

ORIGINAL ARTICLE

A Bibliometric Analysis of Communication Journals from 2002 to 2005

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Journal impact ratings are often used by authors, promotion/hiring committees, and grant review teams as a proxy for scholarship quality. Journal citation data (2002–2005) from Social Sciences Citation Index were used to rank journals in the field of communication. A journal relatedness algorithm was applied to ascertain the 19 semantically related journals in communication. The mean journal impact index was 0.77 (SD = 0.28). Human Communication Research (HCR), Personal Relationships, Journal of Communication (JOC), and Communication Research (CR) were ranked the top four journals for the study years examined. Network analysis was conducted on in-degree (i.e., citations to journals) and out-degree (i.e., citations from journals) data for the 19 communication journals for 2003–2005. The purpose of the network analysis was to study the citation patterns among journals in the field of communication. Data using degree centrality indicate that Communication Monographs, CR, HCR, and JOC (in alphabetical order) are the four most central journals in the field.

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Communication research is a community-based endeavor (Stewart, 2002). For knowledge to advance, one must access and build upon published research in a given area of scholarship. The credo when one logs onto Google Scholar (<http://www.scholar.google.com/>), a Web-based system for conducting ancestry searches of research articles, paraphrases Sir Isaac Newton and declares, “Stand on the Shoulders of Giants.” Given the cumulative nature of social science, it is imperative that a scholar provides an accurate and representative account of current research (Cooper, 1989). With the computer age upon us, retrieval of past research is more sophisticated than ever before. In fact, the field of bibliometrics or journalology (Garfield, 2006) is dedicated, in part, to the access, organization, and systematization of research citations.

The citation of another’s published work in bibliometrics indicates that a meaningful relationship exists between a study and the reference. One could say that the cited piece meaningfully informed the specific paper or the citing piece (Rice,

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Borgman, & Reeves, 1988). A popular method of measuring journal citation frequency among journals is the journal impact factor (JIF). The JIF has emerged as the gold standard in evaluating the quality of journals and has been in existence since the mid-1950s (Brody, 1995; Garfield, 1999, 2006). The JIF has been in the spotlight of late, as measurement in higher education has become more common. Quantifying scholarship is becoming commonplace, and there is increasing pressure for junior faculty to publish in the leading journals in order to earn tenure (Adam, 2002; Lawrence, 2003; Traynor & Rafferty, 2001).

A primary goal of the present article was to provide impact data on journals that publish communication research. Admittedly, the motivation to produce a list of the top-cited journals in communication may be human nature, as one author (Hakonen, 2002) argues. One function of lists, according to Hakonen, is to reduce complicated or diverse information to a level the average person can easily handle. Stated differently, measurement and lists make the dissimilar comparable by reducing it to abstract (and countable) quantities (Adorno & Horkheimer, 1979, as cited in Traynor & Rafferty, 2001). There are, however, more important reasons for determining the JIFs for the communication field. First, journal impact rankings provide objective data for tenure, promotion, and, possibly, grant review committees on the quality of scholars' work. Publication in higher impact journals is often equated with quality of scholarship. There are several studies that provide evidence to this claim (e.g., Linardi, Coelho, & Costa, 1996; Saha, Saint, & Christakis, 2003; for review, see Kurmis, 2003).

A second justification for rating journal impact relates to authors' decision making related to submission of original research. Certainly, scholars wish to send their research to the leading journals, and what exactly are the leading journals in communication is unclear and what data are available are more than 16 years old (Funkhouser, 1996; Reeves & Borgman, 1983; Rice et al., 1988). The most recent analysis by Funkhouser examines impact data from only one study year, 1990.

A third reason for evaluating journal impact data is to update the communication literature, and using conventional bibliometric data allows for direct comparison to earlier published studies on the topic (e.g., Rice et al., 1988). Indirectly related to communication research, librarians often use journal impact data to make resource decisions on which journals (or databases) to keep current.

The JIF

The JIF for any given year reflects the number of citations of a journal's material in the preceding 2-year period divided by the number of citable materials published by that same journal (Kurmis, 2003). Citable materials that count in the denominator include original research articles, reviews of the literature, and technical notes. What does not count as citable materials are letters to the editor, book reviews, and editorials.

Some important considerations are in order for interpreting journal impact data. First, journal impact score is a relative score within a single field of study, and JIF is

greatly influenced by the size of one's field. For example, the 2004 impact factor for the *New England Journal of Medicine* is 38.6, and the impact factor for *Journal of Personality and Social Psychology* is 3.63 for the same year. Both journals are ranked as high-impact journals for medicine and social psychology, respectively. It is also widely reported that there is a positively skewed distribution of citations in most fields. That is to say, a small percentage of citations make up most of the citations. Garfield (2006) calls this the 80/20 phenomenon to signify that 20% of articles account for 80% of citations. Seglen (1997) found results in the sciences that indicate that 15% of the articles in a given journal account for 50% of the journal citations.

Related to this last consideration, high-quality articles (and authors) can drive up a journal's impact factor. However, the reverse is not necessarily true, that is, publishing in a high-impact journal does not guarantee a high-quality and oft-cited article. Journal editors and reviewers still serve an important role in ensuring that high-quality research makes it to print (see Lawrence, 2003, for excellent discussion). Thus, tenure committees, tenure referees, and search committees are still not relieved of their responsibility to read individual research studies of candidates to judge quality of scholarship.

