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Pitfalls of Using Citation Indices for Making Academic Accounting Promotion, Tenure, Teaching Load, and Merit Pay Decisions

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ABSTRACT: With the advent of computerized data searches, the number of accounting programs that use citation analysis to measure faculty members' research productivity has increased—often believing that this methodology offers relevant or reliable data for tenure, promotion, teaching load, and merit pay decisions. But such "objective" bases often ignore such factors as which journals to count, the effect of co-authorships, and article quality. Reliance on such citations can also cause "uneven playing fields" within the accounting discipline as well as among accounting and other areas or departments within schools of business.

After reviewing the relevant literature, we present the results of a survey asking accomplished authors about the factors that make them more or less likely to cite an article. Since the process of counting citations focuses on *quantity* issues (as all citations "count" equally regardless of the citation's importance to the research article and the reasons for making the citation), we examine some *quality* issues that lead to authors citing others' research findings. The survey results indicate that, while citations often are based on the quality of the cited work, other factors less indicative of quality, such as authorship by a friend or colleague and publication in a U.S. journal, help to determine which relevant works are cited or not cited. We also suggest other measures to assess research quality to supplement or replace citation counts.

Keywords: research productivity; citation indices; survey research.

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BACKGROUND AND MOTIVATION

Many university accounting departments use citation counts as an important, but not exclusive, basis for promotion and tenure (hereafter, P&T) and other resource allocation decisions.[1] Our study is motivated by a concern that such counts could produce unintended consequences, and that this process can lead to some "game playing" and can result in "uneven playing fields." For example, some programs focus on articles published in certain indices, using the frequency with which these indices refer to or "cite" the author's published works; however, the correlation between citation frequency and quality is unclear (Altbach 2006). Many citations also could reflect a heavily researched, and even "over-researched," area, while lower cites occur in important emerging areas. A work addressing a salient topic might also be cited often for weak research quality, while a high-quality article analyzing a less-salient issue may not get cited.

The citation process can also cause "uneven playing fields" within the accounting discipline, as when, for example, the SSCI recognizes *Auditing: A Journal of Practice & Theory*, but not *The Journal of the American Taxation Association*, both of which have similar editorial policies and constituencies and, most likely, similar stature among accounting academics. As also shown later in this study, other disciplines have substantially more SSCI listings than accounting, placing it at a competitive disadvantage for receiving resources among other business school departments, and when all business disciplines are combined within a single department. In addition, our survey of accomplished accounting academics indicates that authors include or omit citations for various reasons not related to quality, thus providing empirical evidence that citation counts entail various potential pitfalls.

Evolution of Bibliographic Metrics

Garfield (1955) proposed and later (Garfield 1963) developed the bibliometric method of tracing the "history" of research ideas and, otherwise, measuring the progress and impact of scientific works. Developed by the hard sciences, the bibliographic method expanded to the social sciences and humanities. Bibliometrics can help analyze how some ideas become accepted and others discarded, while identifying the most widely cited ideas and individuals. Garfield's system was developed mainly to trace the communication of scientific discoveries and innovations, rather than as a means to evaluate individual faculty members, scientists, entire universities, programs, or academic systems. Many researchers use the Social Science and other citation indices (SSCI and SCI) to determine the frequency of citations for specific papers and, when aggregated, for individual authors. While new tools are emerging, such as Google Scholar, their recency leaves most existing research focusing almost exclusively on the SSCI or SCI.

Exhibit 1 outlines some problems in using indices for evaluation rather than tracing, and Exhibit 2 highlights the top six issues surrounding citations analysis. The left-hand columns of Exhibits 1 and 2 identify issues regarding citations analysis, and also form the bases of corresponding questions for our survey instrument (Exhibit 3). However, not all items in Exhibit 1 correspond to a survey question or to a citation issue investigated in this study.

Gamble and O'Doherty (1985b, 39) note that "searching" the literature (e.g., using the SSCI) must "be experienced to be fully appreciated." The SSCI provides a "window" to the literature unavailable from other indices or abstracts, while extending and complementing—but not supplanting—other bibliographic tools.

[1] We recently inquired of colleagues at 38 institutions nationwide of their programs' use of citation studies for P&T and other resource allocation purposes. While 17.6 percent of the respondents require its use for P&T decisions, 26.4 percent encourage submitting such counts to "enhance" candidates' P&T applications, or plan to give the process greater future use. This, plus anecdotal evidence, indicates a movement toward using citation counts for such decisions—a measure that many of our colleagues in the physical and social sciences have long used.

EXHIBIT 1

Further Limitations and Biases of Citation Analysis

Limitation and Bias[a]	Explanation and Example	Sources of Information
Negative references III (5)	Not all citations are complementary, e.g., citing authors who made major errors, which many later authors later condemn; e.g., a clever hoax paper that many authors later debunk (Croom 1970). Moravcsik and Murugesan (1975) investigated relative size of the negative citation problem, finding about 10 percent of all citations were negative.	Brown and Gardner (1985b)
Bias in favor of popular authors III (1)	Popular authors enjoy a "halo effect," attracting citations by authors who seek to legitimatize their papers (May 1967). Inhaber and Przednowek (1976) compared citation patterns of scientists before/after earning Nobel Prizes, finding halo effects often varied by discipline. Citation rates were unchanged for physicists, grew for medical scientists, and fell for chemists.	Brown and Gardner (1985b)
Self-citations III (4)	Authors tend to cite themselves, their friends, or mentors more often than they cite other authors. Citation researchers have argued that these types of citations are often justifiable (Margolis 1967).	Brown and Gardner (1985b)
Certain articles and areas tend to be heavily cited III (1) and (14)	Review articles tend to be heavily cited (Woodward and Henson 1976). Areas using applied methods and established fields with many researchers are more likely to be cited (Margolis 1967).	Brown and Gardner (1985b)
"Hot topic" phenomenon III (14)	Current interest topics may generate many citations for a short time period, but are ignored later; e.g., six of the ten most influential 1979−1982 papers focused on a passing *hot topic*: oil and gas (Brown 2005).	Brown and Gardner (1985b)
Ignore paper's age III (6)	The probability of a citation decreases with a paper's age (Price 1963).	Brown and Gardner (1985b)
Only measure the utility or impact of cited works, not the nature of the work VII	Citation counts claim to evaluate individuals and measure impact of scientific works objectively, but ignore the nature of the work or reasons for any utility or impact. Only content analyses and peer reviews of the works deal well with such factors. Citation analyses should not replace such judgments, but make them more objective and astute (Garfield 1979).	Brown and Gardner (1985b)

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Number of years used in calculations III (6)	Many impact factors use citations only for the two years after publication date. Gupta (1997) notes that most *Interfaces* articles are cited within the first three years of publication, yet impact factors measure data for only the first two years.	Donohue and Fox, (2000)
One heavily cited article effect III (14)	Nord and Nord (1995) show that a single heavily cited article could artificially increase a journal's impact factor.	Nord and Nord (1995)
Bias to include or exclude data bases III (15) and (16)	Deciding which journals to include in the citation database is a subjective bias. SSCI and others cover only a few accounting journals.	Donohue and Fox (2000)
Bias on the age of citations III (6)	The age of citations to analyzed affects ranking results, but methodology to select optimal number of years to include in this analysis does not exist.	Baumgartner and Pieters (2003)
Bias on same journal citation III (7)	Journals often "require" citing other articles in that journal; e.g., *JAR* articles cite *JAR* more than other major journals (Williams and Rodgers 1995).	Redman et al. (1999)
Bias on older journals	"Older" journals have larger pools of articles available for citation, which raises the chances of citations and biasing results for such journals.	Redman et al. (1999)
Publish varying numbers of articles	Journals publishing a greater number of articles each year have increased likelihood of citations due to the larger pool of citable articles.	Redman et al. (1999)
Overall validity of citations measuring influence IV, V, VI, VII	Citations are simply a subset of the total population of influences (i.e., ignore articles' quality; Brooks 1986; M&M; Liu 1993; Baird and Oppenheim 1994).	Beattie and Goodacre (2006)
Functions of citations vary IV, V, VI, VII	Citations use/apply, affirm/support, review, mention perfunctory, and negate. References reflect different influence of cited works. Perfunctory references (Kotler 1972) may not really measure influence. Authors may cite, but not use, articles (Wertsch 1995); or cite them for strategic reasons, e.g., authors of the cited articles are potential article reviewers (Tellis et al. 1999). The perfunctory citations were found to account for 20 percent to 60 percent of references.	Baumgartner and Pieters (2003)

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Inconsistent rankings III (6)	Rankings depend on particular measures; e.g., cite metric are biased in favor of older papers, while cites per year would favor newer articles.	Brown (1996)
SSCI "all other" citations problems	SSCI does not identify all journal citations, citing some of them as "all other." Some impact-adjusted journal rankings ignore cited journals' citations that fall in the "all other" category.	David (1988)
Citing multiple-authored articles	Citation studies use three methods to give credit to multiple authorship: straight counts—count only first author; count all authors as if each one wrote sole-authored works; and divide credit among authors—which derive different results.	M&M
Formal influence not cited IV, V, VI, VII	Most authors do not cite most of their influences, and none cited all influences. Some influences are evident in the papers' text, but not found in the bibliographies. Text-bibliography discrepancies ranged from not citing basic assumptions and background knowledge to citing non-key works. Covering papers' information needed 719 references, but only 216 references were made. Coverage of key works averaged 30 percent; maximum: 64 percent.	M&M
Biased citing VI	Biased citing includes obliteration, halo effect, in-house citations, Matthew effect, etc. Authors found many incorrect citings, even with attributing secondary sources, plus no correlation between the frequency of use and frequency of citation. They also found secondary sources playing a major role. Of 55 citations, 21(38 percent) were to secondary sources; i.e., over one-third of the credit given was taken from the discoverer and allotted to someone who had nothing to do with the discovery. The authors traced 13 facts through 23 papers and found that although the facts were used 93 times, only 37 percent were correctly cited.	M&M

