The Intellectual Influence of Entrepreneurship Journals: A Network Analysis

Brian L. Dos Santos
Clyde W. Holsapple
Qian Ye

As entrepreneurship emerges into an independent field of study, it is important for scholars and administrators to have a good understanding of the main channels for disseminating knowledge within this field. Here, we provide a new evaluation of journals devoted to entrepreneurship, plus more general journals that publish entrepreneurship articles. The evaluation uses a citation-based model to rate journals. This model overcomes some limitations inherent in the widely known "JIFs" approach. The model is used to derive ratings that shows the relative influences of established journals that publish research dealing with the entrepreneurship domain. In addition to being a way to gauge the influence that a particular journal has had on this domain, a journal's rating can serve as an early proxy for measuring the influence of individual entrepreneurship articles that have yet to have an opportunity to accumulate citations.

Introduction

Determining the quality or importance of research conducted by academics is a perennial issue of interest to researchers, university administrators, research funding agencies, and organizations that evaluate business school programs (e.g., *Business Week, U.S. News & World Report*). Published journal ratings are used within many colleges and universities to evaluate the scholarly productivity of individuals.[1] There are also external studies that rank universities in specific disciplines by measures of scholarship that can include journal ratings (Rupp & McKinney, 2002). Such evaluations proceed under the assumption that journal ratings provide a relatively unbiased view of scholarship (Laband & Piette, 1994). However, the assertion that published journal ratings are relatively unbiased is tenuous at best as both survey methods and conventional citation methods used in producing ratings are problematic (Holsapple, 2008, 2009).

Please send correspondence to: Brian L. Dos Santos, tel.: (502) 852-4787; e-mail: brian@louisville.edu, to Clyde W. Holsapple at cwhols@uky.edu, and to Qian Ye at qian.ye@louisville.edu.
1. Here, the term "rating" subsumes the narrower notion of a ranking.

There have been a few published articles that rate journals as forums for entrepreneurship research (Chrisman, Chua, Kellermanns, Matherne, & Debicki, 2008; Fried, 2003; MacMillan, 1991, 1993). To date, published ratings of entrepreneurship journals tend to reflect views of a few scholars or employ processes that are not clearly specified and thus difficult to evaluate (Katz & Boal, 2008). As entrepreneurship research emerges as a legitimate academic pursuit, ratings of entrepreneurship journals have both practical and academic importance. Journal ratings of entrepreneurship research reflect the relative importance of channels for disseminating knowledge within this field, while new knowledge about entrepreneurship activity can speed up economic outcomes desired by entrepreneurial individuals, firms and societies (Busenitz et al., 2003). For academics involved in developing new knowledge of entrepreneurship, journal ratings are relevant to an assessment of the worth and relevance of research conducted that partly determines decisions on faculty promotion and tenure (Pfeffer, 1993). Given the importance of journal ratings of entrepreneurship research outlets, they need to be based on clearly described criteria that can be readily scrutinized.

Here, we advance a citation-based model to determine, at least in part, the relative influences of entrepreneurship journals. The widely known citation-based journal "Impact Factors" (JIF) reported by the Thompson ISI Journal Citation Reports (JCR) have serious limitations that render them highly questionable as indicators of importance, quality, or relevance—even though they are commonly applied as such (Greenwood, 2007; Holsapple, 2009). The JCR do not define any of these three terms, and it is unusual to see them defined by those who regard them as being measured by JIFs. Aside from interpretation difficulty, there are also structural concerns about these measures.

The model described here is designed to overcome some of the JCR limitations. Most notably, we do not limit our examination to the relatively small set of journals covered in JCR, to the traditional small window of coverage encompassing only the first two calendar years following publication (JCR has recently begun reporting for 5-year windows), or to inconsistencies in the definitions of cited items and citing items. Moreover, our model does not consider all citations to be equal. Here, citations appearing in journals that end up being more highly rated are treated as more valuable than citations appearing in journals determined to have lower ratings. The ratings are determined endogenously in our model, i.e., ratings of all journals are determined simultaneously and these ratings determine the value of the citations in a journal.

In the next section of this article, we provide a brief discussion of the use of secondary data to rate journals and describe how the JIF and the new rating measures published by Thomson are determined. In the third section, we describe a citations-based influence model. This model overcomes some serious limitations of the JCR impact factor method. In the fourth section, we describe data collection and present results obtained from applying the model. Finally, we discuss the results, their limitations, and their implications.

Background

Academic journals play an important role in dissemination of knowledge and certification of scientific credit. Today, entrepreneurship journals face stiff competition for the "best" articles, while researchers face stiff competition to get their work published in

the "best" journals.[2] Hence, editors and publishers of a journal should be interested in a "market assessment" of their product, while individual faculty members need better information to make good decisions on the placement of their work, and ways to better demonstrate the relative value of their work. Formal assessments of the influence of journals on entrepreneurship research can also provide university administrators with better journal importance information—as one input to hiring, funding, merit, tenure, and promotion decisions—and aid others having different objectives (e.g., *Business Week*).

To begin with, it is important to be clear about three distinct, but related, notions: actual influence of a published article, average influence of articles published in a journal, and actual influence of a journal itself.

● A simple way to approximate the *actual influence of an article* is to count the number of times it has been cited. This overt article influence metric may be used in evaluating an individual author's research performance, the research performance of the organizational program within which an individual works, and the actual influence of the journal in which it is published. More complex ways to measure the actual influence of an article go beyond a citation count to incorporate such factors as the sources of the citations (e.g., sources that are themselves highly influential versus sources that have yet to exhibit much overt influence).

There is a major limitation to the use of actual influence measures for articles. Until an article has been available to the research community for quite some time, there will be little visible influence. Because of the length of research and publishing cycles, an article published today will typically garner few citations by other published work before three or more years have elapsed.

● Determining an *average influence of articles published in a journal* can be a way to deal with this limitation. In cases where it is premature to ascertain an actual influence measure for a published article, we may nevertheless like to have some indicator of its prospective influence (e.g., to factor into decisions about an individual researcher's merit, promotion, tenure, or merit evaluation). As a proxy, we contend that the average influence of articles published in a journal (over some recent and substantial time frame) is suggestive of the actual influence that may eventually accrue to these articles.

● One way to gauge the *actual influence of a journal* is to examine the citations that have accumulated to the articles it has published within a large set of volumes. As with the actual influence of an article, the actual influence of a journal can go beyond a citation count by incorporating such factors as the sources of the citations into the construction of a journal-influenced metric (e.g., sources that are themselves highly influential versus sources that have yet to exhibit much overt influence). There can be alternative conceptions of influence as well. For example, journal influence might denote the overall volume with which its articles affect the entrepreneurship domain (in total, do its articles exhibit high influence, even though they are not very potent influences on average?).

In this article, we use citation data as inputs to a model that measures the influence of journals on the entrepreneurship literature—thereby yielding ratings of the journals. When we say "journal influence," we are referring to the potency of its contents with

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2. For instance, this study finds that the two most influential entrepreneurship journals are *Entrepreneurship Theory and Practice* and *Journal of Business Venturing*. There is a clear delineation between these two and the other entrepreneurship journals. Taken together, these two journals have averaged about 65 published articles per year since 2000. In contrast, the Entrepreneurship Division of the Academy of Management has approximately 2,500 individual members. Thus, there are a relatively large number of researchers vying for comparatively few spots.

respect to their overt contributions to the entrepreneurship literature. A journal whose articles, on average, have a relatively large influence (i.e., heavily cited by articles in other journals that turn out to be highly influential themselves) will be rated as being more influential than another journal whose average article influence is lower (even though there may be very large numbers of such articles).

