[a] *Source:* Buhalis (2011) from Thomson Reuters.
[b] Ranking of journals adopting Wagner's (2009) percentrank model.

3. tabulate the total number of papers (or outputs) published by all journals in the set;
4. calculate the share of total papers published by each journal in the set;
5. tabulate the total number of citations generated by the suite of journals;
6. calculate the share of citations for each journal in the set;
7. calculate an influence ratio score by dividing the share of citations by the share of papers for each journal.

The following example explains the technique. It is based on information shown in Table 2, which examines hospitality journals. We have identified 17 journals in the population set, with the *International Journal of Hospitality Management* used as a case. A two year time citation window including papers published in 2008 and 2009 was used. This journal published 157 outputs over the period that generated 1311 citations. In total, the suite of hospitality journals published 1032 outputs that generated 3153 citations. Thus, the *International Journal of Hospitality Management* accounted for 15.32% of all hospitality outputs and 41.58% of all citations. Dividing citation share by output share produces a ratio score of 2.71. This score means that this specific journal generated a share of citations that was almost three times as high as the share of papers it published, suggesting it has a large influence on the field.

Influence ratio scores of around 1.0 indicate that a journal's share of citations is roughly equivalent to the share of papers published. Such journals could be seen to inform research and scholarship at a level that is commensurate with the volume of papers they publish. Journals whose score is substantially higher than 1.0 generate substantially more citations than the share of papers published. Such journals may be regarded as being proportionately more influential in informing research and scholarship. Conversely, journals registering scores of substantially less than 1.00 generate a smaller share of citations than their share of papers would suggest. Such journals may be regarded as being less influential, for the academic community looks to them disproportionately less frequently than one could expect. For the purposes of this paper, an arbitrary cut off score of 1.3 (rounded to one significant decimal point) has been established to define journals that are classified as being disproportionately influential; a score of between 0.8 and 1.2 is used to identify journals whose performance is deemed to be equivalent to their outputs and scores of less than or equal to 0.7 to identify journals whose influence is disproportionately low.

This technique has a number of advantages. First and foremost, it generates like for like comparisons among a set of journals, whereby one can easily assess the relative contributions that journals make to a field of study. It avoids the interpretive problems associated with impact factors that are context specific, for the score is predicated on a direct comparison of two aggregate share figures. In doing so, comparisons of the relative importance of journals across disciplines is possible. Additionally, it avoids the risk of value-laden judgments associated with percentile rankings, where small differences in scores may yield large percentile changes.

Its limitations must also be recognized. No method can control for the inherent advantages that journals with strong distribution networks, that publish more papers across a wider spectrum of topics have over journals that publish fewer papers in specialist topics and may not have as effective a distribution system. Additionally, long established journals tend to have an advantage over newer titles primarily because they have had a longer presence in the marketplace. These conditions must be accepted as realities in academic publishing. Additionally, the Influence Ratio method is appropriate when evaluating journal outputs as a whole and not specific outputs from one journal. A journal may generate an overall lower ratio score if its suite of papers are not cited often, even if it publishes one ground breaking paper that is highly cited, while other journals that publish papers that are consistently cited at a modest level may generate a higher score. Finally, this method makes no statements, inferred or explicit, about the quality of the journals under consideration. All journals included in this study adopt a double-blind refereeing process. All papers published, therefore, meet acceptable standards for academic publication.

4. Method

Data for this study were acquired from the *Google Scholar* data base and analyzed using the *Publish of Perish* software. The broader coverage offered by *Google Scholar* and the development of the *Publish or Perish* software to analyze this data base create an opportunity to analyze a larger set of journals than available from other citation sources. *Google Scholar* is an on-line search engine specializing in scholarly papers. According to its website (Google Scholar, 2011) the site "includes journal and conference papers, theses and dissertations, academic books, pre-prints, abstracts, technical reports and other scholarly literature from all broad areas of research... works available include those from a wide variety of academic publishers, professional societies and university repositories, as well as scholarly articles available anywhere across the web." *Publish or Perish* is an open access software package developed by Prof. Anne Wil Harzing from the University of Melbourne in Australia (Harzing, 2011) that retrieves and analyzes citations listed in *Google Scholar*. The journal impact analysis function produces a range of bibliometrics relating to the number of items published, citation counts and impact scores.

Table 2
Assessing the influence of hospitality journals.

