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Scholarly Influence in the Field of Management: A Bibliometric Analysis of the Determinants of University and Author Impact in the Management Literature in the Past Quarter Century†

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The purpose of this study is to identify the universities and research scholars who have had the greatest impact on the field of management during the past quarter century and the factors that influence their impact. Using bibliometric techniques, the authors examined 30 management journals to identify the 100 most-cited universities and 150 most-cited authors from 1981 to 2004. The analysis included more than 1,600 universities and 25,000 management scholars across five individual time periods. The findings showed that (a) a relatively small proportion of

†The authors would like to thank Victor Borden, vice president of institutional development and student affairs at Indiana University, for his help in identifying some of the university databases that we used in our research.

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universities and scholars accounted for the majority of the citations in the field; (b) total publications accounted for the majority of the variance in university citations; (c) university size, the number of PhDs awarded, research expenditures, and endowment assets had the biggest impact on university publications; and (d) total publications, years in the field, graduate school reputation, and editorial board memberships had the biggest effect on a scholar's citations.

Keywords: *citation analysis; bibliometric techniques; scholarly impact; university impact*

More than a century has passed since Wharton was established as the first school of business in 1881. Since that time, a great number of developments have taken place in the field of management. For example, in 1900 the Tuck School of Business at Dartmouth started the first graduate business program; in 1911 Frederick Taylor published *The Principles of Scientific Management*, in which he described how scientific methods could be applied to management to improve the productivity of workers; and the first Academy of Management meeting was held in Chicago in 1936. In the years since these early developments, the number of business schools accredited by the Association to Advance Collegiate Schools of Business (AACSB) has grown to more than 700 institutions, the Academy of Management now has almost 17,000 academic and professional members representing 101 different nations worldwide, and a search of Amazon.com for books using the keyword *management* generated more than 455,000 titles.

However, despite this impressive growth, little is actually known about the people and institutions that have shaped the development of the field of management. It is important to identify the most influential scholars because these individuals are the thought leaders who have made major conceptual or methodological contributions to our understanding of management processes and are also the gatekeepers who in their role as reviewers, editorial board members, and editors determine what is published. Similarly, identifying the most influential universities is important because these are the institutions that have been most successful in developing and disseminating new knowledge and training the thought leaders of tomorrow. Unfortunately, only two studies (Morrison & Inkpen, 1991; Shane, 1997) have attempted to identify specific scholars who have influenced the field of management, and only a handful of studies (e.g., Kirkpatrick & Locke, 1992; Morrison & Inkpen, 1991; Shane, 1997; Trieschmann, Dennis, Northcraft, & Niemi, 2000) have examined the impact of specific universities on the discipline—and all of these studies are subject to some important limitations (see Table 1).

The first limitation is that, with the exception of Kirkpatrick and Locke (1992), all of the studies reported to date have used the number of articles published to assess author or university influence. Although the number of articles published by scholars and universities is obviously an important measure of their influence, we believe that citation counts represent a better measure of influence for several basic reasons. First, we agree with Sharplin and Mabry (1985: 141), who noted that "the intended purpose of publications in academic journals is to impart knowledge to others, furthering the advancement of the discipline. The number of references (citations) to particular works, therefore, provides a way of evaluating . . . the researchers themselves." Similar points have been made by Cole and Cole (1967), Salancik (1986), and Podsakoff, MacKenzie, Bachrach, and Podsakoff (2005). Second, Cole

Table 1
Summary of Studies Examining University and Author Influence/Impact in the Field of Management

Article	Examined University Influence?	Examined Author Influence?	Number of Mgmt. Journals Covered	Article Topic Limitations?	Time Period Covered	Measure of Influence?
Kirkpatrick & Locke (1992)	Yes	No	36 broadly defined management journals	No limitations	1983-1987	Number of articles, citations, and peer ratings
Morrison & Inkpen (1991)	Yes	Yes	5 management journals	Only international business articles	1980-1989	Number of articles
Shane (1997)	Yes	Yes	15 management journals	Only entrepreneurship articles	1987-1994	Number of articles
Trieschmann, Dennis, Northcraft, & Niemi (2000)	Yes	No	5 top management journals	No limitations	1986-1998	Number of articles
Present study	Yes	Yes	30 management journals	No limitations	1981-2004	Number of citations

and Cole have reported that the number of citations is more strongly correlated than is the number of publications with a wide variety of measures of scientific recognition, including the total number of research awards received ($r = .67$ vs. $r = .46$), the prestige of these awards ($r = .41$ vs. $r = .35$), the rank of the department in which the scholar resides ($r = .33$ vs. $r = .24$), and the percentage of academics familiar with the individual scholar's research ($r = .64$ vs. $r = .49$). Finally, although the number of publications influences the number of citations an individual scholar or university receives, not all articles are created equal in terms of their impact on the field. Indeed, Garfield (1998) has reported that out of almost 33 million articles included in the Science Citation Index from 1945 to 1988, approximately 56% received only one citation, 3.6% received between 25 to 99 citations, and only 0.4% received more than 100 citations. This suggests that although publishing articles is a necessary condition for having an influence on the field, it is not sufficient. Thus, we feel that citation counts are a better measure of scholarly influence than the number of articles published.

Another limitation of the previous research is that few of the studies have specifically focused on the management domain as a whole. For example, Shane's (1997) study focused only on universities and scholars who have had an impact on the field of entrepreneurship, and Morrison and Inkpen (1991) exclusively focused on researchers and universities in the international business domain. Although Kirkpatrick and Locke (1992) obtained ratings of researchers in the management discipline, they reported results only for a composite ranking of each university's reputation across five disciplines (accounting, finance, management science and statistics, management, and marketing), making it impossible to disentangle the contribution of management scholars from the university's overall reputational ranking. Only the study conducted by Trieschmann et al. (2000) provided separate rankings for the field of management. However, these authors did not report on the impact of individual scholars in the field.

A third limitation is that some of the previous research has examined author and university impact in a fairly limited set of management journals. For example, Trieschmann et al. (2000) restricted their study to only five top management journals, and Morrison and Inkpen (1991) limited their study to only four management journals. Although Shane (1997) included a larger set of journals (15) in his analyses, his study was limited by the fact that it was restricted to entrepreneurship articles published in these outlets.

One final limitation with the previous studies reported on author and university influence is that, with the exception of Trieschmann et al. (2000), all the other studies have assessed influence in only a few relatively narrow time periods and ignored dynamic changes in author and university influence over time. For example, Kirkpatrick and Locke (1992) restricted their analysis to the 5-year period between 1983 and 1987, and Shane (1997) focused on the 8-year period between 1987 and 1994. Although Morrison and Inkpen's (1991) study spanned a 10-year period (1980 to 1989), this study did not make any attempt to examine dynamic changes over time. Only the study reported by Trieschmann et al. examined changes in the rankings of the universities over time by separating the 13-year time period (1986 to 1998) they examined into three different eras (1986 to 1989, 1990 to 1993, and 1994 to 1998).

In summary, previous studies have provided only "snapshots" of university and author influence in the field of management because they often have (a) focused on individual subareas of the field, (b) focused on a limited set of journals, (c) focused on a relatively narrow range of years, and (d) used the number of articles published rather than the number of

citations as their measure of influence. Taken together, these limitations make it difficult to get a clear picture of the relative influence of universities and scholars in the field of management. They also provide no information about why some universities or scholars are more influential than others. In other words, it is not clear from these studies what specific factors cause some universities or scholars to be cited more than others.

Therefore, the purpose of this research is to examine university and author influence in the field of management during the past 25 years using citation counts as a measure of influence. In Study 1, we develop and test hypotheses about some of the variables that should be related to university influence. In Study 2, we develop and test hypotheses about the determinants of an author's influence. To be as comprehensive as possible, our sample for both the university and author studies was obtained from 30 journals, the majority of which have been used in previous research on journal influence in the field of management (cf. Coe & Weinstock, 1984; Extejt & Smith, 1990; Johnson & Podsakoff, 1994; Podsakoff et al., 2005; Sharplin & Mabry, 1985; Tahai & Meyer, 1999). We conclude the article with a discussion of the findings and implications for future research.

Study 1: Examination of University Influence

Hypotheses Regarding the Distribution of University Citations

In his research on how ideas diffuse throughout scientific communities, Robert Merton (1968, 1988) noted that some universities and scholars gain disproportionate amounts of recognition for their research. He labeled this phenomenon the "Matthew effect" because the pattern seemed to match the one described in the gospel of Matthew (25:29): "For those who have will be given more, and they will have an abundance. As for those who do not have, even what they have will be taken from them." As noted by Merton (1968: 58), "The accruing of greater increments of recognition for particular scientific propositions to scientists of considerable repute and the withholding of such recognition from scientists who have not yet made their mark" implies that the distribution of citations will be highly skewed such that a relatively small number of universities and/or scholars will account for the majority of the citations in a discipline.

Consistent with this expectation, there is a considerable amount of evidence indicating that the distribution of publications for authors in other disciplines roughly conforms to this pattern (de Solla Price, 1975; Egghe, 2005; Kyvik, 1989; Lotka, 1926; Wilson, 1999). For example, in an attempt to determine which scholars contributed the most to the progress of science, Lotka (1926) plotted the number of scholars publishing 1, 2, 3, etc. articles against the number of articles published (1, 2, 3, etc.) in two different disciplines (chemistry and physics). He found that these data followed a power function (now called Lotka's law) such that the number of scholars producing n articles is proportional to K/n^a, where K and a are positive constants and a generally takes on (but is not necessarily restricted to) the value of 2. As noted by Merton (1988: 611), "In a variety of disciplines this works out to some 5 or 6 percent of the scientists who *publish at all* producing about half of all papers in their discipline." Although we are not aware of any study that has applied Lotka's power function to universities, because researchers compose the faculties in these institutions, we would expect

that the power function described by Lotka would also apply to university citations. Therefore, we hypothesize,

Hypothesis 1: The number of universities receiving n citations is proportional to $1/n^a$.

Hypothesis 2: Approximately 5% of the universities that publish in management journals account for at least 50% of all of the citations in the field.

Hypotheses Regarding the Determinants of University Citations

At the university level, the most important determinant of citations is publications. Publications are necessary (but not sufficient) for citations. Indeed, at the level of individual authors, Judge, Kammeyer-Mueller, and Bretz (2004) showed that the total number of publications produced by an author is strongly related to the author's total citations. Therefore, we expect that this will be true for universities as well.

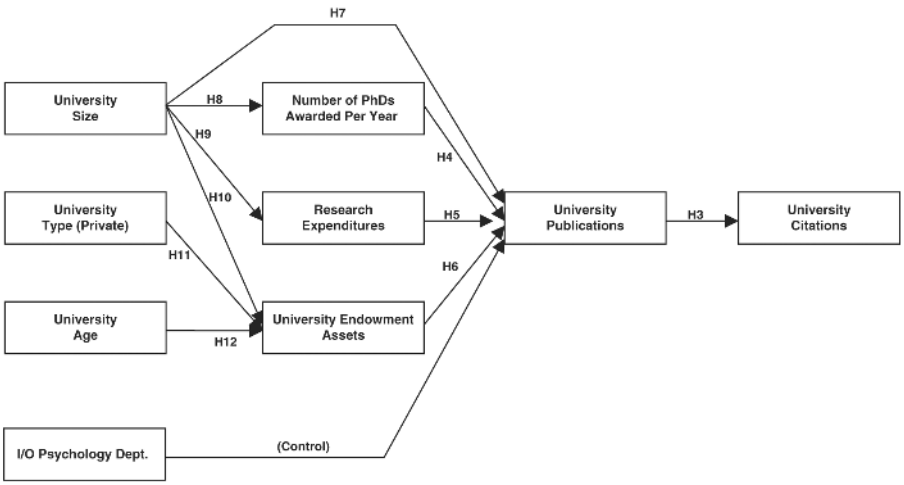
Hypothesis 3: There is a positive relationship between a university's total publications and the total number of citations it receives.

Given that publications are expected to determine citations, it is important to identify those factors that influence publications. Figure 1 provides a summary of our hypotheses regarding the determinants of university publications. As shown in the figure, we expect the number of PhDs awarded per year, the amount of research expenditures, university endowment assets, and university size to have positive effects on publications.

The number of PhDs awarded per year is expected to influence university publications for a variety of reasons, including (a) the number of doctoral students at a university may be a reflection of its commitment to research, (b) doctoral students are oriented toward publishing research, and this may lead to publications by the students that count toward the university's total and/or joint publications with faculty, and (c) teaching doctoral-level seminars may generate new research ideas for the faculty members teaching them. Research expenditures are also expected to be positively related to total publications because this money is exclusively used for faculty summer stipends, reductions in teaching loads, and expenses associated with the design and implementation of research studies. University endowment assets are expected to have a similar effect because they can be utilized for many of the same purposes when employed to fund faculty fellowships, chairs, and other titled positions. Finally, we also expect university size to be positively related to university publications because larger universities generally have larger academic units with more faculty members, and, as noted by Kyvik (1989), in larger academic units (a) it is easier to establish viable research groups, (b) the probability that two or more researchers will have the same interests is greater, thus creating intellectual synergies, (c) it is easier to establish stimulating research environments, and (d) research facilities and conditions (e.g., technical support staff, labs, equipment, etc.) may be better because of economies of scale. Thus, we hypothesize,

Hypothesis 4: There is a positive relationship between the number of PhDs awarded per year by a university and its total number of publications.

Figure 1
Hypothesized Relationships for University Publications and Citations



Hypothesis 5: There is a positive relationship between a university's research expenditures and its total number of publications.

Hypothesis 6: There is a positive relationship between a university's endowment assets and its total number of publications.

Hypothesis 7: There is a positive relationship between a university's size and its total number of publications.

The hypotheses above describe the effects of university resources on total publications. The remaining hypotheses describe some of the determinants of those resource levels. First, we expect that larger universities will award a greater number of PhDs per year and have greater research expenditures because they have larger financial resources from tuition. In addition, we expect larger universities to have larger endowment assets because they have a larger base of alumni from which they can raise money. We also expect that private universities will have larger endowment assets than public universities because their graduates are likely to be more loyal and donate more money than graduates of public universities. Indeed, as reported by the Center for Measuring University Performance (2007), 8 of the top 10 and 17 of the top 20 most highly endowed universities are private. Finally, we expect that a university's age will be positively related to the size of its endowment assets because older, more established universities have had a longer period of time to accrue both graduates and prestige and have had their endowments invested for a longer period of time. Therefore, we expect,

Hypothesis 8: There is a positive relationship between a university's size and the number of PhDs that it awards.

Hypothesis 9: There is a positive relationship between a university's size and its research expenditures.

Hypothesis 10: There is a positive relationship between a university's size and its endowment assets.

Hypothesis 11: There is a positive relationship between a university's type (public vs. private) and its endowment assets.

Hypothesis 12: There is a positive relationship between a university's age and its endowment assets.

Finally, as indicated in Figure 1, we statistically controlled for the presence of an industrial and organizational (I/O) psychology department in our study. We thought it was important to do this because not all universities have I/O psychology programs, but scholars in these departments often publish in the journals included in our analysis.

Method

Journal Selection Process

Information regarding university influence was obtained from 30 journals in the field of management (see Table 2). With the exception of *Organization Science* and *Organizational Research Methods*, all of the other journals were included in the recent analysis of management journal influence reported by Podsakoff et al. (2005). These authors selected journals for their analysis using two criteria. First, they selected a "core" set of management journals on the basis of the number of times they had been included in previous studies of journal impact (cf. Coe & Weinstock, 1984; Extejt & Smith, 1990; Gomez-Mejia & Balkin, 1992; Johnson & Podsakoff, 1994; Salancik, 1986; Sharplin & Mabry, 1985; Tahai & Meyer, 1999). Second, to improve the representativeness of their sample, these authors included other journals from subdisciplines in the management field (e.g., entrepreneurship, international business, leadership, etc.) that had been shown to be among the top journals in their respective domains. We included *Organization Science* in the present study because this journal has emerged as an influential outlet for research on organizational studies, and we added *Organizational Research Methods* because it has already established itself as the most prominent journal specifically devoted to research methods within the management domain. Taken together, all of the main areas of research in the field of management are represented by one or more journals, including strategic management, personnel and human resources management, leadership, general management, industrial and labor relations, entrepreneurship, organizational behavior, organizational theory, organizational development and change, international management, management science, operations management, decision sciences, technology and innovation management, and research methods.

Data for University Publications and Citations

Data for this study were obtained from the Institute for Scientific Information's (ISI) Web of Knowledge relational database. ISI is the major source of citation information in the world. The ISI relational database summarizes information from approximately 8,500 scientific journals. About two thirds (5,500) of these journals are from the physical or "hard" sciences, whereas the remaining one third (3,000) are from the social sciences and humanities. Although the ISI Social Sciences Citation Index provides information on citations

Table 2
Summary of Journals Included in the Analysis

1. Academy of Management Journal (*AMJ*)
2. Academy of Management Review (*AMR*)
3. Administrative Science Quarterly (*ASQ*)
4. California Management Review (*CMR*)
5. Decision Sciences (*DS*)
6. Group & Organization Management (*G&OM*) (formerly *Group & Organization Studies*)
7. Harvard Business Review (*HBR*)
8. Human Relations (*HR*)
9. Human Resource Management (*HRM*)
10. Industrial & Labor Relations Review (*I&LRR*)
11. Industrial Relations (*IR*)
12. Journal of Applied Psychology (*JAP*)
13. Journal of Business Research (*JBR*)
14. Journal of Business Venturing (*JBV*)
15. Journal of Human Resources (*JHR*)
16. Journal of International Business Studies (*JIBS*)
17. Journal of Management (*JOM*)
18. Journal of Management Studies (*JMS*)
19. Journal of Occupational and Organizational Psychology (*JOOP*) (formerly *Journal of Occupational Psychology)*
20. Journal of Organizational Behavior (*JOB*) (formerly *Journal of Occupational Behavior*)
21. Journal of Vocational Behavior (*JVB*)
22. Leadership Quarterly (*LQ*)
23. Management Science (*MS*)
24. Monthly Labor Review (*MLR*)
25. Organization Science (*OS*)
26. Organizational Behavior & Human Decision Processes (*OBHDP*) (formerly *Organizational Behavior and Human Performance)*
27. Organizational Research Methods (*ORM*)
28. Personnel Psychology (*Per. Psych.*)
29. Sloan Management Review (*SMR*)
30. Strategic Management Journal (*SMJ*)

dating back to 1956, the computerized relational database dates back only to 1981. We used the relational database because it allows researchers to identify the total number of citations and articles for each of the universities and authors included in the database. The relational database contains citations to only articles (not book chapters) and counts all citations from any other journal in the ISI database.

It is important to note that the ISI relational database classifies articles into 15 different categories (articles, bibliographies, book reviews, chronologies, corrections, discussions, editorials, items about an individual, letters, meeting abstracts, news items, notes, reprints, reviews, and software reviews). Because we were interested in the impact that universities have on the field through their theoretical and empirical research, we limited our analyses to citations received only from articles, notes, and reviews.

The number of citations and articles for each of the universities included in our study was obtained for each year from January 1, 1981, to June 30, 2004. The only exceptions were for *Journal of Business Venturing*, *Leadership Quarterly*, *Organization Science*, and *Organizational Research Methods*, which did not begin publication until 1986, 1990, 1990, and 1998, respectively. The computerized database was available for all of the journals for all years, except for *Academy of Management Review* (1981 to 1982), *Decision Sciences* (1981 to 1983), *Group & Organization Studies/Group & Organization Management* (1981 to 1984), *Human Resource Management* (1981 to 1984), *Journal of Business Venturing* (1986), *Journal of Management* (1981 to 1982), *Leadership Quarterly* (1990 to 1993), *Organization Science* (1990 to 2004), and *Organizational Research Methods* (1998 to 2000). In these instances, we conducted a manual search of the journals to identify the universities associated with the articles published and then used ISI's Web of Science database in the first week of August 2004 to determine the number of citations received by each of the universities for these additional articles. We waited until the first week of August to collect these data to allow ISI 1 month after our June 30 cutoff to complete their data-entry process.

In the case of university citations, the ISI database treats the institution as the unit of analysis. That is, the database gives article and citation credits to each institution with which authors of an article are affiliated. Therefore, an institution receives credit for (a) the number of articles that have at least one author who is affiliated with it and (b) the number of citations attributed to each article that has at least one author who is affiliated with it. However, ISI does not give additional credit for citations or articles that have been written by more than one coauthor from a given institution. In other words, the ISI database does not double count either articles or citations in those cases where there are multiple coauthors from the same institution.

ISI reports the affiliations of the authors based on the information printed in journal articles. In some cases, authors of larger universities (University of London) report their individual college affiliations (e.g., Kings College, etc.) rather than their affiliation with the larger university entity. In these instances, we aggregated all of the articles and citations up to the larger institutional entity. However, this was not done in the case of regional or satellite campuses. For example, articles and citations attributed to the University of Wisconsin at Whitewater and the University of Michigan at Dearborn were not included with those of the main campuses of the University of Wisconsin (Madison) or the University of Michigan (Ann Arbor). The reason for this difference in treatment is that the colleges in the University of London system are all located on the same campus in the city of London and are considered part of the larger institution, whereas the regional and satellite campuses are actually located in different cities.

One final point worth noting is that the ISI database reports not only information on articles published by researchers who are affiliated with universities but also information from noneducational private organizations (e.g., AT&T, Bain & Co., Booz Allen & Hamilton, Inc., Boston Consulting Group, McKinsey & Co., P&G, Rand Corporation, World Bank, etc.) as well as public agencies or organizations (e.g., National Bureau for Economic Research, National Center for Higher Education Management, U.S. Office of Personnel Management, U.S. Bureau of Labor Statistics, U.S. Navy, U.S. Army, etc.). However, because we were interested only in the impact of educational institutions, we do not report results for noneducational institutions in our analysis.

Measures of University Characteristics

In addition to the publication and citation data obtained from the ISI database, we obtained measures of the other variables included in our university study from a variety of different sources. Data regarding university age, type (public or private), and whether or not the university had an I/O psychology program were obtained from university Web sites, endowment assets were obtained from the National Association of College and University Business Officers Web site, and university size (based on total enrollments), the number of PhDs awarded per year, and research expenditures were obtained from the Center for Measuring University Performance (2007) Web site.

Although the majority of the measures we obtained for this study are self-explanatory, one that requires some additional explanation is the measure of research expenditures. The Center for Measuring University Performance reports the total amount of money that universities spend on research and development activities as well as a breakdown of the percentage of these expenditures by major disciplines (e.g., life sciences, physical sciences, engineering sciences, mathematics, psychology, social sciences, etc.). Because we were interested in obtaining a measure of research expenditures that was proximal to the research reported in the journals included in our study, we first recorded the total amount of money that each university spent on all research activities and then multiplied this amount by the percentage of the total expenditures each of the universities spent in psychology, the social sciences and "other" sciences (which includes business). For example, if a university spent a total of $10,000,000 on research in 1 year and the percentages of this total that were allocated to psychology, the social sciences, and "other" sciences were 3%, 14%, and 3%, respectively, the research expenditure assigned to this university in our database would have been $2,000,000 (or $10,000,000 × (.03 + .14 + .03)). All of the data that we obtained for the universities were for 2004, with the exception of the information regarding the research expenditures, which was available only for 2003.

Analytical Procedures

We conducted our analysis of university influence in several stages. First, because we were interested in examining the trends in university influence over time, we divided the information from the ISI database into five individual time periods (1981 to 1984, 1985 to 1989, 1990 to 1994, 1995 to 1999, and 2000 to 2004). Next, we examined the data from these time periods and aggregated it by university where it was appropriate. There were three major reasons why this aggregation process was necessary. First, in some cases, authors identified their affiliation with a particular school within their university rather than by the university itself, and these data had to be added together. Second, we had to integrate the citations and articles published in those journal issues that were not available in the relational database. Third, some universities have changed their names during the past 25 years (e.g., California State University at San Diego to San Diego State University), and we had to integrate the data from these postings before we conducted our analyses. To ensure the reliability of this aggregation process, one of the authors and a research assistant independently sorted the

data and then checked their level of agreement. They agreed 96% of the time. All disagreements were examined and resolved before further data analyses were conducted. Once the aggregation process was completed, we tested the hypotheses about the distribution of citations for the entire set of universities included in our sample.

Following this, we conducted a more extensive analysis of only the 100 most-cited universities. The reason for analyzing the 100 most-cited universities in greater depth is that we wanted to focus our attention on those institutions that have had the biggest impact. Based on these data, we estimated the model shown in Figure 1 using LISREL 8.8. Finally, we examined the influence of individual universities in the cumulative period and changes in their influence over time. As part of this analysis, we tried to identify those universities that have increased (or decreased) their influence during the past 25 years.

Results

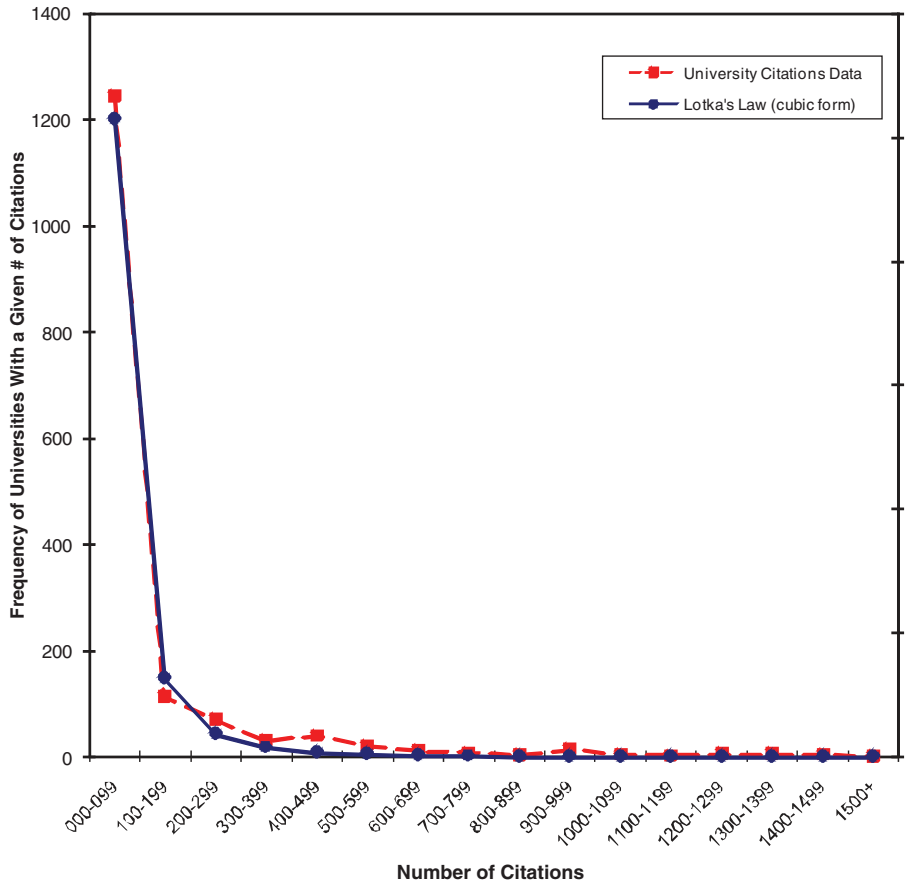
Descriptive Statistics

A total of 1,693 universities had faculty members publish articles in at least 1 of the 30 management journals from 1981 to July 2004, and these articles received a total of 739,472 university citations. In addition, although the mean number of articles per university in the cumulative period was 24.19 (SD = 74.62), the modal number of articles per university was only 1 and the median number of articles per university was only 3. The mean number of citations per university during the past quarter century was 436.78 (SD = 1,700.87), the mode was 0, and median was 232. Taken together, these findings suggest that even though a large number of universities had faculty members who contributed to the management literature during the past quarter century, the majority of these universities contributed only a few articles and fewer than 20 citations to the literature per year. Indeed, the data indicate that 9% of the universities in our sample received no citations for the articles that their faculty published during the past quarter century.