Journal ratings, similar to ratings of anything else (e.g., MBA programs, entrepreneur-friendly cities, best cities in which to live), are affected by the methods used to derive the ratings. Published ratings that are widely read by the target population undoubtedly have a large impact on the entities ranked, the target population's decisions, and others. For example, the *Business Week* rankings of full-time MBA programs affect full-time MBA programs, decisions by potential students of these programs, faculty teaching in these programs, and so forth. However, care must be taken in the application of journal ratings. It should be noted that placement of an article in an elite journal does not guarantee that it will have a high (or even a noticeable) impact on its discipline. Accordingly, evaluating an article's importance (or its author's performance) as being inextricably tied to its host journal's importance involves a substantial leap of faith (Smith, 2004; Starbuck, 2005). Garfield (1998), among others, tells us that such leaps are inadvisable. However, decisions about merit, promotion, tenure, hiring, and so forth often need to be made before the degree of importance for an accepted or recently published article can be known. This is where average impact of articles in a journal may be a proxy, albeit imperfect, for assessing a recently published/accepted article in that journal.

In general, we can distinguish between two broad approaches to rating journals: stated preference and revealed preference (Tahai & Meyer, 1999). Typically, stated preference studies are based on data obtained from relevant "experts" (e.g., scholars, deans), while revealed preference studies use secondary data sources, most often citations. Mingers and Harzing (2007) show that there is a fairly high degree of correlation between journal rankings based on stated preference and revealed preference. However, stated preference studies have long memories and perceptions of journals normally change very slowly in these ratings (Mingers & Harzing). As such, revealed preference studies provide a fairer assessment (e.g., for new journals, changes in editorial scope, improved content). Hence, revealed preference studies could be argued to present a more accurate picture of journal influence (Mingers & Harzing). To date, there are few published ratings of entrepreneur-ship journals, and most of these use a stated preference approach. Note that regardless of the method employed, processes used to gather and analyze the data and derive the ratings affect the outcome.

Revealed preference approaches have been used to rate journals in a wide assortment of academic disciplines, including: cardiology (de Jong & Schaper, 1996), health science (Fang, 1989), international business (DuBois & Reeb, 2000), law (Posner, 2000), opera-tions management (Vokurka, 1996), physics (Pinski & Narin, 1976), social work (Sellers, Perry, Mathiesen, & Smith, 2004), and so forth. Most of the revealed preference studies determine journal ratings based on citations to its articles. Citations, the argument goes, are indicative of the impact an article has on research developments in the field. Among others, they are one indicator of the contribution an article makes in helping build social consensus. A journal's relative stature is assumed to be reflected by some aggregation of the citations to its articles within a time period, perhaps adjusted to account for various factors that can differ from one journal to the next. Examples of these factors include journal page counts, article sizes, article quantities, journal age, circulation, and size restrictions (or norms) for journals' reference lists or page counts.

Today, counting citations is a well-established method of empirical research in many disciplines (Posner, 2000). However, the use of citation counts must be approached with

caution as the number of citations may be a poor proxy for what is really of interest (Holsapple, 2009; Mingers & Harzing, 2007). Citation-based methods of assessing journal influence also have several limitations. One important issue is that articles may be cited for a variety of reasons, not all reflecting a transfer of knowledge or true acknowledgement of intellectual indebtedness (Baumgartner & Pieters, 2003).

Many of the revealed preference studies over the past two decades use citation data from Thomson's social science citation index (SSCI), the arts and humanities citation index, and/or the science citation index (SCI). In these studies, the ratings, and what can be inferred from the ratings, are affected by at least the following:

● How journals are selected and citation data are obtained. A common approach is to use citation data for journals tracked by the ISI Web of Knowledge^SM.
● How the citation data are converted into a rating.

Garfield (1955) was first to suggest using citations to measure the impact of a journal. Garfield's "JIF" construct is the most widely known citations-based measure of journal influence because of its use in the construction of the SSCI and the SCI in the JCR. The JIF is traditionally calculated by dividing the number of citations from articles published in a set of journals in year three to articles published in a journal in years one and two, by the number of articles published in that journal in years one and two. For example, the JIF for journal *X* in 2008 is determined by the number of citations from all articles published in 2008 in ISI-tracked journals, to articles published in journal *X* in 2006 and 2007, and divided by the number of articles published by journal *X* in 2006 and 2007. In the case of the ISI database used for JCR, the set of journals providing citations may not be the same as the set of journals receiving citations. In 2008, JCR began publishing 5-year JIFs. The 5-year JIF for journal *X* in 2008 is determined by the number of citations from all articles published in 2008 in ISI-tracked journals, to articles published in journal *X* between 2003 and 2007.

JCR's JIFs, as influence measures for journals, have several shortcomings, including the following:

● It traditionally considers only citations to articles that have appeared in the previous 2 years, even though it is unusual for a business article to have more than a handful of citations (if any) within the first 2 years following publication. Business articles may begin receiving substantial citations long after the 2-year window used to determine JIFs (Baumgartner & Pieters, 2003; Oswald, 2007). Thus, using a 2-year window can provide a poor indication of the value of articles in a journal.
● It does not distinguish between citations from articles published in highly rated journals and citations in articles published in journals that are less highly rated. Most researchers would rather have their work cited by articles appearing in the top journals in a field rather than by articles appearing in journals that are not highly rated.
● It does not consider the number of citations that appear in an article. Most researchers would prefer that their article be one of just a few cited in an article, rather than one of hundreds of references in an article (in the same journal). The rationale here is that on average, the fewer the references, the greater the impact of each reference on the article.

Aside from traditional JIFs, JCR provides additional bibliometric information including citation half-life and immediacy index. These metrics seem to be less "popular" than JIFs. The former is a measure of how long articles in the journal continue to be cited after publication (the greater the citation duration, the longer the journal's half-life). The latter is a measure of how quickly a journal's "average" article is assimilated (i.e., cited) in the

literature. More recently, in addition to 5-year JIFs, JCR began publishing two other metrics in 2008: an Eigenfactor Score and an Article Influence Score.

The Eigenfactor Score for journal X in 2008 measures the number of times articles published in journal X between 2003 and 2007 have been cited in the ISI-tracked journals in 2008. Similar to the JIF, the Eigenfactor Score is essentially a ratio of number of citations to total number of articles. However, in contrast to the JIF, the Eigenfactor Score includes citations to journals in both the sciences and social sciences, eliminates self-citations (references from one article in a journal to another article from the same journal are not counted), and weighs each reference according to a stochastic measure of the amount of time researchers spend reading the journal.

The Article Influence Score (AIS) measures relative importance of a journal on a per article basis. It is the journal's Eigenfactor Score divided by the fraction of articles published by the journal. That fraction is normalized so that the sum total of articles from all journals is 1. The mean AIS is 1.00. Scores greater than 1.00 indicate that the average article in the journal has above average influence. Scores less than 1.00 indicate that the average article in the journal has below average influence.

Citation-based journal ratings are affected by the set of journals included in the study, the time frames used to gather references and citations, and the methods used to convert raw citation data to ratings. Because many entrepreneurship journals are omitted from the Thompson ISI database, JIF may be a poor measure of the importance of entrepreneurship journals. Moreover, none of the results available through the Journal Citation Reports (Thomson) speak to a journal's influence on development of the entrepreneurship discipline because they include citations from all articles in the ISI database.