Journal name	Total 'outputs' recorded	Total citations recorded	Citations per 'output'	Share of total 'outputs'	Share of total citations	Influence ratio
International Journal of Hospitality Management	157	1311	8.35	15.32	41.58	2.71
Journal of Hospitality and Tourism Research	58	243	4.19	5.66	7.71	1.36
International Journal of Contemporary Hospitality Management	139	519	3.73	13.56	16.46	1.21
Scandinavian Journal of Hospitality and Tourism	45	153	3.4	4.39	4.85	1.11
Journal of Hospitality, Leisure, Sport and Tourism Education	30	93	3.1	2.93	2.95	1.01
Journal of Hospitality and Tourism Management	25	66	2.24	2.44	2.09	0.86
Cornell Hospitality Quarterly	100	235	2.35	9.76	7.45	0.76
International Journal of Hospitality and Tourism Administration	47	90	1.91	4.59	2.85	0.62
Journal of Human Resources in Hospitality and Tourism	29	53	1.83	2.83	1.68	0.59
Journal of Hospitality and Leisure Marketing (re-titled Journal of Hospitality Marketing and Management in 2009)	54	91	1.69	5.27	2.89	0.55
International Journal of Culture, Tourism and Hospitality	59	81	1.37	5.76	2.57	0.45
Journal of Quality Assurance in Tourism and Hospitality	33	38	1.15	3.22	1.21	0.37
Journal of Foodservice Business Research	59	56	0.95	5.76	1.78	0.31
Journal of Hospitality and Tourism Education	53	38	0.72	5.17	1.21	0.23
Journal of Culinary Science and Technology	39	22	0.56	3.80	0.70	0.18
Journal of Hospitality Financial Management	18	5	0.28	1.76	0.16	0.09
FIU Hospitality and Tourism Review	21	3	0.14	2.05	0.10	0.05
Total	1032	3153	3.08			Median = 0.55

Publish or Perish is a powerful tool, providing its strengths and limitations are noted (Harzing, 2007). Its breadth of coverage represents its greatest strength as the *Google Scholar* data base includes a vast array of scholarly inputs across many disciplines. As such, it is far more comprehensive than any other citation service available. However, as Harzing (2007) herself notes, the output from *Publish or Perish* is only as good as its input, and here *Google Scholar* has a number of limitations. The use of an automated processing system without the benefit of manual cleaning represents its greatest weakness. Inconsistencies in the way journal titles are written, authors are listed or even journals are named, typographical errors in the source paper, excessive commas leading to parsing problems, different uses of capitalizations, publication dates or spellings of the author's name can result in the same item appearing a number of times as ostensibly separate, discrete entries. Additionally, mirror sites may appear to inflate the number of outputs, even though few or no citations may appear on these sites. The inability to clean entries effectively produces an exaggerated total output count. The 'number of papers' listed in the *Publish or Perish*, therefore, must be viewed as being indicative and not definitive. It is for this reason that returns are referred to as 'outputs' in this manuscript.

A total of 54 journals were included in this study. This set includes 13 journals with a dominant hospitality focus, 37 with a tourism focus and four journals that publish approximately equal numbers of hospitality- and tourism-focused papers. These four journals were included in each of the specialist sets, resulting in a population of 17 'hospitality' journals and 41 'tourism' journals. The citation window includes papers published in 2008 and 2009. The census date was September 17, 2011, providing a maturation window of just shy of between almost two years and almost four years, depending on when the paper was published. The citation window considers only papers officially published by journals and not early on-line publication through the 'in press' section used by many journals using the DOI (digital online information) system. In effect, many papers that were not officially published were actually in the public domain for many months before their appearance in hard copy. The two year citation window was selected to offer a more normalized assessment of a journal by accounting for possible outliers in any one year, where one highly cited paper could skew the influence ratio for a journal.

Three conditions had to be met for the inclusion of a journal in this study. First, the journal had to have a primary focus of hospitality, tourism or a related area, which thus excluded leisure and gaming titles, to name a few. Second, prospective journals must have a continuous publications' history over the entire census period. Journals that started publishing after 2008 or ceased publication prior to 2009 were excluded. Third, a complete record of outputs from journals must be available on *Scholar.Google*. The *Google Scholar* data base is still in its Beta, developmental phase. Records for some journals may be incomplete. A preliminary set of over 100 prospective titles was identified using journal lists developed previously others (Anglefire, 2011; CIRET, 2011; Dahiya, 2011; McKercher et al., 2006). The list was then cleaned first to eliminate journals with a tangential connection to hospitality and tourism, such as leisure, gaming, food science and then results were checked against the other conditions to ensure completeness of coverage.

All 'outputs' from a journal were included for analysis, including full papers, research notes, commentaries, reviews and other materials. All outputs were included for the practical reason that any output could be cited, with research notes often cited as frequently as full papers and for the pragmatic reason of difficulty in determining the type of output based on journal tables of contents. The denominator was set at the cleaned set of outputs listed on the *Publish or Perish* website. The set of outputs was cleaned to exclude materials that were not related to the journal in question, as for example, chapters of books with the title '*Tourism Management*'; reprints of older papers that were republished on mirror sites with a date that matched the citation window, but in actuality were published many years earlier were also excluded, as was evident with a number of papers appearing in 2008 in *Information Technology and Tourism*; and deleting items posted on mirror sites (most notably http://dialnet.unirioja.es/), for their inclusion would, artificially inflate the denominator and, consequently artificially deflate the output. The numerator was set at all 'citations' that were generated from the cleaned set of outputs.