Hypothesis Tests for Universities

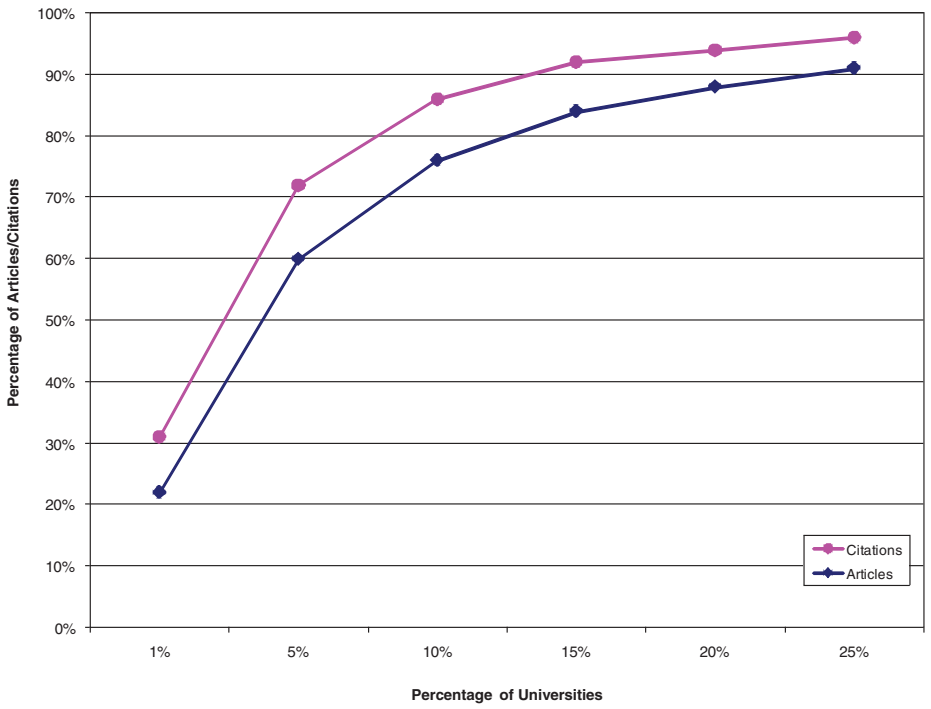
Tests of hypotheses regarding the distribution of university citations. Based on Lotka's (1926) law, we expected (Hypothesis 1) that the number of universities receiving n citations would be inversely proportional to n^a. We tried values for a ranging from 1 to 4 and plotted the actual frequency distribution of citations against the value predicted by Lotka's law. Once these values were plotted, we used two criteria to determine whether the data conformed to the predicted values. The first criterion was an examination of the plots for the actual and predicted values, and the second was the correlation between the actual and predicted values, after correcting for skew. Based on these criteria, we concluded that the cubic form of the relationship (a = 3) came the closest to matching the data. Figure 2 shows the frequency distribution for the university citation data along with a line depicting the prediction made based on Lotka's law. As indicated in this figure, the actual and predicted lines come very close to converging. This was supported by a nearly perfect correlation (r = .999) between the actual and predicted values. This pattern of results supports Hypothesis 1.

Figure 2
Comparison of the Actual Frequency of Universities With a Given Number of Citations to Lotka's (1926) Prediction



Hypothesis 2 posited that 5% of the universities would account for at least 50% of the citations. Figure 3 reports the percentage of total citations accounted for by various percentages of the 1,693 universities included in our sample. As indicated in this figure, 5% of the 1,693 universities ($n = 85$) accounted for approximately 72% of the total number of citations received by all universities. In addition, this figure shows that 5% of the universities also accounted for a majority of the publications (60%). Consistent with our expectations, these findings suggest that a relatively small percentage of the universities publishing research in the management literature are responsible for the vast majority of the citations and articles in the field during the past 25 years. Indeed, 25% of the universities ($n = 423$) accounted for almost all of the citations (96%) and articles (91%), as shown in Figure 3.

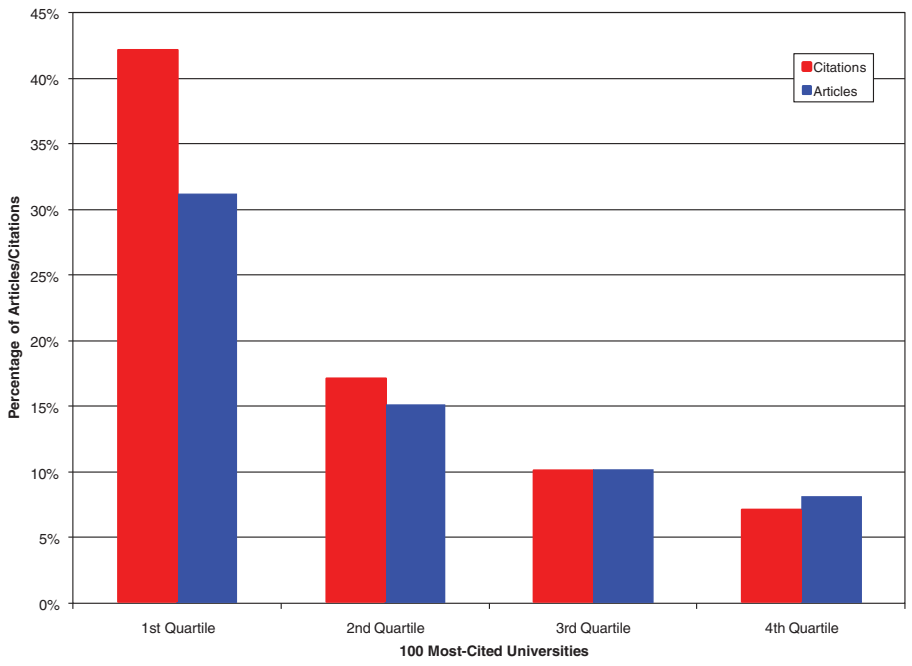
Figure 3
Plot of Percentages of University Articles and Citations From 1981 to 2004



Tests of the hypothesized determinants of university citations. The data discussed above suggest that a relatively small percentage of universities account for the majority of the citations and have a disproportionate amount of influence on the field of management. Therefore, when testing the remaining hypotheses (Hypotheses 3 to 12), we focused our attention on the top 100 universities in each of the five time periods (1981 to 1984, 1985 to 1989, 1990 to 1994, 1995 to 1999, 2000 to 2004). Given that some universities were represented in the 100 most-cited institutions in some of the five time periods but not in others, the total number of universities that were in the top 100 for at least one time period was 157. These universities comprised approximately 9% (157 of 1,693) of the total number of universities and together they accounted for 84% of all citations and 75% of all publications.

Of course, the danger of limiting our analyses to only this subset of universities is that it may restrict the variance in the variables of interest. Fortunately, this does not appear to be a major problem. Figure 4 shows the percentage of the total number of citations received and articles published in our database by the 100 most-cited universities, broken down by quartiles. Generally speaking, the data indicate that the top quartile of the 100 most-cited universities in our study averaged twice as many articles published as those universities in the

Figure 4
Percentage of the Total Number of Articles and Citations Accounted for by the 100 Most-Cited Universities (by Quartile)



second quartile (31% vs. 15% of all the articles), more than 3 times more than those in the third quartile (31% vs. 10%) and approximately 4 times more than those in the fourth quartile (31% vs. 8%). These differences were even more pronounced in the case of citations, where the top quartile averaged about 2.5 times more citations than the universities in the second quartile (42% vs. 17% of all citations), 4 times more than the third quartile (42% vs. 10%), and almost 6 times more than the fourth quartile (42% vs. 7%). These findings are impressive when one considers that, in an absolute sense, this means that universities in the top quartile published almost as many total articles (12,614 vs. 13,595) and received more than 21% more total citations (307,988 vs. 253,223) from 1981 to 2004 than the other three quartiles combined!

To test Hypotheses 3 to 12, the model shown in Figure 1 was estimated using LISREL 8.8 based on the sample covariances. The advantage of this approach is that it allows us to estimate all of the relationships in our model at the same time, test the indirect effects implied by the model, and obtain overall goodness-of-fit indices. However, this method is sensitive to violations of normality. Therefore, we transformed any nonnormal variables using a log transformation before estimating our model. In the first step of our model-testing procedure, we estimated only the hypothesized relationships shown in Figure 1. Next, we

eliminated nonsignificant relationships. Finally, we added those nonhypothesized relationships that were found to be significant.

The means, standard deviations, and intercorrelations for the variables included in our university model are reported in Table 3, and the results of our path analysis are shown in Figure 5. The solid lines in this figure represent significant hypothesized relationships, whereas the dashed lines represent significant relationships that were not hypothesized. Overall, this model fit the data very well ($\chi^2 = 17.13$, $df = 14$, $p = .25$; comparative fit index (CFI) = .99, goodness-of-fit index (GFI) = .97, root mean square error of approximation (RMSEA) = .04, standardized root mean residual (SRMR) = .03).

As indicated in Figure 5, total publications were positively related to total citations ($\beta_{std} = .93$, $p < .05$) and accounted for 87% of the variance in total citations. This supports Hypothesis 3. Consistent with Hypotheses 4 to 7, we also found that the number of PhDs awarded ($\beta_{std} = .46$, $p < .05$), amount of research expenditures ($\beta_{std} = .22$, $p < .05$), university endowment assets ($\beta_{std} = .17$, $p < .05$), and university size ($\beta_{std} = .14$, $p < .05$) all were positively related to university publications. Together, these predictors accounted for 65% of the variance in total university publications. Generally speaking, these findings suggest that those universities that are larger and possess greater resources in terms of doctoral students, research expenditures, and endowment assets publish more articles.

Figure 5 also indicates that, as predicted by Hypothesis 8, the number of PhDs awarded per year was influenced by university size ($\beta_{std} = .74$, $p < .05$). In addition, the number of PhDs awarded was also positively related to whether the university was private ($\beta_{std} = .21$, $p < .05$) and university age ($\beta_{std} = .28$, $p < .05$). These three predictors accounted for 48% of the variance in this criterion variable. As expected (Hypothesis 9), research expenditures were positively related to university size ($\beta_{std} = .53$, $p < .05$). In addition, these expenditures were also positively related to university age ($\beta_{std} = .26$, $p < .05$), suggesting that older universities spend more on research than do younger ones. Taken together, these two predictors accounted for 33% of the variance in research expenditures. Finally, as expected (Hypotheses 10 to 12), university endowment assets were positively related to the university's size ($\beta_{std} = .30$, $p < .05$), its status as a private university ($\beta_{std} = .57$, $p < .05$), and its age ($\beta_{std} = .41$, $p < .05$). Together, these predictors accounted for 45% of the variance in the university's endowment assets.

Finally, although we examined the effect of the presence of an I/O psychology department as a covariate, there are no arrows emanating from this variable in Figure 5 because it did not have any significant effects.

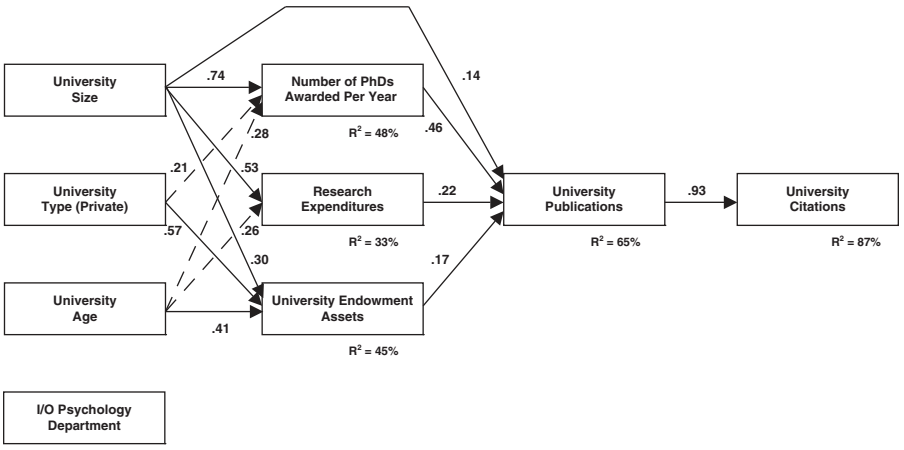
Examination of total and indirect effects. As a final step in our analysis of the determinants of university citations, we examined the total and indirect effects of the variables in our model. First, all of the indirect paths shown in Figure 5 were statistically significant ($p < .05$). Second, total publications completely mediated the effects of the number of PhDs awarded per year, research expenditures, and endowment assets on total citations. Of these mediated indirect effects, variation in the number of PhDs awarded per year had the strongest impact on total citations (standardized indirect effect = .43), followed by research expenditures (standardized indirect effect = .20) and endowment assets (standardized indirect effect = .16). Third, with respect to the indirect effects of university size, type, and age on total publications,

Table 3
Means, Standard Deviations and Intercorrelations of U.S. University Characteristics

	M	*SD*	1	2	3	4	5	6	7	8
1. Age of university	141.82	52.86								
2. University type (private = high)	1.34	.48	.19*							
3. Presence of I/O Psych. dept.	1.36	.48	–.14	–.35*						
4. University size (enrollment 1,000's)	24.70	11.06	–.08	–.57*	.27*					
5. # Ph.D.s granted per year	262.50	179.57	.26*	–.14	.03	.59*				
6. Research expenditures (1,000's)	20,003.00	19,818.00	.22*	–.21*	.05	.51*	.65*			
7. Endowment assets (1,000's)	1,579,233.00	2,909,302.00	.49*	.48*	–.21*	–.05	.57*	.31*		
8. Total publications	222.25	175.85	.27*	–.09	.07	.52*	.78*	.64*	.49*	
9. Total citations	4,664.00	4,509.00	.26*	–.04	.03	.42*	.76*	.56*	.47*	.93*

Note: The means and standard deviations reported in this table represent raw scores; whereas the intercorrelations reported include corrections for skewness for those variables where it was appropriate (e.g., research expenditures, endowment assets, total publications, and total citations).
* $p < .05$

Figure 5
Best Fitting Model for Predicting University Publications and Citations



the results indicate that (a) 79% of the total effect of university size on total publications was mediated by the number of PhDs awarded, research expenditures, and endowment assets; (b) 100% of the total effect of university age on total publications was mediated by number of PhDs awarded, research expenditures, and endowment assets; and (c) 100% of the total effect of university type on total publications was mediated by just the number of PhDs awarded and endowment assets. Thus, with the exception of university size, all of the effects of university type and age were mediated through their effects on university resources, and even in the case of university size, these resources still accounted for the majority of the total effect.

Individual University Influence in the Cumulative Period (1981 to 2004)

Table 4 provides a summary ranking of the 100 most-cited universities for the cumulative period from 1981 to 2004 arranged by the total number of citations received. This table presents the following information: (a) the name of the university, (b) the number of total citations received by it, and (c) a z score based on the total number of citations. Thus, the data in Table 4 indicate that, during the cumulative period from 1981 to 2004, Harvard University received 18,719 citations ($z = 2.89$). It should be noted that because all of the data regarding the total number of citations were found to be positively skewed, we used a log transformation on these data before computing the z scores.

There are several interesting patterns that emerged from Table 4. First, the data indicate that the schools from the Big Ten Conference were among the most prolific in terms of citations received during the cumulative period, followed by schools from the Pac 10, the Ivy League, and the ACC and Big 12. Three of the universities in the Big Ten (Michigan, Illinois,

Table 4
100 Most-Cited Universities in the Field of Management (1981-2004)

University	Cites	*z*
1. Harvard University	18,719	2.89
2. University of Pennsylvania	18,523	2.89
3. Stanford University	18,408	2.88
4. University of Michigan	16,397	2.83
5. University of Illinois	15,149	2.80
6. Texas A&M University	14,929	2.79
7. New York University (NYU)	14,476	2.78
8. MIT	14,332	2.77
9. University of Minnesota	14,062	2.76
10. Columbia University	13,859	2.76
11. University of Texas	13,835	2.76
12. UC Berkeley	12,869	2.72
13. Michigan State University	12,761	2.72
14. Ohio State University	11,467	2.67
15. Northwestern University	11,172	2.66
16. Indiana University	10,381	2.63
17. Cornell University	10,076	2.61
18. Penn State University	9,752	2.60
19. Carnegie Mellon University	9,397	2.58
20. University of Maryland	8,959	2.56
21. University of Wisconsin	8,190	2.52
22. Purdue University	7,997	2.51
23. University of Washington	7,993	2.51
24. University of Southern California (USC)	7,333	2.47
25. UCLA	6,952	2.45
26. University of North Carolina	6,863	2.44
27. University Iowa	6,676	2.43
28. University of London[a]	6,508	2.42
29. Rutgers State University	6,189	2.39
30. University of South Carolina	5,908	2.37
31. Dartmouth College	5,885	2.37
32. Arizona State University	5,844	2.37
33. McGill University[a]	5,544	2.35
34. University of Arizona	5,321	2.33
35. INSEAD[a]	5,021	2.30
36. Georgia Institute of Technology	5,007	2.30
37. Boston University	4,834	2.28
38. University of Western Ontario[a]	4,744	2.28
39. Duke University	4,743	2.28
40. University of Colorado	4,690	2.27
41. University of Chicago	4,655	2.27
42. Louisiana State University (LSU)	4,609	2.26
43. University of Missouri	4,604	2.26
44. UC Irvine	4,355	2.24
45. University of Florida	4,341	2.24
46. SUNY Buffalo	4,324	2.23

(continued)

Table 4 (continued)

University	Cites	*z*
47. University of Houston	4,137	2.21
48. Tel Aviv University[a]	3,927	2.19
49. University of Pittsburgh	3,839	2.18
50. University of Massachusetts	3,838	2.18
51. Southern Methodist University (SMU)	3,615	2.15
52. University of Toronto[a]	3,529	2.14
53. Florida State University	3,494	2.14
54. University of Akron	3,355	2.12
55. University of Georgia	3,289	2.11
56. SUNY Albany	3,195	2.10
57. Wayne State University	3,129	2.09
58. University of Oregon	2,963	2.06
59. University of Tennessee	2,954	2.06
60. Virginia Tech	2,940	2.06
61. Concordia University[a]	2,936	2.06
62. Case Western Reserve	2,922	2.06
63. University of Cincinnati	2,915	2.06
64. University of Virginia	2,855	2.05
65. City University of New York (CUNY)	2,806	2.04
66. University of Connecticut	2,799	2.04
67. Hebrew University Jerusalem[a]	2,776	2.04
68. Georgia State University	2,737	2.03
69. University of British Columbia[a]	2,717	2.03
70. Bowling Green	2,689	2.02
71. Yale University	2,609	2.01
72. SUNY Binghamton	2,584	2.00
73. Georgetown University	2,573	2.00
74. York University	2,570	2.00
75. University of South Florida	2,564	2.00
76. Queen's University[a]	2,485	1.99
77. University of Sheffield[a]	2,435	1.98
78. George Mason University	2,433	1.98
79. University of Nebraska	2,422	1.97
80. Florida International University	2,415	1.97
81. Tulane University	2,360	1.96
82. Iowa State University	2,325	1.96
83. Temple University	2,286	1.95
84. Northeastern University	2,270	1.95
85. University of Manchester[a]	2,231	1.94
86. University of Alberta[a]	2,172	1.93
87. Marquette University	2,104	1.91
88. Clemson University	2,078	1.91
89. University of Notre Dame	2,020	1.89
90. Haute Ecole Commerciale (HEC) Montreal[a]	2,005	1.89
91. Southern Illinois University	1,982	1.88
92. University of Oklahoma	1,964	1.88
93. University of Santa Clara	1,963	1.88

(continued)

Table 4 (continued)

University	Cites	*z*
94. University of Arkansas	1,940	1.87
95. Colorado State University	1,933	1.87
95. Washington State University	1,933	1.87
97. University of Alabama	1,897	1.86
98. University of Kentucky	1,895	1.86
99. University of Delaware	1,888	1.86
100. University of New South Wales[a]	1,866	1.86

Note: MIT = Massachusetts Institute of Technology; UC = University of California; UCLA = University of California, Los Angeles; INSEAD = Institut European d'Administration des Affaires; SUNY = State University of New York.
a. University located outside of the United States.

and Minnesota) were ranked among the top 10 in terms of total citations, and 10 of the 11 schools in this conference (including Michigan State, Ohio State, Northwestern, Indiana, Penn State, Wisconsin, and Purdue) were ranked among the 25 most-cited universities in the cumulative period (with Iowa ranked 27th). Five universities from the Pac 10 conference (Stanford, University of California, Berkeley, Washington, Southern California, and UCLA) and four universities from the Ivy League (Harvard, Columbia, Cornell, and Penn) also made the list of the top 25 most-cited universities. In addition, two universities in the Big 12 (Texas A&M and Texas) were among the top 25 in terms of total citations received during the past quarter century.

Second, it is worth noting that the universities included in the 100 most-cited institutions are dominated by those in the United States. All of the top 25 universities and all but 15 in the top 100 are located in the United States. However, this probably is not surprising because the first business school (Wharton) was located in the United States, many of the disciplines associated with modern management were developed in the United States, and nearly all of the journals included in our study got their start and continue to be published in this country.

Changes in University Influence Over Time

As noted earlier, in addition to being interested in identifying the most influential universities during the past 25 years, we were also interested in examining any changes in their influence over time. Therefore, we divided the total period into five intervals (1981 to 1984, 1985 to 1989, 1990 to 1994, 1995 to 1999, 2000 to 2004) and identified the top 100 universities in each of these intervals. This resulted in a table similar to Table 4 for each of the five time periods. These universities were then ranked within each time period, based on the total number of citations received and this information is reported in Table 5. The data reported in this table refer to the citations that were received by articles published during the periods included in our study. In other words, we identified all of the articles that a university had published in each of the time periods (1981 to 1984, 1985 to 1989, 1990 to 1994, 1995 to 1999, 2000 to 2004) and all of the subsequent citations that those articles received. Thus, the entries reported in the 1985 to 1989 column of the table represent the number of citations

that a university has received for articles that were published during this specific period (only). The reason for conducting our analysis in this way is that it allowed us to determine whether a university continued to generate highly cited articles over time, as opposed to simply resting on the "laurels" of earlier published articles that continued to be cited for a long time after they were published.

Because some universities were in the top 100 in some periods but not in other periods, a total of 157 universities made at least one of the "100 most-cited" lists. To help make any trends in this data more discernable, the quartile rankings are provided in parentheses. For example, the first numerical entry in this table indicates that Arizona State University was ranked 32nd in total citations for the cumulative time period from 1981 to 2004, and this placed Arizona State in the second quartile during this time period. Likewise, the last column in the first row of this table indicates that Arizona State was the 13th ranked school in terms of total citations from 2000 to 2004, and this placed it in the first quartile in this time period. Finally, dashes (—) in this table indicate that a university did not make the top 100 during the specific period examined.

Table 5 indicates that a relatively limited set of universities has enjoyed fairly prominent positions with respect to their influence in the management literature during the past 25 years. For example, this table indicates that (a) 56 of the 157 institutions (36%) that were among the 100 most-cited universities in one period were represented in all five periods, (b) 16 institutions (10%) were represented in four of the five periods, (c) 24 universities (15%) were represented in three of the periods, and (d) 21 of the institutions (13%) were represented twice in the five periods. Perhaps more impressive is the fact that 15 universities (Carnegie Mellon, Columbia, Harvard, Illinois, Indiana, Massachusetts Institute of Technology, Michigan, Minnesota, New York University, Northwestern, Penn State, Pennsylvania, Stanford, Texas, and Texas A&M) consistently ranked in the top quartile for all five periods, seven others (Cornell, Michigan State, Ohio State, Purdue, University of California at Berkeley, Maryland, and Wisconsin) were ranked within the top quartile in all but one of the periods, and three others (Arizona State, University of London, and University of Washington) were ranked in the top quartile in all but two periods. Taken together, this suggests that these 25 institutions accounted for 112 (90%) of the possible 125 positions available in the top quartile across the five periods. Thus, it appears that these universities have all but dominated the field of management (in terms of citations) during the past quarter century.

The data reported in Table 5 also provide some additional insight into those schools whose citation impact has increased somewhat during the past 25 years. For example, Arizona State and the University of London have moved into the top quartile of schools during the past three time periods. Thus, it would appear that these schools have gained some additional prominence in terms of their influence in the management literature in the recent past. In addition, if the data in Table 5 are indicative of the future, a few universities have diminished in influence during the past two decades as well. Perhaps the most prominent of these is McGill University, which was ranked in either the first or second quartiles during the first three time periods but was not ranked in the top 100 in the last two periods.