The next section describes a citations-based approach to rate journals that attempts to address the problems with JIFs described earlier. Numerous other citation-based approaches that address one or more of the shortcomings described earlier have been proposed to rate journals (e.g., Laband & Piette, 1994; Mingers & Harzing, 2007; Posner, 2000). Moreover, numerous other approaches have been suggested to evaluate intellectual contributions (e.g., Harzing & van der Wal, 2009; Hirsch, 2005; Holsapple, 2008). Reviewing or comparing different approaches is beyond the scope of this article.

A Network Rating Model

Intellectual Influence

It is important to distinguish between the total influence of a journal on a field and the influence of an (average) article published in a journal in a field (Holsapple, 2008; Smith, 2004; Starbuck, 2005). A publisher or editor is likely interested in the journal's total influence. Evaluators of a researcher's record are likely interested in the influence of an article published in a journal. Here, we focus on (and present results for) the influence that the average entrepreneurship article in a journal has on the entrepreneurship field. This provides a way for rating journal influence (potency of its articles' influence), and it gives an early proxy for assessing influence of emergent research publications.

There are good reasons to use citations to measure the influence of scientific publications. In describing how an idea goes from theory to an accepted fact, Bruno Latour, a leading philosopher and Philosophy of Science author, states (1987, p. 40):

> There is something still worse, however, than being either criticized or dismantled by careless readers: it is being *ignored*. Since the status of a claim depends on later users' insertions, what if there are *no* later users whatsoever? This is the point that people

who never come close to the fabrication of science have the greatest difficulty in grasping. They imagine that all scientific articles are equal and arrayed in lines like soldiers, to be carefully inspected one by one. However, most papers are never read at all. No matter what a paper did to the former literature, if no one else does anything with it, then it is as if it never existed at all. You may have written a paper that settles a fierce controversy once and for all, but if readers ignore it, it cannot be turned into a fact; it simply *cannot*.

You may protest against this injustice; you may treasure the certitude of being right in your inner heart; but it will never go further than your inner heart; you will never go further in certitude without the help of others. Fact construction is so much a collective process that an isolated person builds only dreams, claims and feelings, not facts.

Journals play a critical role in the development of a field. When not ignored, the articles they publish build on each other, forming a network structure. Each article in the field is a node in the network. A reference from one article to another (cited article) establishes a directed link between two articles, from the referring article to the cited article. The value of each article in this network varies. Thus, the value of citations should vary, depending on the value of the article that issues the citation. Some perceived influence studies suggest and use such network structures to rate journals and identify subfields (Baumgartner & Pieters, 2003; Laband & Piette, 1994; Mann, Mimno, & McCallum, 2006). These studies differ in how network structure data (characteristics of a node and the linkages) are used.

In contrast to the JIF approach, which assigns equal value to each citation, the model we describe here allows different values for citations based on the value of the article (in the network) issuing the citation, as suggested by Pinski and Narin (1976). In addition, for two articles appearing in the same journal, a reference in an article that has fewer references is more valuable than a reference in an article that has many references. This model is similar to the PageRank™ model that is at the core of the algorithm used by Google™ to rank web pages (Page, Brin, Motwani, & Winograd, 1998)—a model that has proven to be extremely effective at determining the importance of information sources (that is, websites) to subjects.[3]

The Model

We develop a measure of the influence of articles published in a journal (i.e., information useful in hiring, merit, promotion, tenure decisions). The extension to a measure of the total influence of a journal (a measure of interest to journal editors and publishers) is simple.

Let K be a finite set of journals of interest. In our case, this is the set of journals that publish articles dealing with entrepreneurship issues. Let C be the citation matrix for K; C is a $|K| \times |K|$ nonnegative matrix. For each $i, j \in K$, c_{ij} represents the number of *citations* to articles in journal i by articles in journal j, or the number of *references* from journal j articles to journal i articles. We use the terms "reference" and "citation" to differentiate between the issuing and receiving unit, respectively. Further, given a matrix of citations $C = (c_{ij})$, we define a row vector $R = \left(r_j\right)_{j \in K} = \sum_{i \in K} c_{ij}, \forall j$, to be the sum of j's references to all journals in K.

A term c_{ij} in the citation matrix is the number of "citations" to the articles published in journal i by articles published in journal j over a specific time interval. The time interval

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3. Other authors have devised different models to address the shortcomings described earlier (Bush, Hamelman, & Staaf, 1974; Liebowitz & Palmer, 1984).

of a citation matrix is important. The articles issuing citations are not the articles receiving citations. The citation matrix is an input–output matrix, with each journal giving out references and receiving citations. Thus, given a matrix of citations C for K, journal i is cited by journal j if $c_{ij} > 0$.

Journals whose articles have a high influence on a field will receive many citations. The proportion of references from articles in journal j that cite articles in journal i is given by:

$$\alpha_i = \frac{c_{ij}}{r_j}, i \in K,$$ [1]

and the proportion of references from articles in all journals in K, to articles published in journal i, is given by:

$$p_i = \sum_{j \in K} \frac{c_{ij}}{r_j}.$$ [2]

Journals publish different numbers of articles in a year (e.g., in 2005, *Management Science* [*MSc*] published 134 articles, while *Family Business Review* [*FBR*] published 19 articles). All else being equal, the greater the number of articles published within a specific time interval, the greater the number of citations and references the journal is likely to have. Because we are interested in the influence of a typical (average) article in a journal, we need to obtain a size-independent measure of influence. A size-independent measure must account for differences in the number of articles published in different journals.

Let a column vector $A = (a_i)_{i \in K}$ represent the number of articles published in the journals. Then, a standardized measure that accounts for differences in the number of articles a journal publishes is:

$$q_i = \frac{1}{a_i} \sum_{j \in K} \frac{c_{ij} a_j}{r_j}.$$ [3]

One of the well-known shortcomings of the ISI is that it treats all citations the same. If articles in certain journals have a greater influence on a field, then a reference in those articles should be more important than references appearing in articles published in less influential journals. Thus, it is necessary to weigh citations to account for differences in journal influence. We do this by multiplying the standardized measure of citations per article in equation 3 by the influence that an article in the journal has, to arrive at an article's influence ρ_i as:

$$\rho_i = \frac{1}{a_i} \sum_{j \in K} \frac{c_{ij} a_j}{r_j} \rho_j, i \in K.$$ [4]

Note that the measure in equation 4 assigns to journal i a weighted average of a function of its citations. All citations do not have the same value. An article's influence is recursively defined by the influence of articles that refer to it. Thus, an article's influence is determined endogenously and simultaneously with the influence of all other articles.

From equation 4, the total influence of a journal is easily obtained by multiplying ρ_i by the number of articles published in journal i in a time interval (e.g., a year).

The Data

The data-gathering process began by compiling lists from previously published articles that rated entrepreneurship journals (Fried, 2003; MacMillan, 1991, 1993). To these lists, we added a list of entrepreneurship journals compiled by Katz and Boal (2008). In 2006, there was a discussion on the entrepreneurship listserv (entrep@aomlists.pace.edu) about key entrepreneurship journals. We compiled a list of journals from this listserv discussion.

These lists were consolidated into a single list of journals that appeared in a majority of these lists (103 journals). We asked two entrepreneurship scholars (separate from the author team) to examine the consolidated list. Both agreed that all journals on this list published numerous entrepreneurship articles.

We first checked each journal's bibliographic record and eliminated journals that began publication after January 2000 as well as journals that had ceased publication by the year 2008. This process left us with 53 journals. Next, we eliminated journals that did not publish on their regular schedule at any time between 2000 and 2008. Journals that missed one or more scheduled issues during this period were eliminated. We added six management journals that were suggested by well-known entrepreneurship scholars as journals that occasionally publish entrepreneurship research. Finally, we eliminated journals if we were unable to obtain published issues either electronically or in hardcopy form from libraries at two major research universities. This process left us with a set of 23 journals.