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Informal influences not cited	Measures of influence, impact, or communication are limited to citable items, such as papers and books, ignoring many non-published trials and errors that are known to insiders, plus the endless shop discussions among scientists and technicians about data, methods, equipment, and the meaning of others' research. Citation analysis has not attempted to include informal influences in their database nor do they discuss this omission.	M&M
Different types of citation III (5)	Moravcsik and Murugesan's (1975) and Chubin and Moitra's (1975) content analyzed the context of citations, constructed citation typologies. Gilbert (1977) criticized such findings: Since authors' intentions are not normally available to the content analyst, we cannot properly resolve classification problems, and other difficulties arise when analysts have only a superficial knowledge of contexts of examined papers. Negative influences are also cited improperly because authors simply avoid mentioning work that they can only cite critically.	M&M

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Variation in citation rate with type of publication, nationality, time period, and size and type of specialty III (2), (8), (9), (12), (13), (15), (16), (17), (18)	Different disciplines, specialties, and countries have different citation rates. Lange (1985) found preferred language of the cited publication and absolute citation frequencies were dependent on publications' discipline and country. Bates (1979) studied citation rate as a function of the size of the pool of available citers, finding that top-cited authors are cited at only about one-twentieth the rate of top scientists in Nobel fields. Line (1979) notes that SCI focuses on journals and usually ignores (key) social sciences monographs. Reference analysis of journals and monographs find some large differences in date distributions, forms of material cited, subject/ self-citation and citations beyond the social sciences, and country of cited publication. Many individuals show that methods papers often receive disproportionally more citations than theoretical or empirical ones. Other reported variations include differences in age of cited literature, how quickly a paper will be cited, how long the citation rate will take to peak, and how long the paper will continue to be cited.	M&M
Synonyms; problem to find individuals	J. Smith and J. H. Smith, which refer to the same person, will be entered in different parts of the SCI. To make complete counts of all possible names, locate and study all such potential variations.	M&M; Doyle et al.(1996)
Homonyms	The number of entries in the SCI is large, and many individuals have the same name. Such individuals must be differentiated to derive valid scores.	M&M
Clerical errors	The SCI file derives directly from bibliographies and thus is no more accurate than the bibliographies. Author mistakes and transcription errors from the original bibliography to the file can cause misspelled author's name, article, or book or journal title, and incorrect page number. Boyce and Banning (1979) reviewed the few studies of this problem, revealing a wide range of errors from the original source.	M&M

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Coverage of literature	Designed to help literature search, SCI and SSCI often instead help citation analysis. Selection process reflects selectors' interests and scientific philosophy. SCI/SSCI cover about 10 percent of scientific literature, and over-represent English-language journals and Western science; and coverage varies among disciplines.	M&M
Bias because of availability III (8) and (12)	The language, editorial policies, marketing muscle of the publishers and so on, will affect availability, and therefore introduce bias.	Doyle et al.(1996)
Inconsistency results because of different methods	Different methods of using citation indices could derive different results. Porter (1978) finds inconsistencies when comparing two psychology-focused citation measures drawn up by Garfield (1979) and Koulack and Keselman (1975).	Jones et al. (1996); Brinn et al. (1996)
Technical problems with citation indices	Authors often cite network articles, friends, potential referees or editors; e.g., Beattie and Ryan (1991) note high level of citations to *AOS* and *JAE* editors and suggest that this is in part due to authors' publication maximization strategy. Also, much that is read is not cited and articles that are cited may not be read.	Jones et al. (1996); Brinn et al. (1996)
Problem relates to those journals included in the citation network III (8) and (12)	European business journals often do not appear in premier U.S. journal rankings (Easton and Easton 2003). Doyle et al. (1996) note that U.K. business faculty at "excellent" business schools seldom publish in premier SSCI-cited journals, often since they themselves are not cited. Richardson and Williams (1990) add that in 1976, SSCI included one accounting journal; by 1989, it reached seven. Brown and Gardner note that the SSCI often ignores journal and article impact; e.g., in 1985, SSCI excluded *JAE* and *AOS*. Jones et al. (1996) and Brinn et al. (1996) note that excluding reputable and well-respected journals still remains a problem in accounting and other subdisciplines. Brinn et al. (1996) found only nine of 44 accounting and finance refereed journals listed in their study.	Jones et al. (1996); Brinn et al. (1996)

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Some useful journals are not cited frequently III (8), (12), (15), (16), (18)	Scientists read some journals similar to why people read newspapers—to keep up with what's going on generally—and they may rarely cite such journals in their published work; e.g., a popular review journal such as *Scientific American* or a news-oriented journal such as *New Scientist* may rank relatively low on a times-cited list, but often they are read and used more than highly cited journals. It merely means that they are written and read primarily for purposes other than communicating original research findings.	Garfield (1972)
Citation frequency is a function of many variables besides scientific merit III (all), IV, V, VI, VII	Some variables include author's reputation, subject-matter controversy, circulation, availability and extent of library holdings, reprint dissemination, secondary services coverage, priority in allocation of research funds, and others. It's very difficult to clarify the relations among such variables and their relative impact on citation frequency.	Garfield (1972)
Citations should not compare individuals across disciplines	Citations should not compare individuals across disciplines, as these rates rely on such discipline-specific factors as the size of the core literature, degree of integration, and age (Garfield 1979).	Brown and Gardner (1985a)
Citations often omit much of an article's impact or contribution	Practitioner/pedagogy-focused articles may significantly influence policy, practice, approaches to teaching, or educational materials with no explicit published cited works. In the current environment of concern over accounting governance, an article's influence on policy makers is unlikely to be reflected in other researchers' citations.	Chow et al. (2007)
Bias because of different databases	Rank order of journals established by citation analysis often depends on the database used; e.g., the rate at which articles in a specific journal appear to be cited depends on the sample of source material upon which the citation count is based.	Over (1978)

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Time span bias III (6) and (17)	Time span measures affect journal rank orderings. Garfield's 1974 citation rate measures of 1972−1973 articles found that such works will more likely be cited in journals with short rather than long publication lags, and by those knowing of articles prior to publication through invisible college networks.	Over (1978)
Limitation of measure average citations per unit time	Average number of citations per unit time can ignore variability in citation rates for articles within or between journals. Of journals with same impact factor, which should rate higher: the one containing the most heavily cited article, the one with the most articles receiving citations, or the one with the least variability in citation rate across articles?	Over (1978)
Internal citation versus external citation III (7)	Carefully compare internal versus external citations; e.g., 212 of 342 citations to articles published in Journal A came from articles appearing in this same journal, while 86 of 362 comparable citations came from Journal B. Both journals have similar impact values, but articles published in Journal B had external influence, while those appearing in Journal A exerted influence primarily over authors who would later publish in the same journal. Which journal has more impact?	Over (1978)
Influence of editors' instruction	Editors' instructions may influence choosing journal titles and truncate reference lists due to extra publication fees.	Todorow and Glanzel (1988)
Popularity of the specialty	Article number of citations depends on specialty's popularity. Larger specialties have more participants and have more literature to draw upon.	Cole (1974)
Omit references to monographs and non-core journals, improperly favoring or conveniently examing a few core journals III (13)	References to social science monographs differ (largely) from journal references. Citation analyses often ignore (strong) references in monographs and non-core journals, improperly favoring or conveniently examining a few core journals.	Line (1979)

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Citation motives vary III (all), IV, V, VI, VII	Citation analysis ignores underlying purposes for author citation. Garfield lists 15 possible reasons for citations. Much arbitrariness arises in how authors select references for their bibliographies.	Liu (1993)
Gatekeepers' influence on the citation pattern III (1), (3), (7)	Gatekeepers (i.e., editors and editorial boards) often exert influence on citation patterns. Sievert and Haughawout (1989) suggest that changes in editorship may result in changed citation patterns.	Liu (1993)
"Copy" references from reference lists in other articles VI	Specific errors in citing a particular target article often occur in more than one citing publication; thus, authors compiling reference lists may copy references from reference lists in other articles without consulting original sources.	Liu (1993)
Time lags of influence III (6)	Scientist's major new ideas are seldom recognized immediately (if not ignored or resisted), especially if they change basic scientific paradigms (Barber 1962).	Kuhn (1962); Cole and Cole (1971)
Treating all citations as equal units	Giving all citations equal weight assesses wrongly the impact of the research. A paper widely cited by first-rank scientists should not equal one cited predominantly by minor-ranked scientists.	Cole and Cole (1971)
Quantity and quality of research output	The number of citations a scientist receives could depend upon research quantity. A scientist publishing many papers that receives only a few citations for each may accumulate as many citations as one who publishes only a few heavily cited papers. Quantity of output may be more heavily rewarded in sociology than in physics.	Cole and Cole (1971)
Contemporaneity III (6)	Papers in physics have less than a five-year half-life; i.e., over half of citations appearing in one year are to works published in the five prior years. Half-lives of sociological papers are only slightly longer. Two papers of original equal quality may have a different number of citations in the 1961 SCI if one paper was published in 1941 and the other in 1959.	Cole and Cole (1971)