The present study is not without precedent. The field of communication has published studies using journal impact data that informed the present analysis. Reeves and Borgman (1983) examined journal impact data from 1977 to 1979, and their data indicate two clear findings: (a) *Human Communication Research (HCR)* was determined to be the most influential journal within the field of communication and (b) *Public Opinion Quarterly (POQ)* was the most influential journal outside the field. So (1988) and Rice et al. (1988) found similar results using Social Sciences Citation Index (SSCI) data from 1983 to 1985. In terms of journal impact, *HCR*, *Communication Monographs (CM)*, *POQ*, and *Communication Research (CR)* were the top four ranked journals in the field. Funkhouser (1996) used citation data from 27 journals in the communication field (14 of these journals were not indexed in 1990 by SSCI). Funkhouser found *CM*, *Quarterly Journal of Speech (QJS)*, *HCR*, and *Journal of Communication (JOC)* to be the four highest impact journals. Two characteristics of the Funkhouser study warrant attention. First, he developed his own method of determining journal impact ratings (JIRs) and, thus, his data cannot be directly compared to earlier published data. Second, he did his tallying by hand and thus used 14 journals not cited by SSCI for 1990.

Journal relatedness

The communication field, it could be said, has emerged from two streams of scholarship. The speech communication tradition is rooted in the humanities, and the mass communication tradition is rooted in the social sciences (Rogers & Chaffee, 1983; Schramm, 1997). Berger and Chaffee (1988) further suggested a schism between interpersonal and mass communication for social scientific research. Not surprisingly, the field has many subdisciplines of study, and the content of journals certainly reflects the heterogeneity of scholarship in communication. Related to this last point,

a second goal of the present study was to study the citation network of journal articles published in the past 4 years. A similar analysis to the one presented herein was completed by Reeves and Borgman (1983) and So (1988). Rice et al. (1988) combined the two data sets and also analyzed citation data between the two studies and provided network data from 1977 to 1985 for 20 communication journals. Rice et al. offered the following conclusions: (a) the field comprises two *cliques*, using network parlance, consisting of interpersonal and mass communication with an intermediary set of isolate journals and (b) there is stability over time in network cliques and interpersonal journals more often cite mass communication journals, than vice versa. Examining the citation network among journals in only communication would provide evidence for the most central or cited journals within the field.

Two recent studies (Barnett & Danowski, 1992; Doerfel & Barnett, 1999) examined the semantic network of the International Communication Association (ICA) using the frequency of joint memberships in ICA divisions (Barnett & Danowski, 1992) and paper titles at its 1991 annual convention (Doerfel & Barnett, 1999). Results across the two studies using multidimensional scaling indicate that at least three dimensions characterize ICA and include one dimension that divides interpersonal and mass communication research. A second dimension differentiates humanistic scholarship from social scientific, and a possible third dimension separates theoretical research from applied research.

The present study warrants attention for several reasons. First, the present analysis uses up-to-date (citation years 2002–2005) impact data on 19 communication journals. Previous research reports data on a restricted number of journals, typically nine, and provides somewhat older data and for a limited number of citation years (e.g., Funkhouser, 1996; Reeves & Borgman, 1983). Providing the most recent journal impact data can provide empirical evidence for what journals represent the highest impact in the field. The present analysis also takes advantage of a recent algorithm (Pudovkin & Garfield, 2002) that provides a more accurate measure of the semantic relationship between pairs of journals. Finally, several communication-related journals (4 of the 14 from Funkhouser, 1996) are now indexed by SSCI and are considered in the present study.

Method

Overview of study procedures

Data on journals related to core communication journals were collected to determine study inclusion. Journal impact was reported for four recent available years (2002–2005) for the 19 journals determined to be related to the communication discipline, and rankings were completed based upon mean impact for each periodical. Finally, network analysis was completed using relatedness data for the core communication journals in an effort to observe the citation patterns between journals.

All study data are taken from the Institute for Scientific Information (ISI) for Web of Science and *Journal Citation Reports (JCR)*. These data are available through

most university libraries or through Thomson Scientific for a fee (<http://www.scientific.thomson.com/>). *JCR* is published annually, and paper versions were produced in the 1970s, and later CD-ROM versions were produced.

Determining communication-related journals for study inclusion

As research suggests (e.g., Doerfel & Barnett, 1999; Barnett & Danowski, 1992), the communication field features many subdisciplines of study and determining what is (or what is not) a communication journal can be subjective. The present study used 7 of the 13 journals published by the discipline's two largest national associations, the National Communication Association (NCA; *CM*, *Critical Studies in Media Communication*, *Journal of Applied Communication Research* [*JACR*], and *QJS*) and the ICA (*HCR*, *Communication Theory* [*CT*], and *JOC*), for inclusion in the study. Using reasoning similar to Bunz (2005), five journals were not considered core to the field due to the content or focus of the journals being either too esoteric (*Text Performance Quarterly*, *Communication and Critical/Cultural Studies*, *Communication Teacher*, *Review of Communication*) or reserved for review articles (*Communication Yearbook*). It should be noted that these articles may still be considered for inclusion if citation data determine that they are related to the seven journals. *Communication Education* was determined ineligible for inclusion, as it has not been included in SSCI since 2001.