For our analysis, we used references in all academic articles published in these journals in 2008 and considered citations to articles that appeared in these journals from 2000 through 2007. We chose 8 years of citations because ISI data for management journals indicated that citations to articles begin to hit their stride about 4 years after publication. By using an 8-year window, we are likely to account for a larger share of citations that most articles will receive.[4]

In compiling the data for our analyses, we excluded book reviews and editorials. For the 23 journals, we obtained the data we needed for the citation matrix using a computer program we wrote to read reference lists of articles published in 2008 and the collection of articles in each issue of the journals from 2000 to 2007. These data are summarized in Table 1. For instance, the *Academy of Management Journal* [*AMJ*] published 516 articles in the 2000–2007 period. There are 1,066 citations to these 516 articles from articles that were published in 2008 in the 23 journals. Excluding reference lists from *AMJ*'s articles (self-citations), the total citation count from the remaining 22 journals' articles falls to 873. In the case of a journal not devoted to entrepreneurship, the last two columns of Table 1 only include citation data for its 2008 articles that strictly emphasize entrepreneurship. For example, when non-entrepreneurship articles are excluded from journals not devoted to entrepreneurship, there are 353 citations to *AMJ* articles published in 2000–2007, or 309 citations when self-citations are excluded.

Analysis and Results

Several journals in Table 1 are highly regarded general management journals (i.e., *AMJ, Academy of Management Review* [*AMR*], *Administrative Science Quarterly* [*ASQ*], *Journal of Management* [*JoM*], *Journal of Management Studies*, *MSc*, *Organization Science* [*OSc*], and *Strategic Management Journal* [*SMJ*]). Although these journals

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4. We should note that a few articles receive many citations more than 8 years after publication, (e.g., Barney, 1991). The 8-year window does not account for these relatively few articles.

Table 1

Summary of Data for Citations and Published Articles

Journal name	Number of articles published in 2000–2007	Citations from all articles published		Citations from articles published in 2008 to articles published in the 2000–2007 period Excludes non-entrepreneurship articles		JCR category
		Includes all citations	Excludes self-citations	Includes all citations	Excludes self-citations	
Academy of Management Journal (AMJ)	516	1,066	873	353	309	Bus/Mgt
Academy of Management Review (AMR)	405	673	575	259	242	Bus/Mgt
Administrative Science Quarterly (ASQ)	146	376	316	120	98	Bus/Mgt
Creativity and Innovation Management (CIM)	233	26	4	26	4	Bus/Mgt
Entrepreneurship and Regional Development (ERD)	172	149	60	149	60	Bus
Entrepreneurship Theory and Practice (ETP)	231	545	375	545	375	Bus
Family Business Review (FBR)	166	214	117	214	117	Bus
Int. Journal of Entrepreneurial Behavior and Research (EBR)	136	61	14	61	14	None
Journal of Business Venturing (JBV)	272	557	451	557	451	Bus
Journal of Developmental Entrepreneurship (JDE)	140	68	30	68	30	None
Journal of Enterprising Culture (JEC)	134	27	13	27	13	None
Journal of Evolutionary Economics (JEE)	225	50	20	50	20	Econ
Journal of Management (JoM)	330	577	482	245	242	Bus/Mgt
Journal of Management Studies (JMS)	495	376	177	115	71	Bus/Mgt
Journal of Organizational Change Management (OCM)	320	52	6	52	6	Mgt
Journal of Small Business and Enterprise Development (SBD)	289	67	25	67	25	None
Journal of Small Business Management (SBM)	246	196	133	196	133	Mgt
Journal of Small Business Strategy (SBS)	53	10	5	10	5	None
Management Science (MSc)	976	284	251	109	107	Mgt
New England Journal of Entrepreneurship (NEE)	65	5	2	5	2	None
Organization Science (OSc)	379	636	503	197	188	Mgt
Quarterly Journal of Austrian Economics (QAE)	163	10	1	10	1	None
Strategic Management Journal (SMJ)	540	1,260	877	470	401	Bus/Mgt

publish entrepreneurship-related articles on occasion, a preponderance of their articles does not concentrate on entrepreneurship-related issues. The citations and references in these journals' non-entrepreneurship articles tell us little about citation patterns in the entrepreneurship arena. Including them in an analysis does not tell us how important articles published in these journals are to the entrepreneurship field. For instance, when a non-entrepreneurship article in *AMJ* cites articles from one of the 22 other journals, it distorts influence scores—masking the real story of what the typical entrepreneurship article in the journal contributes to the entrepreneurship field. Thus, the main analyses reported here do not include all articles from the general management journals.

To determine which articles in the general management journals are entrepreneurship-related, we had two entrepreneurship scholars independently identify all entrepreneurship-related articles published by these eight journals during 2008. We used the union of articles identified by the two scholars (56 articles).[5] Citations from the 56 articles for the eight journals were combined with citations from all articles in the 15 other journals to form citation matrices, which are used in the analyses reported later—first examining all citations in the dataset (these underlie the data summary in the fifth column of Table 1), and then excluding self-citations (column six in Table 1).

Using all citations in the dataset, we applied the model specified in equation 4. With Maple 13™, we analyzed these data to determine an influence score for each journal. For comparison, these data were also analyzed using the approach for computing JCR-reported JIFs. However, this computation differs from the traditional JCR-reported calculation in a couple of ways. First, our JIF analysis is based strictly on data from the 23 journals, whereas JCR includes citations only to entrepreneurship-related journals that it tracks—with citations coming from all journals in its database.[6] Second, we compute a full series of JIFs for each journal, with these JIFs being computed for time periods of increasing size. For example, our 6-year JIF for a journal is determined by counting the number of references from 2008 articles in the 23 journals to articles in the same set of journals published from 2002 through 2007. The total number of citations to a journal over the 6-year period is then divided by the number of articles published in the journal over the same period. In contrast, the traditional JCR JIF includes references only to articles published in the previous 2 years (now JCR also provides 5-year JIFs) and only for the journals that it tracks.

For each of the 23 journals, Table 2 presents the endogenous influence score determined from the model in equation 4. The model scores are standardized (scaled) so that a journal of average influence (for this journal set) has a score of 1. A score above 1 indicates that the journal's contribution is greater than average. For each journal, we also show the series of JCR-like JIFs to see whether these results differ from traditional JCR-like JIFs. If little difference is apparent, we conclude that the new approach offers little value added, aside from covering entrepreneurship-related journals not covered by JCR. However, to the extent that there are notable differences, users of traditional JIFs have an alternative citation-based rating of entrepreneurship journals. Which option is adopted depends on the relative degree of a user's agreement with underlying assumptions and data for each approach. We advocate those presented here.

At the top of the model's influence ratings in Table 2, there are three general management journals and two journals devoted to entrepreneurship: *ASQ*, *SMJ*, *Journal of*

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5. The number of entrepreneurship-related articles published in the general management journals were as follows: *AMJ* (13), *AMR* (4), *ASQ* (5), *JMS* (13), *MSc* (8), *OSc* (4), *SMJ* (10), and *JoM* (2).
6. It should be noted that many of the journals studied here have no impact factors in JCR as of 2008. These journals, although having been in regular publication for many years, are not recognized in the JCR database (see last column in Table 1).