Table 5
Summary of Quartile Ranking of 100 Most-Cited Universities from 1981-2004

	1981 to 2004	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004
Arizona State University	32 (2nd)	54 (3rd)	60 (3rd)	24 (1st)	22 (1st)	13 (1st)
Auburn University	—	59 (3rd)	94 (4th)	—	—	—
Boston College	—	87 (4th)	—	—	72 (3rd)	74 (3rd)
Boston University	37 (2nd)	35 (2nd)	45 (2nd)	41 (2nd)	42 (2nd)	37 (2nd)
Bowling Green State University	70 (3rd)	97 (4th)	38 (2nd)	—	69 (3rd)	—
Brigham Young University	—	—	—	—	—	47 (2nd)
California Poly San Luis Obispo	—	—	97 (4th)	—	—	—
Carnegie Mellon University	19 (1st)	25 (1st)	17 (1st)	16 (1st)	20 (1st)	22 (1st)
Case Western Reserve	62 (3rd)	96 (4th)	50 (2nd)	68 (3rd)	56 (3rd)	77 (4th)
Chinese University of Hong Kong[a]	—	—	—	—	98 (4th)	49 (2nd)
Clemson University	88 (4th)	89 (4th)	87 (4th)	81 (4th)	—	88 (4th)
Cleveland State University	—	—	—	—	—	99 (4th)
Colorado State University	95 (4th)	—	66 (3rd)	87 (4th)	—	95 (4th)
Columbia University	10 (1st)	1 (1st)	13 (1st)	10 (1st)	7 (1st)	15 (1st)
Concordia University (Canada)[a]	61 (3rd)	75 (3rd)	63 (3rd)	57 (3rd)	55 (3rd)	—
Cornell University	17 (1st)	13 (1st)	16 (1st)	17 (1st)	23 (1st)	26 (2nd)
City University of New York (CUNY)	65 (3rd)	65 (3rd)	79 (4th)	59 (3rd)	74 (3rd)	86 (4th)
Dartmouth College	31 (2nd)	33 (2nd)	28 (2nd)	27 (2nd)	53 (3rd)	69 (3rd)
DePaul University	—	93 (4th)	—	—	—	—
Drexel University	—	82 (4th)	89 (4th)	—	—	—
Duke University	39 (2nd)	58 (3rd)	40 (2nd)	42 (2nd)	30 (2nd)	55 (3rd)
Emory University	—	—	—	—	84 (4th)	56 (3rd)
Erasmus University (Netherlands)[a]	—	—	—	—	—	93 (4th)
Florida International University	80 (4th)	85 (4th)	76 (4th)	—	48 (2nd)	58 (3rd)
Florida State University	53 (3rd)	34 (2nd)	68 (3rd)	80 (4th)	54 (3rd)	36 (2nd)
George Mason University	78 (4th)	—	72 (3rd)	48 (2nd)	—	27 (2nd)
Georgetown University	73 (3rd)	—	—	73 (3rd)	28 (2nd)	—
George Washington University	—	68 (3rd)	—	—	—	73 (3rd)
Georgia Institute of Technology	36 (2nd)	30 (2nd)	43 (2nd)	62 (3rd)	35 (2nd)	38 (2nd)
Georgia State University	68 (3rd)	—	—	52 (3rd)	40 (2nd)	29 (2nd)
Harvard University	1 (1st)	4 (1st)	6 (1st)	3 (1st)	1 (1st)	2 (1st)
Hebrew University Jerusalem[a]	67 (3rd)	72 (3rd)	52 (3rd)	86 (4th)	73 (3rd)	72 (3rd)
Haute Ecole Commerciale (HEC - Canada)[a]	90 (4th)	63 (3rd)	95 (4th)	—	—	99 (4th)
Hitotsubashi University (Japan)[a]	—	—	—	88(4th)	—	—
Hong Kong Polytechnic University[a]	—	—	—	—	—	68 (3rd)

(continued)

Table 5 (continued)

	1981 to 2004	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004
HKUST (Hong Kong)[a]	—	—	—	—	44 (2nd)	85 (4th)
Indiana University	16 (1st)	15 (1st)	15 (1st)	18 (1st)	25 (1st)	24 (1st)
INSEAD (France)[a]	35 (2nd)	56 (3rd)	31 (2nd)	56 (3rd)	33 (2nd)	21 (1st)
Iowa State University	82 (4th)	51 (3rd)	—	92 (4th)	71 (3rd)	—
Johns Hopkins University	—	85 (4th)	—	—	—	—
Kansas State University	—	—	—	—	86 (4th)	97 (4th)
Kent State University	—	—	84 (4th)	—	—	—
Louisiana State University	42 (2nd)	—	29 (2nd)	40 (2nd)	36 (2nd)	89 (4th)
Loyola Marymount University[a]	—	—	—	89 (4th)	—	—
Loyola University	—	—	—	70 (3rd)	—	—
Marquette University	87 (4th)	—	87 (4th)	46 (2nd)	—	—
McGill University (Canada)[a]	33 (2nd)	21 (1st)	24 (1st)	43 (2nd)	—	—
McMaster University (Canada)[a]	—	—	81 (4th)	—	—	—
Michigan State University	13 (1st)	27 (2nd)	5 (1st)	13 (1st)	9 (1st)	5 (1st)
Massachusetts Institute of Technology (MIT)	8 (1st)	8 (1st)	7 (1st)	6 (1st)	13 (1st)	8 (1st)
National University of Singapore[a]	—	—	—	—	61 (3rd)	62 (3rd)
New York University (NYU)	7 (1st)	9 (1st)	2 (1st)	12 (1st)	16 (1st)	25 (1st)
North Carolina State University	—	92 (4th)	—	—	—	84 (4th)
Northeastern University	84 (4th)	91 (4th)	74 (3rd)	77 (4th)	—	96 (4th)
Northwestern University	15 (1st)	14 (1st)	19 (1st)	14 (1st)	6 (1st)	16 (1st)
Ohio State University	14 (1st)	5 (1st)	11 (1st)	19 (1st)	29 (2nd)	12 (1st)
Ohio University	—	—	—	—	—	91 (4th)
Oklahoma State University	—	95 (4th)	—	—	—	—
Penn State University	18 (1st)	23 (1st)	22 (1st)	11 (1st)	19 (1st)	19 (1st)
Princeton University	—	—	—	94 (4th)	—	—
Purdue University	22 (1st)	24 (1st)	25 (1st)	22 (1st)	21 (1st)	31 (2nd)
Queen's University (Canada)[a]	76 (4th)	79 (4th)	54 (3rd)	76 (4th)	—	—
Rice University	—	78 (4th)	96 (4th)	—	—	71 (3rd)
Rutgers State University	29 (2nd)	67 (3rd)	42 (2nd)	26 (2nd)	15 (1st)	30 (2nd)
San Jose State University	—	98 (4th)	—	85 (4th)	64 (3rd)	—
Simon Fraser University (Canada)[a]	—	84 (4th)	73 (3rd)	—	—	—
Southern Illinois University	91 (4th)	53 (3rd)	—	—	68 (3rd)	—
Southern Methodist University	51 (3rd)	37 (2nd)	46 (2nd)	66 (3rd)	80 (4th)	—
Stanford University	3 (1st)	6 (1st)	1 (1st)	5 (1st)	3 (1st)	10 (1st)
SUNY Albany	56 (3rd)	41 (2nd)	91 (4th)	51 (3rd)	81 (4th)	—
SUNY Binghamton	72 (3rd)	—	77 (4th)	50 (2nd)	62 (3rd)	—
SUNY Buffalo	46 (2nd)	26 (2nd)	56 (3rd)	45 (2nd)	60 (3rd)	—
Syracuse University	—	77 (4th)	—	100 (4th)	65 (3rd)	—
Technion (Israel)[a]	—	—	65 (3rd)	—	—	—
Tel Aviv University (Israel)[a]	48 (2nd)	43 (2nd)	36 (2nd)	60 (3rd)	75 (3rd)	80 (4th)
Temple University	83 (4th)	—	53 (3rd)	—	87 (4th)	—

(continued)

Table 5 (continued)

	1981 to 2004	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004
Texas A&M University	6 (1st)	3 (1st)	8 (1st)	4 (1st)	18 (1st)	7 (1st)
Texas Christian University	—	64 (3rd)	—	—	—	—
Texas Tech University	—	94 (4th)	—	—	—	—
Thunderbird School of Global Management	—	—	—	—	100 (4th)	—
Tilburg University (Netherlands)[a]	—	—	—	—	66 (3rd)	—
Tulane University	81 (4th)	—	62 (3rd)	72 (3rd)	67 (3rd)	48 (2nd)
University of Akron	54 (3rd)	37 (2nd)	48 (2nd)	82 (4th)	85 (4th)	—
University of Alabama	97 (4th)	62 (3rd)	—	—	93 (4th)	—
University of Alberta (Canada)[a]	86 (4th)	76 (4th)	82 (4th)	78 (4th)	—	—
University of Amsterdam (Netherlands)a	—	—	—	—	—	52 (3rd)
University of Arizona	34 (2nd)	42 (2nd)	32 (2nd)	39 (2nd)	38 (2nd)	50 (2nd)
University of Arkansas	94 (4th)	—	—	65 (3rd)	45 (2nd)	60 (3rd)
University of British Columbia (Canada)[a]	69 (3rd)	90 (4th)	71 (3rd)	44 (2nd)	—	—
University of Calgary (Canada)[a]	—	—	—	—	70 (3rd)	—
University of California (UC) Berkeley	12 (1st)	2 (1st)	14 (1st)	15 (1st)	11 (1st)	35 (2nd)
University of California (UC) Irvine	44 (2nd)	60 (3rd)	51 (3rd)	34 (2nd)	43 (2nd)	58 (3rd)
University of California Los Angeles (UCLA)	25 (1st)	20 (1st)	21 (1st)	36 (2nd)	37 (2nd)	32 (2nd)
University of California (UC) Santa Barbara	—	—	61 (3rd)	—	—	—
University of Cambridge (UK)[a]	—	—	—	—	—	65 (3rd)
University of Central Florida	—	—	—	—	—	79 (4th)
University of Chicago	41 (2nd)	39 (2nd)	80(4th)	37 (2nd)	32 (2nd)	41 (2nd)
University of Cincinnati	63 (3rd)	46 (2nd)	93 (4th)	74 (3rd)	63 (3rd)	65 (3rd)
University of Colorado	40 (2nd)	61 (3rd)	33 (2nd)	38 (2nd)	46 (2nd)	34 (2nd)
University of Connecticut	66 (3rd)	74 (3rd)	83 (4th)	64 (3rd)	52 (3rd)	46 (2nd)
University of Delaware	99 (4th)	—	92 (4th)	79 (4th)	—	62 (3rd)
University of Florida	45 (2nd)	31 (2nd)	39 (2nd)	71 (3rd)	79 (4th)	17 (1st)
University of Georgia	55 (3rd)	55 (3rd)	69 (3rd)	49 (2nd)	76 (4th)	45 (2nd)
University of Houston	47 (2nd)	19 (1st)	59 (3rd)	91 (4th)	47 (2nd)	91 (4th)
University of Illinois	5 (1st)	10 (1st)	3 (1st)	9 (1st)	5 (1st)	6 (1st)
University of Iowa	27 (2nd)	50 (2nd)	30 (2nd)	21 (1st)	27 (2nd)	17 (1st)
University of Kansas	—	49 (2nd)	—	—	—	—
University of Kentucky	98 (4th)	71 (3rd)	100 (4th)	—	91 (4th)	76 (4th)
University of London (UK)[a]	28 (2nd)	100 (4th)	47 (2nd)	20 (1st)	12 (1st)	14 (1st)
University of Lund (Scandinavia)[a]	—	—	—	—	—	94 (4th)
University of Maastricht (Netherlands)a	—	—	—	97 (4th)	—	—

(continued)

Table 5 (continued)

	1981 to 2004	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004
University of Manchester (UK)[a]	85 (4th)	—	78 (4th)	63 (3rd)	94(4th)	—
University of Maryland	20 (1st)	18 (1st)	18 (1st)	31 (2nd)	17 (1st)	3 (1st)
University of Massachusetts	50 (2nd)	57 (3rd)	49 (2nd)	33 (2nd)	—	—
University of Melbourne (Australia)[a]	—	—	—	—	—	99 (4th)
University of Miami	—	—	—	69 (3rd)	82 (4th)	67 (3rd)
University of Michigan	4 (1st)	11 (1st)	9 (1st)	2 (1st)	4 (1st)	9 (1st)
University of Minnesota	9 (1st)	17 (1st)	4 (1st)	8 (1st)	9 (1st)	11 (1st)
University of Missouri	43 (2nd)	52 (3rd)	41 (2nd)	32 (2nd)	49 (2nd)	83 (4th)
University of Montreal (Canada)[a]	—	—	85 (4th)	99 (4th)	—	—
University of Nebraska	79 (4th)	66 (3rd)	67 (3rd)	93 (4th)	—	82 (4th)
University of New South Wales (UK)[a]	100 (4th)	—	70 (3rd)	—	76 (4th)	—
University of North Carolina	26 (2nd)	28 (2nd)	27 (2nd)	30 (2nd)	31 (2nd)	23 (1st)
University of Notre Dame	89 (4th)	81 (4th)	—	—	50 (2nd)	64 (3rd)
University of Nottingham (UK)[a]	—	—	—	—	—	43 (2nd)
University of Oklahoma	92 (4th)	—	—	83 (4th)	78 (4th)	40 (2nd)
University of Oregon	58 (3rd)	40 (2nd)	86 (4th)	75 (3rd)	57 (3rd)	—
University of Oxford (UK)[a]	—	—	—	—	88 (4th)	—
University of Pennsylvania	2 (1st)	12 (1st)	10 (1st)	1 (1st)	2 (1st)	1 (1st)
University of Pittsburgh	49 (2nd)	69 (3rd)	37 (2nd)	47 (2nd)	51 (3rd)	80 (4th)
University of Queensland (Australia)[a]	—	—	—	—	—	78 (4th)
University of Richmond	—	—	—	—	—	86 (4th)
University of Rochester	—	—	97 (4th)	—	—	—
University of Santa Clara	93 (4th)	32 (2nd)	—	96 (4th)	—	—
University of Sheffield (UK)[a]	77 (4th)	44 (2nd)	—	—	83 (4th)	—
University of South Carolina	30 (2nd)	29 (2nd)	35 (2nd)	35 (2nd)	34 (2nd)	53 (3rd)
University of South Florida	75 (3rd)	—	44 (2nd)	98 (4th)	92 (4th)	50 (2nd)
University of Southern California (USC)	24 (1st)	45 (2nd)	26 (2nd)	28 (2nd)	14 (1st)	44 (2nd)
University of Tennessee	59 (3rd)	80 (4th)	57 (3rd)	54 (3rd)	97 (4th)	53 (3rd)
University of Texas	11 (1st)	7 (1st)	12 (1st)	7 (1st)	8 (1st)	4 (1st)
University of Toronto (Canada)[a]	52 (3rd)	47 (2nd)	57 (3rd)	84 (4th)	39 (2nd)	39 (2nd)
University of Tulsa	—	—	99 (4th)	—	—	—
University of Utah	—	—	—	—	59 (3rd)	70 (3rd)
University of Utrecht (Netherlands)[a]	—	—	—	—	—	98 (4th)
University of Virginia	64 (3rd)	83 (4th)	64 (3rd)	53 (3rd)	—	33 (2nd)
University of Warwick (UK)[a]	—	—	—	95 (4th)	—	—
University of Washington	23 (1st)	22 (1st)	20 (1st)	23 (1st)	26 (2nd)	28 (2nd)
University of Western Ontario (Canada)[a]	38 (2nd)	70 (3rd)	55 (3rd)	25 (1st)	41 (2nd)	42 (2nd)
University of Wisconsin	21 (1st)	16 (1st)	23 (1st)	29 (2nd)	24 (1st)	20 (1st)
Vanderbilt University	—	87 (4th)	—	—	58 (3rd)	57 (3rd)
Virginia Tech	60 (3rd)	36 (2nd)	75 (3rd)	90 (4th)	99 (4th)	74 (3rd)
Washington State University	96 (4th)	—	—	67 (3rd)	96 (4th)	—

(continued)

Table 5 (continued)

	1981 to 2004	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004
Washington University (St. Louis)	—	—	—	—	—	61 (3rd)
Wayne State University	57 (3rd)	—	34 (2nd)	61 (3rd)	90 (4th)	—
Western Michigan University	—	99 (4th)	—	—	—	—
Yale University	71 (3rd)	48 (2nd)	—	58 (3rd)	94 (4th)	89 (4th)
York University (Canada)*	74 (3rd)	72 (3rd)	90 (4th)	55 (3rd)	89 (4th)	—

Note: HEC = Haute Ecole Commerciale; HKUST = Hong Kong University of Science and Technology; INSEAD = Institut European d'Administration des Affaires; SUNY = State University of New York; UC = University of California; UCLA = University of California, Los Angeles; UK = United Kingdom. — indicates that the university was not among the 100 most cited for the period. Values in parentheses represent quartile distributions for each period.
a. Located outside of the United States.

Supplementary Analyses Omitting Harvard Business Review (HBR)

Following the initial examination of the rankings of universities by citations, we also conducted a follow-up analysis of university influence in which citations and articles from *HBR* were excluded from consideration. The reason that this analysis was conducted without *HBR* in the data set is that there was some evidence from our preliminary research that suggested that Harvard faculty published far more articles in this journal than faculty from any other university. Thus, we felt it was important to determine what effect excluding this journal might have on the rankings. The results of this follow-up analysis are reported in Table 6 for the 50 most-cited universities in our sample, based on the cumulative period (1981 to 2004). The reason for including only the top 50 was that omitting the data from *HBR* had no appreciable influence on any of the remaining universities in the top 100. The three columns in this table report (a) the total number of citations (and rank) received by each institution without including *HBR* in the analysis, (b) the total number of citations (and rank) received by the institution with *HBR* included in the analyses, and (c) the change in relative ranking based on citation counts when *HBR* was excluded from the analyses.

As indicated in Table 6, articles published in *HBR* accounted for 41% (7,645 of 18,719) of the total number of citations that Harvard received from 1981 to 2004. When these citations were excluded from the analysis, Harvard moved from the most-cited university down to the 14th most-cited university based on total citations. Thus, it is obvious that Harvard's citation prominence is at least in part influenced by the fact that their faculty publish substantially in *HBR*. In addition to Harvard, a few other universities dropped somewhat in the rankings when *HBR* was excluded from the analysis. These included Institut European d'Administration des Affaires (INSEAD), the University of London, and Boston University, which all moved down six places in terms of the number of citations received. Of these additional universities, it appears that the University of London was influenced the most by excluding *HBR* because approximately 22% of its total citations were attributable to articles published in this journal.

Table 6
Ranking of Top 50 Most-cited Universities with and without Harvard Business Review from 1981-2004

University	Number of Citations Without HBR	Number of Citations With HBR	Change in Relative Rank
University of Pennsylvania	18,102 (1)	18,523 (2)	+1
Stanford University	18,040 (2)	18,408 (3)	+1
University of Illinois	15,139 (3)	15,149 (5)	+2
University of Michigan	15,048 (4)	16,397 (4)	0
Texas A&M University	14,907 (5)	14,929 (6)	+1
New York University	14,414 (6)	14,476 (7)	+1
University of Minnesota	14,045 (7)	14,062 (9)	+2
University of Texas	13,823 (8)	13,835 (11)	+3
Massachusetts Institute of Technology (MIT)	13,809 (9)	14,332 (8)	−1
Columbia University	13,755 (10)	13,859 (10)	0
UC Berkeley	12,766 (11)	12,869 (12)	+1
Michigan State University	12,740 (12)	12,761 (13)	+1
Ohio State University	11,448 (13)	11,467 (14)	+1
Harvard University	11,074 (14)	18,719 (1)	−13
Northwestern University	10,937 (15)	11,172 (15)	0
Indiana University	10,365 (16)	10,381 (16)	0
Cornell University	10,076 (17)	10,076 (17)	0
Penn State University	9,654 (18)	9,752 (18)	0
Carnegie Mellon University	9,114 (19)	9,397 (19)	0
University of Maryland	8,946 (20)	8,959 (20)	0
University of Wisconsin	8,121 (21)	8,190 (21)	0
University of Washington	7,966 (22)	7,993 (23)	+1
Purdue University	7,958 (23)	7,997 (22)	−1
University of Southern California (USC)	7,180 (24)	7,333 (24)	0
UCLA	6,948 (25)	6,952 (25)	0
University of North Carolina	6,756 (26)	6,863 (26)	0
University Iowa	6,676 (27)	6,676 (27)	0
Rutgers State University	6,170 (28)	6,189 (29)	+1
University of South Carolina	5,908 (29)	5,908 (30)	+1
Arizona State University	5,844 (30)	5,844 (32)	+2
Dartmouth College	5,670 (31)	5,885 (31)	0
McGill University	5,308 (32)	5,544 (33)	+1
University of Arizona	5,194 (33)	5,321 (34)	+1
University of London	5,078 (34)	6,508 (28)	−6
Georgia Institute of Technology	5,007 (35)	5,007 (36)	+1
University of Western Ontario	4,735 (36)	4,744 (38)	+2
Duke University	4,734 (37)	4,743 (39)	+2
University of Colorado	4,682 (38)	4,690 (40)	+2
Louisiana State University	4,606 (39)	4,609 (42)	+3
University of Chicago	4,584 (40)	4,655 (41)	+1
INSEAD	4,468 (41)	5,021 (35)	−6
University of Missouri	4,567 (42)	4,604 (43)	+1
Boston University	4,515 (43)	4,834 (37)	−6
University of Florida	4,337 (44)	4,341 (45)	+1

(continued)

Table 6 (continued)

University	Number of Citations Without HBR	Number of Citations With HBR	Change in Relative Rank
SUNY Buffalo	4,324 (45)	4,324 (46)	+1
University of California Irvine	4,247 (46)	4,355 (44)	−2
University of Houston	4, 129 (47)	4,137 (47)	0
Tel Aviv University	3,927 (48)	3,927 (48)	0
University of Pittsburgh	3,839 (49)	3,839 (49)	0
University of Massachusetts	3,814 (50)	3,838 (50)	0

Note: UC = University of California; UCLA = University of California, Los Angeles; INSEAD = Institut European d'Administration des Affaires; SUNY = State University of New York.

Discussion

With respect to university influence, the findings not only provided support for Lotka's law (Hypothesis 1) but also were surprising in the degree of concentration exhibited. Indeed, our analysis indicated that the 100 most-cited universities (which represented only about 6% of the total sample of universities) accounted for 60% of all the articles published and almost three fourths (72%) of all the citations received in the 30 journals included in our sample from 1981 to 2004. This exceeds the prediction made in Hypothesis 2 by a substantial amount. Moreover, the universities having the greatest impact were fairly stable over time. Indeed, our analyses indicated that 36% of the universities included among the 100 most-cited in one period were included in all five periods, and almost three fourths (74%) of the institutions included among the 100 most-cited universities were included in more than one of the five periods. Perhaps more important, we found that 15 universities consistently ranked in the top quartile of the 100 most-cited institutions for all five periods, 7 others were ranked within the top quartile in all but one period, 3 others were ranked in the top quartile in all but two periods, and, as a group, these 25 institutions accounted for 90% of all of the 125 positions available in the top quartile across the five periods we examined in this study. Therefore, it appears that a relatively small number of universities have been responsible for the vast majority of citations in the field during the past 25 years and that the institutions included at the very top of this list over the majority of the five periods included in this study (Arizona State, Carnegie Mellon, Columbia, Cornell, Harvard, Illinois, Indiana, Massachusetts Institute of Technology, New York University, Maryland, Michigan, Michigan State, Minnesota, Northwestern, Ohio State, Penn State, Pennsylvania, Purdue, Stanford, Texas, Texas A&M, University of California at Berkeley, University of London, Washington, and Wisconsin) have not dramatically varied over time.

The results also indicated that the main determinant of a university's impact was the total number of articles it had published. Total publications were themselves primarily determined by the human and financial resources available at the university. More specifically, we found that the number of PhDs awarded per year was the most important determinant of a university's publication success, followed by research expenditures, endowment assets, and university size. Together, these human and financial resources accounted for nearly two thirds

(65%) of the variance in total publications. This is rather impressive and suggests that anything a university can do to increase its resources in terms of the size of its doctoral program, the money it spends on research related activities, and growing its endowment should ultimately have a positive effect on its influence in terms of publications and citations.

Study 2: Examination of Author Influence

Study 1 focused on the influence that universities have on the field of management, based on the citations they have received during the past quarter century. Generally speaking, the results of this study showed that influence in the field was fairly concentrated in a relatively small number of institutions during that period. In addition, our results showed that university human and financial resources were key determinants of a university's influence in the field. In Study 2, we turn our attention to individual scholars who have influenced the field, again using citations as the primary criterion variable.

Hypotheses Regarding the Distribution of Author Citations

As noted earlier, there is evidence (cf. Egghe, 2005; Kyvik, 1989; Lotka, 1926; Wilson, 1999) suggesting that the distribution of publications among scholars in the physical sciences, humanities, social sciences, natural sciences, medical sciences, and infomatics roughly conforms to Lotka's (1926) power law. Merton (1988) argued that this functional form should apply not only to the number of publications but also to the number of citations to an author's work. He cited some evidence from Garfield (1998) in support of this. As a result, Merton's observation that about half (50%) of the publications are produced by only 5% to 6% of all scholars should also apply to author citations in the management discipline. Therefore, we expect,

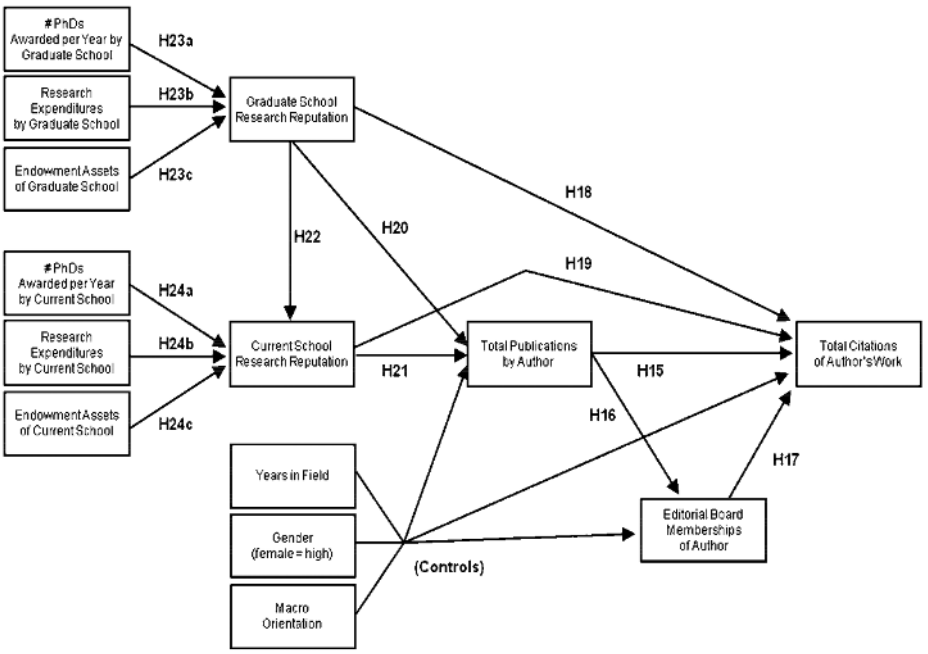
Hypothesis 13: The number of scholars receiving n citations is proportional to $1/n^a$.