5. Results

This section presents the empirical findings of the study. The implications of the findings are discussed in the next section.

Table 2 and Fig. 1 present the results for the set of 17 hospitality journals evaluated. A total of 1023 'outputs' were recorded, which generated a total of 3153 citations. The *International Journal of Hospitality Management* published the largest number of papers, accounting for more than one in seven of the

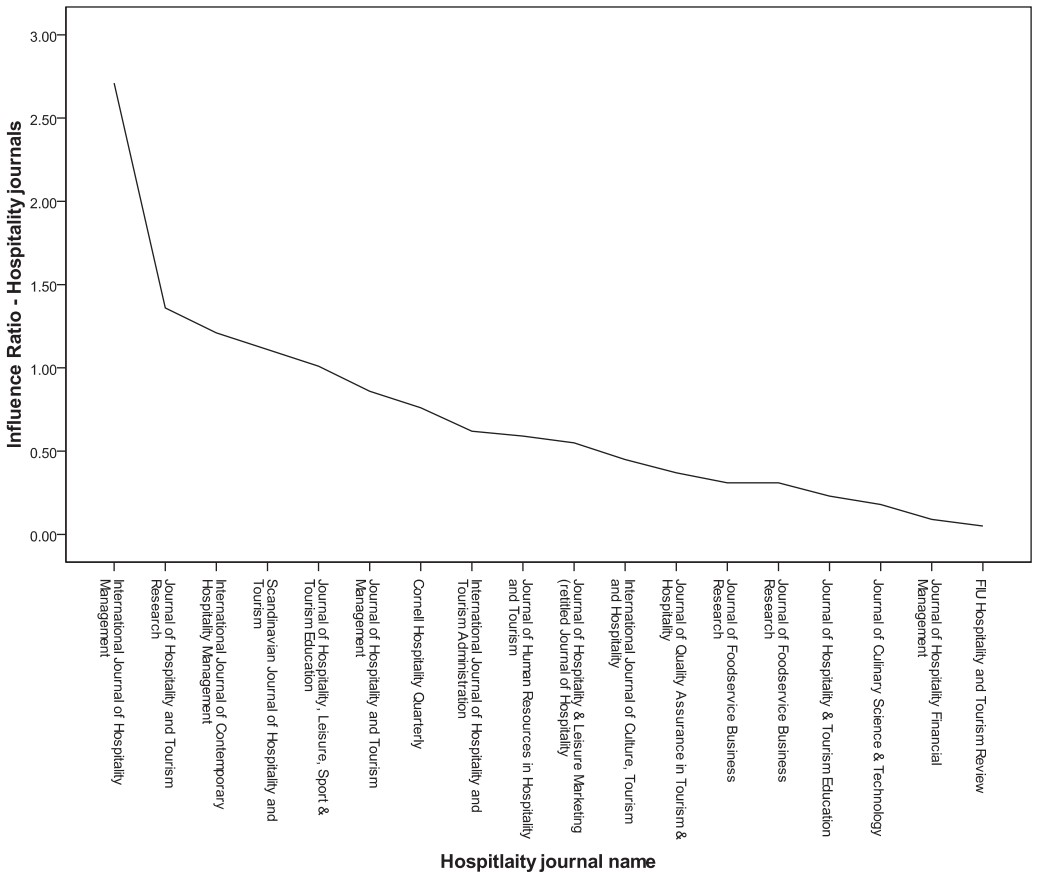

Fig. 1. Influence ratio—hospitality journals.

total outputs published. Three journals, the *International Journal of Hospitality Management*, the *Cornell Hospitality Quarterly*, and the *International Journal of Contemporary Hospitality Management* accounted for almost 40% of the total outputs. Little relationship was noted between the number of papers published and the number of citations, though, for the *International Journal of Hospitality Management* alone generated more than 40% of all citations. This journal, along with the *International Journal of Contemporary Hospitality Management* accounted for almost 60% of citations.

Influence ratio analysis reveals a skewed distribution among hospitality journals. The median influence ratio for the group is 0.55. Two journals were disproportionately influential, generating scores of 1.4 or higher (when measured to one significant decimal place). Five other journals recorded scores of between 0.8 and 1.2. The other 11 journals, though, recorded scores of less than 0.7. One could suggest, therefore, that seven of the 18 hospitality journals studied have influence that is at or above what one would expect if citations and publications were distributed evenly.