Table 2

Model Scores and JIFs for Journals, Using Entrepreneurship Articles Only[†]

Journal name	Model scores	JCR-like impact factors (JIFs)						
		06–07	05–07	04–07	03–07	02–07	01–07	00–07
Administrative Science Quarterly (ASQ)	5.124	.91	1.44	1.70	1.89	2.12	2.30	2.58
Strategic Management Journal (SMJ)	3.432	.96	1.36	1.74	1.87	1.98	2.15	2.33
Journal of Business Venturing (JBV)	2.692	1.05	1.30	1.44	1.99	1.97	1.92	2.05
Entrepreneurship Theory and Practice (ETP)	2.613	1.42	2.12	2.33	2.56	2.49	2.52	2.36
Organization Science (OSc)	2.430	.83	1.14	1.40	1.50	1.66	1.74	1.68
Academy of Management Journal (AMJ)	1.968	1.53	1.66	1.68	1.82	1.89	1.98	2.07
Academy of Management Review (AMR)	1.625	1.06	1.09	1.22	1.45	1.51	1.55	1.66
Journal of Management (JoM)	.771	1.39	1.44	1.61	1.78	1.71	1.73	1.75
Management Science (MSc)	.536	.15	.14	.18	.26	.33	.31	.29
Family Business Review (FBR)	.370	1.12	.97	1.27	1.27	1.36	1.39	1.29
Journal of Small Business Management (SBM)	.272	.30	.56	.62	.65	.72	.80	.80
Entrepreneurship and Regional Development (ERD)	.228	.64	.57	.81	.89	.93	.85	.87
Journal of Evolutionary Economics (JEE)	.206	.17	.15	.23	.26	.27	.24	.22
Journal of Management Studies (JMS)	.167	.85	.87	.84	.85	.82	.78	.76
Journal of Developmental Entrepreneurship (JDE)	.088	.08	.16	.43	.44	.50	.51	.49
Quarterly Journal of Austrian Economics (QAE)	.058	.05	.05	.04	.03	.04	.05	.06
Journal of Small Business and Enterprise Development (SBD)	.023	.16	.23	.23	.26	.25	.23	.23
Creativity and Innovation Management (CIM)	.016	.13	.12	.12	.13	.12	.12	.11
International Journal of Entrepreneurial Behavior and Research (EBR)	.013	.46	.45	.39	.35	.38	.39	.45
Journal of Small Business Strategy (SBS)	.007	.07	.09	.08	.11	.13	.19	.19
Journal of Enterprising Culture (JEC)	.004	.13	.27	.31	.28	.24	.21	.20
Journal of Organizational Change Management (OCM)	.000	.20	.17	.18	.17	.16	.15	.16
New England Journal of Entrepreneurship (NEE)	.000	.14	.12	.10	.08	.08	.09	.08

[†] The model scores are standardized so that a journal of average influence has a score of 1.

Business Venturing (*JBV*), *Entrepreneurship Theory and Practice* (*ETP*), and *OSc*. At the other extreme, we find the *Journal of Small Business Strategy*, *Journal of Enterprising Culture*, *Journal of Organizational Change Management* [*OCM*], and *New England Journal of Entrepreneurship*.

It is clear that the influence of *ETP* and *JBV* is more than that of any other entrepreneurship journal—each exhibiting more influence than all of the other 13 entrepreneurship journals combined. Notice, also, that each has about five times as much overt influence on entrepreneurial research as the stalwart *MSc*, and over three times as much as *JoM*. Among the general management journals, *ASQ* and *SMJ* appear to exert the greatest influence on entrepreneurship research in the period studied here.

Rather than a strict ranking, journals can be rated in terms of clusters where each cluster is composed of journals that have similar degrees of influence. For example, nine

clusters are shown in Table 2. Observe that *ETP* and *JBV* form a high influence cluster along with *OSc*. These are followed by two clusters, each composed of two general management journals. Then, *FBR* seems to be in a cluster of its own, followed by entrepreneurship journals that have similar degrees of influence: *Journal of Small Business Management* [*SBM*] and *Entrepreneurship and Regional Development* [*ERD*].

In addition to influence scores, trends that we find within JIF series are also notable. In many cases, numbers in a JIF series increase. This suggests that articles in the journal tend to become more potent over time (e.g., JIFs for *the SBM* monotonically increase from 0.30 to 0.80 as the period for citation counts increases from 2 to 7 years). In some cases, however, the JIF scores are fairly steady, indicating that the journal's articles tend to have a persistent shelf-life at some level (e.g., the JIFs for *Journal of Small Business and Enterprise Development* remain at a modest level of 0.23 to 0.26 after the traditional 2-year period used by JCR). Observe that a 2-year JIF for *Journal of Developmental Entrepreneurship* is lower than for *OCM* but that the rating is strikingly reversed when an 8-year window is used. Thus, aside from considering different JIF levels in a given year, our findings indicate that trend differences should not be ignored.

Compared with its JIF scores, the relatively low influence score of the *FBR* is surprising. An examination of the raw data indicates that the *FBR's* high JIF scores result from a large number of self-citations (i.e., over 45% of the citations to *FBR* articles appearing between 2000 and 2007 are from articles appearing in *FBR* in 2008). This raises an interesting question. Should self-citations be used when determining journal influence? If self-citations are counted, journal ratings may be artificially inflated. For instance, the JIF system could be gamed by editors or publishers who ask (or require) authors to cite other articles published in the same journal (and within some time frame that will boost the JIF). On the other hand, it may be that heavy self-citation is indicative of a journal concentrating on a subject that is little covered by other journals in the field.

Journals can be viewed as contributing to a web of knowledge in a field. If the articles in one journal do not influence articles in other journals in the same field, it can be argued that the journal really has not overtly influenced knowledge in the field, outside of what is published in its own pages. If we are interested in determining a journal's influence on a field as a whole, excluding self-citations provides insight into the *breadth* of a journal's influence on that field. For these reasons, we compute influence ratings and JIF scores when self-citations are excluded (corresponding to the sixth column in Table 1). Results for the 23 journals are shown in Table 3.

When compared with Table 2, these results are quite interesting. *FBR*'s JIF scores drop significantly, but its model influence score does not change. The drop in JIF scores reflects the fact that the journal receives many self-citations. *FBR*'s model scores do not change much even though 45% of its citations (self-citations) are excluded because the citations it does receive tend to be from high-influence journals. For *Journal of Evolutionary Economics* [*JEE*], on the other hand, both the model score and the JIFs drop from Table 2 to Table 3. This indicates that citations to *JEE* are largely from articles in *JEE*, but also that *JEE* is little cited by other highly rated journals in the set. The influence of *JEE* on the field as a whole may not be nearly as high as the rating in Table 2 suggests. The same can be said for *Quarterly Journal of Austrian Economics*.

