

# Entrepreneurship Research in Management and Organization Studies:

## A Contribution-Based Assessment of the Literature

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*Entrepreneurship-related research in management and organizational journals has experienced rapid growth, particularly in the last several years. The purpose of this study is to identify the researchers and universities that have had the greatest influence on entrepreneurship research since the turn of the century. Using a systematic and comprehensive study identification protocol, the authors delve into the individual and institutional actors contributing to scholarship in entrepreneurial studies for the period from 2000 to 2015. Examination of top-tier management and organizational journals revealed that a total of 371 entrepreneurship-related articles were published during this period by 618 authors from 303 different institutions. Rankings for the most prolific individuals as well as institutions, adjusted and unadjusted for journal quality, are presented. The article concludes with a discussion of the limitations and implications of the research undertaken here.*

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**Keywords:** research impact; management journals; entrepreneurship research

It has been about three decades since the Academy of Management accorded division status to the field of entrepreneurship (Bygrave, 2007). In these years, entrepreneurship research has proliferated (Chiles, Bluedorn, & Gupta, 2007). Despite its loosely defined nature, entrepreneurship as a field of inquiry has become increasingly accepted by researchers and academics worldwide (Baker & Welter, 2014). An increasing number of journal articles, special issues, and conference presentations in management and organizational studies have been devoted to entrepreneurship, suggesting its increasing acceptance within the research community. The purpose of this study is to “take stock” of entrepreneurship-related research by examining the actors who are contributing to research published in leading journals.

As a body of literature develops, it is useful to take inventory of the published studies. This is particularly critical in a field like entrepreneurship, which has grown rapidly in a relatively short time and has become known for its eclectic nature, attracting interest from a variety of disciplines (Ireland & Webb, 2007). Periodical reflections on the way a field of academic inquiry is developing is essential to derive maximal benefits from existing research, and to propel future investigations into new directions. One way to understand the state of extant research is to identify the institutions and people that have shaped the development of the field. Academic fields characterized by the participation of diverse groups of contributors in the research process tend to be more conducive to the emergence and diffusion of novel sampling frames, hypotheses development, statistical techniques, and research methodologies. Conversely, fields that are more insular—whether naturally or due to deliberate actions of incumbent players—tend to become inward-directed and self-referential with little tolerance for multiple perspectives and divergent approaches.

In the present study, we provide an understanding of the impact of individual researchers and academic institutions on entrepreneurship research published in leading management and organizational journals. We focus our efforts on research published between 2000 and 2015 (both inclusive) to identify leading contributors to the entrepreneurship literature. Given that there is no overwhelming consensus on what constitutes entrepreneurship research, we rely on Busenitz et al. (2003)'s well-regarded conception to seek relevant articles for our purpose. Thus, our research will systematically and comprehensively evaluate the influence of researchers and institutions who have facilitated the growth and development of entrepreneurship. Given that “new interesting issues and works seem to emerge all the time” in entrepreneurship research (Landstrom, 2014: 34), our reflective effort should help better understand the

actors who are able to maintain their influence over a considerable period of time.

### Conceptual Framework

Entrepreneurship, conceived broadly, is probably as old as civilization itself (Neergaard & Ulhøi, 2007), but the academic field of entrepreneurship is relatively young. Despite its short history, entrepreneurship is tremendously popular in academia, attracting scholars from a range of disciplines and from around the world. Almost every major university in the United States now has programs and courses in entrepreneurship, and international schools and colleges are following suit. The growing popularity of entrepreneurship is also reflected in the scholarship in this area, as research has become more diverse, more rigorous, more complex, and more prominent. As a consequence, entrepreneurship research has now achieved acceptance with various stakeholders (e.g., deans and tenure committees) and is considered a legitimate field of inquiry.

The impressive growth of entrepreneurship research engenders the need to understand and learn about the researchers and institutions that have been instrumental in furthering the field. Merton (1968, 1988) observed that some scholars and universities gain tremendous influence for their research productivity in scientific communities, while many others were relegated to relative obscurity. He termed this the ‘Matthew effect’ as it resembled Matthew (25: 29) from the New Testament: “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.” The implication of the Matthew effect for academic scholarship is that a relatively small number of institutions and researchers will account for the majority of high-quality research in a discipline. Indeed, in their survey of family business research, Debicki et al. (2009: 152) found that “research in the field has been dominated by a relatively small number of scholars who appear to be connected in terms of backgrounds, institutional affiliations, and interests.”