Hypothesis 14: Approximately 5% of the scholars who publish in management journals account for at least 50% of all of the citations in the field.

Hypotheses Regarding the Determinants of Author Citations

As shown in Figure 6, we expect that the number of articles published is directly related to the number of citations a scholar receives. Consistent with this expectation, Judge et al. (2004) found that the number of career publications was indeed positively related to career citations. In addition, we also expect that total publications has an indirect effect on total citations through their effects on editorial board memberships. Positions on editorial boards are often reserved for scholars who publish quite a bit in the top journals. Therefore, we expect that the greater the number of articles an individual publishes, the greater the opportunities he or she has for serving on editorial boards. Moreover, because these editorial positions are highly visible and individuals serving in these capacities are regarded as thought leaders in

Figure 6
Hypothesized Model of Author Publications and Citations



the discipline, one would expect that their research would be cited more frequently than research published by other scholars who do not serve in this capacity. Thus, we predict,

Hypothesis 15: The number of total publications by a scholar is positively related to the number of citations he or she receives.

Hypothesis 16: The number of total publications by a scholar is positively related to years of service in an editorial board capacity (e.g., as an editor, associate editor, or editorial board member).

Hypothesis 17: The years of service in an editorial capacity (e.g., as an editor, associate editor, or editorial board member) is positively related to the number of citations a scholar receives.

Another factor that should be related to the number of citations a scholar receives is the research reputation of the university with which a scholar is affiliated. Indeed, several authors (Hunt & Blair, 1987; Long, Bowers, Barnett, & White, 1998) have argued that the research reputation of a scholar's graduate program, as well as the research reputation of the university where he or she is currently employed, should be related to his or her scholarly visibility and overall contribution to the field. Consistent with the hypothesis that university affiliation affects citation counts, Allison and Long (1990) found that citations to a scholar's research *increased* when he or she moved from a department with a *weaker* scholarly reputation to a department with a *stronger* scholarly reputation and *decreased* when a scholar

moved from a department with a *stronger* scholarly reputation to a department with a *weaker* scholarly reputation. In addition, empirical research has indicated that the research reputation of a scholar's graduate program (Hogan, 1986; Jacobs, Hartgraves, & Beard, 1986) and the reputation of his or her present affiliation (Crane, 1965; Hagstrom, 1968; Manis, 1951) are positively related to research productivity. Finally, Judge et al. (2004) found that the research reputation of a scholar's degree-granting institution is positively related to the research reputation of the scholar's first job. They hypothesized that this may be in part because of the fact that selection committees at highly respected institutions may wish to hire faculty from other highly respected institutions because of the way it looks to external observers. Thus, we expect,

Hypothesis 18: Research reputation of a scholar's degree-granting institution is positively related to his or her citations.

Hypothesis 19: Research reputation of a scholar's current institutional affiliation is positively related to his or her citations.

Hypothesis 20: Research reputation of a scholar's degree-granting institution is positively related to his or her publications.

Hypothesis 21: Research reputation of a scholar's current institutional affiliation is positively related to his or her publications.

Hypothesis 22: Research reputation of a scholar's degree-granting institution is positively related to the research reputation of his or her current affiliation.

Consistent with the arguments made in Study 1, we also expect the number of PhDs awarded per year by a university to be positively related to the university's research reputation because the size of the PhD program is a reflection of a university's commitment to research and teaching doctoral seminars generates research ideas and leads to publications by faculty and students. We also expect a university's research reputation to be positively related to its level of research expenditures and endowment assets because these resources provide researchers with the financial means to pay for expenses associated with their research. Obviously, these arguments are equally applicable to both an author's current affiliation and his or her degree-granting institution. Thus, we hypothesize,

Hypotheses 23a to 23c: The (a) number of PhDs awarded per year, (b) amount of dollars spent on research related activities, and (c) endowment assets of a scholar's degree-granting institution are positively related to that institution's research reputation.

Hypotheses 24a to 24c: The (a) number of PhDs awarded per year, (b) amount of dollars spent on research related activities, and (c) endowment assets of a scholar's current institutional affiliation are positively related to that institution's research reputation.

Finally, when testing the hypothesized relationships described above, it was also important to control for several other factors that might influence the criterion variables. These include the number of years a scholar has been in the field, his or her gender, and whether his or her research has a micro or macro orientation. The reason that we controlled for the number of years a scholar has been in the field is because it takes time to publish articles, time for

the scholar to be cited in the literature, and time to generate the reputation necessary for being asked to serve on editorial boards. Consistent with this, Judge et al. (2004) found that years since degree was positively related to career citations and editorial board memberships. We controlled for gender because studies on research productivity have generally found that women publish less than men (Bellas & Toutkoushian, 1999; Judge et al., 2004; Saks, Hagedorn, Arredondo, & Decrisi, 2002). Finally, we controlled for research orientation (micro vs. macro) to allow for the possibility that the general research topic, research method, and/or demand for different types of research might affect publication rates, editorial board memberships, and/or citations.

Method

Journal Selection and Data Coding for Authors

Publication and citation data from the same 30 journals used in Study 1 served as the basis for our analysis of author influence in Study 2. However, in the case of authors, the ISI database gives full and equal article and citation credit to each of the coauthors of any given article. As a result, each coauthor of an article receives full credit for the article and all of the citations it receives (including self-citations), regardless of his or her position in the order of authorship. As in the case of the university data, we restricted our author analyses only to those article that were classified as articles, notes, and reviews in the ISI relational database.

The data for authors in the ISI database present significantly more problems for those interested in conducting research than do the data provided for universities, for several reasons. First, the database for authors is dramatically larger. For example, although there were fewer than 2,000 universities included in Study 1, there were in excess of 25,000 authors included in Study 2. Thus, the task of sorting through these data was much more demanding and time-consuming. Second, the ISI database records only authors' surnames and initials (not full first names) in the manner in which they appear in an article. In other words, an author whose name appears as Peter G. Bonner in an article is recorded as *Bonner, PG* in the ISI database. The problem this presents is that some authors use their middle initials in some articles and not in others, and some authors change their names completely (e.g., as a result of a change in marital status). As a result, we had to carefully search the database for these cases and aggregate citations where appropriate. In cases where authors had the same first initials and last names but did not report a middle initial, we examined the articles to determine whether they should be aggregated. Similarly, in cases where ISI reported hyphenated names, we compared the articles in which these hyphenated names appeared with articles in which only the surname roots appeared to determine whether the articles were written by the same authors and should be aggregated. Finally, we used a variety of sources (other colleagues, university and personal Web sites, etc.) to try to identify any authors who had changed their surnames during their careers. This resulted in the identification of several authors who had changed their names and whose data had to be aggregated. Although we were as conscientious as we could be, it is possible that we missed some name changes among the more than 25,000 authors included in the database.

Measures

University resources. For each university, we obtained data regarding the number of PhDs awarded per year, endowment assets, and research expenditures. We used the same sources for this information that were used in the university study (Study 1).

University research reputation. The research reputation achieved by an author's degree-granting institution, and the research reputation of his or her current institutional affiliation, was obtained from the university data reported in Study 1. Institutions that were in the top quartile of total citations for the cumulative period (1981 to 2004) received a research reputation score of 5, those in the second quartile received a score of 4, those in the third quartile received a score of 3, those in the fourth quartile received a score of 2, and all other schools received a score of 1.

Control variables. We obtained information for the control variables (e.g., gender, years in the field, and research orientation) from a variety of sources, including faculty and/or university Web sites, University Microfilms International (UMI) ProQuest Dissertation Abstracts, faculty resumes, or the authors themselves. Faculty members whose primary areas of interest included organizational behavior, general psychology, I/O psychology, counseling psychology, quantitative psychology, social psychology, leadership, human resource management, and industrial or labor relations were classified as having a micro orientation. Faculty members whose primary areas of interest included organizational theory, strategy, international business, entrepreneurship, sociology, technology innovation, and general management were classified as having a macro orientation. Faculty members whose primary research interests could not be categorized into these two areas (e.g., those who focused on management or decision sciences, information systems, etc.) were classified as having an "other" orientation.

Editorial board memberships. To obtain information about the number of years of service in an editorial capacity, we manually searched each of the 30 journals from 1981 to 2004 and counted the number of years each author on our list served on each of the journals as an editor, associate editor, or member of the editorial review board.

Analytical Procedures

As in the case of university citations, we conducted our analysis of author citations in several stages. In the first stage, one of the authors and a research assistant independently sorted through the database for each of the five individual time periods (1981 to 1984, 1985 to 1989, 1990 to 1994, 1995 to 1999, 2000 to 2004) and aggregated the information by author where it was appropriate. Once these sorts were completed, the agreement between the two sorters was computed (average agreement = 92%), and all disagreements were examined and resolved. Based on these data, we tested the hypotheses about the distribution of citations for the entire set of authors included in our sample.

In the second stage of our analysis, we calculated the means, standard deviations, and intercorrelations among the author citation variables for the 150 most-cited authors in each of five individual periods and for the cumulative period as well. We chose to examine the 150 most-cited authors because we wanted to focus our attention on those individuals who have had the biggest impact on the field while at the same time keeping our analysis to a manageable number. Following this, we tested the hypothesized relationships by estimating the model shown in Figure 6 using LISREL 8.8. Finally, we examined the influence of individual authors in the cumulative period and changes in their influence over time.

Results

Descriptive Statistics

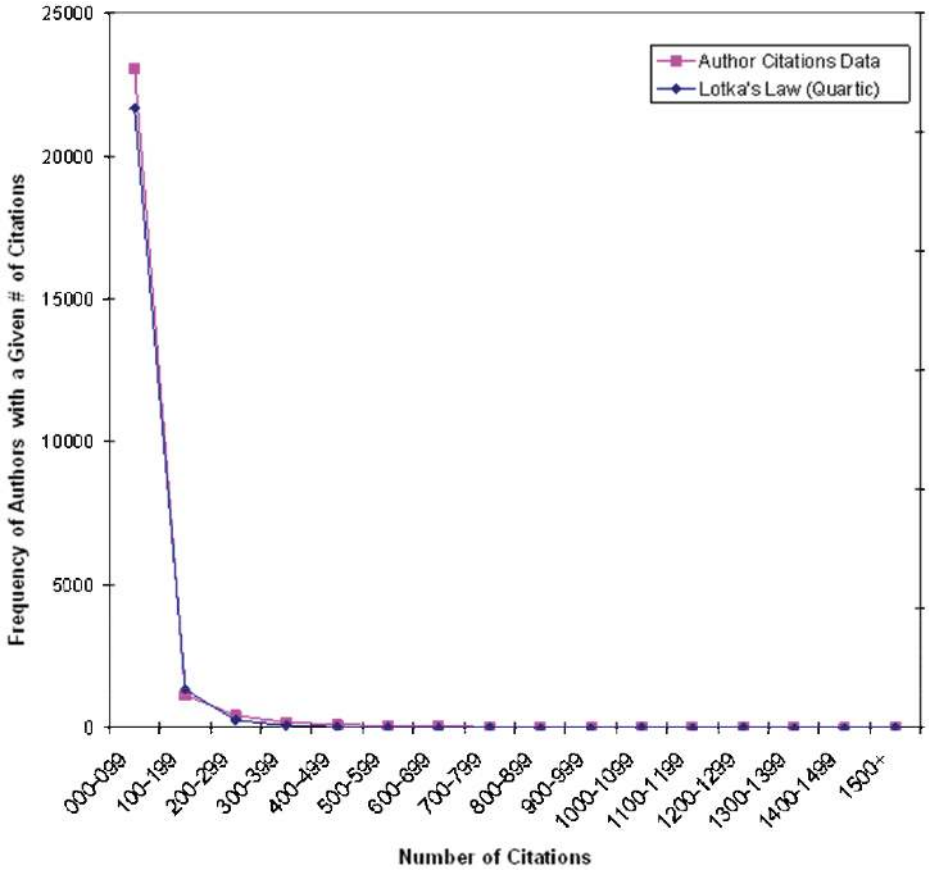
A total of 25,248 authors published articles in at least one of the 30 management journals from 1981 to July 2004, and these authors received a total of more than one million (1,008,258) citations. The mean, median, and modal number of articles per author in the cumulative period was 2.37, 1.00, and 1.00, respectively. The mean number of citations per author during the past quarter century was 39.93 (SD = 120.58), the mode was 0, and median number was 9. Taken together, these findings suggest that even though an extremely large number of authors have contributed to the management literature during the past quarter century, the majority of these authors contributed only a few articles to the literature and received a relatively small number of citations. Indeed, almost 15% (14.50%) of the authors included in the cumulative period received no citations for their publications during the past quarter century.

Hypothesis Tests for Authors

Tests of distributional hypotheses. We expected (Hypotheses 13) that the number of authors receiving n citations would be inversely proportional to n^a. We tried values for a ranging from 1 to 5 and plotted the actual frequency distribution of citations against the value predicted by Lotka's (1926) law. Once these values were plotted, we used the same two criteria that we used for university citations to determine whether the data conformed to the predicted values: (a) an examination of the plots for the actual and predicted values and (b) the correlation between these values after correcting for skew. Based on these criteria, we concluded that the quartic form of the relationship ($a = 4$) came the closest to matching the data. As indicated in Figure 7, the actual and predicted lines come close to converging, and the correlation between the actual and predicted values was nearly perfect (r = .998). Thus, this pattern of results supports Hypothesis 13.

Hypothesis 14 posited that 5% of the authors would account for at least 50% of the citations. Figure 8 reports the percentage of total citations accounted for by various percentages of the more than 25,000 authors in our sample. As indicated in this figure, 5% of the authors accounted for approximately 53% of the total number of citations received by all universities and 26% of all publications. These findings are consistent with our expectations and suggest that a relatively small percentage of the authors is responsible for the majority of the

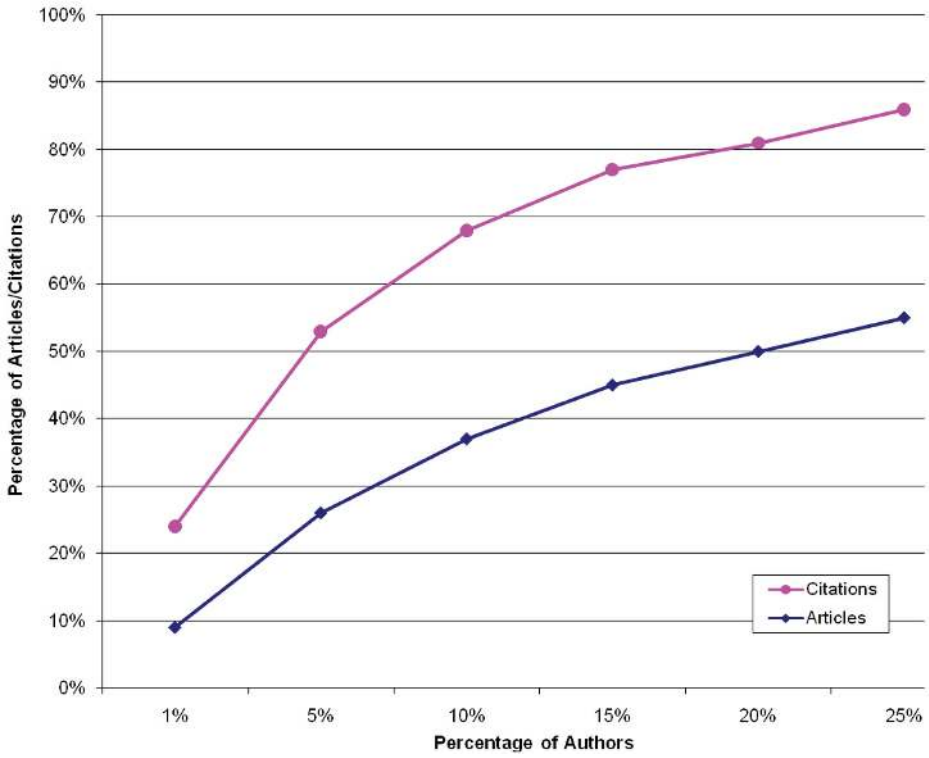
Figure 7
Comparison of the Actual Frequency of Authors With a Given Number of Citations to Lotka's (1926) Prediction



citations in the field during the past 25 years. Indeed, as shown in Figure 8, the top 25% of the authors accounted for the vast majority of the citations (86%) and more than half of all of the articles (55%).

Tests of the hypothesized determinants of author citations. The data discussed above suggest that a relatively small percentage of the authors account for the majority of the citations and have a disproportionate amount of influence on the field of management. Therefore, when testing the remaining hypotheses (Hypotheses 15 to 24), we focused our attention on the most-cited authors in each of five time periods (1981 to 1984, 1985 to 1989, 1990 to 1994, 1995 to 1999, 2000 to 2004). Given that some authors were represented in the most-cited group in more than one period, the total number of authors who were in the top 150 for

Figure 8
Plot of Percentages of Author Articles and Citations From 1981 to 2004

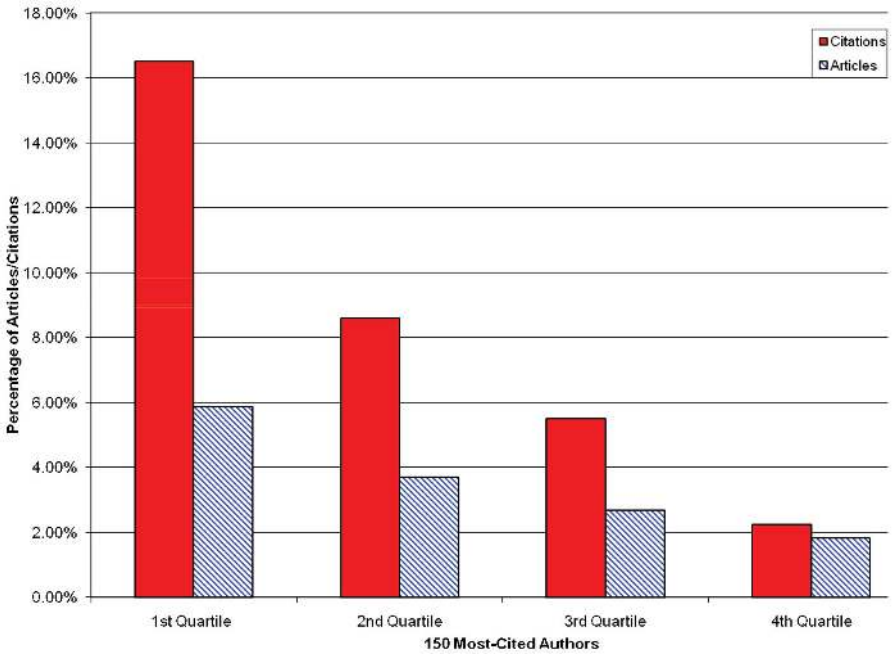


at least one period was 550. These authors comprised approximately 2% (550 of 25,248) of the total number of authors, and together they accounted for 32.82% of all citations and 14.01% of all publications.

As in the case of universities, our decision to limit the remaining author analyses to only the most cited authors across the five time periods could restrict the variation in the variables of interest. Fortunately, this does not appear to be a major problem. Figure 9 shows the percentage of the total number of citations received and articles published by any of the more than 25,000 authors in our study that were produced by the 550 most-cited authors, broken down by quartiles. As shown in the figure, there was still a substantial amount of variation across the quartiles, with the authors in the top quartile averaging about 8 times as many citations (16.50% vs. 2.23%) and about 3 times as many articles (5.85% vs. 1.82%) as those authors in the fourth quartile.

To test Hypotheses 15 to 24, the model shown in Figure 6 was estimated using LISREL 8.8 based on the sample covariances. As in Study 1, we transformed any nonnormal variables using a log transformation before estimating our model. Following this, we estimated the

Figure 9
Percentage of the Total Number of Articles and Citations Accounted for by the 150 Most-Cited Authors Across the Five Time Periods Included in This Study



hypothesized effects of the university resource and research reputation factors on total publications, editorial board memberships, and total citations while controlling for the effects of years in the field, gender, and research orientation on these criterion variables. Finally, we eliminated nonsignificant relationships.

The means, standard deviations, and correlations for the variables included in our structural model are reported in Table 7. The standardized estimates for our path analysis are shown in Figure 10. (Not shown in the figure are the estimated covariances among the exogenous variables.) Overall, this model fit the data very well ($\chi^2 = 60.85$, $df = 36$, $p = .01$; CFI = .99, GFI = .98, RMSEA = .04, SRMR = .03).

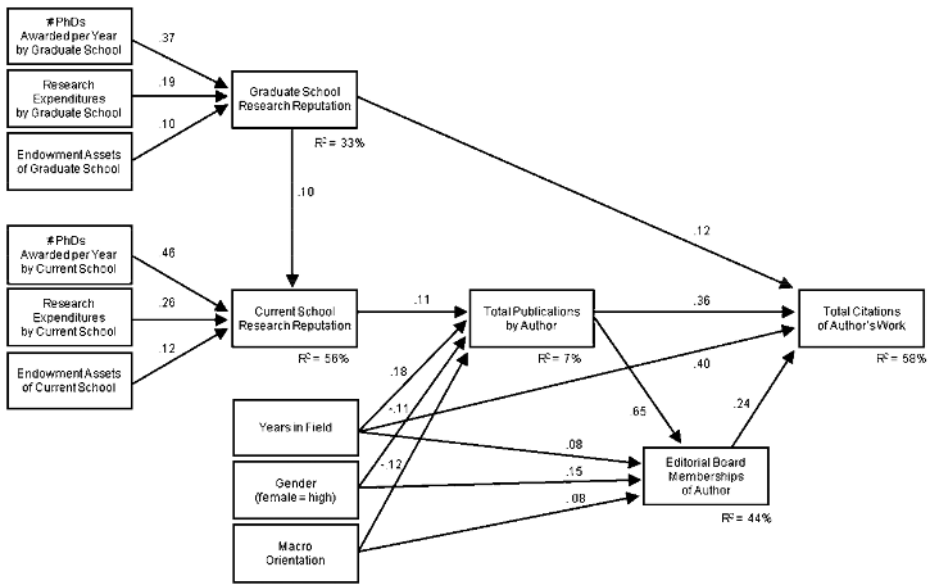
As indicated in Figure 10, an author's total number of citations was positively related to total publications ($\beta_{std} = .36$, $p < .05$), editorial board memberships ($\beta_{std} = .24$, $p < .05$), and graduate school research reputation ($\beta_{std} = .12$, $p < .05$). This supports Hypotheses 15, 17, and 18, respectively. However, we found no support for the hypothesized relationship (Hypothesis 19) between current school research reputation and total citations. In addition, one of the control variables (years in the field) was also significantly related ($\beta_{std} = .40$, $p < .05$) to total citations. Taken together, these predictors accounted for 58% of the variance in an author's total citations.

Table 7
Means, Standard Deviations and Intercorrelations of Most-Cited Authors

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Graduate program #PhDs granted/year	442.43	166.84													
2. Graduate program research expenditures (1,000s)	34,734	25,525	.62												
3. Graduate program endowment assets (1,000s)	3,746,235	5,343,322	.61	.21											
4. Current affiliation #PhDs granted/year	369.85	210.13	.22	.14	.26										
5. Current affiliation research expenditures (1,000s)	30,035	26,112	.09	.04^{ns}	.22	.65									
6. Current affiliation endowment assets (1,000s)	2,999,923	5,024,510	.21	.06^{ns}	.35	.67	.36								
7. Graduate school research reputation	4.15	1.34	.68	.54	.47	18	.14	.18							
8. Current school research reputation	3.45	1.63	.21	.15	.27	.79	.65	.61	.23						
9. Years in field	21.23	9.75	.11	.06^{ns}	.10	.06^{ns}	.01^{ns}	.02^{ns}	.01^{ns}	.10					
10. Gender (Female = high)	1.23	0.42	.04^{ns}	–.02^{ns}	.04^{ns}	.03^{ns}	.11	–.01^{ns}	.04^{ns}	.04^{ns}	–.17				
11. Research orientation (Macro = high)	1.37	0.48	.21	.08^{ns}	.30	.15^{ns}	.08^{ns}	.29	.08	.18	–.03^{ns}	–.16			
12. Total publications	15.15	10.83	–.05^{ns}	.02^{ns}	–.08^{ns}	–.01^{ns}	.02^{ns}	.00^{ns}	–.04^{ns}	.11	.22	–.12	–.10		
13. Editorial Board Membership	12.85	11.98	.07^{ns}	.05^{ns}	.00^{ns}	.03^{ns}	.16	.03^{ns}	.01^{ns}	.15	.20	.05^{ns}	–.01^{ns}	.64	
14. Total citations	598.21	457.39	.11	.04^{ns}	.08^{ns}	.02^{ns}	.01^{ns}	.01^{ns}	.11	.14	.53	–.06^{ns}	–.01^{ns}	.60	.55

Note: All correlations are significant at $p < .05$, except those indicated by *ns*. The means and standard deviations reported in this table are for the raw scores, whereas the intercorrelations include corrections for skewness for those variables where it was appropriate.

Figure 10
Best Fitting Model for Predicting Author Publications and Citations



As expected, total publications was positively related ($\beta_{std} = .65$, $p < .05$) to editorial board memberships. This supports Hypothesis 16. In addition, all three control variables were positively related to editorial board memberships. More specifically, scholars who have been in the field longer ($\beta_{std} = .08$, $p < .05$), who are female ($\beta_{std} = .15$, $p < .01$), or who have a macro orientation ($\beta_{std} = .08$, $p < .05$) were found to serve on editorial boards more frequently. As a group, these predictors accounted for 44% of the variance in the number of editorial board memberships.