Such changes are not unexpected for a journal that focuses on a specialized entrepreneurial topic, particularly if other journals tend not to cover that topic (i.e., the journal tends to be the first read [and main read] for those interested in the topic). A journal can function as a (or the) key forum for the niche topic on which it concentrates—thereby contributing in its own way to the broader field of knowledge. When a field's knowledge on a particular topic is concentrated in a specific journal, a relatively high degree of self-citation is

Table 3

Model Scores and JIFs for Journals, Using Entrepreneurship Articles Only and with Self-Citations Excluded[†]

Journal Name	Model scores	JCR-like impact factors (JIFs)						
		06–07	05–07	04–07	03–07	02–07	01–07	00–07
Administrative Science Quarterly (ASQ)	5.316	.61	1.10	1.35	1.50	1.72	1.92	2.16
Organization Science (OSc)	2.947	.50	.76	1.03	1.13	1.27	1.36	1.33
Entrepreneurship Theory and Practice (ETP)	2.855	.79	1.39	1.57	1.79	1.74	1.73	1.62
Journal of Business Venturing (JBV)	2.787	.69	.93	1.04	1.62	1.59	1.55	1.66
Strategic Management Journal (SMJ)	2.403	.63	.88	1.14	1.26	1.34	1.49	1.62
Academy of Management Journal (AMJ)	2.268	1.19	1.32	1.33	1.47	1.54	1.59	1.69
Academy of Management Review (AMR)	1.601	.98	.98	1.01	1.23	1.27	1.32	1.42
Journal of Management (JoM)	1.110	1.01	1.09	1.28	1.45	1.40	1.43	1.46
Management Science (MSc)	.720	.13	.11	.16	.22	.28	.27	.26
Family Business Review (FBR)	.375	.56	.45	.57	.62	.73	.76	.70
Journal of Small Business Management (SBM)	.310	.24	.37	.39	.44	.49	.55	.54
Journal of Management Studies (JMS)	.210	.26	.33	.33	.39	.38	.37	.36
Entrepreneurship and Regional Development (ERD)	.187	.19	.17	.24	.26	.30	.30	.35
Journal of Developmental Entrepreneurship (JDE)	.102	.03	.07	.17	.20	.22	.23	.21
Journal of Evolutionary Economics (JEE)	.083	.00	.02	.07	.09	.10	.09	.09
Journal of Small Business and Enterprise Development (SBD)	.029	.01	.07	.06	.08	.08	.07	.09
Creativity and Innovation Management (CIM)	.020	.00	.01	.01	.01	.02	.02	.02
International Journal of Entrepreneurial Behavior and Research (EBR)	.014	.03	.03	.04	.03	.05	.08	.10
Journal of Small Business Strategy (SBS)	.009	.04	.04	.04	.08	.09	.09	.09
Quarterly Journal of Austrian Economics (QAE)	.009	.00	.00	.00	.00	.00	.00	.01
Journal of Enterprising Culture (JEC)	.005	.06	.10	.15	.15	.13	.11	.10
New England Journal of Entrepreneurship (NEE)	.001	.00	.00	.00	.00	.02	.04	.03
Journal of Organizational Change Management (OCM)	.000	.01	.01	.01	.01	.02	.02	.02

[†] The model scores are standardized so that a journal of average influence has a score of 1.

inescapable. Thus, large discrepancies in scores between the two tables may be a sign of heavy concentration of coverage for a topic within the pages of a single journal.

Comparing Table 3 results with those of Table 2, we see that the five highest-influence journals are essentially the same in the two tables, except *SMJ* and *OSc* swapped positions 2 and 5 and appear to be in different clusters. *ETP* and *JBV* still cluster together with *OSc*. They are exceeded only by *ASQ*. Farther down, we have *SMJ, AMJ*, *AMR,* and so forth. Interestingly, the 6th–10th journals are identical in the two tables. Where to actually draw cluster lines, and which table(s) to use, are issues that we leave for adopters to determine in relation to their own situations and purposes.

In all, we contend that the results in Tables 2 and 3 provide a good indication of the influence of journals' contents on entrepreneurship research. Among those journals whose content is devoted primarily to entrepreneurship (or a specialization within it), the three boldfaced influence groups in Table 2 are evidently influential. *ETP* and *JBV* are the most influential journals devoted to the field, followed by a group composed of *FBR*, *SBM*, *ERD*, and *JEE*. Table 3 yields the same two clusters, except the second contains *FBR* and *SBM* only. These two clusters, with self-citations excluded, are mostly consistent with the

four journals' 8-year JIFs. However, the model's influence scores and JIF series tell different stories for some journals in the list. For example, using influence scores, we see that *ETP, JBV,* and *MSc* have much higher influence scores than their JIFs would suggest.

Discussion

We contend that it is valuable for scholars and administrators to have a good understanding of the main scholarly channels for disseminating knowledge about entrepreneurship. Combining the ratings from Tables 2 and 3, we draw the following conclusions:

- From an influence viewpoint, there are two elite entrepreneurship journals: *ETP* and *JBV*.
- The specialized entrepreneurship journals having the greatest influence are: *FBR*, *SBM*, and *ERD*. Each of these has an emphasis on a special subject area related to the entrepreneurship domain. Respectively, these are the dynamics of family firms, small business entrepreneurship/management, and local/regional contexts of entrepreneurship.
- Among general management journals, *ASQ* is clearly the most influential for the entrepreneurship domain.
- Among general management journals, there are two of comparable entrepreneurship influence to *ETP* and *JBV*: *OSc* and *SMJ*.

Because entrepreneurship is an important domain within management, we should expect at least some general management journals to have important influences on the domain. The top three of these are identified earlier. As one would expect, the influence of a top specialized journal will not be as great as that of a top journal devoted to the broad domain of entrepreneurship. Nevertheless, the three specialized journals noted earlier should be regarded as premier outlets for research in their respective niches of the entrepreneurship domain. For instance, someone who wants to stay aware of the most influential entrepreneurship research concerned with small businesses would be well advised to closely monitor *SBM*. Its influence with respect to small business entrepreneurship may be as high as that of any other journal.

The journal rating methodology used here avoids problems inherent in adopting fiat or opinion survey methods for rating journals. It also avoids drawbacks inherent in trying to use JCR's reported "journal impact factors" for such purposes as evaluating an individual's research, selecting potential research outlets, constructing reading lists, and so forth (Holsapple, 2009). Nevertheless, there are some limitations to the results reported here.

First, there is the issue of which journals to include in constructing the dataset. Ideally, the journals studied should include all of those devoted to entrepreneurship research. Some are missing from our study. For example, the *Strategic Entrepreneurship Journal* was not included as its first volume was just published in 2007. Some older journals, such as the *International Small Business Journal* and *Small Business Economics*, were not included because we did not have access to necessary data about them across the needed time period. Many general management journals are missing from our study. Although we have included some of the most prominent journals in this category, it could be argued that others would be useful to include as well. Any of these limitations pertaining to journal inclusion may be overcome by further research.

Second, there is the treatment of general management journals. Which of their articles should be treated as entrepreneurship research and which should be dropped from consideration? The question is an important one because the results are sensitive to the answer. Tables A1 and A2 in the Appendix show the effects of not dropping any articles

in the general management journals from consideration. The general management journals dominate the top 10 model scores. Regardless of whether self-citations are excluded or not, the first six places belong to general management journals as do eight of the top 10. In other words, results are sensitive to which articles in the general management journals are retained for building the dataset. For this study, the determination was made via interpretations of entrepreneurship scholars.

Third, our analysis examines references from only one journal year (2008) to articles published over the prior 8 years (2000–2007). It is possible that substantially extending the 8-year period could yield a different result. For example, the extent of shifts in emphasis (either more or less) by general management journals on entrepreneurship can affect the results or the ascendancy of a particular journal with respect to the value of its entrepreneurship content may have an effect. Also, it is conceivable that examining references from alternative (or multiple) journal years could affect results. Such possibilities suggest opportunities for future research.

Conclusion

This study uses a network-based model to rate 23 journals in terms of the contributions of their articles to the entrepreneurship field. This model assigns value to citations based upon the rating of the journal that issues the citation. Citations from articles published in highly rated journals have a weight proportional to the journal's rating. The approach is similar to the PageRank™ approach used by Google to rank web pages. The set of 23 journals selected for inclusion in this study were determined by prior work that rates entrepreneurship journals, a discussion on an entrepreneurship listserv, and suggestions made by entrepreneurship scholars.