A “contribution-based” approach is one way to assess scholarly output by measuring contributions to prestigious journals (Morrison & Inkpen, 1991). Instead of attempting to cover every article to overview the scholarly literature in an area, researchers can focus on a select set of top-tier academic journals. The strength of such an approach lies in its (a) manageable focus, (b) relative objectivity, and (c) easy comparability with previous reviews (e.g., Shane, 1997).

Although contribution-based assessment of the literature is not able to fully account for all published studies in a topic area, we believe that its benefits outweigh the drawbacks, especially when the goal is to assess the major influences in an area. Not surprisingly, the contribution-based approach has found favor with researchers in many disciplines, including international business (Morrison & Inkpen, 1991), management (Podsakoff, MacKenzie, Posakoff, & Bachrach, 2008), Chinese studies (Peng, Shenkar, & Wang, 2001), and family business (Debicki, Matherne, Kellermanns, & Chrisman, 2009), to name a few. A focus on contributions as a way to make sense of the field is not unknown to entrepreneurship researchers as Shane (1997) conducted such a study to reflect on the early years of scholarship in entrepreneurship.

The diversity of research that falls under the broad umbrella of “management and organization” makes it challenging to parsimoniously identify acceptable high-quality journals that publish research on managerial and organizational topics. Many scholars have argued that the definition of quality outlets in a particular field must come from within the field. As MacMillan (1993) noted, “each field of inquiry has a forum in which work of scholars in that field should be presented, whereby if a candidate’s work is accepted in that forum, then such work is deemed scholarly.” In this vein, Busenitz et al. (2003) identified seven high-quality journals in what they termed “business management.” Their selection of journals is informed by expert opinion as well as number of citations received by journals (Barman, Tersine, & Buckley, 1991; Coe & Weinstock, 1984; Franke, Edlund, & Oster, 1990; Gomez-Mejia & Balkin, 1992; Johnson & Podsakoff, 1994; Salancik, 1986). For our purpose, we adopt Busenitz et al.’s (2003) list of high-quality outlets to delineate the forum for publishing high-quality entrepreneurship research.

### Methodology and Results

We identified and analyzed entrepreneurship articles published in seven major academic journals in business management. We examined *Academy of Management Journal*, *Academy of Management Review*, *Strategic Management Journal*, *Journal of Management*, *Organization Science*, *Management Science*, and *Administrative Science Quarterly* for research papers in entrepreneurship. We focused on these journals as they publish articles covering a variety of topics in the field of business management, and not just on the topics in entrepreneurship. As such, we did not include discipline-specific journals, such as *Entrepreneurship Theory & Practice* and *Journal of Business*

*Venturing* in our study. In addition, as the journals we selected are published only in English, our study is limited to contributions made in the English language. Studies published in languages other than English are thus excluded from our study. Our decision to focus on top English-language journals is consistent with similar studies in other fields (e.g., Podsakoff et al., 2008).

We chose to analyze articles published in the time period January 1, 2000, to December 31, 2015, for two reasons. First, 2000 was chosen as the start year because it signals the start of the new century and it allows us to enhance prior research on contributions to the entrepreneurship literature published until 1999 (Busenitz et al., 2003). Second, the end of 2015 has been selected as the cut-off to ensure consistency of article publication as journals have different publication dates and issues in a year.

We used Business Source Complete database to gain access to articles published in the seven journals selected for this study. We searched and selected entrepreneurship articles that used entrepreneurship-related keywords such as entrepreneur/entrepreneurial/entrepreneurship, small business/emerging business, new venture/emerging venture, and founder(s) in an abstract or title of the article (Busenitz et al., 2003). To ensure that only relevant articles were selected, we omitted editor notes, book reviews, and replies to published articles.