Table 3 and Fig. 2 present the results for the larger population of tourism journals. More than 2500 outputs were recorded and they generated almost 10,500 citations. Outputs were more evenly distributed, as six journals (*Tourism Management, Annals of Tourism Research, Journal of Travel and Tourism Marketing, Tourism Analysis, Journal of Travel Research,* and *Tourism Economics*) generated about 40% of total publications. But again, production is not necessarily associated with citations. Here, four journals (*Tourism Management, Annals of Tourism Research, Journal of Travel Research,* and the *Journal of Sustainable Tourism*) accounted for almost 60% of all citations, with *Tourism Management* alone generating more than one-third of the total.

Influence ratio analysis indicates that five journals exert a disproportionately greater influence in informing tourism research than other journals. Again, each recorded scores at least 1.6 (to one significant decimal place), with *Tourism Management* and the *Journal of Travel Research* recording scores of greater than 2.0. The median influence ratio score of 0.47 was a function of few citations generated European-based English language journals. They do not seem to be referred to widely by the rest of the academic community. Six journals recorded scores of between 0.8 and 1.2, indicating that their influence is roughly proportional to the number of papers they publish. A long tail of 30 journals whose influence seems to be disproportionate to their share of papers was also observed. One could conclude, then that 11 of the 41 tourism journals studied have influence that is at or above what one would expect if citations and publications were distributed evenly.

Table 4 and Fig. 3 present the aggregated findings for the combined set of 54 journals. In total, in excess of 3400 outputs were identified that generated more than 13,200 citations. The median influence ratio score is 0.47. The dominance of tourism journals in terms of both the quantum of outputs and citations skews the results somewhat, tending to over-state the influence of tourism journals and under-report the influence of hospitality journals. For example, the five of the six journals that recorded influence ratio scores of more than 1.7 were tourism-oriented. Another nine journals registered scores between 0.8 and 1.2, with the remaining 40 journals registering scores of less than 0.8.

6. Discussion and implications

This study adopted the holistic method of evaluating sets journals in their entirety to determine each journal's relative

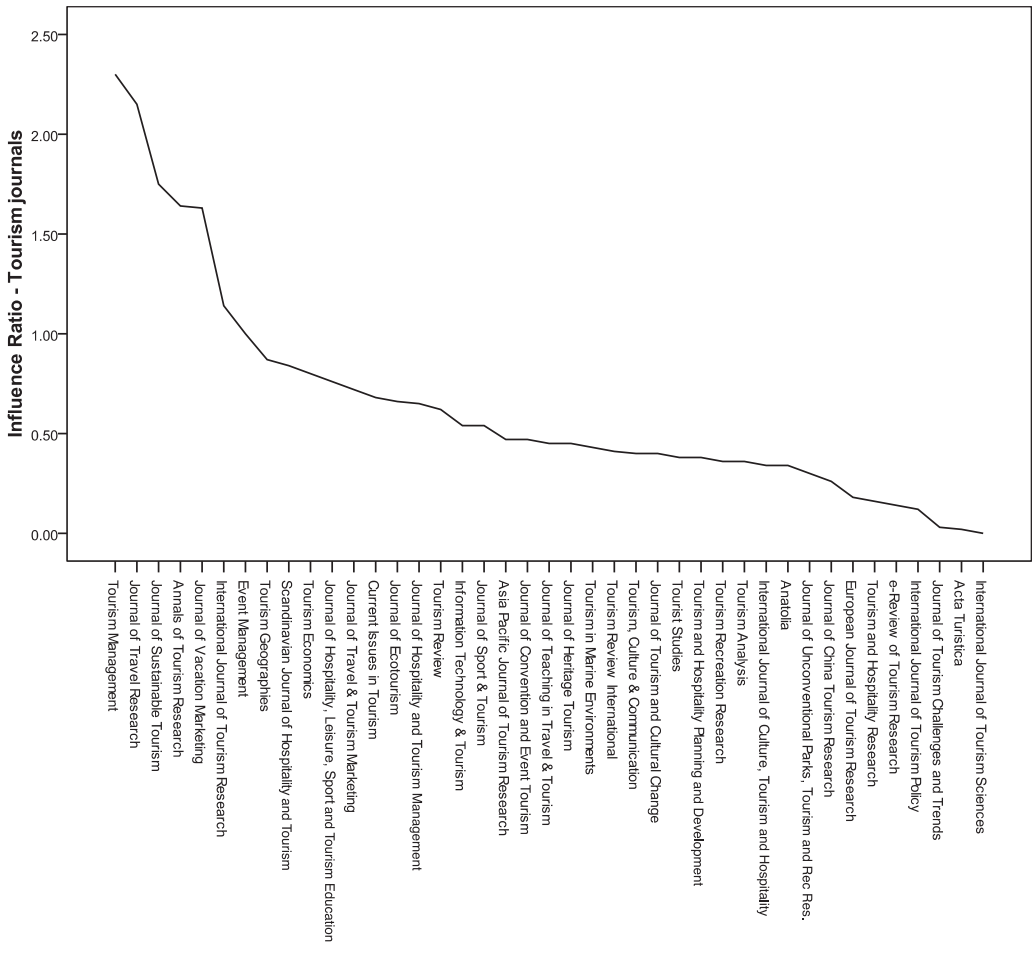

Fig. 2. Influence ratio—tourism journals.