We apply the influence model to produce two ratings. One is based on all articles in the 23 journals, except for the many non-entrepreneurship articles in general management journals. The other excludes self-citations from these journals. We further found that eliminating self-citations substantially changed positions for some journals. Ratings without self-citations are a better indication of the breadth of influence a journal has on entrepreneurship research because they indicate how much articles in the journal contribute to work published in other journals.

In both cases, our analysis with the influence model found that the journals with the greatest influence on current entrepreneurship research are, alphabetically, *ASQ, ETP, JBV, OSc,* and *SMJ.*

For each case, we also performed seven JCR-like calculations for periods ranging from 2 to 8 years. The ratings produced by the influence model have a much greater dispersion of scores than the JIF ratings, allowing for clearer differentiation. They also yielded different positions for some of the entrepreneurship journals. The ratings developed in this article offer a distinct alternative to traditional JCR JIFs—yielding different results, avoiding some limitations, and deserving consideration in entrepreneurship circles. This work is a step toward a more informative foundation for understanding knowledge dissemination channels in the entrepreneurship domain. Its results can be used by entrepreneurship scholars and administrators to complement, supplement, or replace ratings obtained by methods of fiat, survey, or JCR metrics.

Our ratings of journal influence can be used as proxy measures for gauging influence of entrepreneurship articles that are too recent for evidence of their actual impacts to be available. They can therefore contribute to evaluation of an individual's research portfolio—particularly the portion comprised of "accepted for publication" articles and

those articles that have had less time to accumulate actual citations (e.g., articles in print for less than 3 or 4 years). The influence ratings may also be helpful in developing a list of must-read journals for entrepreneurship research (especially for those who are new to this domain) or in guiding the identification of publication targets for entrepreneurship manuscripts (especially by researchers whose work is bridging into this domain).

Ultimately, across all management domains, there is a challenge of breaking the considerable inertia of conventional (and all too often, uncritical or unquestioned) views by those who evaluate researchers and research programs. New views are needed and they need to be justified and disseminated. They need to be readily available to evaluators, who otherwise do not have the time or inclination to develop ways to deviate from the conventional but who are genuinely interested in improving assessment practices. In the entrepreneurship domain, results of the influence model applied here is an example of a new view that may well serve as a contributing factor to breaking the inertia and adopting sounder applications of research metrics.

Appendix

Table A1

Model Scores and Factor Series for JCR-like JIFs (with all articles considered)[†]

Journal Name	Model Scores	JCR-like Impact Factors (JIFs)						
		06-07	05-07	04-07	03-07	02-07	01-07	00-07
Administrative Science Quarterly (ASQ)	5.265	0.91	1.44	1.70	1.89	2.12	2.30	2.58
Strategic Management Journal (SMJ)	4.360	0.96	1.36	1.74	1.87	1.98	2.15	2.33
Academy of Management Journal (AMJ)	3.018	1.53	1.66	1.68	1.82	1.89	1.98	2.07
Organization Science (OSc)	2.651	0.83	1.14	1.40	1.50	1.66	1.74	1.68
Academy of Management Review (AMR)	2.254	1.06	1.09	1.22	1.45	1.51	1.55	1.66
Journal of Management (JoM)	1.876	1.39	1.44	1.61	1.78	1.71	1.73	1.75
Entrepreneurship Theory and Practice (ETP)	0.960	1.42	2.12	2.33	2.56	2.49	2.52	2.36
Journal of Business Venturing (JBV)	0.925	1.05	1.30	1.44	1.99	1.97	1.92	2.05
Journal of Management Studies (JMS)	0.574	0.85	0.87	0.84	0.85	0.82	0.78	0.76
Management Science (MSc)	0.547	0.15	0.14	0.18	0.26	0.33	0.31	0.29
Family Business Review (FBR)	0.147	1.12	0.97	1.27	1.27	1.36	1.39	1.29
Journal of Evolutionary Economics (JEE)	0.112	0.17	0.15	0.23	0.26	0.27	0.24	0.22
Journal of Small Business Management (SBM)	0.104	0.30	0.56	0.62	0.65	0.72	0.80	0.80
Entrepreneurship and Regional Development (ERD)	0.082	0.64	0.57	0.81	0.89	0.93	0.85	0.87
Journal of Organizational Change Management (OCM)	0.038	0.20	0.17	0.18	0.17	0.16	0.15	0.16
Journal of Developmental Entrepreneurship (JDE)	0.033	0.08	0.16	0.43	0.44	0.50	0.51	0.49
Creativity and Innovation Management (CIM)	0.021	0.13	0.12	0.12	0.13	0.12	0.12	0.11
Quarterly Journal of Austrian Economics (QAE)	0.017	0.05	0.05	0.04	0.03	0.04	0.05	0.06
Journal of Small Business and Enterprise Development (SBD)	0.008	0.16	0.23	0.23	0.26	0.25	0.23	0.23
International Journal of Entrepreneurial Behavior and Research (EBR)	0.005	0.46	0.45	0.39	0.35	0.38	0.39	0.45
Journal of Small Business Strategy (SBS)	0.003	0.07	0.09	0.08	0.11	0.13	0.19	0.19
Journal of Enterprising Culture (JEC)	0.002	0.13	0.27	0.31	0.28	0.24	0.21	0.20
New England Journal of Entrepreneurship (NEE)	0.000	0.14	0.12	0.10	0.08	0.08	0.09	0.08

[†] The model scores are standardized so that a journal of average influence has a score of 1. The JCR category indicates whether the journal is included in the SSCI and, if so, the category or categories in which it appears.

Table A2

Model Scores and Factor Series for JCR-like JIFs—with Self-Citations Excluded[†]

Journal Name	Model Scores	JCR-like Impact Factors (JIFs)						
		06-07	05-07	04-07	03-07	02-07	01-07	00-07
Administrative Science Quarterly (ASQ)	5.654	0.61	1.10	1.35	1.50	1.72	1.92	2.16
Organization Science (OSc)	3.135	0.50	0.76	1.03	1.13	1.27	1.36	1.33
Academy of Management Journal (AMJ)	3.037	1.19	1.32	1.33	1.47	1.54	1.59	1.69
Strategic Management Journal (SMJ)	2.748	0.63	0.88	1.14	1.26	1.34	1.49	1.62
Academy of Management Review (AMR)	2.378	0.98	0.98	1.01	1.23	1.27	1.32	1.42
Journal of Management (JoM)	2.323	1.01	1.09	1.28	1.45	1.40	1.43	1.46
Entrepreneurship Theory and Practice (ETP)	1.035	0.79	1.39	1.57	1.79	1.74	1.73	1.62
Journal of Business Venturing (JBV)	0.955	0.69	0.93	1.04	1.62	1.59	1.55	1.66
Journal of Management Studies (JMS)	0.670	0.26	0.33	0.33	0.39	0.38	0.37	0.36
Management Science (MSc)	0.557	0.13	0.11	0.16	0.22	0.28	0.27	0.26
Family Business Review (FBR)	0.147	0.56	0.45	0.57	0.62	0.73	0.76	0.70
Journal of Small Business Management (SBM)	0.118	0.24	0.37	0.39	0.44	0.49	0.55	0.54
Entrepreneurship and Regional Development (ERD)	0.066	0.19	0.17	0.24	0.26	0.30	0.30	0.35
Journal of Evolutionary Economics (JEE)	0.047	0.00	0.02	0.07	0.09	0.10	0.09	0.09
Journal of Developmental Entrepreneurship (JDE)	0.038	0.03	0.07	0.17	0.20	0.22	0.23	0.21
Journal of Organizational Change Management (OCM)	0.038	0.01	0.01	0.01	0.01	0.02	0.02	0.02
Creativity and Innovation Management (CIM)	0.025	0.00	0.01	0.01	0.01	0.02	0.02	0.02
Journal of Small Business and Enterprise Development (SBD)	0.010	0.01	0.07	0.06	0.08	0.08	0.07	0.09
International Journal of Entrepreneurial Behavior and Research (EBR)	0.005	0.03	0.03	0.04	0.03	0.05	0.08	0.10
Journal of Small Business Strategy (SBS)	0.004	0.04	0.04	0.04	0.08	0.09	0.09	0.09
Quarterly Journal of Austrian Economics (QAE)	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Journal of Enterprising Culture (JEC)	0.002	0.06	0.10	0.15	0.15	0.13	0.11	0.10
New England Journal of Entrepreneurship (NEE)	0.000	0.00	0.00	0.00	0.00	0.02	0.04	0.03