Three coders reviewed the selected entrepreneurship articles based on the criteria specified. A total of 12,722 articles were reviewed by the coders. Of these, 371 papers (~ 2.9% of the total) were selected as entrepreneurship-related research articles. The selection of articles was based on a manual search and visual analysis, so that each article was perused by at least two coders. Both coders agreed on the final selection for 98% of the articles. For articles where discrepancy was observed, the selection was rechecked and article included if both coders agreed. After rechecking, coders agreed on 100% of the selection of articles. The distribution of entrepreneurship articles in each of the seven journals in the time period 2000–2015 that meets the selection criteria is presented in Table 1.

Consistent with the global and diverse nature of entrepreneurship research, we find that authorship of the sample articles was attributed to multiple scholars from various institutions around the world. Specifically, a total number of 618 authors from 303 different institutions published entrepreneurship related research in the seven selected journals from 2000–2015.

### Impact of Authors

In measuring the impact of authors in publication of entrepreneurship-related research, we employ Shane's (1997) methodology and adopt four different measures. First, authors were ranked on the number of entrepreneurship articles they had published in the seven

**Table 1. Distribution of Entrepreneurship Articles in Journals**

| Journal Name                     | Number of ENT Articles |
|----------------------------------|------------------------|
| Academy of Management Journal    | 61                     |
| Strategic Management Journal     | 70                     |
| Administrative Science Quarterly | 29                     |
| Journal of Management            | 63                     |
| Academy of Management Review     | 40                     |
| Management Science               | 50                     |
| Organization Science             | 58                     |
| <b>TOTAL</b>                     | <b>371</b>             |

selected journals from 2000–2015. Table 2 shows the most published authors as per this ranking, listing authors who have greater or equal to four counts of articles.

Second, authors were ranked on the basis of the “adjusted number of appearances” in the articles selected. This measure is used to control for the number of articles that have multiple coauthors and to give equal weight

based on the combined contribution of each author to the article. Based on approaches used by Morrison and Inkpen (1991), Shane (1997), and Heck and Cooley (1988), the adjusted number of appearances is calculated as follows. For each published article, a score of 1 is assigned to each author for a single-authored article, 0.5 for an article with two authors, 0.33 for an article with three authors, etc. Table 3 shows the top authors ranked by

**Table 2. Most Published Authors Ranked by Total Number of Articles**

| Rank | Author                       | Total Number of Articles |
|------|------------------------------|--------------------------|
| 1    | Shane, Scott A               | 15                       |
| 2    | Shepherd, Dean A             | 12                       |
| 3    | Agarwal, Rajshree            | 9                        |
| 3    | Ireland, R. Duane            | 9                        |
| 5    | Baron, Robert A              | 8                        |
| 5    | Gruber, Marc                 | 8                        |
| 5    | Sine, Wesley D               | 8                        |
| 8    | Eisenhardt, Kathleen M       | 6                        |
| 8    | Hitt, Michael A              | 6                        |
| 8    | Ketchen Jr., David J         | 6                        |
| 8    | Simsek, Zeki                 | 6                        |
| 8    | Zahra, Shaker A              | 6                        |
| 13   | Alvarez, Sharon A            | 5                        |
| 13   | Busenitz, Lowell W           | 5                        |
| 13   | Ganco, Martin                | 5                        |
| 13   | Hsu, David H                 | 5                        |
| 13   | McDougall, Patricia Phillips | 5                        |
| 18   | Atuahene-Gima, Kwaku         | 4                        |
| 18   | Delmar, Frédéric             | 4                        |
| 18   | Dushnitsky, Gary             | 4                        |
| 18   | Glynn, Mary Ann              | 4                        |
| 18   | Li, Haiyang                  | 4                        |
| 18   | Priem, Richard L             | 4                        |
| 18   | Sørensen, Jesper             | 4                        |
| 18   | Venkataraman, S              | 4                        |

adjusted number of appearances in the seven journals in the time period from 2000 to 2015.