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Integration of basic ideas	Papers often use widespread basic ideas without explicit citation to their well-known source. Integration of a discovery into the body of scientific knowledge may lead to errors in assessing the quality of that discovery through citations.	Cole and Cole (1971)
Citations to collaborative papers	Since many collaborative papers list authors alphabetically, co-authors whose names start with letters late in the alphabet would be misclassified if we counted only citations appearing after their name in the SCI.	Cole and Cole (1971)
Missing coverage of new journals in SCI and SSCI	New journals sometimes impose particularly difficult coverage decisions. SCI and SSCI should compile their counts as soon as possible, but since 2–3 years often elapse for the citation rate of a published item to peak, citation counts are not usually relevant to the evaluating new journals.	Garfield (1979)
Weakness of the accuracy of citation counts	Weaknesses of accuracy relate to mechanics of compiling the data and data's intrinsic characteristics, including that SCI and SSCI lists cite items only by the first author; and they may fail to distinguish those with same last names; e.g., R.A. Fisher is a well-known theoretical statistician and a lesser-known physicist.	Garfield (1979)
Citation measure too much to be valid	Citation counts do not really measure the merit of scientific works, but their utilities.	Garfield (1979)
Ignore premature discoveries	The premature work that is highly significant, but so far ahead of the field, always goes unnoticed; so citation counts cannot identify them.	Garfield (1979)
Phenomenon of obliteration	Obliteration occurs when a scientist's work becomes so generic to the field, so integrated into its body of knowledge, that people frequently neglect to cite it; e.g., Lederberg's (1947) work on bacteria's sexual reproduction in the late 1940s–early 1950s so quickly became a key part of the field of genetics that it is now cited as much lower than its importance would lead one to expect.	Garfield (1979)
Compare scientists in different fields	Citation counts should not compare scientists in different fields because citation potential can vary significantly from one field to another.	Garfield (1979)

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EXHIBIT 1 (continued)

Limitation and Bias[a]	Explanation and Example	Sources of Information
Too ambiguous to be trusted	One ambiguity is that while all Nobel winners have high citation rates, others not winning such peer recognition have equally high rates. Indices also fail to distinguish between a scientist cited 15 times a year for two years and one who is cited six times a year for five years. Crosbie and Heckel (1976) add that citation measures of departmental performance are extremely sensitive to the covered time periods and thus easily produce ambiguous results.	Garfield (1979)
Time lag between publication and citation III (6)	An unavoidable time lag exists between an article's publication and its subsequent citing by the literature. This biases the citation frequencies against the recently published articles.	Smith et al. (2007)

[a] References correspond to the survey (Exhibit 3); e.g., III (1) corresponds to Survey Part III, Question 1.

[b] The left-hand column identifies issues regarding citations analysis and, for each issue identified, indicates the corresponding question from our survey instrument (Exhibit 3). But not all items in Exhibit 1 correspond to a survey question or to a citation issue investigated in this study.

EXHIBIT 2

The Authors Unanimously Agree These Are the Top Six Limitations and Biases of Citation Analysis

Limitation and Bias[a]	Explanation and Example	Sources of Information
Bias in favor of popular authors III (1)	Popular authors enjoy a "halo effect," attracting citations by authors who seek to legitimatize their papers (May 1967). Inhaber and Przednowek (1976) compared citation patterns of scientists before/after earning Nobel Prizes, finding halo effects often varied by discipline. Citation rates were unchanged for physicists, grew for medical scientists, and fell for chemists.	Brown and Gardner (1985b)
Only the measure of the utility or impact of cited works, not the nature of the work VII	Citation counts claim to evaluate individuals and measure impact of scientific works objectively, but ignore the nature of the work or reasons for any utility or impact. Only content analyses and peer reviews of the works deal well with such factors. Citation analyses should not replace such judgments, but make them more objective and astute (Garfield 1979).	Brown and Gardner (1985b)
Bias on same journal citation III (7)	Journals often "require" citing other articles in that journal; e.g., *JAR* articles cite *JAR* more than other major journals (Williams and Rodgers 1995).	Redman et al. (1999)
Publish varying numbers of articles	Journals publishing a greater number of articles each year have increased likelihood of citations due to the larger pool of citable articles.	Redman et al. (1999)
"Hot topic" phenomenon III (14)	Current interest topics may generate many citations for a short time period, but are ignored later; e.g., six of the ten most influential 1979−1982 papers focused on a passing *hot topic*: oil and gas (Brown 2005).	Brown and Gardner (1985b)
Certain articles and areas tend to be heavily cited III (1) and (14)	Review articles tend to be heavily cited (Woodward and Henson 1976). Areas using applied methods and established fields with many researchers are more likely to be cited (Margolis 1967).	Brown and Gardner (1985b)

[a] References correspond to the survey (Exhibit 3); e.g., III (1) corresponds to Survey Part III, Question 1.

EXHIBIT 3

Survey of Accomplished Accounting Authors

The purpose of this survey is to understand further authors' citation-related decisions.

(I.) Please check your [one] *primary* area in which you have published:

_____ Accounting Education
_____ Auditing
_____ Behavioral
_____ Capital Markets
_____ Taxation
_____ Other (Please indicate:_____)
_____ Information Systems
_____ Governmental/Not-for-Profit (NFP)
_____ Financial Accounting/Financial Economics
_____ Management/Cost Accounting
_____ International

(II.) Please consider the journal-ranking categories below that are based on prior journal-ranking studies.

A+: *Journal of Accounting Research*; *The Accounting Review*; *Journal of Accounting and Economics*; *Journal of Finance*; *Journal of Financial Economics*; *Management Science*; and *MIS Quarterly*.

A: *Accounting, Organizations and Society*; *Contemporary Accounting Research*; *Decision Science*; *Review of Accounting Studies*; *Journal of Accounting Auditing and Finance*; *The Journal of the American Taxation Association*; *Auditing: A Journal of Practice & Theory*; *Journal of Management Accounting Research*; *Journal of Business*; and *Journal of Financial and Quantitative Analysis*.

A/A−: *Journal of Accounting and Public Policy*; *Journal of Business Finance and Accounting*; and *Journal of Taxation*; *National Tax Journal.*

A−: *Abacus*; *Accounting and Business Research*; *Behavioral Research in Accounting*; and *Journal of Accounting Literature*.

A−/B+: *Accounting, Auditing and Accountability Journal*; *Accounting Horizons*; *Financial Analysts Journal*; *Issues in Accounting Education*; and *Advances in Accounting*.

B+: *Journal of Accountancy*; *International Journal of Accounting*; *Journal of Accounting Education*; *Advances in International Accounting*; *Advances in Management Accounting*; *Advances in Taxation*; *Critical Perspectives on Accounting*; *The Journal of Information Systems*; *Research in Accounting Ethics*; *Research in Accounting Regulation*; and *Research in Governmental and Nonprofit Accounting.*

B+/B: *Accounting and Finance*; *The CPA Journal*; and *Strategic Finance*.

We recognize that you may not fully agree with these ranking categories. However, please indulge us and use them as the point of reference so that we can better aggregate responses from various scholars.

Over the past five years, how many accounting articles have you authored or co-authored in each of the above journal categories? (If you have published in journals outside of those in the table, please use your judgment to place them into one of the categories.)

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EXHIBIT 3 (continued)

The purpose of this survey is to understand further authors' citation-related decisions.

Category A+ _____
Category A/A−_____
Category A−/B+ _____
Category B+/B _____
Category A _____
Category A−_____
Category B+ _____

Please consider ONLY the highest category in which you have published over the past five years (as reflected in your preceding answer); use those articles as the basis to answer the following questions.

(III.) In writing these articles for submission, to what extent did each of the following attributes of a work affect your decision to cite or not cite it in your own work(s)? [Please CIRCLE the number corresponding to your answer to each question.] (We recognize that some questions may touch sensitive matters, and will treat your anonymous responses with respect and complete confidentiality.)

Greatly reduced its chances of being cited			Had no effect on whether it was cited or not cited			Greatly increased its chances of being cited	No opinion
−3	−2	−1	0	1	2	3	X
(1) It was written by a well-known author.							
−3	−2	−1	0	1	2	3	X
(2) It was published in a journal that you perceived to have equal or higher standing than the one you were submitting to.							
−3	−2	−1	0	1	2	3	X
(3) Its author was on the editorial board of the journal you were submitting to.							
−3	−2	−1	0	1	2	3	X
(4) You had authored or co-authored it.							
−3	−2	−1	0	1	2	3	X
(5) Your citation of it would be negative or highly critical.							
−3	−2	−1	0	1	2	3	X
(6) It had a recent publication date.							
−3	−2	−1	0	1	2	3	X

(continued on next page)

EXHIBIT 3 (continued)

The purpose of this survey is to understand further authors' citation-related decisions.