Journal relatedness data were used for 2003–2005 to determine what other journals are semantically related to the seven communication journals published by ICA and NCA. Journal relatedness or the relatedness factor (RF) is an algorithmic procedure for finding semantically related journals and was developed in 2002 by Pudovkin and Garfield. Data on RF have been available since 2003 on social sciences journals. Conceptually, the RF examines which pairs of journals cite one another on a regular basis, and journals that more often cite other journals are considered more related than journals that seldom or never cite each other. It is important to note that RF takes into account the size of the journal in terms of number of issues and articles. The number of citations from one journal to another, it is reasoned by Pudovkin and Garfield (2002), should be proportional to the number of papers it publishes. As an example, a recent issue of *HCR* (2006, Vol. 32/1) published 4 articles, whereas a recent issue of *JOC* (2005, Vol. 55/4) published 11 research articles. With all other conditions the same, the *JOC* issue should be 2.75 times more likely to be cited compared to the *HCR* issue.

The RF computes a metric for cited data and citing data for journals. Cited data measure what other journals a particular periodical cites, and for the purposes of the present study and clarity, cited data are dubbed out-degree data for each journal, consistent with network terminology that uses out-degree to measure the number of links a node reports to have with other nodes (Borgatti, Everett, & Freeman, 1992; Mossholder, Settoon, & Henagan, 2005). Citing data measure what journals cite a particular journal and are considered in-degree data for each journal. The RF also computes an RF_{\max} measure that takes the larger of the out-degree and in-degree data.

RF data were examined for each of the seven core journals for 2003, 2004, and 2005, and to be conservative and more inclusive, the RF_{\max} measure was used.

A decision rule was applied that a journal was determined to be a primary communication journal and thereby included in the present study if it was related to two or more communication journals. In the instance where a journal was related to only two of the seven journals, it was included if it was related to one or both journals in more than one study year. Table 1 reports 20 journals related to communication, and data in each cell represent the number of years (out of three: 2003, 2004, and 2005) the journal was determined to be related to a given journal. As an example, *Public Relations Review* was excluded from the study as it was only related to *CT* and *QJS* for only one year each. By comparison, *Small Group Research* was included for analyses, as it was related to *HCR* for all three study years and related to *CM* for two of the three study years.

Table 1 Rank Order of Journals Semantically Related to Journals of NCA and ICA Publications

	<i>CT</i>	<i>HCR</i>	<i>JOC</i>	<i>JACR</i>	<i>CM</i>	<i>QJS</i>	<i>CSMC</i>	#J	Total
Journals included in the analysis									
1. <i>JBEM</i>	1	3	3	1	2	0	2	6	12
2. <i>HC</i>	1	2	3	2	3	0	0	5	8
3. <i>CR</i>	2	3	3	0	3	0	0	4	11
4. <i>JLSP</i>	1	2	3	0	3	0	0	4	9
5. <i>MP</i>	1	1	3	0	2	0	0	4	7
5. <i>JMCQ</i>	0	1	3	1	2	0	0	4	7
7. <i>PC</i>	0	1	3	0	1	0	1	4	6
8. <i>JSPR</i>	0	3	0	1	3	0	0	3	7
9. <i>JHC</i>	2	1	2	0	0	0	0	3	5
10. <i>SGR</i>	0	3	0	0	2	0	0	2	5
11. <i>MCS</i>	0	0	0	1	0	0	3	2	4
11. <i>PR</i>	0	1	0	0	3	0	0	2	4
Journals excluded from the analysis									
13. <i>PRR</i>	1	0	0	0	0	1	0	2	2
13. <i>IJIR</i>	0	1	0	0	1	0	0	2	2
13. <i>PRR</i>	1	0	0	0	0	1	0	2	2
16. <i>HIJPP</i>	0	0	3	0	0	0	0	1	3
17. <i>JNB</i>	0	2	0	0	0	0	0	1	2
17. <i>POQ</i>	0	0	2	0	0	0	0	1	2
19. <i>AMJ</i>	1	0	0	0	0	0	0	1	1

Note: See Table 2 for list of journal abbreviations. Each cell represents number of years (out of 3 years: 2003, 2004, and 2005) a journal is related to an ICA/NCA periodical. #J represents total number of unique ICA/NCA publications a journal is related to. Total represents total number of times (across journals) a journal is related to a periodical journal. All data were extracted from Relation Index (Pudovkin & Garfield, 2002), Journal Citations Reports, 2003–2005 Social Sciences Citation Index, Web of Science, and Thomson Scientific. NCA = National Communication Association; ICA = International Communication Association.

In addition to the 7 core journals, 12 journals were determined through RF analysis to be related to communication for a total of 19 journals. The journals most closely related to communication were *Journal of Broadcasting and Electronic Media (JBEM)*, *CR*, *Health Communication (HC)*, and *Journal of Language and Social Psychology*.