As hypothesized (Hypothesis 21), the research reputation of an author's current affiliation was positively related ($\beta_{std} = .11$, $p < .05$) to his or her total publications. In addition, all three of the control variables were significantly related to an author's total number of publications. Specifically, authors who have been in the field longer ($\beta_{std} = .18$, $p < .05$) were found to have a higher numbers of publications; authors who are female ($\beta_{std} = -.11$, $p < .05$) or who have a macro orientation ($\beta_{std} = -.12$, $p < .05$) were found to have a lower number of publications. However, contrary to our expectation, no support was found for the hypothesis that the research reputation of an author's graduate school (Hypothesis 20) is related to total publications. Together, the predictors accounted for 7% of the variance in the total number of author publications.

Finally, consistent with Hypotheses 23a to 23c and 24a to 24c, the financial and human resources of a university were found to have significant, positive effects on a university's

research reputation. More specifically, the number of PhDs awarded per year (β_{std} = .37, p < .01), research expenditures (β_{std} = .19, p < .01), and endowment assets (β_{std} = .10, p < .05) of an author's graduate school were all positively related to the research reputation of the graduate school and together accounted for 33% of the variance in this criterion variable. Similarly, the number of PhDs awarded per year (β_{std} = .46, p < .01), research expenditures (β_{std} = .26, p < .01), and endowment assets (β_{std} = .12, p < .01) of an author's current affiliation were all positively related to the research reputation of the current school and together accounted for 56% of the variance in this criterion variable. It is interesting that the results also indicated that a university's research reputation was driven more by the number of PhDs awarded per year than by research expenditures and endowment assets combined, and this was true for both an author's graduate school and current school.

Examination of total and indirect effects. As a final step in our analysis, we tested the indirect effects of an author's years in the field, gender, macro orientation, research reputation of his or her graduate school, and research reputation of his or her current school on total citations to clarify the impact of these author characteristics on citation frequency. All of these indirect effects were significant (p < .05). Next, we decomposed the total effect of these author characteristics on total citations into the proportion due to each of these variables. The following pattern emerged. First, years in the field accounted for 68% of the total effect of author characteristics on total citations. Most of this effect was direct, but 24% of it was mediated by total publications and/or editorial board memberships. Graduate school research reputation accounted for the second largest percentage of the total effect of author characteristics on total citations (16%). Once again, most of this effect was direct, with only 5% of this effect mediated by current school reputation, total publications, and/or editorial board memberships. Current school research reputation accounted for 7% of the total effect of the author characteristics on total citations, and all of its effect was mediated by total publications and/or editorial board memberships. Macro orientation accounted for 6% of the total effect of author characteristics on total citations, and all of this effect was indirectly mediated by total publications and/or editorial board memberships. Finally, gender accounted for 3% of the total effect of the author characteristics on total citations, and all of this effect was indirectly mediated by total publications and/or editorial board memberships. It is interesting that the indirect effects of gender and macro orientation on total citations were partially negative (mediated by total publications) and partially positive (mediated by editorial board memberships), with the negative effects being somewhat stronger than the positive effects.

Individual Author Influence

Table 8 provides summary information on the 150 most-cited authors in the cumulative period arranged by the total number of citations received. This table presents the name of the authors along with the number (and z scores) of citations these authors received during the past quarter century. The z scores were calculated based on the complete set of more than 25,000 authors included in our sample. Because the data were found to be positively skewed, we used a log transformation on them before computing all of the z scores. Thus, for example, the data in Table 8 indicate that during the cumulative period from 1981 to 2004,

Table 8
150 Most-Cited Authors in the Field of Management (1981-2004)

Author	Cites	*z*
1. Eisenhardt, Kathleen M.	3,628	3.67
2. Hambrick, Donald C.	3,163	3.59
3. O'Reilly, Charles A.	2,526	3.45
4. Jackson, Susan E.	2,397	3.41
5. Miller, Danny	2,294	3.39
6. Kogut, Bruce	2,207	3.36
7. Barney, Jay B.	2,034	3.31
8. Hitt, Michael A.	2,003	3.30
9. Prahalad, C.K.	1,969	3.29
10. Dutton, Jane E.	1,904	3.27
11. Staw, Barry M.	1,899	3.27
12. Podsakoff, Philip M.	1,848	3.25
13. Schmidt, Frank L.	1,780	3.23
14. March, James G.	1,768	3.22
15. Vandeven, Andrew H.	1,766	3.22
16. Daft, Richard L.	1,733	3.21
17. Levinthal, Daniel A.	1,719	3.21
18. Locke, Edwin A	1,699	3.20
19. Hamel, Gary	1,687	3.19
20. Porter, Michael E.	1,642	3.18
21. Organ, Dennis W.	1,639	3.18
22. Venkatraman, N.	1,625	3.17
23. Hoskisson, Robert E.	1,596	3.16
24. Huber, George P.	1,587	3.16
25. James, Lawrence R.	1,558	3.15
26. Schmitt, Neal	1,531	3.13
27. Spector, Paul, E.	1,530	3.13
28. Meyer, John P.	1,517	3.13
29. Tushman, Michael L.	1,502	3.12
30. Judge, Timothy A.	1,474	3.11
31. Mount, Michael K.	1,459	3.10
32. Weick, Karl E.	1,455	3.10
33. Ashforth, Blake E.	1,421	3.09
34. George, Jennifer M.	1,407	3.08
35. Mitchell, Terence R.	1,395	3.08
36. Dess, Gregory G.	1,389	3.07
37. Greenberg, Jerald	1,386	3.07
38. Wernerfelt, Berger	1,379	3.07
39. Barrick, Murray R.	1,355	3.06
40. Hill, Charles W.L.	1,354	3.06
41. Hunter, John E.	1,334	3.05
42. Earley, P. Christopher	1,324	3.04
43. MacMillan, Ian C.	1,312	3.04
44. Sutton, Robert I.	1,295	3.03
45. Pfeffer, Jeffrey	1,292	3.03
46. Brief, Arthur P.	1,283	3.02

(continued)

Table 8 (continued)

Author	Cites	*z*
47. Caldwell, David F.	1,245	3.01
48. Schuler, Randall S.	1,244	3.00
49. Tsui, Anne S.	1,242	3.00
50. Ghoshal, Sumantra	1,232	3.00
51. Chatman, Jennifer A.	1,206	2.99
52. Ferris, Gerald R.	1,201	2.98
53. Lord, Robert G.	1,198	2.98
54. Feldman, Daniel C.	1,189	2.98
55. Neale, Margaret A.	1,187	2.98
56. Greenhaus, Jeffrey H.	1,184	2.97
57. Ajzen, Icek	1,179	2.97
58. Thomas, Howard	1,166	2.96
59. Schneider, Benjamin	1,151	2.96
60. Mintzberg, Henry	1,148	2.95
61. Bazerman, Max H.	1,135	2.95
62. Noe, Raymond A.	1,121	2.94
63. Zajac, Edward J.	1,115	2.94
64. Allen, Natalie J.	1,112	2.93
65. Gist, Marilyn E.	1,104	2.93
66. Sackett, Paul R.	1,095	2.93
67. Ashford, Susan J.	1,090	2.92
68. Banker, Rajiv D.	1,057	2.90
69. Brett, Jeanne M.	1,056	2.90
70. Hackett, Gail N.	1,048	2.90
71. Bettis, Richard A.	1,045	2.90
72. Cohen, Wesley M.	1,041	2.89
73. Liden, Robert C.	1,040	2.89
74. Kiesler, Sara B.	1,038	2.89
75. Ganster, Daniel C.	1,037	2.89
75. Singh, Harbir	1,037	2.89
77. Campion, Michael A.	1,031	2.89
78. Konovsky, Mary A.	1,003	2.87
79. Sproull, Lee S.	1,002	2.87
80. Hollenbeck, John R.	997	2.87
81. Walsh, James P.	996	2.87
82. Latham, Gary P.	989	2.86
83. Gulati, Ranjay	973	2.85
84. Brockner, Joel	972	2.85
85. Grant, Robert M.	966	2.85
86. Bagozzi, Richard P.	964	2.85
87. Murphy, Kevin R.	945	2.83
88. Nonaka, Ikujiro	944	2.83
89. Desanctis, Gerardine L.	938	2.83
90. Black, J. Stewart	932	2.82
91. Ford, J. Kevin	927	2.82
92. Clark, Kim B.	924	2.82
93. Gomez-Mejia, Luis R.	922	2.82

(continued)

Table 8 (continued)

Author	Cites	*z*
94. Dalton, Dan R.	915	2.81
95. Cooper, William W.	911	2.81
96. Bobko, Philip	903	2.80
97. House, Robert J.	902	2.80
98. Charnes, Abraham	898	2.80
99. Lee, Cynthia	896	2.80
100. Hulin, Charles L.	894	2.80
101. Bedeian, Arthur G.	888	2.79
102. Rousseau, Denise M.	874	2.78
103. Lee, Hau L.	870	2.78
104. Fredrickson, James W.	864	2.78
105. Barley, Stephen R.	862	2.78
106. Zander, Udo	860	2.77
107. Schaubroeck, John M.	855	2.77
108. Schoemaker, Paul J.H.	854	2.77
109. Motowidlo, Stephan J.	848	2.77
110. Anderson, Philip	845	2.76
111. Teece, David J.	844	2.76
112. Sitkin, Sim B.	842	2.76
113. Williams, Larry J.	839	2.76
114. Bourgeois, Lionel J. III	836	2.76
114. Fisher, Marshall L.	836	2.76
116. Arvey, Richard J.	834	2.76
117. Burke, Michael J.	830	2.75
118. Blau, Gary J.	827	2.75
119. Northcraft, Gregory B.	824	2.75
120. Bowen, David E.	823	2.75
121. Moorman, Robert H.	822	2.75
122. Pearce, John A. II	821	2.75
123. Glick, William H.	816	2.74
124. Heilman, Madeline E.	813	2.74
125. Burgelman, Robert A.	811	2.74
126. Cool, Karel O.	808	2.74
127. Graen, George B.	799	2.73
128. Maslach, Christina	797	2.73
129. Schroeder, R.G.	795	2.73
130. Lubatkin, Michael H.	794	2.72
131. Gersick, Connie G.	791	2.72
132. Dreher, George F.	789	2.72
133. Avolio, Bruce J.	787	2.72
134. Mathieu, John E.	775	2.71
135. Dean, James W. Jr.	770	2.71
136. Schweiger, David M.	769	2.70
137. Oliver, Christina E.	768	2.70
138. Robinson, Richard B.	767	2.70
139. Schwenk, Charles R.	759	2.70
140. Parasuraman, Saroj	758	2.70

(continued)

Table 8 (continued)

Author	Cites	*z*
141. Snell, Scott A.	756	2.69
142. Wayne, Sandy J.	752	2.69
143. Ancona, Deborah G.	750	2.69
144. Rynes, Sara L.	749	2.69
145. Trevino, Linda K.	744	2.68
146. Gerhart, Barry	739	2.68
146. Pisano, Gary P.	739	2.68
148. Barnett, W.P.	738	2.68
149. DeNisi, Angelo S.	737	2.68
150. Leonard, Dorothy	736	2.68

the most-cited author (Kathleen M. Eisenhardt) received 3,628 citations ($z = 3.67$), and the second most-cited author (Donald Hambrick) received 3,163 citations ($z = 3.59$).

Changes in Individual Author Influence Over Time

As noted earlier, in addition to being interested in identifying the most influential authors during the past 25 years, we were also interested in examining any changes in their influence over time. Therefore, we divided the total period into five intervals (1981 to 1984, 1985 to 1989, 1990 to 1994, 1995 to 1999, 2000 to 2004) and identified the top 150 authors based on the number of citations that these authors received for articles that they published during each of these specific time periods. The reason we limited our analysis to only the citations that were received for articles published in each of the time periods is that this procedure permitted us to determine whether an author continued to generate new highly cited articles over time as opposed to receiving citations from impactful articles that he or she had published earlier in his or her career. This procedure also allowed relatively new scholars who wrote an impactful article to appear on our list. This resulted in a table similar to Table 8 for each of the five periods. These authors were then ranked within each period based on the total number of citations received, and this information is reported in Table 9. An author was not counted in a given period if he or she graduated after the beginning of a period. For example, Eric Abrahamson (a) has no entries in the columns corresponding to the periods 1981 to 1984 and 1985 to 1989 because he had not yet received his PhD, (b) was ranked 92nd in total citations in the 1990 to 1994 period, 50th in the 1995 to 1999 period, and (c) did not make the top 150 in the 2000 to 2004 period (as indicated by the dash).

In addition, Table 9 also provides information regarding each author's (a) graduate school, (b) degree date, and (c) current affiliation. Information regarding these variables was obtained from a variety of sources, including faculty and/or university Web sites, UMI ProQuest Dissertation Abstracts, faculty resumes, or the authors themselves.

There are several interesting patterns in Table 9. First, of the 550 authors reported in Table 8, 404 (73.0%) appeared only once, 98 (18.0%) appeared in two periods, 37 (7.0%) appeared in three periods, 9 (2.0%) appeared in four periods, and two (0.4%) appeared in all five

Table 9
Summary of Most-Cited Authors in the Field of Management 1981-2004

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Abrahamson, Eric	NYU	1990	Columbia			92	50	—	
Ackerman, Phillip L.	Illinois	1984	Georgia Tech.		144	—	—	—	
Adler, Paul S.	University of Picardie	1981	USC	—	—	—	80	58	
Aguinis, Herman	SUNY Albany	1993	Colorado - Denver				129	—	
Ahuja, Gautam	Michigan	1996	Michigan				—	11	
Ajzen, Icek	Illinois	1969	Massachusetts	—	—	4	—	—	57
Alexander, Ralph A.	Rochester	1974	Deceased	115	—	—	—	—	
Allen, Natalie J.	Western Ontario	1985	Western Ontario	94	—	19	—	—	64
Alvesson, Mats	Lund	1984	Lund		—	—	—	28	
Amburgey, Terry L.	Stanford	1984	Toronto		—	66	—	—	
Amit, Raphael H.	Northwestern	1977	Pennsylvania	—	—	75	—	—	
Ancona, Deborah[c]	Columbia	1982	MIT	119	—	71	—	—	143
Anderson, Philip C.	Columbia	1988	INSEAD		33	—	—	—	110
Arkes, Hal R.	Michigan	1971	Ohio University	—	61	—	—	—	
Arnold, Hugh J.	Yale	1976	Toronto	23	—	—	—	—	
Arthur, Jeffrey B.	Cornell	1990	Virginia Tech			146	—	—	
Arvey, Richard D.	Minnesota	1970	Emeritus (Minnesota)	50	135	—	—	—	116
Ashford, Susan J.	Northwestern	1983	Michigan		149	77	79	—	67
Ashforth, Blake E.	Toronto	1986	Arizona State		59	45	11	67	33
Astley, W. Graham	Washington	1978	Deceased	33	—	—	—	—	
Autio, Erkko	Helsinki Univ. of Technology	1995	Imperial College				—	141	
Avolio, Bruce J.	Akron	1982	Nebraska		—	137	102	141	133
Bachrach, Daniel G.	Indiana	2002	Alabama					58	
Bagozzi, Richard P.	Northwestern	1976	Michigan	—	62	—	—	—	86
Bailey, James E.	Wayne State	1975	Emeritus (Arizona State)	80	—	—	—	—	
Bakker, Arnold B.	Groningen (Netherlands)	1995	Utrecht (Netherlands)				—	116	
Bandura, Albert	Iowa	1952	Stanford	—	110	—	—	—	
Banker, Rajiv D.	Harvard	1980	Texas – Dallas	15	—	—	—	—	68

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Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Barkema, Harry G.	Groningen (Netherlands)	1988	Tilburg			—	46	—	
Barley, Stephen R.	MIT	1984	Stanford		83	—	—	—	105
Barnett, William P.	UC Berkeley	1988	Stanford		106	—	—	—	148
Barney, Jay B.	Yale	1982	Ohio State		92	2	—	89	7
Barrick, Murray R.	Akron	1988	Texas A&M			6	54	85	39
Bateman, Thomas S.	Indiana	1981	Virginia	47	—	—	—	—	
Bauer, Talya N.	Purdue	1994	Portland State				—	148	
Baum, Joel A.C.	Toronto	1989	Toronto			—	43	47	
Bazerman, Max	Carnie Mellon	1980	Harvard	48	74	—	—	—	61
Beamish, Paul W.	Western Ontario	1985	Western Ontario		—	—	134	—	
Beard, Donald W.	Nebraska	1975	Unknown	64	—	—	—	—	
Becker, Brian E.	Wisconsin	1977	SUNY Buffalo	—	—	—	65	—	
Bedeian, Arthur G.	Mississippi State	1973	Louisiana State	66	101	—	—	—	101
Bennett, Nathan	Georgia Tech	1989	Georgia Tech			—	68	—	
Bettis, Richard A.	Michigan	1979	North Carolina	67	46	—	115	—	71
Betz, Nancy E.	Minnesota	1976	Ohio State	11	—	—	—	—	
Beutel, Nicholas J.	Stevens Institute	1979	Iona	—	79	—	—	—	
Beyer, Janice M.	Cornell	1973	Deceased	76	—	—	—	—	
Birkinshaw, Julian M.	Western Ontario	1995	London Business School				86	—	
Black, J. Stewart	UC Irvine	1988	Michigan			32	—	—	90
Blau, Gary J.	Cincinnati	1982	Temple		81	—	—	—	118
Bobko, Philip	Cornell	1976	Gettysburg	48	—	—	—	—	96
Bohmer, Richard M.J.	Aukland University	Unknown	Harvard					67	
Bono, Joyce E.	Iowa	2001	Minnesota					9	
Bourgeois, Lionel J. III	Washington	1978	Virginia	74	45	—	—	—	114
Bowen, David E.	Michigan State	1983	Thunderbird		92	—	—	—	120
Brett, Jeanne M.	Illinois	1972	Northwestern	25	—	—	124	—	69
Bretz, Robert D.	Kansas	1988	Notre Dame			46	—	—	

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Brief, Arthur P.	Wisconsin	1974	Utah	78	13	—	—	—	46
Brockner, Joel	Tufts	1977	Columbia	—	116	64	—	58	84
Brown, John S.	Michigan	1970	Unknown	—	—	92	—	—	
Brown, Shona L.	Stanford	1995	Google Inc.				16	—	
Brown, Steven D.	Alberta	1978	Loyola – Chicago	—	—	112	—	—	
Brynjolfsson, Eric	MIT	1991	MIT				99	20	
Burgelman, Robert A.	Columbia	1980	Stanford	26	—	—	—	—	125
Burke, Michael J.	Illinois Tech	1982	Tulane		76	—	—	—	117
Butler, John E.	NYU	1985	University of Hawaii – Manoa		—	—	—	33	
Cable, Daniel M.	Cornell	1995	North Carolina				66	141	
Cachon, Gerard P.	Pennsylvania	1995	Pennsylvania				—	89	
Calabrese, Tony	McGill	1996	Unknown					148	
Caldwell, David F.	UCLA	1978	Santa Clara	91	126	25	—	—	47
Cameron, Kim S.	Yale	1978	Michigan	70	112	—	—	—	
Campion, James E.	Minnesota	1968	Houston	136	—	—	—	—	
Campion, Michael A.	North Carolina State	1982	Purdue		—	65	96	94	77
Cappelli, Peter	Oxford	1983	Pennsylvania		—	—	—	148	
Carpenter, Mason A.	Texas	1997	Wisconsin					67	
Carroll, Glenn R.	Stanford	1982	UC Berkeley	57	—	—	—	—	
Cascio, Wayne F.	Rochester	1973	Colorado – Denver	—	118	—	—	—	
Chan, David	Michigan State	1998	Singapore Management University				28	—	

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Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Charnes, Abraham	Illinois	1947	Deceased	7	—	—	—	—	98
Chatman, Jennifer A.	UC Berkeley	1988	UC Berkeley		35	35	—	—	51
Chatterjee, Sayan	Michigan	1985	Case Western		—	149	—	—	
Chen, Frank	Toronto	1996	Unknown					121	
Chen, Ming-Jer	Maryland	1988	Virginia			138	96	—	
Chen, Peter Y.	South Florida	1991	Colorado State				—	29	
Clark, Kim B.	Harvard	1978	Harvard	—	—	23	—	—	92
Clegg, Chris W.	Bradford	1971	Sheffield	88	—	—	—	—	
Cohen, Susan G.	Yale	1988	Deceased			—	83	—	
Cohen, Wesley M.	Yale	1981	Duke	—	—	7	—	—	72
Colquitt, Jason A.	Michigan State	1999	Florida					2	
Conger, Jay A.	Harvard	1985	London Business School		98	—	—	—	
Conlon, Donald E.	Illinois	1989	Michigan State			—	—	47	
Connelly, Mary Shane	George Mason	1996	Oklahoma					111	
Conner, Kathleen R.	UCLA	1986	Unknown			131	150	—	
Cool, Karel	Purdue	1985	INSEAD		14	—	—	—	126
Cooper, William W.	MIT	1967	Emeritus (Texas)	7	—	—	—	—	95
Corley, Kevin G.	Penn State	2002	Illinois					121	
Cortina, Jose M.	Michigan State	1994	George Mason			120	—	—	
Cotton, John L.	Iowa	1979	Marquette	—	58	—	—	—	
Cropanzano, Russell	Purdue	1988	Arizona			—	142	43	
Cummings, Larry L.	Indiana	1964	Deceased	98	—	—	—	—	
Dacin, M.Tina	Toronto	1993	Queen's				—	121	
Daft, Richard L.	Chicago	1974	Vanderbilt	5	12	—	—	—	16
Dalton, Catherine M.[d]	Indiana	1991	Indiana				55	—	
Dalton, Dan R.	UC Irvine	1979	Indiana	69	—	—	—	—	94
Damanpour, Fariborz	Pennsylvania	1983	Rutgers		—	113	—	—	
Das, T.K.	UCLA	1984	CUNY		—	—	—	141	
D'Aveni, Richard A.	Columbia	1987	Dartmouth			146	—	—	
Davenport, Thomas H.	Harvard	1982	Babson		—	—	118	—	

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Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Davis, Fred D.	MIT	1986	Arkansas		62	—	—	14	
Davis, Gerald F.	Stanford	1990	Michigan			144	—	—	
Davis, James H.	Iowa	1991	Notre Dame				17	—	
Davis, Peter S.	South Carolina	1988	Memphis	103	—	—	—	—	
Davis-Blake, Alison	Stanford	1986	Minnesota		56	—	—	—	
Dean, James W. Jr.	Carnegie Mellon	1983	North Carolina		—	50	61	—	135
Delacroix, Jacques J.	Stanford	1974	Santa Clara	108	—	—	—	—	
Delery, John E.	Texas A&M	1993	Arkansas				129	—	
Delios, Andrew	Western Ontario	1998	National University of Singapore					148	
Demaree, Robert G.	Illinois	1950	Deceased	41	—	—	—	—	
DeNisi, Angelo S.	Purdue	1977	Tulane	60	—	—	—	—	149
Denison, Daniel R.	Michigan	1982	IMD (Switzerland)	—	—	—	124	—	
Dennis, Alan R.	Arizona	1991	Indiana			101	—	—	
Desanctis, Gerardine L.	Texas Tech	1982	Deceased		64	—	—	—	89
Dess, Gregory G.	Washington	1980	Texas – Dallas	6	—	—	134	—	36
Dierickx, Ingemar	Harvard	1985	INSEAD		40	—	—	—	
Dobbins, Gregory H.	Virginia Tech	1983	Deceased		70	—	—	—	
Donaldson, Thomas J.	Kansas	1976	Pennsylvania	—	—	—	74	—	
Doty, D. Harold	Texas	1990	Syracuse			—	120	—	
Dougherty, Deborah	MIT	1987	Rutgers			86	—	—	
Dougherty, Thomas W.	Houston	1981	Missouri	—	—	59	—	—	
Doz, Yves L.	Harvard	1976	INSEAD	—	—	—	150	—	
Drasgow, Fritz	Illinois	1978	Illinois	—	—	—	77	29	
Dreher, George F.	Houston	1977	Indiana	90	—	115	—	—	132
Drezner, Zvi	Technion	1975	California State Fullerton	—	—	—	—	121	
Duguid, Paul	Unknown	Unknown	Unknown			96	—	—	
Dukerich, Janet M.	Minnesota	1985	Texas		—	91	—	—	
Dunnette, Marvin D.	Minnesota	1954	PDRI	—	—	79	—	—	
Dutton, Jane E.	Northwestern	1983	Michigan	20	7	61	—	54	10
Dyer, Jeffrey H.	UCLA	1993	BYU				9	20	

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Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Earley, P. Christopher	Illinois	1984	National University of Singapore		16	62	—	49	42
Eby, LillianT.	Tennessee	1996	Georgia					121	
Eden, Lorraine	Dalhousie	1976	Texas A&M	—	—	—	—	132	
Edmondson, Amy C.	Harvard	1996	Harvard					101	
Edwards, Jeffrey R.	Carnegie Mellon	1987	North Carolina			42	—	116	
Eisenberger, Robert	UC Riverside	1972	Delaware	—	—	—	—	80	
Eisenhardt, Kathleen M.	Stanford	1982	Stanford		1	82	1	3	1
Erez, Amir	Cornell	1997	Florida					76	
Erez, Miriam	Technion	1972	Technion	—	55	—	—	—	
Ettlie, John E.	Northwestern	1975	Rochester Institute of Technology	91	—	—	—	—	
Evanisko, Michael J.	Yale	1978	Unknown	96	—	—	—	—	
Farrell, Daniel J.	Iowa	1977	Western Michigan	61	—	—	—	—	
Feldman, Daniel C.	Yale	1976	Georgia	22	—	141	95	—	54
Feldman, Jack M.	Illinois	1972	Georgia Tech.	54	119	—	—	—	
Feldman, Martha S.	Stanford	1983	UC Irvine	30	—	—	—	—	
Ferris, Gerald R.	Illinois	1982	Florida State		54	49	—	—	52
Fetter, Richard	Indiana	1991	Butler			106	—	—	
Finkelstein, Sydney	Columbia	1988	Dartmouth			80	132	—	
Fiol, C. Marlene	Illinois	1986	Colorado – Denver		113	122	—	—	
Fisher, Cynthia D.	Purdue	1978	Bond University	130	—	—	—	—	
Fisher, Marshall L.	MIT	1970	Pennsylvania	28	—	—	—	98	114
Fitzgerald, Louise F.	Ohio State	1979	Illinois	—	122	—	48	—	
Flynn, Barbara B.	Indiana	1984	Indiana – IUPUI		—	—	121	—	
Folger, Robert	North Carolina	1975	Central Florida	—	75	—	121	—	
Ford, J. Kevin	Ohio State	1983	Michigan State		28	—	—	—	91
Frederick, Elizabeth	Maryland	1985	Unknown	62	—	—	—	—	
Fredrickson, James W.	Washington	1980	Texas	46	126	—	—	—	104
Freeman, Richard B.	Harvard	1968	Harvard	143	—	—	—	—	