(7) It was published in the same journal that you were submitting to.
−3 −2 −1 0 1 2 3 X

(8) It was published in a non-U.S., English language journal.
−3 −2 −1 0 1 2 3 X

(9) It was published in a journal with a large circulation.
−3 −2 −1 0 1 2 3 X

(10) It was authored or co-authored by your friends or colleagues.
−3 −2 −1 0 1 2 3 X

(11) It was a review article.
−3 −2 −1 0 1 2 3 X

(12) It was published in a foreign, non-English language journal.
−3 −2 −1 0 1 2 3 X

(13) It was in a form other than an article (e.g., book or monograph).
−3 −2 −1 0 1 2 3 X

(14) It has been heavily cited by others.
−3 −2 −1 0 1 2 3 X

(15) It was in a practitioners' or pedagogical journal.
−3 −2 −1 0 1 2 3 X

(16) It was published in a non-highly ranked journal.
−3 −2 −1 0 1 2 3 X

(17) It was a working paper.
−3 −2 −1 0 1 2 3 X

(18) It was published in a nonaccounting medium.
−3 −2 −1 0 1 2 3 X

(continued on next page)

EXHIBIT 3 (continued)

The purpose of this survey is to understand further authors' citation-related decisions.

(IV.) Some people hold that authors should only cite works that are truly relevant to a study, and that the above-listed factors should play no part in citation choices. Using this view as the reference point, what percentage of your citations would you say were included primarily due to the (extraneous) factors listed in (III) above? Please enter a number in the 0%−100% range. 0% means that none of your citations were of this nature, and 100% means that all of your citations were of this nature: ____%.

(V.) Authors conducting studies may be influenced by some works that improve their general background and understanding, and some that bear directly on the topic. If the total number of *each* of these *two* types of work were assigned an index value of 100%, what percentages of each type of work did you include in your citations? For *each* type, please enter a number in the 0%−100% range. 0% means that you cited none of this type of work, and 100% means that you cited all of this type of work.

Works that improved your general background and understanding: _____%.

Works bearing directly on the topic of the article: _____%.

(VI.) It has been suggested that authors sometimes cited works that they had not read personally, but were cited in sources that they had consulted in conducting their own research. Please estimate what proportion of your citations was of this nature, by entering a number in the 0%−100% range. 0% means that none of your citations was of this nature, and 100% means that all of your citations were of this nature: _____%.

(VII.) Even among cited works that are relevant to a study, there may be wide variation in their centrality to the study. Some cited works may be essential to the study, while others may be perfunctory and only included to beef up the number of citations. If we adopt this perspective, what percentage of your citations would you consider to be perfunctory in nature? Please enter a number in the 0%−100% range. 0% means that none of your citations were of this nature, and 100% means that all of your citations were of this nature: _____%.

Thanks for completing this questionnaire, and for mailing it in the attached, stamped envelope.

Please provide any comments that you wish to add in the space below.

Citation methodology morphed from tracing the "history" of a research idea to measuring a faculty member's or a program's research productivity—often without anyone reading or extending the underlying works. Despite cautions about using citations to measure quality, Garfield and Sher (1963) were among the first to measure scientists' citation output to help segregate those producing high-quality work from others.

Cole (1974, 33), from sociology, stresses that counting citations is an inadequate basis for individual P&T decisions, because sociologists use citation analysis to study the *community* of scientists, not individual scientists *per se*. Diamond (1986, 312) adds that citations in math, physics, chemistry, economics, and other fields positively and significantly affect faculty members' earnings over nearly all observed ranges of citation levels. However, many researchers produce works that do not fit into this citation system. For example, cutting-edge research often takes many years to gain mainstream acceptance and may not be cited extensively until many years following publication.

Cole (2000, 292) adds that while the counts are useful for statistical aggregates, academicians should not use them to make individual comparisons across fields and specialties. He notes the inappropriateness, for example, of concluding that a scientist with 15 citations has had a greater impact on the field than one whose work had received ten citations.

Some Basic Problems in Using Citation Analysis in the Accounting Literature

Institutions using citation counts as a key factor for P&T and resource allocation purposes should recognize that this process does not implicitly assume that higher-quality articles are cited more often than those of lower quality. Citation counts rely on a frequency analysis of cited articles in a predefined set of published studies. Sriram and Gopalakrishnan (1994) used citation analysis to rank the top 34 doctoral programs and their most prolific graduates. Seetharaman and Islam (1995) used this technique to rank the quality of 32 accounting journals, considering factors such as a journal's age and circulation, and citations of articles appearing in both premier accounting journals and non-accounting journals. They also compared their results from 1985–1987 and 1988–1989 to ascertain "movements" in these rankings over time.

Citation frequency is presumed to have the valued attribute of objectivity—either an article is cited or it is not. But citation frequency can be influenced by the author's reputation; the contentiousness of the subject matter; and the journal's circulation, coverage, and timeliness. Citation analysis often works from limited databases due to the extensive analysis of articles, footnotes, or references required. McRae (1974) first used citation analysis on accounting publications by measuring the frequency of citations of only 17 articles. Gamble and O'Doherty (1985a, 1985b) and Beattie and Ryan (1991) also were limited in scope by the difficulty in developing databases in terms of links with other disciplines and with official bodies. Further, the efficacy of citation analysis depends greatly on the representativeness of the publications used to conduct the frequency analysis of cited works.

Focus on the SSCI Index

Begley (2006) notes that scientists and publishers are concerned with the overemphasis placed on impact factors (i.e., a measure of how often certain journals in the SCI and SSCI indices appear in or make reference to other journals in this database), as it skews the direction of research; causes researchers to focus on popular, mainstream methods; and eschews less-popular approaches. Moreover, impact factors measure only how often other scientists cite a paper rather than if the results are useful. MacRoberts and MacRoberts (1989; hereafter M&M) add that SCI and SSCI selection processes reflect the selectors' interests and scientific philosophies, cover only about 10 percent of scientific literature, and over-represent English-language journals and Western science.

Chow et al. (2007) note that while the SSCI is the most widely used source of citation counts, covering over 1,700 social science journals worldwide, it "counted" only nine accounting journals (see Table 1).[2] Jones et al. (1996) and Swanson (2004) add that this number is too limited to make valid comparisons between accounting and other disciplines. Swanson (2004) also stresses that accounting is at a significant disadvantage, as premier finance, marketing, and management journals publish more articles per year than do accounting journals (i.e., considering accounting's four premier journals of *JAE*, *JAR*, *TAR*, and *CAR*), for each discipline's number of doctorally qualified faculty members—while containing more faculty positions. Swanson et al. (2007) notes that accounting faculty publish the least number of articles in major journals, compared to other business disciplines; management, for example, has twice as many successfully published faculty members than accounting, but the disciplines have a similar number of doctoral faculty members.

The SSCI database (Thomson Reuters 2009) lists 14 and 46 journals in accounting and finance (from the Business/Finance category), respectively; 102 management journals; 73 marketing journals (from the Business category); 215 economics journals; and 109 business law journals (from the Law category). This large variance of SSCI journals per accounting faculty, plus the fewer number of "slots" per accounting faculty member in such premier journals can penalize accounting faculty members competing for P&T and other resources with members of other business school departments. Swanson (2004, 229) notes that "accounting has a statistically significant lower proportion of AACSB doctoral faculty publishing a major article than the other three disciplines [finance, marketing, and management]. The proportion of doctoral faculty in the other three disciplines publishing a major article is 1.8 times greater than in accounting." These factors can lead to accounting receiving smaller resources that other business disciplines.

Some Inherent Problems in Using SSCI or Other Indices

Many studies find that factors other than article quality impact citation frequencies. Gamble and O'Doherty (1985b, 32) note that citations associate directly with the rate of growth of the subject area or subfield of research. High citation counts often depend, to a greater extent, on how many researchers enter a discipline's particular subfield, than on how many are already in the

TABLE 1

Accounting Journals Included in SSCI

Abacus
Accounting, Organizations and Society (AOS)
Auditing: A Journal of Practice & Theory (AJPT)
Contemporary Accounting Research (CAR)
Journal of Accounting and Economics (JAE)
Journal of Accounting and Public Policy (JAPP)
Journal of Accounting Research (JAR)
National Tax Journal (NTJ)
The Accounting Review (TAR)

[2] Since the time of this study, the SSCI added five journals (*Accounting and Business Research* [*ABR*], *Accounting Horizons* [*AH*], *European Accounting Review* [*EAR*], *Journal of Business Finance & Accounting* [*JBFA*], *Management Accounting Research* [*MAR*], and *Review of Accounting Studies* [*RAS*], but deleted *Abacus*. Table 1 does not reflect the addition or deletion of these journals.

subfield. Menard (1971, 21) adds that a paper in a rapidly doubling subfield is five times more likely to be cited than a paper in a slowly expanding field. Gamble and O'Doherty (1985b, 31) conclude that while highly cited researchers (e.g., Nobel Prize winners) often present seminal ideas or new research methods, even supporters of these ideas can be relatively highly cited, if they choose their research area wisely. Thus, citation counts cannot be used indiscriminately to assess the quality of academic work, particularly in comparing researchers in such different subfields as accounting and other business and non-business disciplines.

Garfield (1979) warns not to compare citation rates for individuals across disciplines, as they rely on such discipline-specific factors as sizes of the core literature, degree of integration, and its age. Cole (1974) adds that an article's number of citations varies with the specialty's popularity. Larger specialties have more participants and have more literature to draw upon.

Large Variance in the Number of Journals in a Discipline That Indices Count

Richardson and Williams (1990) note that in 1976, SSCI listed no accounting journals; by 1989, it reached seven. Brown and Gardner (1985a, 1985b) add that the SSCI is not well suited to assess accounting journals' and articles' impact, as in 1985 it excluded *JAE* and *AOS*. Jones et al. (1996) add that excluding reputable, well-respected journals remains a problem for the accounting discipline. Garfield (1972) stresses that scientists read some journals as some people read newspapers—to keep up with what's going on generally—but they rarely cite them in their own works. A popular review journal such as *Scientific American* or a news-oriented journal such as *New Scientist* may rank relatively low on a times-cited list, but they are read and used more often than highly cited ones. Cole and Cole (1971) add that significant new scientific ideas are seldom recognized immediately, especially those that change basic scientific paradigms, and are often resisted or ignored (Barber 1962). For example, less consensus probably exists in sociology than in physics on the criteria to evaluate research, thus producing major variances. Such a lack of consensus also exists in accounting and other business areas.