The JIF

The JIF reflects the number of citations of a journal's articles in the preceding 2-year period divided by the number of citable articles published by that journal during the same 2-year period (Garfield, 1999; Kurmis, 2003). Thus, a JIF for 2005 would indicate how frequently articles published in 2003 and 2004 were cited divided by the number of countable articles published. It should be noted that not all articles are counted in the denominator of the formula. Articles that are not considered "citable articles" include letters to the editor, book reviews, abstracts, and editorials (Garfield, 1999; Gowrishankar & Divakar, 1999). Funkhouser (1996) devised his own JIR that used the product of the number of citations received by a journal (i.e., in-degree), the percentage of all journals that cite a journal, and the percentage of citations that do not come from a journal (i.e., the percentage of nonself-citations). The JIF impact measure, rather than Funkhouser's JIR, is used in the present study for several reasons. First, journal impact is the conventional measure used in the social sciences and would provide a comparable metric to previous (e.g., Reeves & Borgman, 1983; Rice et al., 1988) or future research in communication. Second, the JIF, as currently used (as opposed to the measure by Funkhouser, 1996), mitigates the importance of absolute citation frequencies that advantage larger journals. Third, research indicates that the number of self-citations made to a journal has little impact on journal impact ranking (Anseel, Duyck, & DeBaene, 2004). The Funkhouser formula would effectively penalize a high-impact journal for citing itself.

Network analysis

To examine the structure of the relations among journals, network analysis was conducted. Network analysis is a set of procedures for identifying structures in systems among its components rather than individual attributes (Rogers & Kincaid, 1981; Wasserman & Faust, 1994). RF data were entered into a Journal \times Journal matrix, with out-degree data on the left side of the diagonal and in-degree data on the right side of the diagonal. This procedure was undertaken for 2003, 2004, and 2005 data sets. The network structures of each of the three study years were compared to one another using the Quadratic Assessment Procedure (QAP). More detailed explanations of QAP are provided elsewhere (Krackhardt & Porter, 1986; Wasserman & Faust, 1994) and Krackhardt and Porter described the procedure as comparing two $N \times N$ matrices:

The [QAP] procedure has several advantages over traditional linear model hypothesis testing. First it directly tests whether two matrices are similar to each

other. The QAP tests take advantage of all the dyadic information represented in each matrix. That is, QAP compares each dyadic cell in Matrix A with the corresponding cell in Matrix B. The dyad is retained, then, as the appropriate unit of analysis. The second advantage of QAP is that it does not make parametric assumptions about the data. Ordinal, even categorical data can be tested without violating the distribution assumptions beyond the procedure. (p. 52)

The QAP is necessary for the current examination to justify using relatedness data for the three study years combined, rather than examining the data yearly for 2003, 2004, and 2005.

UCINET VI software (Borgatti, Everett, & Freeman, 2002) was used for all network analyses including computation of each journal's network position using degree centrality. Degree centrality (see Feeley, 2000, and Freeman, 1979, for discussion) measures the number of links or connections a journal has compared to other journals. The present study used in-degree centrality or the number of citations *to* a journal (out-degree would be number of cites *from* a journal). For each degree measure, the cumulative degree over 3 years of data was used for comparison. NETDRAW [2.33] software was used to illustrate the overall network structure.

Results

Overall journal impact

To simplify reporting of study results, abbreviations are used to represent each journal and the definitions are reported in Table 2. Journal impact data are reported in Table 3 for 2002–2005 and mean value for the four study years. The average mean impact rating across 19 journals and 4 years of data is 0.77 ($SD = 0.28$); this impact rating indicates that each article published in each of the 2-year intervals between 2000 and 2003 (i.e., 2 years before each impact factor rating period) was cited, on the average, 0.77 times. The mean JIRs for 2002 through 2005 were 0.62 ($SD = 0.34$), 0.73 ($SD = 0.38$), 0.85 ($SD = 0.33$), and 0.81 ($SD = 0.34$), respectively. Thus, the impact factor increased from 2002 to 2004 and decreased slightly for 2005.

The top four cited journals overall were *HCR*, *Personal Relationships (PR)*, *JOC*, and *CR*, and each of these four journals had a mean impact rating at least of 1 SD above the mean. *HCR*'s z-score is 1.96, indicating that it is almost 2 SD s above the mean. Examination of the standard deviations over 4 years indicates that the JIF is relatively stable over time. The two highest standard deviations in journal ratings were for *CT* and *JACR*; both journals had large increases in impact ratings for 2004 and 2005 compared to 2002 and 2003.

Journal relatedness

The QAP in UCINET VI compared the structure of the 2003, 2004, and 2005 journal-by-journal out-degree and in-degree citation data, and results indicate that

Table 2 Abbreviations for Communication Journals

Journal	Abbreviation
<i>Academy Management Journal</i>	AMJ
<i>Communication Monographs</i>	CM
<i>Communication Research</i>	CR
<i>Communication Theory</i>	CT
<i>Critical Studies in Mass Communication</i>	CSMC
<i>Harvard International Journal of Press-Politics</i>	HIJPP
<i>Health Communication</i>	HC
<i>Human Communication Research</i>	HCR
<i>International Journal of Intercultural Relations</i>	IJIR
<i>Journal of Applied Communication Research</i>	JACR
<i>Journal of Broadcasting and Electronic Media</i>	JBEM
<i>Journal of Communication</i>	JOC
<i>Journal of Health Communication</i>	JHC
<i>Journal of Language and Social Psychology</i>	JLSP
<i>Journal of Nonverbal Behavior</i>	JNB
<i>Journal of Social and Personal Relationships</i>	JSPR
<i>Journalism Mass Communication Quarterly</i>	JMCQ
<i>Media Psychology</i>	MP
<i>Media, Culture and Society</i>	MCS
<i>Personal Relationships</i>	PR
<i>Political Communication</i>	PC
<i>Public Opinion Quarterly</i>	POQ
<i>Public Relations Review</i>	PRR
<i>Quarterly Journal of Speech</i>	QJS
<i>Small Group Research</i>	SGR

the matrices are related to one another. Specifically, Pearson correlations between 2003/2004, 2003/2005, and 2004/2005 were 0.71, 0.70, and 0.84, respectively. Thus, analyses were conducted on the aggregate data set for ease of interpretation.