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Frese, Michael	Technical U of Berlin	1978	Giessen	—	—	—	—	25	
Friesen, Peter H.	Stanford	1974	Unknown	53	—	—	—	—	
Frone, Michael R.	SUNY Buffalo	1991	SUNY Buffalo			131	146	—	
Gaertner, Stefan	Georgia State	2000	Unknown					111	
Gallupe, R. Brent	Minnesota	1985	Queen's		64	—	—	—	
Ganster, Daniel C.	Purdue	1978	Arkansas	—	—	50	—	—	75
Gavetti, Giovanni	Pennsylvania	2000	Harvard					58	
George, Jennifer M.	York	1987	Rice		86	15	—	15	34
Gerhart, Barry A.	Wisconsin	1985	Wisconsin		—	78	109	—	146
Gersick, Connie G.	Yale	1984	Yale		70	88	—	—	131
Ghoshal, Sumantra	Harvard	1986	Deceased		77	103	7	—	50
Gibson, Cristina B.	UC Irvine	1995	UC Irvine				—	58	
Gilliland, Stephen W.	Michigan State	1992	Arizona			123	—	—	
Gioia, Dennis A.	Florida State	1979	Penn State	—	—	131	—	—	
Gist, Marilyn E.	Maryland	1985	Seattle University		43	67	—	—	65
Glick, William H.	UC Berkeley	1981	Rice	—	—	—	114	—	123
Goldman, Barry M.	Maryland	1998	Arizona					40	
Gomez-Mejia, Luis R.	Minnesota	1981	Arizona State	—	106	—	105	132	93
Gooding, Richard Z.	Michigan State	1989	Strategic Advantage Co.	130		—	—-	—	
Gordon, Michael E.	UC Berkeley	1969	Rutgers	126	—-	—	—-	—	
Govindarajan, Vijay	Harvard	1978	Dartmouth	—-	—	—-	—	94	
Graen, George B.	Minnesota	1967	Louisiana – Lafayette	31	—-	—	140	—-	127
Grant, Robert M.	City Univ. (London)	1983	Georgetown		—	108	13	—-	85
Greenberg, Jerald	Wayne State	1975	Ohio State	—	18	21	—-	—	37
Greenhaus, Jeffrey H.	NYU	1970	Drexel	63	49	80	—-	—	56
Gregersen, Hal B.	UC Irvine	1989	BYU			126	—	—	
Greve, Henrich R.	Stanford	1994	BI Norw. School of Mgmt.				142	—	
Griffeth, Rodger W.	South Carolina	1981	New Orleans	—	—	—	—	108	
Griffin, Ricky W.	Houston	1978	Texas A&M	108	—	—	—	—	
Gulati, Ranjay	Harvard	1993	Northwestern				2	17	83
Gully, Stanley M.	Michigan State	1997	Rutgers					43	

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Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Gupta, Anil K.	Harvard	1980	Maryland	78	—	—	—	89	
Gutek, Barbara A.	Michigan	1975	Arizona	145	—	123	—	—	
Hackett, Gail N.	Penn State	1978	Arizona State	32	—	109	—	—	70
Hackman, J. Richard	Illinois	1966	Harvard	—	—	—	107	—	
Hambrick, Donald C.	Penn State	1979	Penn State	1	34	28	38	—	2
Hamel, Gary P.	Michigan	1990	Strategos		115	3	—	—	19
Hammer, Tove H.	Maryland	1973	Cornell	127	—	—	—	—	
Hansen, Morten T.	Stanford	1996	Harvard				70	—	
Harrigan, Kathryn R.	Harvard	1979	Columbia	104	110	—	—	—	
Harris, Michael M.	Illinois (Chicago)	1984	Missouri – St Louis		48	—	—	—	
Harrison, David A.	Illinois	1988	Penn State			—	74	—	
Hart, Stuart L.	Michigan	1983	Cornell		—	—	87	—	
Haveman, Heather A.	UC Berkeley	1990	Columbia			106	—	—	
Heilman, Madeline E.	Columbia	1972	NYU	—	57	—	—	—	124
Helfat, Constance E.	Yale	1985	Dartmouth		—	—	—	132	
Henderson, Rebecca M.	Harvard	1988	MIT			24	—	—	
Hennart, Jean-Francois	Maryland	1977	Tilburg	—	—	142	—	—	
Higgins, Christopher A.	Waterloo	1981	Western Ontario	—	—	105	—	—	
Higgins, Monica C.	Harvard	1995	Harvard				—	101	
Hill, Charles W.L.	Manchester	1983	Washington		44	29	74	—	40
Hitt, Michael A.	Colorado	1974	Texas A&M	—	37	17	21	6	8
Hofmann, David A.	Penn State	1992	North Carolina				99	—	
Hofstede, Geert	Groningen (Netherlands)	1967	Emeritus (Tilburg)	140	—	—	—	—	
Hogarth, Robin M.	Chicago	1972	Universitat Pompeu Fabra	117	—	—	—	—	
Hogg, Michael A.	Bristol	1983	Queensland		—	—	—	67	
Hollenbeck, John R.	NYU	1984	Michigan State		21	—	118	—	80
Hom, Peter W.	Illinois	1979	Arizona State	—	—	—	—	85	
Hoskisson, Robert E.	UC Irvine	1984	Arizona State		100	10	94	38	23
Hough, Leaetta M.	Minnesota	1981	Dunnette Group, Inc.	—	—	71	—	—	
House, Robert J.	Ohio State	1960	Pennsylvania	—	—	129	64	—	97
Howell, Jane M.	British Columbia	1986	Western Ontario		—	119	—	—	

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Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Huber, George P.	Purdue	1966	Texas	55	103	13	—	—	24
Huber, Vandra L.	Indiana	1982	Washington		105	—	—	—	
Huff, Anne S.	Northwestern	1974	Technische Univers. Muenchen	—	—	150	—	—	
Hulin, Charles L.	Cornell	1963	Illinois	—	97	—	129	—	100
Hult, G. Tomas M.	Memphis	1995	Michigan State					141	
Hunter, John E.	Illinois	1964	Deceased	40	23	—	—	—	41
Huselid, Mark A.	SUNY Buffalo	1993	Rutgers				4	—	
Ibarra, Herminia	Yale	1989	INSEAD			94	—	—	
Ilgen, Daniel R.	Illinois	1969	Michigan State	130	—	—	—	—	
Ingram, Paul	Cornell	1994	Columbia				104	—	
Inkpen, Andrew C.	Western Ontario	1992	Thunderbird				88	—	
Ireland, R. Duane	Texas Tech	1977	Texas A&M	—	—	—	—	141	
Ivancevich, John M.	Maryland	1968	Houston	117	—	—	—	—	
Ives, Blake	Minnesota	1978	Houston	71	—	—	—	—	
Jackson, Douglas N.	Purdue	1955	Deceased	—	—	115	—	—	
Jackson, Paul R.	Sheffield	Unknown	University of Manchester	142	—	—	—	—	
Jackson, Susan E.	UC Berkeley	1982	Rutgers	3	2	—	—	—	4
Jaikumar, Ramchandran	Pennsylvania	1985	Deceased		137	—	—	—	
James, Lawrence R.	Utah	1970	Georgia Tech	2	—	144	—	—	25
Jarillo, J. Carlos	Harvard	1986	HEC Geneva		148	—	—	—	
Jehn, Karen A.	Northwestern	1992	Leiden				31	—	
Jemison, David B.	Washington	1978	Texas	—	95	—	—	—	
Johnson, Eric J.	Carnegie Mellon	1981	Columbia	—	130	—	—	—	
Johnson, Jonathan L.	Indiana	1995	Arkansas				36	—	
Johnson, Richard A.	Texas A&M	1992	Missouri			103	—	—	
Jones, Gareth R.	Lancaster	1980	Texas A&M	—	84	—	—	—	
Jones, Thomas M.	UC Berkeley	1977	Washington	—	—	—	43	—	
Judge, Timothy A.	Illinois	1990	Florida			14	6	1	30
Kacmar, K. Michele	Texas A&M	1990	Alabama			—	—	67	
Kale, Prashant	Pennsylvania	1999	Michigan					121	

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Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Kanfer, Ruth	Arizona State	1981	Georgia Tech.	—	52	—	—	—	
Kanungo, Rabindra	McGill	1962	Emeritus (McGill)	134	89	—	—	—	
Karreman, Dan	Unknown	Unknown	Lund					116	
Katz, Ralph	Pennsylvania	1973	Northeastern University	140	—	—	—	—	
Khanna, Tarun	Harvard	1993	Harvard				—	19	
Kiesler, Sara B.	Ohio State	1965	Carnegie Mellon	122	32	—	—	—	74
Kim, W. Chan	Michigan	1984	INSEAD		—	83	—	—	
Kimberly, John R.	Cornell	1970	Pennsylvania	89	—	—	—	—	
Kinicki, Angelo J.	Kent State	1982	Arizona State		—	—	127	—	
Kirsch, Michael P.	Michigan State	1988	Unknown	130	—	—	—	—	
Klein, Howard J.	Michigan State	1987	Ohio State		82	—	—	—	
Klein, Katherine J.	Texas	1984	Pennsylvania		—	—	—	85	
Kogut, Bruce M.	MIT	1983	INSEAD		11	9	12	58	6
Konovsky, Mary A.	Indiana	1986	Unknown		42	58	—	—	78
Koput, Kenneth W.	UC Berkeley	1992	Arizona				30	—	
Korsgaard, M. Audrey	NYU	1990	South Carolina			—	48	—	
Kozlowski, Steve W.J.	Pennsylvania	1982	Michigan State		—	—	—	121	
Kraimer, Maria L.	Illinois-Chicago	1999	Melbourne (Australia)					37	
Kristof-Brown, Amy L.[e]	Maryland	1997	Iowa				134	—	
Kwon, Seok-Woo	USC	2003	Kentucky					108	
Lance, Charles E.	Georgia Tech.	1985	Georgia		—	—	—	81	
Latham, Gary P.	Akron	1974	Toronto	100	68	—	—	—	82
Lau, Chung Ming	Texas A&M	1991	Chinese U. of Hong Kong				—	49	
Lee, Cynthia	Maryland	1984	Northeastern University	39	—	—	—	—	99
Lee, Hau L.	Pennsylvania	1983	Stanford		128	—	23	32	103
Lengel, Robert H.	Texas A&M	1983	Texas - San Antonio		27	—	—	—	
Lent, Robert W.	Ohio State	1979	Maryland	—	—	84	—	—	
Leonard, Dorothy[f]	Stanford	1979	Harvard	—	—	57	—	—	150
Lepak, David P.	Penn State	1998	Rutgers				149	—	
LePine, Jeffrey	Michigan State	1998	Florida					11	
Levinthal, Daniel A.	Stanford	1985	Pennsylvania		—	1	—	101	17

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Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Levitt, Theodore	Ohio State	1951	Deceased	85	—	—	—	—	
Lewis, Kyle	Maryland	1999	Texas					89	
Liden, Robert C.	Cincinnati	1981	Illinois-Chicago	—	—	—	14	49	73
Lieberman, Marvin B.	Harvard	1982	UCLA		90	—	—	—	
Locke, Edwin A.	Cornell	1964	Emeritus (Maryland)	14	72	95	67	40	18
London, Manuel	Ohio State	1974	SUNY Stony Brook	—	—	—	134	—	
Lord, Robert G.	Carnegie Mellon	1975	Akron	16	66	—	—	—	53
Lubatkin, Michael H.	Tennessee	1982	Connecticut		—	—	77	—	130
Luo, Yadong	Temple	1996	Miami (Florida)					36	
Lyles, Majorie A.	Pittsburgh	1977	Indiana-IUPUI	—	131	—	—	—	
Lynch, John G.	Illinois	1979	Duke	—	144	—	—	—	
Mabe, Paul A.	Florida State	1982	Georgia	128	—	—	—	—	
MacDuffie, John P.	MIT	1991	Pennsylvania				15	—	
MacKenzie, Scott B.	UCLA	1983	Indiana		—	75	56	65	
MacMillan, Ian C.	U. of South Africa	1975	Pennsylvania	119	30	86	—	—	43
Mael, Fred	Wayne State	1988	American Institutes of Research		135	—	—	—	
Mahoney, Joseph T.	Pennsylvania	1989	Illinois			115	—	—	
Makridakis, Spyros	NYU	1969	Emeritus (INSEAD)	52	—	—	—	—	
Mannix, Elizabeth A.	Chicago	1989	Cornell			—	—	101	
Manz, Charles C.	Penn State	1981	Massachusetts	—	138	—	—	—	
March, James G.	Yale	1953	Emeritus (Stanford)	19	144	12	—	—	14
Marks, Michelle A.	George Mason	1997	George Mason					18	
Martin, Jeffrey A.	Stanford	2002	Texas					9	
Martins, Luis L.	NYU	1997	Georgia Tech				150	—	
Maslach, Christina	Stanford	1971	UC Berkeley	13	—	—	—	—	128
Mason, Phyllis A.	Columbia	1986	Unknown	18	—	—	—	—	
Masterson, Suzanne S.	Maryland	1998	Cincinnati					43	
Mathieu, John E.	Old Dominion	1985	Connecticut		—	43	—	33	134
Mayer, Roger C.	Purdue	1989	Akron			—	24	—	

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
McAllister, Daniel J.	UC Irvine	1993	National University of Singapore				50	—	
McEvoy, Glenn M.	Colorado	1985	Utah State		124	—	—	—	
McFarlan, F. Warren	Harvard	1965	Emeritus (Harvard)	36	—	—	—	—	
McFarlin, Dean B.	SUNY Buffalo	1986	Dayton			53	—	—	
McGrath, Rita G.	Pennsylvania	1993	Columbia				63	—	
Medsker, Gina J.	Purdue	1993	HUMRRO			142	—	—	
Mento, Anthony J.	Maryland	1978	Loyola College-Maryland	—	113	—	—	—	
Meyer, Alan D.	UC Berkeley	1977	Oregon	71	—	—	—	—	
Meyer, John P.	Western Ontario	1978	Western Ontario	94	—	11	—	—	28
Mezias, Stephen J.	Stanford	1987	NYU			102	—	—	
Millar, Victor E.	Unknown	Unknown	AT&T		95	—	—	—	
Miller, Danny	McGill	1976	HEC Montréal	10	5	62	70	—	5
Milliken, Frances J.	CUNY	1985	NYU		—	—	117	—	
Miner, Anne S.	Stanford	1985	Wisconsin		—	126	146	—	
Mintzberg, Henry	MIT	1968	McGill	—	29	—	—	—	60
Mitchell, Terence R.	Illinois	1969	Washington	27	—	38	—	—	35
Mitchell, William (Will) G.	UC Berkeley	1988	Duke			—	62	—	
Mitroff, Ian	UC Berkeley	1967	USC	145	—	—	—	—	
Mobley, William H.	Maryland	1971	China Europe Inter. Bus. School	148	—	—	—	—	
Montgomery, Cynthia A.	Purdue	1979	Harvard	59	—	—	—	—	
Montgomery, David B.	Stanford	1966	Retired (Stanford)	—	106	—	—	—	
Moorman, Robert H.	Indiana	1990	Creighton			18	—	—	121
Moran, Peter	INSEAD	1999	London Business School				142	—	
Morrison, Elizabeth W.	Northwestern	1991	NYU			120	81	121	
Morrow, Paula C.	Iowa State	1978	Iowa State	91	—	—	—	—	
Motowidlo, Stephan J.	Minnesota	1976	Rice	—	92	—	—	—	109
Mount, Michael K.	Iowa State	1977	Iowa	—	—	5	70	—	31
Mumford, Michael	Georgia	1983	Oklahoma		—	—	—	11	
Murphy, Kevin R.	Penn State	1979	Penn State	145	50	—	—	—	87

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Nahapiet, Janine	London Bus. School	Unknown	Oxford				99	—	
Neale, Margaret A.	Texas	1982	Stanford		15	—	69	—	55
Near, Janet P.	SUNY Albany	1977	Indiana	42	—	—	—	—	
Ng, Kok Yee	Michigan State	2001	Nanyang (Singapore)					58	
Nobeoka, Kentaro	Unknown	Unknown	Kobe (Japan)					49	
Noe, Raymond A.	Michigan State	1985	Ohio State	104	19	—	—	101	62
Nohria, Nitin	MIT	1988	Harvard			—	121	31	
Nonaka, Ikujiro	UC Berkeley	1972	UC Berkeley	—	—	26	—	—	
Northcraft, Gregory B.	Stanford	1981	Illinois	—	69	—	—	—	119
Nutt, Paul C.	Wisconsin	1974	Ohio State	136	—	—	—	—	
Okhuysen, Gerardo A.	Stanford	1997	Utah					94	
Oliver, Christine E.	Toronto	1988	York			30	—	—	137
Olson, Margrethe H.	Minnesota	1978	Bentley	71	—	—	—	—	
Ones, Deniz S.	Iowa	1993	Minnesota				25	—	
O'Reilly, Charles A.	UC Berkeley	1975	Stanford	12	3	20	—	—	3
Organ, Dennis W.	North Carolina	1970	Indiana	17	8	—	107	—	21
Orlikowski, Wanda J.	NYU	1988	MIT			47	—	35	
Osterman, Paul S.	MIT	1976	MIT	—	—	—	—	40	
Ostroff, Cheri	Michigan State	1987	Maryland			69	—	—	
Ovalle, Nestor K. (Nick)	Indiana	1981	Unknown	108	—	—	—	—	
Padmanabhan, V.	Texas - Dallas	1990	INSEAD - Singapore			—	56	—	
Paine, Julie Beth	Indiana	2001	Best Buy					76	
Parasuraman, Saroj	SUNY Buffalo	1977	Deceased	—	—	135	—	—	140
Parkhe, Arvind	Temple	1989	Temple			56	—	—	
Pearce, John A. II	Penn State	1976	Villanova	—	72	—	—	—	122
Pearce, Jone L.	Yale	1978	UC Irvine	—	—	—	116	—	
Pearson, Sammy W.	Arizona State	1977	Unknown	80	—	—	—	—	
Pelled Colabella, Lisa H.[g]	Stanford	1993	Rand Corporation				83	—	
Peng, Mike W.	Washington	1996	Ohio State					65	
Perry, James L.	Syracuse	1974	Indiana – IUPUI	99	—	—	—	—	
Peterhaf, Margaret A.	Yale	1987	Dartmouth			88	—	—	

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Peters, Lawrence H.	Purdue	1975	Texas Christian University	122	—	—	—	—	
Pfeffer, Jeffrey	Stanford	1972	Stanford	29	52	136	—	—	45
Phillips, James S.	Akron	1981	Houston	121	—	—	—	—	
Pisano, Gary P.	UC Berkeley	1988	Harvard			—	8	—	146
Ployhart, Robert E.	Michigan State	1999	South Carolina					121	
Podsakoff, Philip M.	Indiana	1980	Indiana	114	10	32	56	49	12
Porter, Christopher O.L.H.	Michigan State	2001	Texas A&M					54	
Porter, Michael E.	Harvard	1974	Harvard	—	22	—	5	—	20
Posner, Barry Z.	Massachusetts	1979	Santa Clara	108	—	—	—	—	
Powell, Thomas C.	NYU	1989	Australian Grad. School of Man.			—	42	—	
Powell, Walter W.	SUNY Stony Brook	1978	Stanford	—	—	—	26	—	
Prahalad, C.K.	Harvard	1975	Michigan	—	26	8	56	—	9
Pratt, Michael G.	Michigan	1994	Illinois				—	148	
Preston, Lee E.	Harvard	1958	Emeritus (Maryland)	—	—	—	112	—	
Price, James L.	Columbia	1962	Emeritus (Iowa)	—	90	—	—	—	
Priem, Richard L.	Texas - Arlington	1990	U. Wisconsin-Milwaukee			—	—	26	
Pulakos, Elaine D.	Michigan State	1984	PDRI	143	—	—	—	—	
Quinn, Robert E.	Cincinnati	1975	Michigan	58	—	—	—	—	
Rafaeli, Anat	Ohio State	1985	Technion		102	—	—	—	
Ragins, Belle Rose	Tennessee	1987	Wisconsin-Milwaukee			130	134	—	
Ramanujam, Vasudevan	Pittsburgh	1984	Case Western		24	—	—	—	
Ravlin, Elizabeth C.	Carnegie Mellon	1986	South Carolina		149	—	—	—	
Reichers, Arnon E.	Michigan State	1983	Ohio State		87	—	—	—	
Reuer, Jeffrey J.	Purdue	1997	North Carolina					76	
Rhoades-Shanock, Linda[h]	Delaware	2001	SUNY Albany					81	
Rhodes, E.	Unknown	Unknown	Unknown	148	—	—	—	—	
Ring, Peter S.	UC Irvine	1986	Loyola Marymount			34	—	—	
Rivkin, Jan W.	Harvard	1997	Harvard					108	
Roberts, Karlene H.	UC Berkeley	1967	UC Berkeley	104	—	139	—	—	
Robey, Daniel	Kent State	1973	Georgia State	96	106	—	—	—	

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Robinson, Richard B.	Georgia	1980	South Carolina	38	—	—	—	—	138
Robinson, Sandra L.	Northwestern	1992	British Columbia				19	—	
Rohrbaugh, John	Colorado	1976	SUNY Albany	122	—	—	—	—	
Rosen, Benson	Wayne State	1970	North Carolina	—	141	—	—	—	
Ross, Jerry	Northwestern	1979	Unknown	—	123	—	—	—	
Roth, Philip L.	Houston	1988	Clemson			—	106	98	
Rothstein, Mitchell G.	Western Ontario	1983	Western Ontario		—	128	—	—	
Rousseau, Denise M.	UC Berkeley	1977	Carnegie Mellon	—	—	73	73	—	102
Rumelt, Richard P.	Harvard	1972	UCLA	—	—	123	—	—	
Rupp, Deborah E.	Colorado State	2002	Illinois					116	
Russell, Joyce E.A.	Akron	1983	Maryland		—	—	—	116	
Ryan, Ann Marie	Illinois, Chicago	1987	Michigan State			—	33	15	
Ryan, Jennifer K.	Northwestern	1997	Purdue					121	
Ryan, Katherine	Indiana	1997	Indiana				134	—	
Rynes, Sara L.	Wisconsin	1981	Iowa	136	—	139	—	—	144
Sackett, Paul R.	Ohio State	1979	Minnesota	56	120	—	96	132	66
Sakakibara, Sadeo	Unknown	Unknown	Unknown				132	—	
Saks, Alan M.	Toronto	1990	Toronto			—	46	—	
Salancik, G.R.	Yale	1971	Deceased	107	—	—	—	—	
Salas, Eduardo	Old Dominion	1984	Central Florida		—	—	—	98	
Sanchez, Ron	MIT	1991	Copenhagen Bus. School				148	—	
Sandberg, William R.	Georgia	1984	South Carolina		124	—	—	—	
Sandelands, Lloyd E.	Northwestern	1982	Michigan	34	—	—	—	—	
Sapienza, Harry J.	Maryland	1989	Minnesota			—	150	132	
Sasser, W. Earl	Duke	1969	Harvard	—	—	134	—	—	
Sawhney, Mohanbir S.	Pennsylvania	1993	Northwestern				—	101	
Scandura, Terri A.	Cincinnati	1988	Miami (Florida)			150	113	—	
Schaubroeck, John M.	Purdue	1988	Drexel		147	59	—	94	107
Schaufeli, Wilmar B.	Groningen (Netherlands)	1988	Utrecht (Netherlands)			—	—	67	
Schilling, Melissa A.	Washington	1997	NYU					101	
Schmidt, Frank L.	Purdue	1970	Iowa	43	36	22	—	—	13

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Schmitt, Neal	Purdue	1972	Michigan State	37	41	—	35	—	26
Schneider, Benjamin	Maryland	1967	Emeritus - Maryland	—	19	—	124	—	59
Schoemaker, Paul J.H.	Pennsylvania	1977	Pennsylvania	87	—	52	—	—	108
Schoorman, F. David	Carnegie Mellon	1983	Purdue		—	—	20	—	
Schroeder, Roger G.	Northwestern	1966	Minnesota	—	—	—	45	—	129
Schuler, Randall S.	Michigan State	1973	Rutgers	43	17	—	—	—	48
Schultz, Majken	Copenhagen Bus. School	1988	Copenhagen Bus. School			—	—	121	
Schweiger, David M.	Maryland	1980	South Carolina	—	121	—	—	—	136
Schwenk, Charles R.	Indiana	1980	Unknown	102	—	—	—	—	139
Scott, W. Richard	Chicago	1961	Emeritus (Stanford)	—	99	—	—	—	
Shane, Scott A.	Pennsylvania	1992	Case Western				53	4	
Shore, Lynn M.	Colorado State	1985	San Diego State		—	99	91	—	
Shuen, Amy	UC Berkeley	1994	Unknown				10	—	
Silverman, Brian S.	UC Berkeley	1996	Harvard				—	132	
Simchi-Levi, David	Tel-Aviv	1987	MIT			—	—	111	
Simon, Michael C.	NYU	1991	Stromberg Consulting		143	—	—	—	
Singh, Harbir	Michigan	1984	Pennsylvania		39	—	29	24	75
Singh, Jitendra V.	Stanford	1983	Pennsylvania		51	—	—	—	
Sitkin, Sim, B.	Stanford	1986	Duke			99	109	—	112
Skarlicki, Daniel P.	Toronto	1995	British Columbia				56	—	
Slocum, John W.	Washington	1967	SMU	101	—	—	—	—	
Smircich, Linda	Syracuse	1978	Massachusetts	35	—	—	—	—	
Smith, C. Ann	Indiana	1983	Deceased	65	—	—	—	—	
Smith, Ken G.	Washington	1983	Maryland		—	74	142	—	
Smith, Michael D.	MIT	2000	Carnegie Mellon					20	
Smith-Doerr, Laurel	Arizona	1999	Boston University				34	—	
Smither, James W.	Stevens Institute	1985	La Salle		—	—	103	—	
Snell, Scott A.	Michigan State	1989	Cornell			—	38	—	141
So, Kut C.	Stanford	1985	UC Irvine		—	—	—	85	
Sorensen, Jesper B.	Stanford	1996	MIT					132	
Spector, Paul E.	South Florida	1975	South Florida	—	6	97	—	8	27