Other Problems with Citation Analyses

Researchers tend to cite review articles (Brown and Gardner 1985b; Woodward and Henson 1976) much more frequently than other types of works (Margolis 1967). Garfield (1979) adds that new journals can impose difficult coverage decisions. The SCI and SSCI often ignore that some excellent works take two to three years to peak. Thus, citation counts usually are not relevant in evaluating new journals. Highly significant works also can be so far ahead of the field that they escape notice. Citation counts often ignore these articles' quality and the potential impact on the field. Kuhn (1962) and Smith et al. (2007) note that an unavoidable time lag exists between an article's publication and its subsequent citing in the literature, biasing citation frequencies against recently published articles, which may cause incorrect faculty P&T decisions.

Gamble and O'Doherty (1985b, 31) summarize some inherent, structural weaknesses in citation analysis, including the size of the research subfield, age of the article, and rate of growth of the subfield or subject area. They point out a paradox: the larger the research subfield or subject area, the less chance a paper has of being highly cited—since large specialties have more participants and literature to draw upon (Cole 1974).

More Serious Problems in Overemphasizing the Citations Process

Recognizing its importance for P&T and other resource allocation decisions, some authors may cite works that they otherwise would not reference. Jones et al. (1996) note that rather than citing quality articles, authors often cite "network" articles written by potential referees, friends, colleagues, or editors. Beattie and Ryan (1989) add that the high level of citations to *AOS* and *JAE* editors is part of authors' publication maximization strategy. McRae (1974) notes that citations

provide an imperfect index to communicate within a knowledge system, causing authors to cite articles that will most likely enhance the possibility of a successful publication—rather than the best or most authoritative.

Diamond (1986) notes that an overemphasis on using citation indices to measure research quality can cause faculty members to increase self-citations and to develop citation exchange relationships with other national colleagues in which they tacitly agree to cite each other more frequently than is justified by the cogency of the cited material.

THE STUDY

As discussed above, the number of citations an article receives need not indicate its influence or quality, which should also include such factors as its positive or negative nature and why it was cited. Simply counting citations could improperly assess an article's quality. For example, assume paper A receives five citations due to its unique finding and insightful nature, while paper B receives five cites, three that refute its findings and two because the researchers had a relationship with paper B's author. Paper A clearly seems to be of higher quality and greater influence than paper B; however, a count of citations would rank both papers equally.

To gather information about the quality issue (i.e., why authors choose to cite other authors' works), we developed a survey for prolific accounting researchers (who should have amassed much experience in this matter) to complete. We believe that this is the first survey to poll successful researchers about their views on citations, which, in turn, should provide valuable insights on the citations process. After reviewing and summarizing the literature (Exhibit 1), our preliminary eight-part survey instrument (Exhibit 3) queried:

1. The faculty member's primary research area;
2. Listing and categorization of their research output;
3 Factors to consider in citing (or not citing) research studies;
4. Propensity to cite studies for "political" or purely non-academic reasons;
5. Whether cited works improved author's general background and understanding or bore directly on the examined topic;
6. Proportion of cited articles that the authors had not read personally (i.e., unread cites within cites);
7. Proportion of cited works that were perfunctory or essential in nature; and
8. Comments the respondents deemed necessary regarding this study.

Two of the co-authors independently compiled a listing of journals to include along with the tentative rankings after reviewing such works as Bonner et al. (2006), Chow et al. (2007), Glover et al. (2006), Hasselback et al. (2003), Barniv and Fetyko (2007), Reinstein and Calderon (2006), and Schwartz et al. (2005). Ten accounting professors with strong research records pre-tested the survey instrument, which we then modified.[3] We distributed this survey to the 228 U.S. accounting faculty who published at least 15 articles in our list of top-40 journals before 2006, and received 93 usable and two unusable responses to our survey.[4] A discussion of our results appears below.

[3] They suggested, for example, that we inform respondents that we recognize that they may not fully agree with our ranking categories, but asked them to indulge us and use these rankings as the point of reference to help us better aggregate responses from various scholars.

[4] Receiving 63 of the 95 responses from October 5 to October 26, 2007, we compared these means to those received after October 26. At a 0.05 level of significance, the only question whose means differed was Question 17 ("whether a paper's status as a working paper influences citation decisions"). Since this question did not impact significantly any conclusions, we concluded that non-response bias likely did not affect our results.

DISCUSSION OF RESULTS

Positive Influences on Probability of Citation

Table 2 lists the ten of 18 questions with positive mean values, indicating that the respondents would consider these factors when deciding when to cite a potential article; all ten were significantly different from zero (where zero indicates that the item had no effect on whether the article was cited). Clearly, researchers are concerned with the cited article's quality and relevance as denoted by its recency (Question 6), journal quality (Question 2), and author's reputation (Question 1). Authors also denote the importance of the frequency with which the cited paper appears in the literature (Question 14). This concern with the frequency that the paper appears in the literature supports at least two limitations noted above: (1) the tendency to cite articles that are already heavily cited and (2) the "hot topics" phenomenon (Brown and Gardner 1985b).

We expected that authors would likely cite articles published in the journal that they targeted for submission. Question 7 indicates that many authors incorporate this strategy into their writing, as Table 3 shows that over 75 percent of the respondents agreed that they tend to cite articles in the same journals they targeted. Publications authored by editorial board members seem also to have a greater weight, as some authors may want to ingratiate themselves with editorial board members (Question 3).

TABLE 2

Frequency Analysis for Ranked Positive Factors Affecting Probability of Citing a Work

Question Number[a]	Question	Mean Response	t-statistic[b]	p-value[b]	−3	−2	−1	0	1	2	3
6	It had a recent publication date.	1.4615	14.73	<0.0001*	0	0	0	16	30	32	13
7	It was published in the same journal that you were submitting to.	1.3956	12.77	<0.0001*	0	0	0	23	24	29	15
14	It has been heavily cited by others.	1.2688	13.62	<0.0001*	0	0	0	21	33	32	7
2	It was published in a journal that you perceived to have equal or higher standing than the one you were submitting to.	1.0440	9.75	<0.0001*	0	0	0	35	27	19	10
1	It was written by a well-known author.	0.9667	8.88	<0.0001*	0	0	0	41	19	22	8
4	You had authored or co-authored it.	0.7391	7.06	<0.0001*	1	0	4	35	33	15	4
11	It was a reviewed article.	0.5568	5.53	<0.0001*	0	0	4	52	14	15	3
9	It was published in a journal with a large circulation.	0.3750	5.58	<0.0001*	0	0	1	59	22	6	0
3	Its author was on the editorial board of the journal you were submitting to.	0.3444	4.43	<0.0001*	0	0	1	67	15	4	3
10	It was authored or co-authored by your friends or colleagues.	0.3297	5.11	<0.0001*	0	0	0	67	19	4	1

* Statistically significant at the 0.05 level.

[a] Question numbers refer to the questions in Exhibit 3.

[b] Tests null hypothesis that the mean response = 0.

TABLE 3

Frequency Analysis for Ranked Negative Factors Affecting Probability of Citing a Work

Question Number[a]	Question	Mean Response	t-statistic[b]	p-value[b]	−3	−2	−1	0	1	2	3
12	It was published in a foreign, non-English-language journal.	1.4615	−10.71	<0.0001*	34	13	5	32	0	0	0
8	It was published in a non-U.S., English-language journal.	1.3956	−5.94	<0.0074*	11	9	11	55	1	0	0
16	It was published in a non-highly ranked journal.	1.2688	−6.36	<0.0001*	6	12	28	39	3	2	0
17	It was a working paper.	1.0440	−6.69	<0.0001*	5	12	28	40	3	1	0
15	It was in a practitioners' or pedagogical journal.	0.9667	−5.78	<0.0001*	3	18	19	44	2	1	1
13	It was in a form other than an article (e.g., book or monograph).	0.7391	−4.78	<0.0001*	1	9	17	59	1	1	0
18	It was published in a non-accounting medium.	0.5568	−3.89	0.0002*	3	3	17	62	4	0	0
5	Your citation of it would be negative or highly critical.	0.3750	−2.74	0.0074*	1	8	11	60	7	1	0

* Statistically significant at the 0.05 level.

[a] Question numbers refer to the questions in Exhibit 3.

[b] Tests null hypothesis that the mean response = 0.

The tendencies to cite articles from target journals and articles written by editors are consistent with gatekeepers influencing citation patterns (Liu 1993). Several explanations can help to explain authors tending to cite articles in their target journals, and articles editors wrote. First, authors may seek to ingratiate themselves with editorial board members by citing those members' papers, and papers from the authors' target journals. Second, the tendency to cite articles from target journals is consistent with authors seeking the most logical outlets for their works. For example, an article citing a number of articles from a specific journal would seem to address a topic that (at least) was of interest to editors and readers of that same journal. Third, since editors and editorial board members are often accomplished authors, they often have authored works relevant to the submitted manuscript. Since these explanations are not mutually exclusive, we believe that portions of all three help to explain these citation patterns.