The means for out-degree and in-degree were 7,924.28 ($SD = 7,932.37$) and 7,424.28 ($SD = 5,142.23$), respectively. The journal ranks for out-degree and in-degree were correlated significantly, using Spearman ranks correlation, $r = .80$, $p < .001$. The standard deviations indicate that the out-degree values are more widely distributed compared to in-degree values. Examination of the data indicates higher and lower values at the scale extremes for out-degree data. Out-degree and in-degree data are reported in Table 4. Examination of the citation network of communication journals indicates that *CR*, *JOC*, *Media Psychology (MP)*, *CM*, and *HCR* are most central in the field using in-degree relatedness data. More specifically, *CR*, *JOC*, *MP*, *CM*, and *HCR* are the most highly cited by the 19 journals examined. *CM*, *HCR*, and *CR* are the three highest ranked journals in the field that cite the 19 communication journals. Two journals have a large disparity between out-degree

Table 3 Journal Impact Data for Communication Journals (2002–2005)

Journal	2002 Impact	2003 Impact	2004 Impact	2005 Impact	Mean Impact (SD)
<i>HCR</i>	1.067	1.602	1.526	1.080	1.32 (0.29)
<i>PR</i>	0.950	1.310	1.000	1.127	1.10 (0.16)
<i>JOC</i>	1.157	0.793	1.213	1.134	1.07 (0.19)
<i>CR</i>	0.852	1.145	1.018	1.255	1.07 (0.17)
<i>MP</i>	0.767	1.167	1.276	0.786	1.00 (0.26)
<i>CT</i>	0.381	0.683	1.263	1.472	0.95 (0.51)
<i>PC</i>	0.897	0.854	0.644	1.261	0.91 (0.26)
<i>JHC</i>	1.220	0.925	0.671	0.802	0.90 (0.23)
<i>HC</i>	0.548	0.889	0.902	0.929	0.82 (0.18)
<i>JSPR</i>	0.679	0.663	0.823	0.718	0.72 (0.07)
<i>SGR</i>	0.871	0.719	0.648	0.561	0.70 (0.13)
<i>CM</i>	0.521	0.596	1.214	0.442	0.69 (0.35)
<i>CSMC</i>	0.260	0.720	0.902	0.412	0.57 (0.29)
<i>JMCQ</i>	0.591	0.933	0.511	0.544	0.51 (0.08)
<i>JBEM</i>	0.417	0.440	0.461	0.631	0.49 (0.10)
<i>QJS</i>	0.000	0.523	0.976	0.447	0.49 (0.40)
<i>JLSP</i>	0.488	0.447	0.524	0.395	0.46 (0.06)
<i>JACR</i>	0.118	0.100	0.517	0.931	0.42 (0.39)
<i>MCS</i>	0.236	0.347	0.385	0.429	0.35 (0.08)

Note: See Table 2 for list of journal abbreviations.

and in-degree data: *MP* is far more likely to be cited by communication journals than to cite communication journals (there are similar data trends with *HC* and *Journal of Health Communication* [*JHC*]). By contrast, the top in-degree journals (*CR*, *JOC*, *CM*, *HCR*) more often cite communication journals than are cited by communication journals.

Figure 1 provides a network illustration of the citation network using in-degree data. Three characteristics of the model shown in Figure 1 are important to note. First, the diameter of each journal node represents its in-degree value and larger nodes represent journals with higher in-degree centrality. For example, *CM*, *CR*, *HCR*, *MP*, and *JOC* have the largest nodes in diameter. Second, the directional arrows represent each *above-average* in-degree relationship between pairs of journals. The direction of the arrow is important to recognize, and an arrow pointing at a node indicates that the node has an in-degree relationship with the source node. Notice an arrow from *QJS* to *JOC*, which indicates that *QJS* articles often cite *JOC* articles but not vice versa. Nodes that point to one another (e.g., *JOC*, *Political Communication*) indicate that the journals cite one another. Third, the thickness (and darkness) of the arrow represents the relative strength of the relationship. For example, the relationship between *JBEM* and *MP* is stronger than that between *JHC* and *HC*. The figure indicates that *CR*, *JOC*, *CM*, and *HCR* are clearly the most central journals in the field in terms of bibliometric citation data. *JHC*, *JACR*, *QJS*, and others appear to be on the periphery of the journal network.

Table 4 Degree Centrality of Communication Journals (2002–2005)

Journal	Out-Degree Centrality (Rank)	In-Degree Centrality (Rank)
CM	25,096.31 (1)	13,911.32 (4)
HCR	24,439.31 (2)	13,209.57 (5)
CR	22,752.70 (3)	16,614.99 (1)
JOC	14,240.45 (4)	16,255.71 (2)
JBEM	11,332.25 (5)	9,931.95 (6)
CT	5,624.92 (6)	8,065.75 (7)
JSPR	5,269.31 (7)	5,088.85 (9)
QJS	4,920.73 (8)	2,437.79 (16)
JMCQ	4,582.31 (9)	7,655.94 (8)
PC	4,030.34 (10)	4,913.72 (10)
PR	3,443.54 (11)	3,943.06 (15)
MP	2,819.40 (12)	15,919.46 (3)
CSMC	2,764.81 (13)	4,190.61 (14)
HC	2,523.47 (14)	4,763.95 (13)
JLSP	2,324.34 (15)	4,868.08 (11)
JACR	1,893.78 (16)	4,791.36 (12)
SGR	1,197.94 (17)	1,301.46 (18)
MCS	1,092.73 (18)	1,148.60 (19)
JHC	712.76 (19)	2,058.22 (17)

Note: See Table 2 for list of journal abbreviations.