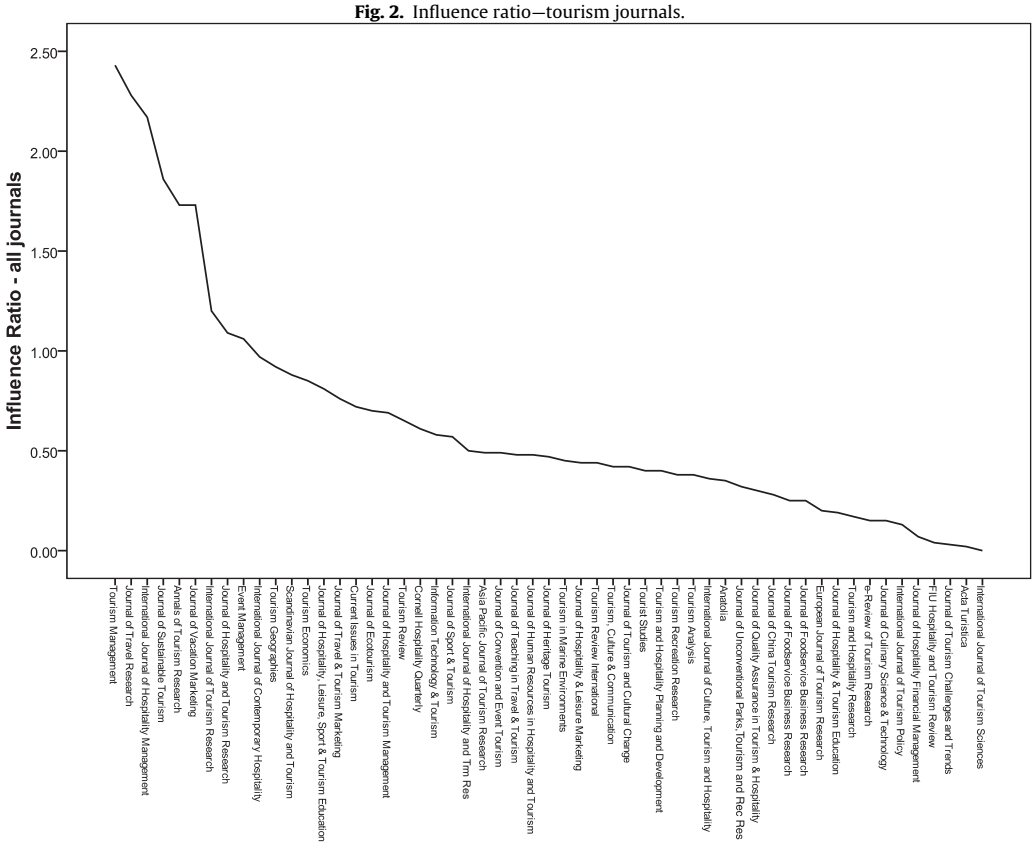

Fig. 3. Influence ratio—all journals.

Table 3
Assessing the influence of tourism journals.