While the issues of recency, journal, and author reputation may be valid indicators of the appropriateness of a publication for citation, Questions 4 and 10 indicate that papers previously published by the researcher, or a researcher's friend or colleague, were also more likely to be cited. Over 63.1 percent of respondents indicated they would cite their own articles, and over 29 percent indicated that publications of friends and colleagues would have an increased likelihood of being cited. This analysis shows that while authors will likely distribute their papers to receive comments from their colleagues and friends, resulting in some familiarity with these shared works, many researchers could look beyond the quality of the published paper in determining whether to cite a research article. These findings are consistent with evidence of biases in favor of self-citations (Brown and Gardner 1985b).

Negative Influences on Probability of Citation

Table 3 lists issues that negatively impact the likelihood of an article being cited. Eight issues had negative mean values and all were statistically different from zero at the 0.05 level. First, a clear bias exists against non-U.S. journals (Questions 12 and 8). Table 3 shows that over 66 percent of respondents view non-English journals negatively, and over 42 percent look negatively at non-U.S. journals even when printed in English. These findings serve to support the existence of a variation in citation rates with nationality (M&M). The bias against non-U.S. journals could mean that many respondents do not know about or cannot access international journals, so they could not cite them; or that they do not give non-U.S. journals their deserved recognition and respect. Thus, the bias based on availability (Doyle et al. 1996) might be at work here. In any event, as our profession seeks to include more international schools and academicians in our professional associations, businesses expand internationally in light of global commerce; and as U.S. standards yield to international standards, universities worldwide will emphasize the global nature of business in their curricula. In fact, since performing this study, many non-U.S. journals have gained some stature to correct this problem. For example, the SSCI now includes four European journals (*ABR*, *EAR*, *JBFA*, and *MAR*; but eliminated the Australian journal *Abacus*); thus, this problem seems to be correcting itself.

A journal's ranking also greatly influenced the citation (Question 16), in that articles in non-highly ranked journals were less likely to be cited. Over 53 percent of respondents indicate that practitioner and pedagogical publications, non-accounting publications, and non-journal publications are less likely to be cited (Questions 15, 18, and 13); however, some respondents indicated a positive influence for these issues. Taken together, these results are consistent with variation in citation rates with publication type (M&M) and with certain useful journals receiving fewer citations (Garfield 1972). While most authors look at a publication that would be cited negatively or critically as a factor less likely to result in a citation (Question 5), eight of 93 respondents (8.6 percent) viewed such an issue positively, indicating some evidence for the bias toward negative references, as Brown and Gardner (1985b) noted.

Citation Usage

Table 4 contains the means of responses to questions about the inclusion of citations in research studies. The results indicate that some citations bear directly on the research issues addressed in a paper. Responses to Questions V-1 and V-2 indicate that, on average, 26.6 percent of citations improve the readers' researchers' background and understanding of research topics (Question V-1), and that authors view over 80 percent of citations as bearing directly on the topic of the article (Question V-2). Despite these findings, other results presented in Table 4 indicate that many citations do not relate directly to the research issues.

Some citations do not bear directly on the research issues addressed in a paper ("non-research citations"). The respondents also indicated using non-high-quality research citations in their publications. For example, they estimated 14 percent of their research citations relate to "extraneous" factors covered in part III of our survey, and characterized 7.6 percent of their citations as perfunctory (Question VII). Thus, many successful accounting researchers indicate citing works of varying quality in their own studies. Interestingly, respondents indicated they did not read an average of 10.2 percent of the articles they cited (Question VI). Using citation counts for P&T decisions does not consider whether a citation was of a research or non-research nature.

Comparison of Authors Based on Productivity

To ascertain whether differences exist between more and less productive respondents, we used the journal rankings from the survey instrument to divide the results into quartiles, based on the respondents' stated number of journal articles published in the last five years. Table 4 covers

TABLE 4

Other Reasons to Include Citations in Research Studies

Question Number[a]	Question[a]	Mean of All Responses	Standard Deviation	Lowest Quartile[b]	Highest Quartile[b]	p-value of Comparison[b]
IV	Percentage of citations included due to "extraneous" factors.	0.140	0.178	0.152	0.140	0.844
V-1	Percentage of citations included due to general background and understanding.	0.266	0.222	0.249	0.302	0.432
V-2	Percentage of citations included bearing directly on the topic of the article.	0.807	0.180	0.827	0.743	0.124
VI	Percentage of citations from articles not read but cited in other sources.	0.102	0.148	0.123	0.069	0.251
VII	Percentage of citations considered perfunctory to the study.	0.076	0.109	0.075	0.092	0.636

[a] Refers to questions in Exhibit 3.

[b] Respondents were divided into quartiles based on the number of articles they had published in the last five years. The mean responses of the authors in the highest and lowest quartiles are presented above and compared. The null hypothesis tested is that the mean responses of the authors in the highest quartile and lowest quartile are equal.

questions about the percentage of respondents' citations that fall into various categories and compares respondents' mean answers in the top and bottom quartiles (based on the number of articles published). No statistical evidence exists that lower-quartile authors are more likely to cite articles based on the study's relevance, ability to provide background information, direct bearing to the subject, articles not read but cited in other sources, or direct or perfunctory works.

Placing respondents into quartiles under the same system as in Table 4, Table 5 compares respondents' answers in the top and bottom quartiles (based on the number of articles published) to survey Questions 1 through 18. Respondents in the lowest quartile had a mean (survey database) output of 2.63 publications. The upper quartile had a mean output of 15.57 publications. The difference between the two quartiles was statistically significant at the 0.05 level. Question 5 indicates that the upper-quartile authors are less likely to include a citation that is negative or highly critical of the cited work. The authors also are less likely to be influenced by the recency of the article (Question 6). These differences are statistically significant at the 0.05 level.

We expected that authors targeting the highest-quality journals would have fewer publications, because these journals usually have lengthier and more-rigorous review processes. To adjust for these assumptions, we modified a weighting from Hasselback et al. (2003) to the respondents' numbers of published articles, as follows:

TABLE 5

Responses to Questions 1–18
Quartiled by Number of Articles Published

Question Number[a]	Question[a]	Lowest Quartile[b]	Highest Quartile[b]	p-value of Comparison[b]
	Average number of publications	2.630	15.565	<0.0001*
1	It was written by a well-known author.	0.917	0.913	0.991
2	It was published in a journal that you perceived to have equal or higher standing than the one you were submitting to.	1.000	1.217	0.446
3	Its author was on the editorial board of the journal you were submitting to.	0.240	0.304	0.719
4	You had authored or co-authored it.	0.923	0.696	0.409
5	Your citation of it would be negative or highly critical.	−0.040	−0.455	0.041*
6	It had a recent publication date.	1.808	1.217	0.030*
7	It was published in the same journal that you were submitting to.	1.462	1.522	0.846
8	It was published in a non-U.S., English-language journal.	−0.760	−0.727	0.921
9	It was published in a journal with a large circulation.	0.400	0.364	0.849
10	It was authored or co-authored by your friends or colleagues.	0.115	0.261	0.254
11	It was a reviewed article.	0.500	0.636	0.623
12	It was published in a foreign, non-English-language journal.	−1.440	−2.000	0.157
13	It was in a form other than an article (e.g., book or monograph).	−0.385	−0.364	0.928
14	It has been heavily cited by others.	1.111	1.261	0.551
15	It was in a practitioners' or pedagogical journal.	−0.400	−0.783	0.252
16	It was published in a non-highly ranked journal.	−0.462	−1.043	0.067**
17	It was a working paper.	−0.654	−1.045	0.205
18	It was published in a non-accounting medium.	−0.154	−0.522	0.085**

*, ** Statistically significant at the 0.05 and 0.10 level, respectively.

[a] Refers to questions in Exhibit 3.

[b] Respondents were divided into quartiles based on the number of articles they had published in the last five years. The mean responses of the authors in the highest and lowest quartiles are presented above and compared. The null hypothesis tested is that the mean responses of the authors in the highest quartile and lowest quartile are equal.

A+ Journals (as indicated in the survey—Exhibit 3)	2.50
A Journals	2.00
A/A− Journals	1.60
A Journals	1.35
A−/B+ Journals	1.15
B+ Journals	0.90
B+/B Journals	0.65

Table 6 shows the results of the comparison based on a weighted number of articles published. The respondents in the lowest quartile had a mean output of 2.69 publications and the upper quartile had a mean output 23.03 publications. The difference between the two quartiles was statistically significant at the 0.05 level.

TABLE 6

Responses to Questions 1–18
Quartiled by Weighted Number of Articles Published

Question Number[a]	Question[a]	Lowest Quartile[b]	Highest Quartile[b]	p-value of Comparison[b]
	Weighted average number of publications	2.685	23.033	<0.0001*
1	It was written by a well-known author.	0.750	1.130	0.239
2	It was published in a journal that you perceived to have equal or higher standing than the one you were submitting to.	0.773	1.348	0.072**
3	Its author was on the editorial board of the journal you were submitting to.	0.381	0.391	0.961
4	You had authored or co-authored it.	0.818	0.783	0.899
5	Your citation of it would be negative or highly critical.	0.500	−0.500	0.022*
6	It had a recent publication date.	1.773	1.174	0.027*
7	It was published in the same journal that you were submitting to.	1.545	1.739	0.524
8	It was published in a non-U.S., English-language journal.	−0.714	−0.636	0.796
9	It was published in a journal with a large circulation.	0.381	0.364	0.936
10	It was authored or co-authored by your friends or colleagues.	0.091	0.348	0.067**
11	It was a reviewed article.	0.286	0.545	0.380
12	It was published in a foreign, non-English-language journal.	−1.238	−1.900	0.121
13	It was in a form other than an article (e.g., book or monograph).	−0.429	−0.636	0.432
14	It has been heavily cited by others.	1.130	1.391	0.371
15	It was in a practitioners' or pedagogical journal.	−0.381	−1.087	0.025*
16	It was published in a non-highly ranked journal.	−0.273	−1.043	0.039*
17	It was a working paper.	−0.667	−0.909	0.460
18	It was published in a non-accounting medium.	−0.091	−0.391	0.178

*, ** Statistically significant at the 0.05 and 0.10 level, respectively.