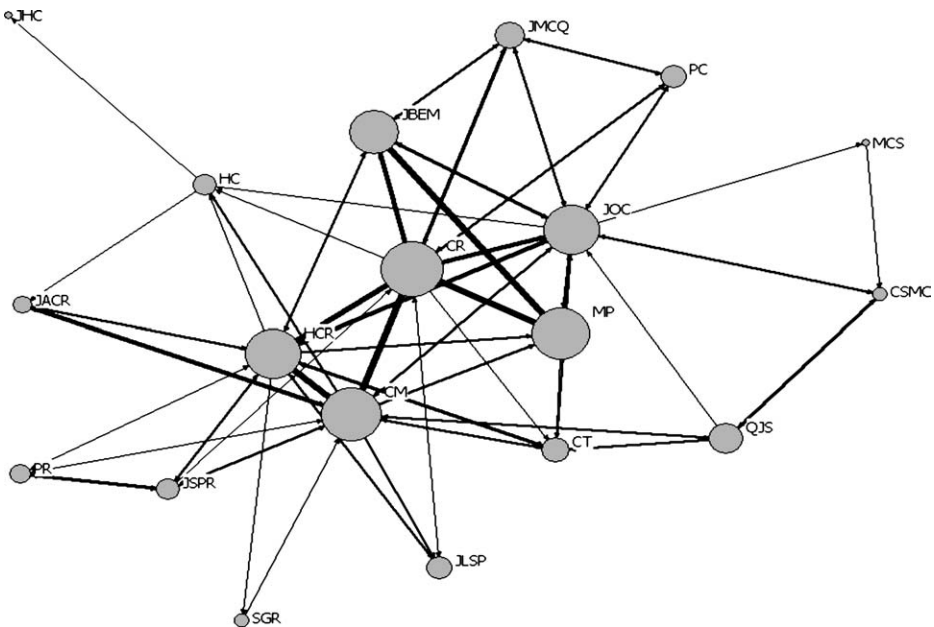


Figure 1 Network illustration of communication citation data using in-degree centrality.

Discussion

Overview of study findings

The present findings with respect to journal impact replicate, in part, earlier reviews conducted in 1988 (Rice et al., 1988) and 1996 (Funkhouser, 1996). Consistent with Rice et al., *HCR* (JIF of 1.08 for 1983–1985) is the top-ranked journal in communication, and citation rankings for *CR* (JIF of 0.68 for 1977–1985) and *JOC* (JIF of 0.52 for 1977–1985) placed these two journals in the top cohort. Funkhouser's analysis using 1990 data ranked *HCR*, *JOC*, and *CR* 3rd, 4th, and 11th, respectively. Both Rice et al. and Funkhouser, it should be noted, included more journals in their analyses. Rice et al. included all the journals in the SSCI, and Funkhouser included regional journals in the field. Future research should further investigate what journals should be included in analyses. The SSCI typically has 40–43 journals in the area of communication and what SSCI considers communication varies somewhat year by year. For example, *POQ* was ranked second by Rice et al. and seventh by Funkhouser but was found to be semantically unrelated to six of the seven core journals (it was related to *JOC*) in the present analysis. Also potentially problematic is what journals in the field are indexed in SSCI. Regional journals, for the most part, are not indexed in SSCI. Seglen (1997) found within the field of mathematics that publications not indexed by SSCI were cited more frequently than those included in SSCI. Related to the last point, the present study makes it unclear how to evaluate publications in regional journals. One might argue that these publications have a lesser potential for reach without being indexed by SSCI or other online search engines. However, within the field of communication, a regional journal article may have an impact on research and theorizing.

JIF data indicate that *HCR*, *PR*, *JOC*, and *CR* are the highest rated journals in the communication field for citation years 2002–2005. The mean impact rating for each of the journals was at least 1 *SD* above the mean for the 19 journals examined. Journal relatedness data indicate that *HCR* and *PR* may have a greater impact outside the field of communication, compared to peer journals, lending to their top two rankings. Journal relatedness data show *HCR* to be on par with *CM*, *CR*, and *JOC*, but these peer journals, especially *CM*, have lower impact ratings using all SSCI data. The two journals related to health communication, *HC* and *JHC*, were ranked eighth and ninth, respectively, in SSCI but appear to be isolated journals compared to core communication journals and have in-degree ranks, respectively, of 13th and 17th when examining the communication journals. In fact, Figure 1 suggests that *JHC* is only linked to the network through *HC*.