Journal name	Total 'outputs' recorded	Total citations recorded	Citations per 'output'	Share of total 'outputs'	Share of total citations	Influence ratio
Tourism Management	383	3580	9.35	14.91	34.27	2.30
Journal of Travel Research	95	832	8.76	3.70	7.97	2.15
Journal of Sustainable Tourism	104	742	7.13	4.05	7.10	1.75
Annals of Tourism Research	148	985	6.66	5.76	9.43	1.64
Journal of Vacation Marketing	61	405	6.64	2.38	3.88	1.63
International Journal of Tourism Research	103	476	4.62	4.01	4.56	1.14
Event Management	59	241	4.08	2.30	2.31	1.00
Tourism Geographies	62	220	3.55	2.41	2.11	0.87
Scandinavian Journal of Hospitality and Tourism	45	153	3.4	1.75	1.46	0.84
Tourism Economics	102	332	2.25	3.97	3.18	0.80
Journal of Hospitality, Leisure, Sport and Tourism Education	30	93	3.1	1.17	0.89	0.76
Journal of Travel and Tourism Marketing	127	370	2.91	4.95	3.54	0.72
Current Issues in Tourism	74	205	2.77	2.88	1.96	0.68
Journal of Ecotourism	37	100	2.7	1.44	0.96	0.66
Journal of Hospitality and Tourism Management	25	66	2.24	0.97	0.63	0.65
Tourism Review	39	98	2.58	1.52	0.94	0.62
Information Technology and Tourism	52	115	2.21	2.02	1.10	0.54
Journal of Sport and Tourism	41	90	2.2	1.60	0.86	0.54
Asia Pacific Journal of Tourism Research	61	116	1.9	2.38	1.11	0.47
Journal of Convention and Event Tourism	30	57	1.9	1.17	0.55	0.47
Journal of Teaching in Travel and Tourism	57	105	1.84	2.22	1.01	0.45
Journal of Heritage Tourism	50	91	1.82	1.95	0.87	0.45
Tourism in Marine Environments	27	47	1.74	1.05	0.45	0.43
Tourism Review International	50	84	1.68	1.95	0.80	0.41
Tourism, Culture and Communication	35	57	1.63	1.36	0.55	0.40
Journal of Tourism and Cultural Change	40	65	1.63	1.56	0.62	0.40
Tourist Studies	36	56	1.53	1.40	0.54	0.38
Tourism and Hospitality Planning and Development (re-titled Tourism Planning and Development)	28	43	1.54	1.09	0.41	0.38
Tourism Recreation Research	78	114	1.46	3.04	1.09	0.36
Tourism Analysis	138	200	1.45	5.37	1.91	0.36
International Journal of Culture, Tourism and Hospitality	59	81	1.37	2.30	0.78	0.34
Anatolia	77	105	1.36	3.00	1.01	0.34
Journal of Unconventional Parks, Tourism and Recreation Research	9	11	1.22	0.35	0.11	0.30
Journal of China Tourism Research	46	49	1.07	1.79	0.47	0.26
European Journal of Tourism Research	16	12	0.75	0.62	0.11	0.18
Tourism and Hospitality Research	25	16	0.64	0.97	0.15	0.16
e-Review of Tourism Research	19	11	0.58	0.74	0.11	0.14
International Journal of Tourism Policy	35	17	0.49	1.36	0.16	0.12
Journal of Tourism Challenges and Trends	32	4	0.13	1.25	0.04	0.03
Acta Turistica	14	1	0.07	0.55	0.01	0.02
International Journal of Tourism Sciences	19	0	0	0.74	0.00	0.00
Total	2568	10445	4.07			Median = 0.45

contribution to or influence on scholarship and research. The paper used hospitality and tourism journals as a case. The use of the influence ratio metric enables a like with like comparison that assesses the relative contribution journals make to research and scholarship by comparing the share of citations generated from a journal, with the share of papers a journal publishes. Journals with high influence ratio scores can be seen to be more influential in informing research than those with low scores.

This study makes a contribution to the literature in three areas: theory and practice of citation analysis and journal evaluation; insights for academics who wish to publish in these fields; and a deeper understanding of hospitality and tourism journals. Each issue is discussed briefly below.

6.1. Theory and practice of citation analysis and journal evaluation

The dual issues of journal evaluation and citation analyses are controversial. Entire issues of journals have been devoted to discussing the use and misuse of bibliometric indices (Wagner, 2009), while editors have written on this topic (Grzybowksi, 2009). The issue is certainly prescient in hospitality and tourism as witnessed by heated discussions on TRINET when members have posted information regarding journal ranking and/or institutional ranking based on publications in specific journals. While it is acknowledged that no single, absolute measure exists, it is also recognized that that citations constitute recognition of foregoing work, and are therefore a reliable measure of the influence that various sources can have on the development of a field of study (Lancho-Barrantes et al., 2010). It is for this reason that many scholars propose the use of a basket of measures to assess influence.

In an ideal world, all journals would have equal influence and would, therefore, generate a share of citations that is commensurate with the share of papers they publish. Where one publishes would not matter. In the real world, though, this situation rarely, if ever occurs. Instead, a hierarchy of journals exists where some journals are more influential than others. This situation has been confirmed repeatedly in hospitality and tourism (Ferreira et al., 1994; Hsu and Yeung, 2003; McKercher et al., 2006; Pechlaner et al., 2004; Schmidgall et al., 1996; Sheldon, 1990) as well as studies examining other disciplines (Fersht, 2009; Greenwood, 2007; Leydesdorff, 2007; Stringer et al., 2008).

Assessing journals and ordering them in some way is an important metric used for tenure and promotion, in spite of the recognized limitations of this tool. The reason is that tenure and promotion cases are often evaluated by people from outside an

Table 4
Assessing the influence of both hospitality and tourism journals.