[a] Refers to questions in Exhibit 3.

[b] Respondents were divided into quartiles based on the weighted number of articles they had published in the last five years. Weights ranging from 0.65 (for publications in B/B+ journals) to 2.50 (for articles in A+ journals) were assigned to each respondent's publications. The number of articles published in each classification was self-reported by each respondent using the journal classification listing in Exhibit 3. The mean responses of the authors in the highest and lowest quartiles are presented above and compared. The null hypothesis tested is that the mean responses of the authors in the highest quartile and lowest quartile are equal.

As in the unweighted sample, authors in the upper quartile are less likely to cite an article negatively or critically (Question 5), and the recency of the publication is less of an influence (Question 6); however, where a non-highly ranked journal's influence was significant at the 0.10 level in Table 5, here it is significant at the 0.05 level (Question 16). Authors in the upper quartile also are less likely to cite articles in practitioner journals (Questions 15). These factors indicate that authors with the most high-level journal publications may have less concern for the recency, and more concern for the quality and type of journal. While only significant at the 0.10 level, responses to Question 2, coupled with responses to Questions 15 and 16, reinforce the finding that the level of the journal quality influences upper-quartile authors more than authors in the lower quartile.

Table 7 indicates the citation percentage for the authors based on the weighted quartiling of output, as used in Table 6. Authors in the lower quartile have a statistically significant higher percentage of citations that bear directly on the topic, perhaps because authors in the upper quartile use more citations for publications aimed at background and understanding. While not statistically significant, this percentage is higher for upper-quartile authors.

LIMITATIONS AND SUGGESTIONS

To provide a context for the above results, we first note that we conducted our survey in an environment where many universities evaluate research based primarily on the quality of the journal that published the article. While some accounting programs use citation counts as the primary basis for P&T and merit pay decisions, this methodology may well increase as more journals seek inclusion in such indices, and programs demand that their faculty publish in journals listed therein. Second, as in all survey literature, self-reporting bias could exist. We believe that respondents are aware that factors such as a friend authoring an article are inappropriate criteria for citing an article, which may lead them to answer questions according to what they thought that they should do, rather than how they actually behave. Yet, despite the likelihood of such biases, we found several interesting factors that influenced citation choices.

Given the importance of faculty research, programs should carefully use or limit citation counts to evaluate research. If accounting programs must use citation counts to evaluate research, such counts should be used with great care and never alone; they should be balanced with reviews of the article by qualified peers, including committee members who can make more informed decisions by actually reading the articles (recognizing, of course, the difficulties of evaluating fully articles in subdisciplines or those external to accounting).

Chow et al. (2007, 426) stress that considering the impact on individual faculty members, their institutions, and the overall health of accounting scholarship, we should evaluate each work

TABLE 7

Citation Percentages Quartiled by Number of Articles Published

Question Number[a]	Question[a]	Lowest Quartile[b]	Highest Quartile[b]	p-value of Comparison[b]
IV	Percentage of citations included due to relevance to the study.	0.136	0.140	0.948
V-1	Percentage of citations included due to general background and understanding.	0.248	0.318	0.343
V-2	Percentage of citations included bearing directly on the topic of the article.	0.850	0.736	0.049*
VI	Percentage of citations from articles not read but cited in other sources.	0.123	0.062	0.192
VII	Percentage of citations considered perfunctory to the study.	0.055	0.101	0.128

* Statistically significant at the .05 level.

[a] Refers to questions in Exhibit 3.

[b] Respondents were divided into quartiles based on the weighted number of articles they had published in the last five years. Weights ranging from 0.65 (for publications in B/B+ journals) to 2.50 (for articles in A+ journals) were assigned to each respondent's publications. The number of articles published in each classification was self-reported by each respondent using the journal classification listing in Exhibit 3. The mean responses of the authors in the highest and lowest quartiles are presented above and compared. The null hypothesis tested is that the mean responses of the authors in the highest quartile and lowest quartile are equal.

on its own merits, rather than abdicate this responsibility by leaning on journal rankings as a proxy for its contribution. Brown and Gardner (1985a, 276) add that they do not advocate using citation analysis for peer judgment, only as a useful adjunct to peer review. They also do not recommend using the procedure to compare individuals across disciplines, as citation rates depend upon such discipline-specific factors as the size of the core literature, its degree of integration, and its age (Garfield 1979). They also recognize some undesirable effects of using it to evaluate researchers, as when manuscript reviewers may be more favorably disposed toward papers that cite their articles; and authors may cite their friends more often (May 1967).

To reduce over-relying on citation or other counts, schools could require faculty members' annual review process to develop research portfolios (akin to teaching portfolios) that contain the journal articles, books, monographs, or other research output. The portfolios should also include narratives of (1) each author's contributions of co-authored articles; (2) how the works "fit into" the author's research agenda; (3) the overall importance of the article; and (4) a justification of the importance of the article, such as noting: (a) the journals' acceptance rates and circulation; (b) studies, major authors, or other articles that cite this work; or (c) studies that rank this journal similar to other recognized journals. Thus, the research should focus on qualitative, rather than quantitative, measures of excellence.

Finally, some accounting programs could recognize and reward both high-quality academic and practitioner research. The study of business, especially accounting, should develop and enhance methodologies that impact the practice and theory of accounting. If citation count is the measure of research quality and, as indicated by our research, practitioner journals are less likely to be cited, many of our most productive researchers may eschew the valid contributions we can make to accounting practice.

CONCLUSION AND EXTENSION OF THE STUDY

This study indicates that even the premier researchers in our profession consider factors besides the research value of the citation in their decisions. Moreover, where colleges of business have established citation-count guidelines, accounting faculty may be at a significant disadvantage due to the relatively low number of accounting journals included in the citation indexes, and the availability of fewer slots per accounting faculty member. Further, those faculty members choosing to research in specialty areas (e.g., AIS, governmental, tax) may have even fewer outlets included in these indexes, which could discourage research in these areas.

Chow et al. (2007) note that since individual faculty members typically publish few articles, a misevaluation can greatly affect how their performance is perceived. Thus, even a small amount of "game playing" in choosing citations can have career-changing consequences. Moreover, not all accounting programs require their faculty to publish primarily in the highest-level journals. Programs with inadequate resources to support the top echelon of academic research may focus on transmitting or applying knowledge, rather than developing new theories.

Our research shows that some successful researchers consider factors besides quality and relevance when citing publications, and exhibit substantial variance in rationales for including citations in their published works. Since our results indicate that many citations are included for reasons besides their quality or direct relevance to the research, citation counts do not necessarily measure a researcher's contribution to the academy. The disparity among business fields in the number of journals included in sources, such as the SSCI, also creates an uneven playing field on which to compare accounting researchers with their business school colleagues. While citation analysis appears to measure objectively research quality, faculty and administrators should consider the above pitfalls that could flaw and manipulate this process. Finally, future studies can extend this sample base to a broader array of accounting academics.

REFERENCES

Altbach, P. G. 2006. The tyranny of citations. *Industry and Higher Education* 43 (Spring): 3–4.

Baird, L. M., and C. Oppenheim. 1994. Do citations matter? *Journal of Information Science* (20): 2–15.

Barber, B. 1962. Resistance by scientists to scientific discovery. In *The Sociology of Science*, edited by Barber, B., and W. Hirsch, 539–556. New York, NY: The Free Press.

Barniv, R., and D. Fetyko. 2007. Perceived quality of accounting journals. *Journal of Business Issues*: 1–27.

Bates, M. 1979. Information search tactics. *Journal of the American Society for Information Science* 30 (4): 205–215.

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

Beattie, V., and A. Goodacre. 2006. A new method for ranking academic journals in accounting and finance. *Accounting and Business Research* 36 (2): 65–91.

Beattie, V. A., and R. J. Ryan. 1989. Performance indices and related measures of journal reputation in accounting. *The British Accounting Review* 21 (3): 267–278.

———, and ———. 1991. The impact of non-serial publications on research in accounting and finance. *Abacus* (March): 32–50.

Begley, S. 2006. Science journals artfully try to boost their rankings. *The Wall Street Journal* (June 5): B1.

Bonner, S. E., J. W. Hesford, W. A. Van der Stede, and S. M. Young. 2006. The most influential journals in academic accounting. *Accounting, Organizations and Society* 31 (7): 663–685.

Boyce, B. R., and C. S. Banning. 1979. Data accuracy in citation studies. *The Library Quarterly* 59 (4): 291–304.

Brinn, T., M. J. Jones, and M. Pendlebury. 1996. U.K. accountants' perceptions of research journal quality. *Accounting and Business Research* 26 (3): 265–278.

Brooks, T. A. 1986. Evidence of complex citer motivations. *Journal of the American Society for Information Science* 37: 34–36.