Implications of present study

The main promise of the present study was to provide data on the top journals in the field of communication using citation indices. Interpretation of these data is limited to journal-level analysis and not individual author- or article-level analysis. Thus, tenure, promotion, hiring, or grant committees can reasonably evaluate if an

applicant or a candidate publishes in the top-ranked journals (for 2002 through 2005). These same committee members may not interpret an author's impact on the field or the impact of any given article he or she has authored. However, the social citation index does allow one to examine citation data at the author level of analysis using a separate search engine. It may still be the case that departments or universities prefer that an author publishes in certain journals (see, e.g., Van Fleet, McWilliams, & Siegel, 2000) and a junior faculty member would do well to heed this information if he or she wishes to continue at the university. Tenure and promotion committees should examine the overall publication outlets for an individual to determine impact. In addition, these data should be used in concert with other important information (e.g., letters from reviewers, author citation information, journal acceptance rates, quality of scholarship) when evaluating a candidate's dossier.

A potential limitation of the present study is the narrow analysis (19) of journals in the field of communication that may include (<http://www.cios.org/>) more than 100 periodicals. In addressing this limitation, one should consider that the ISI database typically includes 40 journals but only the 19 titles in the present analysis proved to be semantically related to the core journals in the field. Although there may be 80+ more journals in communication, only a minority of these journals are indexed in ISI and even fewer are referenced by social science journals.

It should be noted that JIF data should only be interpreted within a field of study, as the size of the field greatly determines the number of citations indexed in the SSCI. Thus, tenure, hiring, or review committees should interpret an individual's impact in comparison to other communication scholars. The communication field has ample data (e.g., Bunz, 2005; Funkhouser, 1996; Hickson, Stacks, & Bodon, 1999; Hickson, Turner, & Bodon, 2003) on how prolific a typical scholar is in communication but would do well to measure a scholar's impact on theory and knowledge development in an area of study. The two most simplistic proxy measures, using the prolific authors approach, could include how often one publishes in the top-tier journals or how often a particular scholar is cited (Funkhouser, 1996). In allied fields, such as psychology, awards are periodically given to authors (e.g., Cohen, 1990) who are highly cited in the field.

There are certainly other criteria used to rank journal quality, such as acceptance rates of journals. Many factors of course enter into acceptance rate, not the least of these factors include journal space, number of submissions, quality of submissions, and blind reviewers. Bunz (2005) contended that the top journals may be those sponsored by the NCA and ICA and reasons:

the "top" and often perceived as most desirable publication outlets are the journals published by the International and National Communication associations. A publication in one of these journals supposedly provides the highest exposure to and impact on the discipline. (p. 705)

The present data would not rank the eight national journals as top-tier journals. Using the mean (0.77) and the standard deviation (0.28), one could reasonably

consider three tiers of journals: Tier 1 would be journals 1 *SD* above the mean, Tier 2 would be journals within 1 *SD* of the mean, and Tier 3 would be journals 1 *SD* below the mean. Using these guidelines, only *JOC* and *HCR* would be Tier 1 journals; *CT*, *Critical Studies in Mass Communication*, and *CM* Tier 2 journals; and *QJS* and *JACR* Tier 3 journals. *Communication Education* is not indexed from 2002 to 2005 but earned a mean index of 0.37 for 1999–2001, placing it into Tier 3.

A final note is in order with respect to journal article factors that tend to inflate JIF rates. Overall, more general articles that appeal to scholars in different areas tend to be cited more often. Methods articles and review articles also tend to get cited more, despite not providing original research. Self-citations also inflate the JIF as well. The length and accuracy of reference lists influence citations rates. Some journals encourage or discourage lengthy reference lists (Sieck, 2000), and research indicates a near 10% error rate in reference list author or article information. “Feeley TD” versus “Feeley TH” will prevent accurate citation recognition as would “HC” versus “HCR.”

It was suggested at the outset that citation of another’s research article indicates that the reference or the source article made a contribution to the author’s study purpose, background, theory, and/or methods. The present data from 4 years of time (2002–2005) indicate that certain journals in the field of communication are more often referenced than other journals. Stated differently, articles published in certain journals, with all else being equal, are more likely to influence thinking, theory development, and the potential advancement of knowledge inside and outside the field of communication. One seeking to contribute to future scholarship (e.g., *HCR*, *CR*) or perhaps practice (e.g., *JHC*, *MP*) might consider submission of their work to the highest ranked journal in a particular area of inquiry.

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Une analyse bibliométrique des revues de communication de 2002 à 2005

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Résumé

Le classement de l'impact des revues est souvent utilisé par les auteurs, les comités de promotion et d'embauche et les comités de sélection des subventions comme indicateur de la qualité de la recherche. Des données liées à la citation des revues (*Journal Citation data*, 2002-2005) du Social Sciences Citation Index furent utilisées pour classer les revues du champ de la communication. Un algorithme de proximité des revues fut appliqué de manière à déterminer les 19 revues de communication liées sur le plan de la sémantique. L'index moyen de l'impact des revues était de 0,77 (écart-type = 0,28). *Human Communication Research*, *Personal Relationships*, *Journal of Communication* et *Communication Research* furent désignés comme étant les quatre revues en tête de liste pour les années étudiées. Une analyse de réseau fut conduite sur des données intra-degré (citations vers des revues) et extra-degré (citations provenant de revues) pour les 19 revues de communication en 2003-2005. L'objectif de l'analyse de réseau était d'étudier les schémas de citations entre les revues de communication. Les données utilisant la centralité des degrés (*degree centrality*) indiquent que *Communication Monographs*, *Communication Research*, *Human Communication Research* et *Journal of Communication* (en ordre alphabétique) sont les 4 revues les plus centraux du domaine.