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Spender, J.C.	Manchester	1980	Unknown	—	—	—	81	—	
Spreitzer, Gretchen M.	Michigan	1992	Michigan				18	—	
Sproull, Lee S.	Stanford	1978	NYU	122	84	111	—	—	79
Staw, Barry M.	Northwestern	1972	UC Berkeley	4	31	115	—	—	11
Steel, Robert P.	Tennessee	1980	Michigan-Dearborn	108	—	—	—	—	
Steensma, H. Kevin	Indiana	1996	Washington					76	
Sterman, John D.	Dartmouth	1982	MIT		134	—	—	—	
Stewart, Greg L.	Arizona State	1993	Iowa				140	—	
Stuart, Toby E.	Stanford	1995	Columbia				—	37	
Stumpf, Stephen A.	NYU	1978	Villanova	45	—	—	—	—	
Sutton, Robert I.	Michigan	1984	Stanford		38	48	83	—	44
Szulanski, Gabriel	INSEAD	1995	INSEAD - Singapore				88	—	
Tabrizi, Behnam N.	Stanford	1994	Stanford				109	—	
Tang, Christopher S.	Yale	1985	UCLA		—	—	—	67	
Taylor, Karen M.	Ohio State	1979	Ohio State	136	—	—	—	—	
Taylor, M. Susan	Purdue	1978	Maryland	85	—	—	—	81	
Teece, David J.	Pennsylvania	1975	UC Berkeley	—	—	—	3	—	111
Teng, Bing-Sheng	CUNY	1998	George Washington					141	
Terry, Deborah J.	Australian National U.	1989	Queensland			—	—	67	
Tetrick, Lois E.	Georgia Tech.	1983	George Mason		138	—	—	—	
Tett, Robert P.	Western Ontario	1995	Tulsa			53	—	—	
Thomas, Howard	Edinburgh	1970	Warwick	—	25	88	—	—	58
Thomas, James B.	Texas	1988	Penn State			97	—	—	
Tjosvold, Dean	Minnesota	1972	Lingnan	—	132	—	—	—	
Todor, William D.	UC Irvine	1979	Unknown	84	—	—	—	—	
Tolbert, Pamela S.	UCLA	1983	Cornell	82	—	—	—	—	
Tosi, Henry I.	Ohio State	1964	Florida	—	128	—	—	—	
Trevino, Linda K.	Texas A&M	1987	Penn State		117	—	—	—	145
Trice, Harrison M.	Wisconsin	1955	Deceased	76	—	—	—	—	
Truxillo, Donald M.	LSU	1987	Portland State			—	—	148	
Tsui, Anne S.	UCLA	1981	Arizona State	—	78	38	—	—	49

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Turnley, William H.	South Carolina	1996	Kansas State					111	
Tushman, Michael L.	MIT	1976	Harvard	—	9	41	—	—	29
Uzzi, Brian	SUNY Stony Brook	1994	Northwestern				91	—	
Valacich, Joseph S.	Arizona	1989	Washington State			40	—	—	
Vandenberg, Robert J.	Georgia	1982	Georgia		—	—	—	67	
Van de Ven, Andrew H.	Wisconsin	1972	Minnesota	51	79	16	—	—	15
Vecchio, Robert P.	Illinois	1976	Notre Dame	150	—	—	—	—	
Venkataraman, Sankaran	Minnesota	1989	Virginia			—	—	26	
Venkatesh, Viswanath	Minnesota	1997	Maryland					5	
Venkatraman, N.	Pittsburgh	1985	Boston University		4	109	—	—	22
Viswesvaran, Chockalingam	Iowa	1993	Florida International				27	—	
Wageman, Ruth	Harvard	1993	Dartmouth				32	—	
Walker, Gordon	Pennsylvania	1982	SMU	135	—	—	—	—	
Walsh, James P.	Northwestern	1985	Michigan		88	55	—	—	81
Wanberg, Connie R.	Iowa State	1992	Minnesota				—	132	
Warr, Peter	Sheffield	1963	Emeritus (Sheffield)	115	—	—	—	—	
Warshaw, Paul R.	Massachusetts	1977	Unknown	—	60	—	—	—	
Waters, James A.	Case Western	1976	Unknown	—	142	—	—	—	
Wayne, Sandy J.	Texas A&M	1987	Illinois – Chicago			68	50	89	142
Webster, Jane	NYU	1989	Queen's		140	—	—	—	
Weick, Karl E.	Ohio State	1962	Michigan	21	—	37	—	—	32
Wells, Gary L.	Ohio State	1977	Iowa State	68	—	—	—	—	
Wernerfelt, Birger	Harvard	1977	MIT	9	66	—	—	—	38
Wesson, Michael J.	Michigan State	2002	Texas A&M					43	
West, Stephen G.	Texas	1972	Arizona State	128	—	—	—	—	
Westphal, James D.	Northwestern	1996	Michigan				21	—	
Whang, Seungjin	Rochester	1988	Stanford			—	38	—	
Wiersema, Margarethe F.	Michigan	1985	UC Irvine		—	113	—	—	
Williams, Larry J.	Indiana	1988	Virginia Commonwealth		104	69	—	—	113
Williamson, Oliver E.	Carnegie Mellon	1963	Emeritus (UC Berkeley)	—	—	36	—	—	
Winkler, Robert L.	Chicago	1967	Duke	74	—	—	—	—	

(continued)

Table 9 (continued)

Author	Graduate School	Degree Date	Current Affiliation[a]	1981 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004[b]	1981 to 2004
Witt, Lawrence A. (L.A.)	Tulane	1985	New Orleans		—	—	—	111	
Wolf, Gerrit	Cornell	1967	SUNY Stony Brook	24	—	—	—	—	
Wood, Robert E.	Washington	1980	Univ. of New South Wales	—	47	—	—	—	
Wright, Mike	Nottingham (U.K.)	1986	Nottingham (U.K.)			—	—	54	
Wright, Patrick M.	Michigan State	1988	Cornell			—	—	132	
Xin, Katherine R.	UC Irvine	1995	HKUST				91	—	
Yammarino, Francis J.	SUNY Buffalo	1984	SUNY Binghamton		—	44	—	—	
Yates, J. Frank	Michigan	1971	Michigan	—	133	—	—	—	
Yukl, Gary A.	UC Berkeley	1967	SUNY Albany	—	—	85	—	—	
Zaccaro, Stephen J.	Connecticut	1981	George Mason	—	—	—	—	7	
Zaheer, Aks	MIT	1992	Minnesota				37	57	
Zaheer, Srilata	MIT	1992	Minnesota				127	—	
Zahra, Shaker A.	Mississippi	1982	Minnesota		—	148	—	23	
Zajac, Edward J.	Pennsylvania	1986	Northwestern			27	88	—	63
Zander, Udo	Stockholm School of Econ.	1991	Stockholm School of Econ.			31	41	—	106
Zapf, Dieter	Free U. (Berlin)	1988	Frankfurt			—	—	81	
Zmud, Robert W.	Arizona	1974	Oklahoma	113	—	—	—	—	
Zohar, Dov	Maryland	1975	Technion	—	—	—	—	148	
Zucker, Lynne G.	Stanford	1974	UCLA	82	—	—	—	—	

—- indicates that the author was not among the 150 most-cited for the time period. Numerical values represent authors' rankings for each time period.
a. Current affiliation was determined for the beginning of the 2006-2007 academic year.
b. Citations for the 2000 to 2004 period were obtained only from January 2000 to July 2004.
c. Deborah G. Ancona is formerly Deborah L. Gladstein. Citations from both names were used in this analysis.
d. Catherine M. Dalton is formerly Catherine M. Daily. Citations from both names were included in this analysis.
e. Amy Kristof-Brown is formerly Amy Kristof. Citations from both names were included in this analysis.
f. Dorothy Leonard is formerly Dorothy Leonard-Barton. Citations from both names were included in this analysis.
g. Lisa Pelled Colabella is formerly Lisa Pelled. Citations from both names were included in this analysis.
h. Linda Rhoades-Shanock is formerly Linda Rhoades. Citations from both names were included in this analysis.

periods. Of those authors whose careers have spanned more than one period, a total of 17 (3.0%) appeared in every possible period since their graduation. A summary of those authors who have had an extended impact on the field by making the most-cited list in more than one period is reported in Table 10. Second, it is interesting to note that the proportion of females (23%) is lower than that for males (77%), and this proportion was fairly constant across all of the five time periods we examined. Whether this suggests that females are underrepresented depends on the percentage of females in the field. Evidence from the Academy of Management (T. Loncar, personal communication, March 16, 2007) would suggest that 37% of the Academy members who provided information about their gender were females. If this proportion is representative of the total Academy membership, it would suggest that females are somewhat underrepresented in the list of most-cited authors.

Supplementary Analysis

Up to this point, we have examined the influence of authors and universities in separate analyses. However, we felt that it might prove worthwhile to use the author data reported in Table 9 to also examine changes in university influence over time. More specifically, we reasoned that in addition to assessing the impact that universities have on the field on the basis of their overall citations, it should also prove worthwhile to examine the impact of these universities based on (a) the number of the most-cited authors who had received a graduate degree from them and (b) the number of the most-cited authors who they currently have on their faculty. For the purposes of this analysis, universities were not given credit for authors who had retired from them or who had assumed emeritus status. The results of these analyses are reported in Table 11.

Column 1 in Table 11 reports an alphabetical listing of those universities that were included in our analyses. Columns 2 through 6 show the number of authors from each degree-granting university who were among the 150 most-cited authors during each of the five time periods. Column 7 reports the total of columns 2 through 6, and column 8 reports the subsequent rank achieved by the university based on this number. Column 9 reports the total number of *different* authors who graduated from the university in question that made the list, and column 10 reports the subsequent ranking the university achieved. Thus, the difference between the numbers in column 7 and those in column 9 is that column 7 shows the total number of times *any* graduate from a university was identified as one of the 150 most-cited authors no matter how many times that graduate made the list in the five time periods and column 9 shows the total number of *different* graduates from a university who were identified as being among the 150 most-cited authors. For example, the first row in Table 11 indicates that the University of Akron had two graduates who were recognized as being among the 150 most-cited researchers in the first period (1981 to 1984), followed by one in the second period (1985 to 1989), two in the third period (1990 to 1994), two in the fourth period (1995 to 1999), and three in the final period (2000 to 2004), for a total of 10 appearances (which resulted in Akron being ranked 25th in terms of this criterion). However, only 5 of these 10 appearances were made by different graduates of this institution, resulting in Akron being ranked 30th in terms of this criterion. Given that we were interested in those universities that have had the biggest impact on the field, only universities that had a total of at least 5 appearances across the five periods were included in the table.

Table 10
List of Most-Cited Authors with More than 1 Appearance

Author	Current Affiliation[a]	Author	Current Affiliation
Two Appearances		Harrigan, Kathryn R.	Columbia
		Hollenbeck, John R.	Michigan State
Abrahamson, Eric	Columbia	House, Robert J.	Pennsylvannia
Adler, Paul S.	USC	Hulin, Charles L.	Illinois
Allen, Natalie J.	Western Ontario	Hunter, John E.	Deceased
Ancona, Deborah G.	MIT	Jackson, Susan E.	Rutgers
Arvey, Richard D.	Emeritus (Minnesota)	James, Lawrence R.	Georgia Tech
Baum, Joel A. C.	Toronto	Kanungo, Rabindra	Emeritus (McGill)
Bazerman, Max	Harvard	Kiesler, Sara B.	Carnegie Mellon
Bedeian, Arthur G.	LSU	Konovsky, Mary A.	Unknown
Bourgeois, Lionel J., III	Virginia	Latham, Gary P.	Toronto
Brett, Jeanne M.	Northwestern	Levinthal, Daniel A.	Pennsylvania
Brief, Arthur P.	Utah	Liden, Robert C.	Illinois-Chicago
Brynjolfsson, Eric[b]	MIT	Lord, Robert G.	Akron
Cable, Daniel M.[b]	North Carolina	Mathieu, John E.	Connecticut
Cameron, Kim S.	Michigan	Meyer, John P.	Western Ontario
Chatman, Jennifer A.	UC Berkeley	Miner, Anne, S.	Wisconsin
Chen, Ming-Jer	Virginia	Mitchell, Terence R.	Washington
Conner, Kathleen R.	Unknown	Mount, Michael K.	Iowa
Cropanzano, Russell	Arizona	Murphy, Kevin R.	Penn State
Daft, Richard L.	Vanderbilt	Neale, Margaret A.	Stanford
Davis, Fred D.	Arkansas	Nohria, Nitin	Harvard
Dean, James W., Jr.	North Carolina	Orlikowski, Wanda J.	MIT
Dess, Gregory G.	Texas-Dallas	Porter, Michael E.	Harvard
Drasgow, Fritz	Illinois	Ragins, Belle Rose	Wisconsin-Milwaukee
Dreher, George F.	Indiana	Roberts, Karlene H.	UC Berkeley
Dyer, Jeffrey H.[b]	BYU	Robey, Daniel	Georgia State
Edwards, Jeffrey R.	North Carolina	Roth, Philip L.	Clemson
Feldman, Jack M.	Georgia Tech	Rousseau, Denise M.	Carnegie Mellon
Ferris, Gerald R.	Florida State	Ryan, Ann Marie	Michigan State
Finkelstein, Sydney	Dartmouth	Rynes, Sara L.	Iowa
Fiol, C. Marlene	Colorado-Denver	Sapienza, Harry J.[b]	Minnesota
Fisher, Marshall L.	Pennsylvania	Scandura, Terri A.	Miami-Florida
Fitzgerald, Louise F.	Illinois	Schneider, Benjamin	Emeritus (Maryland)
Folger, Robert	Central Florida	Schoemaker, Paul J. H.	Pennsylvania
Fredrickson, James W.	Texas	Schuler, Randall S.	Rutgers
Frone, Michael R.	SUNY Buffalo	Shane, Scott A.[b]	Case Western
Gerhart, Barry A.	Wisconsin	Shore, Lynn M.	San Diego State
Gersick, Connie G.	Yale	Sitkin, Sim B.	Duke
Gist, Marilyn E.	Seattle University	Smith, Ken G.	Maryland
Grant, Robert M.	Georgetown	Taylor, M. Susan	Maryland
Greenberg, Jerald	Ohio State	Thomas, Howard	Warwick
Gulati, Ranjay[b]	Northwestern	Tsui, Anne S.	Arizona State
Gupta, Anil K.	Maryland	Tushman, Michael L.	Harvard
Gutek, Barbara A.	Arizona	Venkatraman, N.	Boston University
Hackett, Gail N.	Arizona State	Walsh, James P.	Michigan
Hamel, Gary P.	Strategos	Weick, Karl E.	Michigan

(continued)

Table 10 (continued)

Author	Current Affiliation[a]	Author	Current Affiliation
Wernerfelt, Birger	MIT	Noe, Raymond A.	Ohio State
Williams, Larry J.	Virginia Commonwealth	O'Reilly, Charles A.	Stanford
Zaheer, Aks[b]	Minnesota	Organ, Dennis W.	Indiana
Zahra, Shakar A.	Minnesota	Pfeffer, Jeffrey	Stanford
Zajac, Edward J.	Northwestern	Prahalad, C. K.	Michigan
Zander, Udo	Stockholm Sch. Econ.	Schaubroeck, John M.	Drexel
		Schmidt, Frank L.	Iowa
Three Appearances		Schmitt, Neal	Michigan State
Ashford, Susan J.	Michigan	Singh, Harbir	Pennsylvania
Avolio, Bruce J.	Nebraska	Spector, Paul E.	South Florida
Barney, Jay B.	Ohio State	Sproull, Lee S.	NYU
Barrick, Murray R.[b]	Texas A&M	Staw, Barry M.	UC Berkeley
Bettis, Richard A.	North Carolina	Sutton, Robert I.	Stanford
Brockner, Joel	Columbia	Van de Ven, Andrew H.	Minnesota
Caldwell, David F.	Santa Clara	Wayne, Sandy J.[b]	Illinois-Chicago
Campion, Michael A.	Purdue		
Earley, P. Christopher	Natl. U. Singapore	**Four Appearances**	
Feldman, Daniel C.	Georgia	Ashforth, Blake E.[b]	Arizona State
George, Jennifer M.	Rice	Dutton, Jane E.	Michigan
Ghoshal, Sumantra	Deceased	Eisenhardt, Kathleen M.[b]	Stanford
Gomez-Mejia, Luis R.	Arizona State	Hambrick, Donald C.	Penn State
Greenhaus, Jeffrey H.	Drexel	Hitt, Michael A.	Texas A&M
Hill, Charles W. L.	Washington	Hoskisson, Robert E.[b]	Arizona State
Huber, George P.	Texas	Kogut, Bruce M.[b]	INSEAD
Judge, Timothy A.[b]	Florida	Miller, Danny	HEC
Lee, Hau L.	Stanford	Sackett, Paul R.	Minnesota
MacKenzie, Scott B.	Indiana		
MacMillan, Ian C.	Pennsylvania	**Five Appearances**	
March, James G.	Emeritus (Stanford)	Locke, Edwin A.[b]	Emeritus (Maryland)
Morrison, Elizabeth W.[b]	NYU	Podsakoff, Philip M.[b]	Indiana

a. Current affiliation was determined for the beginning of the 2006-2007 academic year.
b. Authors have appeared in all possible time periods included in our study since obtaining their doctoral degrees.

Similar numbers (and rankings) are provided in the right-hand side of the table based on the current affiliations of the authors. The columns on this side of the page indicate the number of faculty members who are currently associated with a university that made the list in one or more of the periods of interest (columns 11 to 15) as well as the total number of researchers who made the list across all periods (column 16) and the total number of *different* authors (column 18). For example, the University of Illinois has no current faculty members who were recognized among the 150 most-cited researchers in the first period, three in the second period, one in the third period, three in the fourth period, and four in the final period, for a total of 11 appearances (which ranks it in 14th place on the list). Of the 11 appearances, 8 were by different researchers currently at Illinois (resulting in a ranking of 9th in terms of this criterion).

Table 11
Number (and Rank) of Most-Cited Authors Based on Degree-Granting Institution and Present Affiliation

	Degree-Granting Institution									Present Affiliation[a]								
(1) University	(2) 1981-1984	(3) 1985-1989	(4) 1990-1994	(5) 1995-1999	(6) 2000-2004	(7) Total Based on All Authors	(8) Rank Based on All Authors	(9) Total Based on # of Different Authors	(10) Rank Based on Different Authors	(11) 1981-1984	(12) 1985-1989	(13) 1990-1994	(14) 1995-1999	(15) 2000-2004	(16) Total Based on All Authors	(17) Rank Based on All Authors	(18) Total Based on # of Different Authors	(19) Rank Based on Different Authors
Akron	2	1	2	2	3	10	(25)	5	(30)									
Arizona										1	0	2	2	2	7	(27)	5	(27)
Arizona State										2	4	4	4	4	18	(6)	8	(9)
Arkansas										0	1	1	2	1	5	(37)	4	(36)
Carnegie Mellon	2	4	3	2	1	12	(21)	8	(20)	1	1	1	1	1	5	(37)	3	(38)
Chicago	3	2	0	0	1	6	(32)	5	(30)									
Cincinnati	1	1	1	2	1	6	(32)	4	(33)									
Colorado	1	2	1	1	1	6	(32)	3	(37)									
Columbia	3	3	3	1	0	10	(25)	8	(20)	1	3	3	3	2	12	(11)	8	(9)
Cornell	5	2	2	4	3	16	(17)	10	(17)	2	0	0	2	2	6	(32)	6	(19)
Dartmouth										0	0	3	2	2	7	(27)	6	(19)
Drexel										1	2	2	0	1	6	(32)	2	(44)
Duke										1	1	2	2	0	6	(32)	5	(27)
Florida										0	1	1	1	4	7	(27)	5	(27)
Georgia										2	0	1	1	3	7	(27)	5	(27)
Georgia Tech										2	3	1	2	0	8	(23)	6	(19)
Harvard	6	9	5	8	7	35	(2)	26	(2)	3	3	4	5	8	23	(3)	19	(1)
Houston	2	0	2	1	1	6	(32)	4	(33)									
Illinois	8	7	6	5	5	31	(3)	20	(4)	0	3	1	3	4	11	(14)	8	(9)
Illinois - Chicago										0	0	1	2	2	5	(37)	2	(44)
Indiana	6	4	5	5	4	24	(8)	18	(6)	5	2	4	5	2	18	(6)	9	(6)
INSEAD										0	4	3	2	1	10	(16)	7	(15)
Iowa	1	2	0	3	1	7	(29)	7	(24)	2	1	3	3	0	9	(21)	5	(27)
Maryland	5	4	3	4	5	21	(12)	17	(7)	2	0	3	1	4	10	(16)	7	(15)
McGill	2	2	1	1	1	7	(29)	3	(37)									
Michigan	2	6	7	6	3	24	(8)	16	(9)	5	7	7	4	3	26	(1)	16	(2)
Michigan State	5	5	3	2	9	24	(8)	21	(3)	2	3	0	3	4	12	(11)	8	(9)
Minnesota	6	5	3	2	3	19	(15)	15	(13)	2	3	2	6	6	19	(5)	11	(5)
MIT	2	5	3	7	8	25	(6)	16	(9)	2	3	3	1	5	13	(9)	9	(6)
Nat'l U. Singapore										0	1	1	1	2	5	(37)	3	(38)
North Carolina	1	2	0	2	0	5	(37)	2	(39)	1	2	2	4	3	12	(11)	7	(15)
Northwestern	4	6	7	6	3	26	(5)	16	(9)	1	0	1	4	2	8	(23)	5	(27)

(continued)

Table 11 (continued)

	Degree-Granting Institution									Present Affiliation[a]								
(1) University	(2) 1981-1984	(3) 1985-1989	(4) 1990-1994	(5) 1995-1999	(6) 2000-2004	(7) Total Based on All Authors	(8) Rank Based on All Authors	(9) Total Based on # of Different Authors	(10) Rank Based on Different Authors	(11) 1981-1984	(12) 1985-1989	(13) 1990-1994	(14) 1995-1999	(15) 2000-2004	(16) Total Based on All Authors	(17) Rank Based on All Authors	(18) Total Based on # of Different Authors	(19) Rank Based on Different Authors
NYU	3	4	3	5	2	17	(16)	12	(16)	1	2	3	2	2	10	(16)	6	(19)
Ohio State	6	6	3	4	1	20	(14)	13	(15)	4	5	2	0	3	14	(8)	9	(6)
Penn State	3	4	2	3	1	13	(20)	8	(20)	2	3	3	2	0	10	(16)	6	(19)
Pennsylvania	3	2	4	5	7	21	(12)	16	(9)	4	3	5	4	6	22	(4)	14	(3)
Purdue	8	5	6	3	5	27	(4)	17	(7)	0	0	1	2	2	5	(37)	3	(38)
Rice										0	2	1	1	1	5	(37)	3	(38)
Rutgers										3	2	2	2	1	10	(16)	8	(9)
Santa Clara										3	1	1	0	0	5	(37)	3	(38)
South Carolina										1	3	0	1	1	6	(32)	6	(19)
Stanford	8	7	10	8	7	40	(1)	30	(1)	3	9	4	7	2	25	(2)	13	(4)
SUNY Buffalo	0	0	4	2	0	6	(32)	5	(30)									
Tennessee	1	0	1	2	1	5	(37)	4	(33)									
Texas	1	1	1	2	2	7	(29)	6	(29)	2	3	2	0	2	9	(21)	6	(19)
Texas A&M	0	2	2	2	3	9	(28)	7	(24)	1	2	2	2	6	13	(9)	8	(9)
Toronto	0	1	2	4	4	11	(24)	7	(24)	2	1	1	2	1	7	(27)	5	(27)
UC Berkeley	6	4	7	7	1	25	(6)	19	(5)	4	2	4	1	0	11	(14)	7	(15)
UC Irvine	2	1	4	3	2	12	(21)	9	(19)	1	0	1	1	2	5	(37)	5	(27)
UCLA	2	2	4	3	3	14	(18)	7	(24)									
Virginia										2	1	1	1	1	6	(32)	4	(36)
Washington	5	4	1	2	2	14	(18)	10	(17)	1	2	2	2	1	8	(23)	5	(27)
Wayne State	1	3	1	0	0	5	(37)	4	(33)									
Western Ontario	2	0	4	3	1	10	(25)	8	(20)	2	0	5	1	0	8	(23)	6	(19)
Wisconsin	5	2	3	2	0	12	(21)	7	(24)	0	0	2	2	1	5	(37)	3	(38)
Yale	6	4	7	3	3	23	(11)	15	(13)									

Note: INSEAD = Institut European d'Administration des Affaires; MIT = Massachusetts Institute of Technology; NYU = New York University; SUNY = State University of New York; UC = University of California; UCLA = University of California, Los Angeles.

a. Emeritus and retired faculty members were not included in the present affiliation portion of this table.

The data reported in Table 11 indicate several interesting patterns. First, it is important to note that a university's presence on the left-hand side of the table does not ensure its appearance on the right-hand side of the table. Indeed, of the 56 universities included in Table 11, only half (28 of 56, or 50%) were represented on the list of the most-cited researchers in terms of their university of origin as well as their current affiliation. This would suggest that some universities on the list either do a good job of developing doctoral students or are represented by current faculty members who have been among the most-cited researchers in the field, but not both. For example, although some institutions (e.g., Chicago, UCLA, and Yale) are among the top-ranked universities on the basis of their graduates, these institutions did not make the list on the basis of their current faculty. Similarly, although other institutions (e.g., Arizona State, Duke, INSEAD, and Rutgers) made the list of the most-cited authors based on their current faculty, these universities did not make the list on the basis of the number of PhD students who graduated from them and went on to become highly cited researchers. This might be an indication of attempts by these universities to build up their faculty in recent years by hiring prominent researchers in the field. However, it may take a while for these prominent faculty members to have an impact on the students who go on to distinguished careers themselves.

The data reported in Table 11 also indicate that only a small number of schools during the past 25 years have truly excelled in terms of *both* producing students who become highly cited authors and having current faculty members who also have achieved this status. For example, only eight institutions (Harvard, Illinois, Indiana, Michigan, Michigan State, Massachusetts Institute of Technology, Pennsylvania, and Stanford) were ranked in the top 10 on producing highly cited authors (column 10) and having highly cited authors on their current faculty (column 19).