Brown, L. D. 1996. Influential accounting articles, individuals, PhD granting institutions and faculties: A citational analysis. *Accounting, Organizations and Society* 21: 262–277.

———. 2005. The importance of circulating and presenting manuscripts: Evidence from the accounting literature. *The Accounting Review* 80 (1): 55–83.

———, and J. C. Gardner. 1985a. Applying citation analysis to evaluate the research contributions of accounting faculty and doctoral programs. *The Accounting Review* (April): 262–277.

———, and ———. 1985b. Using citation analysis to assess the impact of journals and articles on contemporary accounting research. *Journal of Accounting Research* (Fall): 84–109.

Chow, C. C., K. Haddad, G. Singh, and A. Wu. 2007. On using journal rank to proxy for an article's contribution or value. *Issues in Accounting Education* 22 (3): 411–427.

Chubin, D. E., and S. D. Moitra. 1975. Content analysis of references: Adjunct or alternative to citation counting? *Social Studies of Science* 5: 423–441.

Cole, J. R. 2000. A short history of the use of citations as a measure of the impact of scientific and scholarly work. In *The Web of Knowledge: A Festschrift in Honor of Eugene Garfield*, edited by Cronin, B., and H. B. Atkins, 281–300. Medford, NJ: ASAIS.

———, and S. Cole. 1971. Measuring the quality of sociological research: Problems in the use of the science citation index. *The American Sociologist* 6 (February): 23–29.

———. 1974. Citation analysis. *Science* 183 (4120): 32–33.

Croom, D. L. 1970. Dangers in the use of citation analysis: Letter to the editor. *Nature* 227: 1173.

Crosbie, G. C., and R. W. Heckel. 1976. Citation criteria for ranking academic departments. *Journal of Metals* 28 (9): 27–28.

David, J. B. 1988. Problems in using the social sciences citation index to rank economics journals. *The American Economist* 42 (2): 59.

Diamond, A. M., Jr. 1986. What is a citation worth? *The Journal of Human Resources* 21: 200–215.

Donohue, J. M., and J. B. Fox. 2000. A multi-method evaluation of journals in the decision and management sciences by U.S. academics. *Omega* 28 (1): 17–36.

Doyle, J. R., A. J. Arthurs, L. McAulay, and P. G. Osborne. 1996. Citation as effortful voting: A reply to Jones, Brinn and Pendlebury. *Omega* 24 (5): 603–606.

Easton, G., and D. M. Easton. 2003. Marketing journals and the research assessment exercise. *Journal of Marketing Management* 19 (1/2): 5–25.

Gamble, G. O., and B. O'Doherty. 1985a. How accounting academicians can use citation indexing and analysis for research. *Journal of Accounting Education* (Fall): 123–144.

———, and ———. 1985b. Citation indexing and its use in accounting: An awareness survey and departmental ranking. *Issues in Accounting Education*: 28–40.

Garfield, E. 1955. Citation indexes for science: A new dimension in documentation through association of ideas. *Science* 122 (3159): 108–111.

———. 1963. Citation indexes in sociological and historical research. *American Documentation* 14 (4): 289–291.

———. 1972. Citation analysis as a tool in journal evaluation. *Science* 178 (4060): 471–479.

———. 1979. *Citation Indexing—Its Theory and Application in Science, Technology, and Humanities*. New York: NY: John Wiley & Sons, Inc.

———, and I. H. Sher. 1963. New factors in the evaluation of scientific literature through citation indexing. *American Documentation* 14 (3): 195–201.

Gilbert, G. N. 1977. Referencing as persuasion. *Social Studies of Science* 7: 113–122.

Glover, S. M., D. J. Prawitt, and D. A. Wood. 2006. Publication records of faculty promoted at the top 75 accounting research programs. *Issues in Accounting Education* 21: 195–218.

Gupta, U. G. 1997. Using citation analysis to explore the intellectual base, knowledge dissemination, and research of interfaces. *Interfaces* 27 (2): 85–101.

Hasselback, J. R., A. Reinstein, and E. S. Schwann. 2003. Benchmarks for the research productivity of accounting faculty. *Advances in Accounting* 20: 95–125.

Inhaber, H., and K. Przednowek. 1976. Quality of research and Nobel Prizes. *Social Studies of Science* 6: 33–50.

Jones, M. J., T. Brinn, and M. Pendlebury. 1996. Journal evaluation methodologies: A balanced response. *Omega* 24 (5): 607–612.

Kotler, P. 1972. A generic concept of marketing. *Journal of Marketing* (April): 46–54.

Koulack, D., and H. J. Keselman. 1975. Ratings of psychology journals by members of the American Psychological Association. *The American Psychologist* 30: 1049–1053.

Kuhn, T. S. 1962. *The Structure of Scientific Revolutions*. Chicago, IL: University of Chicago Press.

Lange, L. 1985. Effects of disciplines and countries on citation habits. An analysis of empirical papers in behavioural sciences. *Scientometrics* 8 (3–4): 205–215.

Lederberg, J. 1947. Gene recombination and linked segregations in Escherichia coli. *Genetics* 32 (5): 505–525.

Line, M. B. 1979. The influence of the type of sources used on the results of citation analyses. *The Journal of Documentation* 35 (4): 265–284.

Liu, M. 1993. Progress in documentation the complexities of citation practice: A review of citation studies. *The Journal of Documentation* 49 (4): 370–408.

MacRoberts, M. H., and B. R. MacRoberts. 1989. Problems of citation analysis: A critical review. *Journal of the American Society for Information Science* (September): 342–349.

Margolis, J. 1967. Citation indexing and the evaluation of scientific papers. *Science* (March): 1213–1219.

May, K. O. 1967. Abuses of citation indexing: A letter to the editor. *Science* (156): 890.

McRae, T. W. 1974. A citational analysis of the accounting information network. *Journal of Accounting Research* (Spring): 80–92.

Menard, H. 1971. *Science: Growth and Change*. Cambridge, MA: Harvard University Press.

Moravcsik, M. J., and P. Murugesan. 1975. Some results on the function and quality of citations. *Social Studies of Science* 5: 86–92.

Nord, J. H., and G. D. Nord. 1995. MIS research: Journal status assessment and analysis. *Information & Management* 29: 29–42.

Over, R. 1978. Journal rankings by citation analysis: Some inconsistencies. *The American Psychologist* (August): 778–780.

Porter, A. J. 1978. A comparison of the various ratings of psychology journals. *American Psychologist* 33(March 3): 295–299.

Price, D. J. D. 1963. *Little Science, Big Science*. New York, NY: Columbia University Press.

Redman, A. L., H. Manakyan, and J. R. Tanner. 1999. A normalized citation analysis of real estate journals. *Real Estate Economics* 27 (1): 169–182.

Reinstein, A., and T. G. Calderon. 2006. Examining accounting departments' rankings of the quality of accounting journals. *Critical Perspectives on Accounting* 17 (4): 457–490.

Richardson, A., and J. Williams. 1990. Canadian academic accountants' productivity: A survey of 10 refereed publications, 1976–1989. *Contemporary Accounting Research* 7 (1): 278–294.

Schwartz, B. N., S. Williams, and P. F. Williams. 2005. U.S. doctoral students' familiarity with the accounting journals: Insights onto the structure of the U. S. academy. *Critical Perspectives on Accounting* 16: 327–348.

Seetharaman, A., and M. Q. Islam. 1995. *Assessing the Relative Quality of Accounting Journals: The Use of Citation Analysis*. Proceedings of the Southwest Regional AAA Meeting, New Orleans, LA.

Sievert, M. E., and M. Haughawout. 1989. An editor's influence on citation patterns: A case study of elementary school. *Journal of the American Society for Information Science* 40 (5): 334–341.

Smith, G., J. L. Krogstad, and K. E. Sigvartsen. 2007. Analysis of citation frequencies to *Auditing: A Journal of Practice & Theory*: 1985–2005. Working paper, University of Northern Iowa and Creighton University.

Sriram, R. S., and V. Gopalakrishnan. 1994. Ranking of doctoral programs in accounting: Productivity and citational analysis. *Accounting Educators' Journal* (Spring): 32–53.

Swanson, E. P. 2004. Publishing in the majors: A comparison of accounting, finance, management, and marketing. *Contemporary Accounting Research* 21 (1): 223–255.

———, C. J. Wolfe, and A. Zardkoohi. 2007. Concentration in publishing at top-tier business journals: Evidence and potential explanations. *Contemporary Accounting Research* 24 (4): 1255–1289.

Tellis, G. J., R. K. Chandy, and D. S. Ackerman. 2009. In search of diversity: The record of major marketing journals. *Journal of Marketing Research* 36 (February): 120–131.

Thomson Reuters. 2009. *Social Sciences Citation Index*. Available at: http://www.thomsonscientific.com/cgi-bin/jrnlst/jloptions.cgi?PC=J.

Todorow, R., and W. Glanzel. 1988. Journal citation measures: A concise review. *Journal of Information Science* 14: 47–56.

Wertsch, J. V. 1995. The need for action in sociocultural research. In *Sociocultural Studies of Mind*, edited by Wertsch, J. V., 56–74. Cambridge, MA: Cambridge University Press.

Williams, P., and J. Rodgers. 1995. The accounting review and the production of accounting knowledge. *Critical Perspectives on Accounting* 6 (3): 263–287.

Woodward, A. M., and S. Henson. 1976. Citations to review serials. *The Journal of Documentation* (December): 290–293.