[†] The model scores are standardized so that a journal of average influence has a score of 1.

REFERENCES

Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120.

Baumgartner, H. & Pieters, R. (2003). The structural influence of marketing journals: A citation analysis of the discipline and its subareas over time. *Journal of Marketing*, *67*(2), 123–139.

Busenitz, L., West, G., III, Shepherd, D., Nelson, T., Chandler, G., & Zacharakis, A. (2003). Entrepreneurship research in emergence: Past trends and future directions. *Journal of Management*, *29*(3), 285–308.

Bush, W., Hamelman, P., & Staaf, R. (1974). A quality index for economic journals. *Review of Economics and Statistics*, *56*(1), 123–125.

Chrisman, J.J., Chua, J.H., Kellermanns, F.W., Matherne, C.F., III, & Debicki, B.J. (2008). Management journals as venues for publication of family business research. *Entrepreneurship Theory and Practice*, *32*, 927–934.

de Jong, J.W. & Schaper, W. (1996). The international rank order of clinical cardiology. *European Heart Journal*, *17*, 35–42.

DuBois, F.L. & Reeb, D. (2000). Ranking the international business journals. *Journal of International Business Studies*, *31*(4), 689–704.

Fang, M.L.E. (1989). Journal rankings by citation analysis in health-sciences librarianship. *Bulletin of the Medical Library Association*, *77*(2), 205–211.

Fried, V.H. (2003). Defining a forum for entrepreneurship scholars. *Journal of Business Venturing*, *18*(1), 1–11.

Garfield, E. (1955). Citation indexes to science: A new dimension in documentation through association of ideas. *Science*, *122*, 108–111.

Garfield, E. (1998). The impact factor and using it correctly. *Der Unfallchirurg*, *48*(2), 413.

Greenwood, D. (2007). Reliability of journal impact factor rankings. *BMC Medical Research Methodology*, *7*(1), 48–53.

Harzing, A.W.K. & van der Wal, R. (2009). A Google scholar H-index for journals: An alternative metric to measure journal impact in economics and business? *Journal of the American Society for Information Science and Technology*, *60*(1), 41–46.

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

Holsapple, C.W. (2008). A publication power approach for identifying premier information systems journals. *Journal of the American Society for Information Science and Technology*, *59*(2), 166–185.

Holsapple, C.W. (2009). Journal self-citation II: The quest for high impact: Truth and consequences? *Communications of the Association for Information Systems*, *25*(2), 11–20.

Katz, J. & Boal, M. (2008). Entrepreneurship journal rankings. Available at http://www.marketingtechie.com/articles/mtart20020307.pdf, accessed 5 May 2010.

Laband, D.N. & Piette, M.J. (1994). The relative impacts of economic journals: 1970–1990. *Journal of Economic Literature*, *32*, 640–666.

Latour, B. (1987). *Science in action*. Cambridge, MA: Harvard University Press.

Liebowitz, S. & Palmer, J. (1984). Assessing the relative impacts of economics journals. *Journal of Economic Literature*, *221*(1), 77–88.

MacMillan, I.C. (1991). Delineating a forum for entrepreneurship scholars. *Journal of Business Venturing*, *6*(2), 83–87.

MacMillan, I.C. (1993). The emerging forum for entrepreneurship scholars. *Journal of Business Venturing*, *8*(5), 377–381.

Mann, G.S., Mimno, D., & McCallum, A. (2006). Bibliometric impact measures leveraging topic analysis. Paper presented at the Proceedings of the 6th ACM/IEEE-CS joint conference on Digital libraries. Chapel Hill, NC: ACM.

Mingers, J. & Harzing, A. (2007). Ranking journals in business and management: A statistical analysis of the Harzing data set. *European Journal of Information Systems*, *16*(4), 303–316.

Oswald, A. (2007). An examination of the reliability of prestigious scholarly journals: Evidence and implications for decision-makers. *Economica*, *74*(293), 21–31.

Page, L., Brin, S., Motwani, R., & Winograd, T. (1998). The PageRank citation ranking: Bringing order to the web. Unpublished Technical Report. Stanford University, Palo Alto, CA.

Pfeffer, J. (1993). Barriers to the advance of organizational science: Paradigm development as a dependent variable. *Academy of Management Review*, *18*(4), 599–620.

Pinski, G. & Narin, F. (1976). Citation influence for journal aggregates of scientific publications: Theory, with applications to the literature of physics. *Information Processing and Management*, *12*(5), 297–312.

Posner, R.A. (2000). An economic analysis of the use of citations in the law. *American Law and Economics Review*, *2*, 381–406.

Rupp, N.G. & McKinney, C.N., Jr. (2002). The publication patterns of the elite economics departments: 1995–2000. *Eastern Economic Journal*, *28*(4), 523–538.

Sellers, S.L., Perry, R., Mathiesen, S.G., & Smith, T. (2004). Evaluation of social work journal quality: Citation versus reputation approaches. *Journal of Social Work Education*, *40*(1), 143–160.

Smith, S.D. (2004). Is an article in a top journal a top article? *Financial Management*, *33*(4), 133–149.

Starbuck, W. (2005). How much better are the most-prestigious journals? The statistics of academic publication. *Organization Science*, *6*(2), 180–200.

Tahai, A. & Meyer, M. (1999). A revealed preference study of management journals' direct influences. *Strategic Management Journal*, *20*(3), 279–296.

Vokurka, R.J. (1996). The relative importance of journals used in operations management research—A citation analysis. *Journal of Operations Management*, *14*(4), 345.

Brian L. Dos Santos holds the Frazier Family Chair at the University of Louisville. He has served on a number of editorial boards, including *Information Systems Research*, *Decision Support Systems*, *Journal of Organizational Computing and Electronic Commerce,* and others. His research focuses on the valuation of information technology investments.

Clyde W. Holsapple holds the Rosenthal Endowed Chair at the University of Kentucky. He is Editor-in-Chief of the *Journal of Organizational Computing and Electronic Commerce*. His research focuses on multiparticipant systems, decision support systems, and knowledge management. His books include *Foundations of Decision Support Systems*, *Decision Support Systems—A Knowledge-based Approach, Handbook on Decision Support Systems*, and *Handbook on Knowledge Management*. He has published over 200 research articles in journals and books.

Qian Ye is a doctoral candidate in the Entrepreneurship program at the University of Louisville. She is interested in new venture creation, entrepreneurial decision making, and cultural influences on entrepreneurship.