Discussion

As in the case of universities, we found support for Lotka's (1926) power function for author citations (Hypothesis 13). Indeed, the curve for authors was even steeper than it was for universities (e.g., a quartic function for authors vs. a cubic function for universities). In addition, the results of our research also indicated that a relatively small proportion of authors had a disproportionate amount of influence on the field of management during the past quarter century. As expected (Hypothesis 14), 5% of the authors accounted for more than half (53%) of the total citations. Indeed, the 150 most-cited authors alone accounted for 17% of the total number of citations received. This means that less than 1% of the authors in the field accounted for almost one fifth of all the citations in the past quarter century. The results across the individual periods were just as impressive. Thus, taken together, these findings suggest that the citations are concentrated among a small proportion of authors, although it is a small proportion of a very large base (more than 25,000 authors).

In terms of the magnitude of their standardized total effects, the most important determinants of an author's total citations are (a) number of publications (.52), (b) years in the field (.51), (c) editorial board memberships (.24), (d) research reputation of an author's degree-granting institution (.12), and (e) research reputation of an author's current affiliation (.06).

This would suggest that part of an author's impact on the field, in terms of citations, is from what he or she has achieved (total publications and editorial board memberships), part is from his or her longevity, and part of it is from the reputation of the universities with which he or she has been affiliated as a graduate student or faculty member. This latter effect is consistent with the Matthew effect in that it shows that university reputation influences an author's impact (citation rates) independently of his or her publication success.

However, what we do not know is the mechanism through which this effect is produced. More specifically, why are researchers affiliated with or trained at prestigious institutions cited more frequently? Is it simply because they have better ideas, use better methods, have access to better data, and so on? Or is it because researchers affiliated with or trained at prestigious institutions benefit from having colleagues who publish more and who are especially likely to cite their work because of heightened familiarity with it from presentations, working papers, research seminars, or casual conversations? Or is it because people in the discipline are more likely to read the work of researchers from prestigious universities? Additional research will be needed to answer these questions.

That being said, the findings do provide some insights into the determinants of a university's research reputation. The results indicate that a substantial proportion of a university's research reputation is determined by its research expenditures, its endowment assets, and the number of PhDs it awards per year. Of these, the number of PhD graduates per year was by far the most important factor, with an impact that was stronger than the other two factors combined. In addition, the pattern of relationships reported in Figure 10 indicates that the financial and human resources that an author's current university devotes to research enhance not only the university's research reputation but also the author's reputation through the citations he or she receives. Similarly, the financial and human resources of an author's degree-granting university also enhance the research reputation of the author's current university and the author's research reputation as well. To our knowledge, this is perhaps the most extensive evidence of the impact of a university's research-related resources on its research reputation and the reputation of its individual faculty members.

It is interesting that gender and research orientation had both positive and negative indirect effects on citations. More specifically, gender and research orientation had *positive* indirect effects on citations through editorial board memberships and *negative* indirect effects on citations through publications. This suggests that females and researchers who have a macro orientation may have a greater impact on the field because they are more likely to be asked to serve as members of editorial boards but have less of an impact because they tend to publish at lower rates. The net negative total effect of these variables on citations indicates that the latter effect is somewhat stronger than the former.

It is not clear why top female scholars tend to be selected more frequently than their male counterparts for editorial boards. However, it is possible that this occurs because top female scholars are somewhat rarer than top male scholars in the list of most-cited authors (see Table 9), and therefore they may be more salient when they attain high levels of scholarly achievement. When combined with an editor's desire to maintain a level of gender diversity on the editorial board, this may result in females being more likely to be selected to serve. Although it is also not clear why macro-oriented researchers tend to be selected more frequently for editorial boards than their micro-oriented counterparts (even though they tend to

publish somewhat less), it is possible that the increased emphasis on macro issues during the past 25 years is responsible for this trend.

Finally, our supplementary analysis indicated that although there are several universities that have been effective either at training doctoral students who go on to attain prominence in the field on the basis of their citations or at acquiring a cadre of current faculty members who have achieved recognition for their research, a relatively small number of these universities have been particularly good at both having current faculty members and training doctoral students who go on to have a significant impact on the field.

Summary and Implications

The purpose of the two studies reported in this article was to examine the extent to which influence in the field of management is concentrated in a few individuals and universities, identify those universities and researchers who have had the biggest impact during the past quarter century, and identify some of the key structural determinants of author and university influence. We found that both university influence and author influence were highly concentrated and followed Lotka's (1926) power function. Our data showed that only 22 (out of more than 1,600) universities ranked in the top quartile for at least four of the five periods included in our study and that only 48 authors (out of more than 25,000) appeared in the majority of the five periods (see Table 9). Thus, it appears that a relatively small proportion of universities and authors have a tremendous influence on other scholars in the discipline and play a leading role in shaping the direction of the field. In addition, at the university level, we found that citations were primarily driven by publications, which were in turn driven by the university's human and financial resources. In contrast, at the author level, we found that citations were driven not only by publications but also by the combination of an author's years in the field, an author's board memberships, and the research reputation of his or her degree-granting institution.

A summary of the results of our hypothesis tests is provided in Table 12. As indicated in this table, all of the university-level hypotheses and the majority of the author-level hypotheses were supported. However, it is worth noting that two of the author-level hypotheses (Hypotheses 19 and 20) were not supported because (a) the research reputation of an author's degree-granting institution was not found to be related to his or her total publications (Hypothesis 20) and (b) the research reputation of an author's current school was not directly related to his or her total citations (Hypothesis 19). However, the indirect effects of both of these reputational factors were significant. Therefore, virtually all of our hypotheses received some measure of support.

Implications

University level. The results of Study 1 demonstrated that a university's human and financial resources influence a university's citations through their effects on publications. This suggests that efforts by administrators to increase the size of the doctoral program on the one hand, or the research expenditures and endowment assets on the other hand, are likely to

Table 12
Summary of Support for Hypothesized Relationships

Hypothesis	Supported?
University hypotheses	
H1: The number of universities receiving n citations is proportional to $1/n^a$.	Yes
H2: Approximately 5% of the universities that publish in management journals account for at least 50% of all of the citations in the field.	Yes
H3: There is a positive relationship between a university's total publications and the total number of citations it receives.	Yes
H4: There is a positive relationship between the number of Ph.Ds awarded be year by a university and its total number of publications.	Yes
H5: There is a positive relationship between a university's research expenditures and its total number of publications.	Yes
H6: There is a positive relationship between a university's endowment assets and its total number of publications.	Yes
H7: There is a positive relationship between a university's size and its total number of publications.	Yes
H8: There is a positive relationship between university size and the number of Ph.Ds awarded.	Yes
H9: There is a positive relationship between university size and its research expenditures.	Yes
H10: There is a positive relationship between university size and its endowment assets.	Yes
H11: There is a positive relationship between a university's type (public versus private) and its endowment assets.	Yes
H12: There is a positive relationship between a university's age and its endowment assets.	Yes
Author hypotheses	
H13: The number of scholars receiving n citations is proportional to $1/n^a$.	Yes
H14: Approximately 5% of the scholars that publish in management journals account for at least 50% of all of the citations in the field.	Yes
H15: Number of total publications by a scholar is positively related to the number of citations (s)he receives.	Yes
H16: Number of total publications by a scholar is positively related to years of service in an editorial board capacity (e.g., as an editor, associate editor, or editorial board member).	Yes
H17: Years of service in an editorial capacity (e.g., as an editor, associate editor, or editorial board member) is positively related to the number of citations a scholar receives.	Yes
H18: Research recognition of scholar's degree-granting institution is positively related to his/her citations.	Yes
H19: Research recognition of a scholar's current institutional affiliation is positively related to his/her citations.	No
H20: Research recognition of a scholar's degree-granting institution is positively related to his/her publications.	No
H21: Research recognition of a scholar's current institutional affiliation is positively related to his/her publications.	Yes
H22: Research recognition of a scholar's degree-granting institution is positively related to the research recognition of his/her current affiliation.	Yes

(continued)

Table 12 (continued)

Hypothesis	Supported?
H23: The (a) number of Ph.Ds awarded per year, (b) amount of dollars spent on research related activities, and (c) endowment assets of a scholar's degree-granting institution are positively related to that institution's research recognition.	Yes
H24: The (a) number of Ph.Ds awarded per year, (b) amount of dollars spent on research related activities, and (c) endowment assets of a scholar's current institutional affiliation are positively related to that institution's research recognition.	Yes

enhance the university's impact on the field of management. Although this may not be surprising to many, to our knowledge these relationships have not been previously documented in the literature, and the amount of variance these variables account for in total management publications and citations is surprisingly high.

Our findings also suggest that the elite universities live in rarified air and that once they have been successful they continue to be successful. But if this is the case, does it mean that this accumulative advantage will go on forever? Is there anything to prevent the "best of the best" institutions from continuing to hold onto this high rank? We think there are several factors that may. One reason for this stability may be that the best new researchers are attracted to the elite schools by their comparatively large resources and well-entrenched systems for rewarding scholarship and allocating resources to the best scholars. One potential threat to the stability of this self-perpetuating cycle might be a major shift in the resource- and reward-allocation policies away from scholarship at the top institutions. This might be brought on by several factors. The first is heavy turnover because of baby-boomer retirements. Much of the emphasis on research that exists in elite business schools today is a result of the response of universities to the Gordon and Howell (1959) and Pierson (1959) reports that were published in the 1960s that criticized business schools for not being more scientific in their approach to research. In response to this criticism, many schools begin to hire young faculty from more basic disciplines such as economics, psychology, and sociology with stronger methodological skills who placed higher value on rigorous scientific research (Porter & McKibbin, 1988). The fact that many of these faculty members were hired in the late 1960s and the 1970s by the elite schools on our list means that many of these people have either retired recently or are close to retirement. These retirements will disproportionately affect those business schools that were expanding in the 1970s more than those that have emerged as major players since then, and as this inordinately large cohort retires, they may take with them their research values that set policy during the 25-year period examined in this research.

Another factor that may threaten the stability in the MBA rankings of universities is the rise in prominence of national rankings of business schools (e.g., *Business Week*, *U.S. News & World Report*, *Wall Street Journal*, etc.) that give diminished importance to scholarship. Although some of these ranking systems do include a narrowly defined research (or intellectual capital) component, it is fair to say that this factor is not given a great deal of weight in the overall ranking relative to factors such as teaching ratings, standardized test scores of students, starting salaries, and recruiter satisfaction. (Indeed, although not previously reported, we found that *U.S. News & World Report* rankings were uncorrelated with publications and citations in our data after controlling for the variables included in our

model.) As a result, schools concerned about these rankings may place greater value on teaching skills, connections with industry, and business experience in their hiring and reward-allocation decisions. Because only a fraction of the more than 1,600 universities that we examined in this research are included in these rankings but literally all of the top research schools are chasing them, it may diminish the value of research at top research schools much more than at others. If this were the case, it would perhaps lead to some schools falling out of the elite category and others coming into it.

Another factor that may threaten the research prominence of the elite schools on our list is pressure from governmental bodies. It is interesting to note that 18 of the top 25 most-cited universities in our study are publicly funded, and in recent years some state legislatures have pressured these universities to shift their internal allocation of resources and reward systems away from research and toward teaching to expand access to more students and decrease tuition. To the extent that this continues, it is likely that at least some of these top universities will be forced to place less emphasis on research and may fall out of the elite group of institutions and be replaced by others that are not subject to this pressure.

Finally, competition from abroad may also threaten the research ranking status quo. Although not reported in this study because of space limitations, we did find some evidence that universities outside of the North American continent are becoming more prominent in terms of their impact on the field of management. It is interesting that our analysis (from Table 5) showed that although the percentage of U.S. schools that have been included among the 100 most-cited universities has stayed relatively constant during the past 25 years (approximately 83%), the percentage of Canadian schools has dropped somewhat (from about 10% to about 3%), and the percentage of European and Asian universities has increased (from about 3% to 8% and from 0% to about 4%, respectively). If this trend accelerates because of the increasing globalization of business, it may cause a reshuffling of the university research rankings.

Taken together, the findings discussed above may have some important implications for administrators in those institutions that have typically not received high research standing in the past and for those administrators in the elite schools. For administrators in the aspiring schools, our results suggest that financial resources and rewards allocated judiciously to research-oriented scholars is one of the keys to enhancing research productivity and an institution's impact on the field. In addition, our findings also document the importance of human resources such as doctoral students in creating a research environment and driving publications and citations. In contrast, for administrators in the elite schools, this should be a wake-up call because if they focus too much attention on knowledge dissemination at the expense of knowledge development and neglect the reward- and resource-allocation policies that brought about their research excellence in the first place, it may be difficult to maintain their preeminent position.

Individual level. With respect to individual researchers, it is obvious that the list of most-cited authors is also fairly concentrated. Our results (see Figure 10) indicate that among the hypothesized factors that directly or indirectly account for the majority of the variance in an author's total citations, the most important ones are total publications, editorial board membership, and research reputation of the author's degree-granting institution and current

affiliation. As expected, this underscores the fundamental hypothesis of our research that citations are a function of more than simply the number of articles an author publishes. The research reputation of an author's current and past university affiliations and the editorial positions he or she holds are also important, and undoubtedly there are other factors as well.

For example, the present research found that the *quantity* of publications is an important factor in determining the number of citations that an author receives but says little about the impact of the *quality* of these publications on his or her citations. In some respects, this is a more interesting question. Among the questions to be addressed by future research are the following. Do pioneers who introduce new topics or new research methodologies into the field receive "first mover" advantages (cf. Kerin, Varadarajan, & Peterson, 1992) in the form of enhanced citations? Do authors who write general, broad-based theories receive more citations than those who develop midrange theories that apply only in a relatively narrow domain? Do researchers who develop new theories and/or constructs get cited more frequently than do empirical researchers who test only previously developed theories? Do authors who market their research well (e.g., by frequently giving presentations, sending prepublication manuscripts to colleagues working in the area, networking with others in the field, etc.) receive more citations than those who do not? Do researchers who conduct programmatic research concentrated on a specific topic get cited more frequently than do researchers who publish one or two studies in a number of different areas? Does an author's writing style have an impact on his or her citations? That is, do authors who are particularly good at simplifying complex issues, explaining their findings, describing the implications of their research, and so on receive more citations than do researchers who do not have these abilities? These are all questions related to the quality of an author's research publications that may be predictive of his or her impact on the field.

Another key finding that has implications for future research is that although the quantity of publications had the biggest total effect on citations, we were not able to account for very much of the variance (7%) in this key variable. This suggests that we need to look at other factors that might be predictive of an author's total publications. Bland, Center, Finstad, Risbey, and Staples (2005) argued that there are three categories of determinants of faculty research productivity. The first is individual characteristics of the researcher, such as motivation, research skills and content knowledge, work habits, and socialization. To this list, we would add some personality variables such as conscientiousness and self-efficacy, both of which have been shown to be related to performance in a wide variety of jobs (Barrrick & Mount, 1991; Hurtz & Donovan, 2000; Stajkovic & Luthans, 1998). The second category was institutional factors, such as the amount of effort spent on recruiting and training faculty, the extent to which faculty members are bonded by shared research-related values and practices, the amount of mentoring that is provided to beginning and midlevel faculty members by more experienced colleagues, the amount of time available for research, the use of fair and equitable methods of allocating rewards for research, and a vibrant network of research-oriented colleagues with whom department members can regularly communicate. The third category is administrative leadership characteristics, such as having a leader who is research oriented and has internalized the group's research mission, a leader who uses a participative style, a leader who is a good fund-raiser, a leader who has good administrative skills, and a leader who keeps the group's research mission and goals visible to all members. Bland et al. (2005: 226) went on to say that these categories are hierarchically ordered such that

> the individual characteristics are essential, but they have more or less power in ensuring faculty productivity depending upon how research-conducive the faculty member's institution is . . . (and) the impact of the institution is mediated by the quality and styles of the leader.

Although we might argue that these factors interact with each other rather than simply being linked in a causal chain as proposed by Bland et al., we believe that the broad categories that they identify are potentially important determinants of a faculty member's research productivity.

In a preliminary test of this model in a medical school setting, Bland et al. (2005) reported that among the most important factors that enhance a faculty member's productivity is his or her motivation to conduct research, the mentoring a faculty member receives, having a well-developed network of external colleagues with whom he or she can discuss research, and spending more hours on research and fewer on teaching. It is interesting that none of the leadership factors were found to influence individual-level research productivity, but several of these factors (e.g., having a participative leadership style, being supportive, and having good administrative skills) were found to be important at increasing productivity at the departmental level and faculty satisfaction. Thus, including the factors identified by Bland and her colleagues in future research may enhance the proportion of variance that is accounted for in an individual's publication productivity.

Finally, additional research is also needed on the consequences of total citations, including faculty promotions, visibility, and compensation. For example, Gomez-Mejia and Balkin (1992) found that both citations and publications in top-tiered journals had a significant impact on 9-month faculty pay, but teaching evaluations did not. One might wonder whether these results would be true today given that their study was based on data from 1988, which was prior to the advent of the national rankings of business schools. In today's environment, it is possible that the impact of total citations may have diminished and the impact of teaching may have increased.

Limitations and Strengths

There are, of course, some limitations to our study. First, it is important to note that our research is limited to the set of journals that we included in our analyses during the period that was examined (1981 to July 2004). We did not include citations to other journals in the field of management or to journals in related fields such as psychology, sociology, social psychology, and so on. Nor did we include citations to books that authors in the field may have published. Finally, we did not include citations to work that appeared before 1981 or after July 2004. This may be important because it could have affected the citations for authors who have written widely cited books (e.g., Jeffrey Pfeffer, Michael Porter, etc.) or authors who published widely cited articles prior to 1981 (e.g., Edwin Locke, Terence Mitchell, Frank Schmidt, Neal Schmitt, etc.) or in other journals not included on our list. Despite these limitations, we believe that our analysis is the most comprehensive attempt to determine university and author influence in the field of management, or any other academic discipline for that matter. Therefore, even though additional studies in this area are obviously needed, we believe that these results are a good starting point in identifying those universities and authors that have influenced the field in the past 25 years.

A second limitation is that citations are a dynamic phenomenon in the sense that they are changing all of the time. Recall that the citations we report for any of the periods are based on those articles that were published during that period. However, the number of citations for an article published within any given period is dependent on how long it has been since the article was published. This means that the citation total for an article in August 2004 will always be less than or equal to the citation total for that article today. Consequently, although these totals reflected the citations in August 2004, all of the total citation counts for both universities and authors in our article are less than or equal to the total citations that one would observe by looking at the ISI database today. Thus, the relative rankings of authors and universities could be different today than they were in August 2004, and this aspect of our study must be periodically updated.

Another limitation of our study relates to the ISI database itself. Information for this database is input from data-entry operators who enter the data from individual journals. Thus, human-entry errors may be a potential problem. However, there are three important things to remember. First, prior research has demonstrated that the ISI database is relatively reliable. Second, data entry is a common practice in most quantitative research, and we do not have any reason to expect that errors are more prevalent for data-entry operators at ISI than for other research projects. Finally, we do not expect that errors are systematic or would have undue influence on any specific university's or author's citation counts.

A fourth limitation of the research is that even though we took every precaution to ensure that we accurately aggregated the data for each university and author, there still may have been some errors made in the aggregation process, particularly in those cases where authors have changed their names.

A final limitation is that the cross-sectional nature of the data used to test the hypotheses prevents us from making strong statements about the direction of causality among the variables. This problem could be diminished in future research either by manipulating some of the hypothesized predictors (which seems impractical given the nature of the variables examined in this research) or by obtaining a much longer time series of observations for each of the variables. For example, we would have preferred to have been able to obtain data on each author's graduate school research reputation, number of PhDs awarded, research expenditures, and endowment assets *at the time of his or her graduation*. This would have provided a stronger test of Hypotheses 18, 20, 22, and 23a to 23c. But, unfortunately, these data are unavailable.

Conclusions

These limitations notwithstanding, this is the first study to examine author and university influence in virtually all subareas of the field of management. It covered almost 25 years of research in the field rather than focusing on a narrower and potentially less representative "snapshot" in time. Finally, and most important, it used citations as a measure of research impact, as opposed to publications, and provided some useful insights into the factors that determine an author's and a university's impact on the field of management.

References

Allison, P. D., & Long, J. S. 1990. Departmental effects on scientific productivity. *American Sociological Review,* 55: 469-478.

Barrick, M. R., & Mount, M. K. 1991. The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 44: 1-26.

Bellas, M. L., & Toutkoushian, R. K. 1999. Faculty time allocations and research productivity: Gender, race and family effects. *Review of Higher Education*, 22: 367-390.

Bland, C. J., Center, B. A., Finstad, D. A., Risbey, K. R., & Staples, J. G. 2005. A theoretical, practical, predictive model of faculty and department research productivity. *Academic Medicine*, 80: 225-237.

Center for Measuring University Performance. 2007. *American research university data*. http://mup.asu.edu/index.html (accessed February 28, 2007).

Coe, R., & Weinstock, I. 1984. Evaluating the management journals: A second look. *Academy of Management Journal*: 27, 660-666.

Cole, S., & Cole, J. R. 1967. Scientific output and recognition: A study in the operation of the reward system in science. *American Sociological Review*, 32: 377-390.

Crane, D. 1965. Scientists at major and minor universities: A study of productivity and recognition. *American Sociological Review*, 30: 699-714.

de Solla Price, D. 1975. The productivity of research scientists. In *1975 yearbook of science and the future*: 409-421. Chicago: Encyclopedia Britannica.

Egghe, L. 2005. Relations between the continuous and the discrete Lotka power function. *Journal of the American Society for Information Science and Technology*, 56: 664-668.

Extejt, M. M., & Smith, J. E. 1990. The behavioral sciences and management: An evaluation of relevant journals. *Journal Management*, 16: 539-551.

Garfield, E. 1998. From citation indexes to informetrics: Is the tail now wagging the dog? *Libri*, 48: 67-80.

Gomez-Mejia, L. R., & Balkin, D. B. 1992. Determinants of faculty pay: An agency theory perspective. *Academy of Management Journal*, 35: 921-955.

Gordon, R. A., & Howell, J. E. 1959. *Higher education for business.* New York: Columbia University Press.

Hagstrom, W. O. 1968. Departmental prestige and scientific productivity. *Sociological Abstracts*, 16: 16.

Hogan, T. D. 1986. The publishing performance of U.S. PhD programs in economics during the 1970s. *Journal of Human Resources*, 21: 216-229.

Hunt, J. G., & Blair, J. 1987. Content, process, and the Matthew Effect among management academics. *Journal of Management*, 13: 191-210.

Hurtz, G. M., & Donovan, J. J. 2000. Personality and job performance: The Big Five revisited. *Journal of Applied Psychology*, 85: 869-879.

Jacobs, F., Hartgraves, A., & Beard, L. 1986. Publications productivity of doctoral alumni: A time adjusted model. *Accounting Review*, 61: 179-187.

Johnson, J. L., & Podsakoff, P. M. 1994. Journals of influence in the field of management: An analysis using Salancik's index in a dependency network. *Academy of Management Journal*, 37: 1392-1407.

Judge, T. A., Kammeyer-Mueller, J., & Bretz, R. D. 2004. A longitudinal model of sponsorship and career success: A study of industrial-organizational psychologists. *Personnel Psychology*, 57: 271-303.

Kerin, R. A., Varadarajan, P. R., & Peterson, R. A. 1992. First-mover advantage: A synthesis, conceptual framework and research propositions. *Journal of Marketing*, 56: 33-52.

Kirkpatrick, S. A., & Locke, E. A. 1992. The development of measures of faculty scholarship. *Group & Organization Management*, 17: 5-23.

Kyvik, S. 1989. Productivity differences, fields of learning, and Lotka's law. *Scientometrics*, 15: 205-214.

Long, R. G., Bowers, W. P., Barnett, T., & White, M. C. 1998. Research productivity of graduates in management: Effects of academic origin and academic affiliation. *Academy of Management Journal*, 41: 704-714.

Lotka, A. J. 1926. The frequency distribution of scientific productivity. *Journal of the Academy of Sciences*, 16: 317-323.

Manis, J. G. 1951. Some academic influences upon publication productivity. *Social Forces*, 29: 267-272.

Merton, R. 1968. The Matthew Effect in science. *Science*, 159: 56-63.

Merton, R. 1988. The Matthew Effect in science, II: Cumulative advantage and the symbolism of intellectual property. *ISIS*, 79: 606-623.

Morrison, A. J., & Inkpen, A. C. 1991. An analysis of significant contributions to the international business literature. *Journal of International Business Studies*, 22: 143-154.

National Association of College and University Business Officers Endowment Study Results. n.d. *Public NES tables.* http://www.nacubo.org/x2376.xml (accessed February 28, 2007).

Pierson, F. C. 1959. *The education of American businessmen.* New York: McGraw-Hill.

Podsakoff, P. M., MacKenzie, S. B., Bachrach, D. G., & Podsakoff, N. P. 2005. The influence of management journals in the 1980's and 1990's. *Strategic Management Journal*, 26: 473-488.

Porter, L. W., & McKibbin, L. E. 1988. *Management education and development: Drift of thrust into the 21st century?* New York: McGraw-Hill.

Saks, L. J., Hagedorn, L. S., Arredondo, M., Decrisi, F. A., III. 2002. Faculty research productivity: Exploring the role of gender and family-related factors. *Research in Higher Education*, 43: 423-446.

Salancik, G. R. 1986. An index of subgroup influence in dependency models. *Administrative Science Quarterly*, 31: 194-211.

Shane, S. A. 1997. Who is publishing the entrepreneurship research? *Journal of Management*, 23: 83-95.

Sharplin, A. D., & Mabry, R. H. 1985. The relative importance of journals used in management research: An alternative ranking. *Human Relations*, 38: 139-149.

Stajkovic, A. D., & Luthans, F. 1998. Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin*, 124: 240-261.

Tahai, A., & Meyer, M. J. 1999. A revealed preference study of management journals' direct influences. *Strategic Management Journal*, 20: 279-296.

Taylor, F. W. 1911. *The principles of scientific management.* New York: Harper & Row.

Trieschmann, J. S., Dennis, A. R., Northcraft, G. B., & Niemi, A. W. 2000. Serving multiple constituencies in business schools: MBA program versus research performance. *Academy of Management Journal*, 43: 1130-1141.

Wilson, C. S. 1999. Informetrics. *Annual Review of Information Science and Technology*, 34: 107-247.

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