Eine bibliometrische Analyse der kommunikationswissenschaftlichen Fachzeitschriften von 2002-2005

Das Ranking des Einflussfaktor von Fachzeitschriften (Impact Factor Rating) wird von Autoren, Beförderungs- oder Einstellungskomitees sowie Reviewern für Zuschüsse oft als Qualitätsmaßstab für Wissenschaft herangezogen. Zeitschriftenzitationsdaten (2002-2005) des Social Science Citation Index (SSCI) wurden benutzt, um eine Rangliste kommunikationswissenschaftlicher Fachzeitschriften zu erstellen. Ein Beziehungsalgorithmus der Zeitschriften wurde angewandt, um die 19 semantisch verwandten Zeitschriften zu ermitteln. Bezogen auf Untersuchungsjahre wurden *Human Communication Research*, *Personal Relationships*, *Journal of Communication* und *Communication Research* als die Top 4 - Zeitschriften gelistet. Für die 19 Zeitschriften (2003-2005) wurden Netzwerkanalysen zum Zitationsgrad von intern (Verweise auf Zeitschriften) und außerhalb (Verweise von Zeitschriften) durchgeführt. Ziel dieser Netzwerkanalyse war es, Zitationsmuster innerhalb dieser kommunikationswissenschaftlichen Fachzeitschriften zu erfassen. Auf Basis dieser Daten zeigte sich, dass *Communication Monographs*, *Communication Research*, *Human Communication Research* und *Journal of Communication* (in alphabetischer Reihenfolge) die vier zentralsten Zeitschriften des Fachs sind.

Un Análisis Bibliométrico de los Journals de Comunicación desde el 2002 al 2005

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Resumen

El impacto de las clasificaciones de los Journals es usualmente usada por los autores, los comités de promoción/contratación, y los equipos de revisión de subvenciones como un reflejo de la calidad de la erudición. Datos de Journals (2002 – 2005) del índice de citas en Ciencias Sociales fueron usados para categorizar a los journals del campo de la comunicación. Un algoritmo relacionado del journal fue aplicado para averiguar las 19 relaciones semánticas de los journals en comunicación. El índice promedio de impacto del journal fue de 0.77 ($SD = 0.28$). *Human Communication Research*, *Personal Relationships*, *Journal of Communication*, and *Communication Research* fueron clasificados como los 4 journals superiores para los años examinados. Un análisis de red fue conducido sobre los datos dentro del título (a saber, citas en los journals) y fuera del título (a saber, citas de los journals) para los 19 journals de comunicación entre 2003-2005. El propósito del análisis de red fue estudiar las pautas de citación de los journals del campo de la comunicación. Los datos, usando la centralidad del título, indican que el *Communication Monographs*, el *Communication Research*, el *Human Communication Research*, y el *Journal of Communication* (en orden alfabético) son los 4 journals más centrales del campo.

2002年至2005年传播学期刊的文献度量分析

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文章作者、晋升/雇用委员会以及资助评估团体经常使用期刊影响力排名来评估学术分量。我们使用社会科学引用目录（Social Sciences Citation Index）的期刊引用数据来为传播学领域的期刊进行排名。我们还应用期刊相关性对数来确保19个语义相关的传播学期刊。期刊影响力的平均指数为0.77 ($SD = 0.28$)。《人类传播研究》、《个人关系》、《传播学期刊》和《传播学研究》在所研究的年份排名前四。我们对19种传播学期刊的度内度（即对期刊的引用）和外度（即源自期刊的引用）数据进行了网络分析，其目的在于研究传播学领域期刊间的引用模式。程度中心趋势数据表明：《传播手册》、《传播研究》、《人类传播研究》和《传播学期刊》（按英文字母排列）是该领域四种最中心的期刊。

2002년부터 2005년 사이 커뮤니케이션 학술지들의 계량서지학 분석

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요약

학술지 영향력 순위는 종종 저자, 승진/채용 위원회, 그리고 학술연구비 검토팀들에 의해 학문적 질을 가름하기 위한 대안으로 사용된다. 커뮤니케이션 분야의 SSCI로부터의 학술지 인용 자료 (2002-2005)가 학술지들의 순위를 매기기 위하여 사용되었다. 학술지 관련성 연산방식이 커뮤니케이션에서 19개의 의미론적으로 연계되어 있는 학술지들을 조사하기 위해 사용되었다. 평균(mean) 학술지 영향력 지표는 0.77 ($SD = 0.28$) 이었다.

Human Communication Research, *Personal Relationships*, *Journal of Communication*, 그리고 *Communication Research* 이 해당 연구년도의 상위 4개의 논문이었다. 네트워크분석이 2003년부터 2005년까지 19개 커뮤니케이션 학술지에 대한 내적 정도 (예를들어, 학술지들에 대한 인용들) 그리고 외부 정도 (학술지들로부터 인용들)을 조사하기 위해 실시되었다. 네트워크분석의 목적은 커뮤니케이션 영역에서 학술지들 사이의 인용형태를 조사하기 위한 것이다. 정도 중심도를 사용한 자료에 따르면 *Communication Monographs*, *Communication Research*, *Human Communication Research*, 그리고 *Journal of Communication* (알파벳 순서)이 커뮤니케이션 영역에서 가장 중심적 학술지들 이라는 것을 보여주고 있다.