Journal name	Total 'outputs' recorded	Total citations recorded	Citations per 'output'	Most cited paper	Share of total 'outputs'	Share of total citations	Influence ratio
Tourism Management	383	3580	9.35	165	11.15	27.11	2.43
Journal of Travel Research	95	832	8.76	43	2.77	6.30	2.28
International Journal of Hospitality Management	157	1311	8.35	40	4.57	9.93	2.17
Journal of Sustainable Tourism	104	742	7.13	33	3.03	5.62	1.86
Annals of Tourism Research	148	985	6.66	49	4.31	7.46	1.73
Journal of Vacation Marketing	61	405	6.64	52	1.78	3.07	1.73
International Journal of Tourism Research	103	476	4.62	17	3.00	3.60	1.20
Journal of Hospitality and Tourism Research	58	243	4.19	24	1.69	1.84	1.09
Event Management	59	241	4.08	30	1.72	1.83	1.06
International Journal of Contemporary Hospitality Management	139	519	3.73	29	4.05	3.93	0.97
Tourism Geographies	62	220	3.55	21	1.81	1.67	0.92
Scandinavian Journal of Hospitality and Tourism	45	153	3.4	19	1.31	1.16	0.88
Tourism Economics	102	332	2.25	18	2.97	2.51	0.85
Journal of Hospitality, Leisure, Sport and Tourism Education	30	93	3.1	9	0.87	0.70	0.81
Journal of Travel and Tourism Marketing	127	370	2.91	13	3.70	2.80	0.76
Current Issues in Tourism	74	205	2.77	13	2.15	1.55	0.72
Journal of Ecotourism	37	100	2.7	9	1.08	0.76	0.70
Journal of Hospitality and Tourism Management	25	66	2.24	12	0.73	0.50	0.69
Tourism Review	39	98	2.58	12	1.14	0.74	0.65
Cornell Hospitality Quarterly	100	235	2.35	21	2.91	1.78	0.61
Information Technology and Tourism	52	115	2.21	13	1.51	0.87	0.58
Journal of Sport and Tourism	41	90	2.2	11	1.19	0.68	0.57
International Journal of Hospitality and Tourism Administration	47	90	1.91	7	1.37	0.68	0.50
Asia Pacific Journal of Tourism Research	61	116	1.9	10	1.78	0.88	0.49
Journal of Convention and Event Tourism	30	57	1.9	12	0.87	0.43	0.49
Journal of Teaching in Travel and Tourism	57	105	1.84	14	1.66	0.80	0.48
Journal of Human Resources in Hospitality and Tourism	29	53	1.83	7	0.84	0.40	0.48
Journal of Heritage Tourism	50	91	1.82	9	1.46	0.69	0.47
Tourism in Marine Environments	27	47	1.74	10	0.79	0.36	0.45
Journal of Hospitality and Leisure Marketing (re-titled Journal of Hospitality Marketing and Management in 2009)	54	91	1.69	5	1.57	0.69	0.44
Tourism Review International	50	84	1.68	22	1.46	0.64	0.44
Tourism, Culture and Communication	35	57	1.63	10	1.02	0.43	0.42
Journal of Tourism and Cultural Change	40	65	1.63	8	1.16	0.49	0.42
Tourist Studies	36	56	1.53	8	1.05	0.42	0.40
Tourism and Hospitality Planning and Development (re-titled Tourism Planning and Development)	28	43	1.54	9	0.82	0.33	0.40
Tourism Recreation Research	78	114	1.46	17	2.27	0.86	0.38
Tourism Analysis	138	200	1.45	27	4.02	1.51	0.38
International Journal of Culture, Tourism and Hospitality	59	81	1.37	14	1.72	0.61	0.36
Anatolia	77	105	1.36	12	2.24	0.80	0.35
Journal of Unconventional Parks, Tourism and Recreation Research	9	11	1.22	7	0.26	0.08	0.32
Journal of Quality Assurance in Tourism and Hospitality	33	38	1.15	5	0.96	0.29	0.30
Journal of China Tourism Research	46	49	1.07	6	1.34	0.37	0.28
Journal of Foodservice Business Research	59	56	0.95	12	1.72	0.42	0.25
European Journal of Tourism Research	16	12	0.75	3	0.47	0.09	0.20
Journal of Hospitality and Tourism Education	53	38	0.72		1.54	0.29	0.19
Tourism and Hospitality Research	25	16	0.64	4	0.73	0.12	0.17
e-Review of Tourism Research	19	11	0.58	5	0.55	0.08	0.15
Journal of Culinary Science and Technology	39	22	0.56	5	1.14	0.17	0.15
International Journal of Tourism Policy	35	17	0.49	4	1.02	0.13	0.13
Journal of Hospitality Financial Management	18	5	0.28	3	0.52	0.04	0.07
FIU Hospitality and Tourism Review	21	3	0.14	1	0.61	0.02	0.04
Journal of Tourism Challenges and Trends	32	4	0.13	2	0.93	0.03	0.03
Acta Turistica	14	1	0.07	1	0.41	0.01	0.02
International Journal of Tourism Sciences	19	0	0	0	0.55	0.00	0.00
Total	3434	13205	3.85				Median = 0.47

academic's core discipline (AIS, 2011). As a result, these individuals need some metric by which to assess output. Rankings often serve as that surrogate measure of quality. The Association of Information Sciences, as an example, advises its members "if you have published in top-ranked journals, be sure to highlight the ranking of those journals in your promotion and tenure packets (AIS, 2011)".

But, there is more to it than simple promotion and tenure. A positive feedback loop exists whereby the strong get stronger and the weak stay relatively weak. Vaughan and Hysen (2002) noted that journals with higher impact scores tend to attract more links to their web sites, further enhancing the chance that papers will be read. Stringer et al. (2008) also observed that people tend to look to top journals first as a source of information when doing research because these journals are rated highly. The authors conclude "even though far from perfect, the journal system ranking of journals provides a powerful heuristic with which to locate the research that will ultimately have the largest impact." Thus, if one wishes to have the greatest impact on a field, the chances of having your work cited are increased significantly by publishing in a so called leading journal than publishing in other journals.

This paper recognizes the existence of a hierarchy, but the author has resisted offering a numerical rank score of journals from

'best' to 'worst'. As discussed previously, such systems have inbuilt value judgments associated with them that may not be appropriate, especially when many journals are clustered narrowly around a score. The approach adopted here was to group journals into three broad categories, based on an evaluation of whether their influence was disproportionately high, equivalent to the share of papers published or disproportionately low. In this study, a cut off of more than 1.2 was used to identify more influential journals, a score between 0.8 and 1.2 identified journals whose citation share is equivalent to their outputs and a score of less than 0.8 for those journals whose share was deemed to be disproportionately low. These figures were arbitrary. Further refinement of cut points can be developed when other disciplines are studied.

The influence ratio metric provides an additional tool to assess journal influence. It is one of many tools that can be used. This metric is more useful in comparing like with like than other measures, such as impact scores or a simple analysis of citations per paper. Both these measures lack a common base-line on which to judge journals. Fields of study have different citation protocols, with some fields traditionally citing more papers per article than others. This tendency, in turn can inflate both the impact score and the citations per paper score. The influence ratio metric uses the same base of share of citations and papers, resulting in a score that is consistent across fields of study. Little additional context is required, for the score reflects the ratio of two shares, citations and publications. Further, the same technique can be used across different sets of journals to identify leading journals in different fields of study. Thus the same score means the same regardless of the fields of study. A 2.0 score, for example, means that that journal produces a share of total citations that is twice as large as its share of publications. The score will be the same regardless of whether a field produces/consumes many citations or few.

6.2. Implications for publishing

This study further re-affirms the importance of choosing the most appropriate journal if one wishes to have a significant impact on his or her field of study. The presumed democratization of publishing brought about by the advent of open-access journals and greater on-line access to many other journals has not resulted in a significant leveling of the publishing playing field. Indeed, if anything, leading journals have become more influential, with a strong secondary group of journals also playing an important role in the development of the field. The study suggests that for the foreseeable future, academics who wish to influence the development of these fields of studies would be advised to target journals that generate citation shares that are equivalent to the paper publication share.

6.3. Implications for hospitality and tourism journals

Finally, the study contributes to the continued evolution of our understanding of hospitality and tourism journals. Three issues emerge that are, perhaps, more significant than the absolute scores derived for any particular journal. First, a clearly defined set of journals is dominant in each of the subfields of hospitality and tourism studies. Five journals are disproportionately influential in tourism while two dominate hospitality studies. The appearance of only two journals in hospitality is a function of fewer journals in the field. Second, the study illustrated the importance of treating tourism and hospitality journals as discrete sets. For the most part, the journals serve separate purposes. A review of content from the journals indicated that four had clear cross over roles, while the remaining 51 had a clearly defined tourism or hospitality focus. The number of papers published by tourism journals and the tendency for these journals to include more citations per paper adversely affects the rating of hospitality journals when the two sets are aggregated. Disaggregation lets the true value of hospitality journals become apparent. Third, and finally, the study points to the changing status of journals in this area. Traditionally, each sub field has had its own 'Big 3' set of journals, with other, newer titles occupying a perceived secondary status. This study suggests that at least two newer journals now exert influence that is commensurate with the legacy journals, while the influence of some of these older journals may be diminishing. The study also indicates that a large number of specialist titles also scored well, illustrating that these types of journals can carve a specialist niche for themselves in the highly competitive publishing field.

7. Conclusion

This study shed light on the influence that different journals have on hospitality and tourism scholarship through the development and testing of the influence ratio metric. The study demonstrated the efficacy of this tool and also revealed that a small number of journals appear to exert a disproportionate influence on research. Further testing of this measure in different fields of study is recommended to test its broader applicability.

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