The quality of the journal plays a critical part in the scholarly impact of the article by the author. To consider this factor, we employ a third measure to score the impact of authors by linking their contribution to the quality of the journal in which the articles were published. MacMillan's (1993) study of high-quality entrepreneurship research journals evaluates the quality

of journals as "outstanding," "significant," "appropriate," and "not appropriate" and assigns ratings of 1 to 4 based on the quality (where 4 is highest quality and 1 is lowest). We employ this criterion to factor in the quality of journal as it is an established and well-accepted independent measure of journal quality. The ratings of the seven selected journals as per MacMillan's (1993) study are provided in Table 4. Given that the journals we considered are all top outlets in the field, it is not surprising that we only have

**Table 3. Top Authors Ranked by Adjusted Appearances**

| Rank | Author                      | Adjusted Appearances |
|------|-----------------------------|----------------------|
| 1    | Shane, Scott A              | 8.87                 |
| 2    | Shepherd, Dean A            | 5.24                 |
| 3    | Baron, Robert A             | 3.69                 |
| 4    | Gruber, Marc                | 3.65                 |
| 5    | Agarwal, Rajshree           | 3.07                 |
| 6    | Sine, Wesley D              | 2.99                 |
| 7    | Hsu, David H                | 2.83                 |
| 8    | Eisenhardt, Kathleen M      | 2.66                 |
| 9    | Ireland, R. Duane           | 2.58                 |
| 10   | Simsek, Zeki                | 2.57                 |
| 11   | Dushnitsky, Gary            | 2.50                 |
| 11   | Sørensen, Jesper B          | 2.50                 |
| 11   | Vissa, Balagopal            | 2.50                 |
| 14   | Ganco, Martin               | 2.41                 |
| 15   | Peng, Mike W                | 2.33                 |
| 16   | Ketchen Jr., David J        | 2.25                 |
| 17   | Almandoz, Juan              | 2.00                 |
| 17   | Atuahene-Gima, Kwaku        | 2.00                 |
| 17   | de Bettignies, Jean-Etienne | 2.00                 |
| 17   | Kacperczyk, Aleksandra J    | 2.00                 |
| 17   | Kor, Yasemin Y              | 2.00                 |
| 17   | Li, Haiyang                 | 2.00                 |
| 17   | Phillips, Damon J           | 2.00                 |
| 17   | Wasserman, Noam             | 2.00                 |

“outstanding” and “significant” journals in the sample. Following Shane (1997), we calculate the third measure for impact of authors named as “weighted appearances.” The weighted appearances score is calculated by taking the mean quality score (rating) for the journals in which the articles were published summed across all articles for a given author. Table 5 shows the top authors ranked by the weighted appearances in quality entrepreneurship journals from 2000–2015.

The quality of the journal outlet as well as the number of coauthors can influence the scholarly contribution of the author at the same time. Accounting for this factor, we use a fourth measure, “composite measure” (Shane, 1997),

which uses both quality of the journal and percentage of authorship to arrive at a score for each author. This measure is calculated by dividing the rating for the journal by the number of authors for each article and then summed across for each author. Table 6 shows the top authors ranked based on composite measure.

To check for any selection bias of journals or coauthors by scholars, we compute the Spearman rank correlation for the four author impact measures. The correlation indicates the convergent validity of these four measures. The results, given in Table 7, show significant convergent validity across the measures, which indicates the absence of bias in these measures.

**Table 4. Mean Quality (Modal) Rating of Journals (MacMillan, 1993)**

| Journal Name                     | Modal Rating |
|----------------------------------|--------------|
| Academy of Management Journal    | 4            |
| Strategic Management Journal     | 4            |
| Administrative Science Quarterly | 4            |
| Journal of Management            | 2            |
| Academy of Management Review     | 4            |
| Management Science               | 3            |
| Organization Science             | 3            |

**Impact of Institutions**

To analyze the contribution of institutions to entrepreneurship research, four different established measures of institutional productivity have been used (Shane, 1997). First, institutions were ranked on the basis of the number of entrepreneurship articles that their faculty had published in the seven selected journals from 2000–2015. Table 8 shows the top institutions according to this ranking.

Second, institutions were ranked on the basis of “adjusted number of appearances” their faculty had made in the relevant articles. This measure is used to control for the occurrence of multiple authors from a single institution for the same article that will result in higher numbers of appearances for that institution. For each

published article selected based on earlier mentioned set criteria, a score of 1 is assigned to each institution for a single-authored article by its faculty, 0.5 for an article with two authors, 0.33 for an article with three authors, and so on (Morrison & Inkpen, 1991; Shane, 1997; Heck & Cooley, 1988). For faculty affiliated with more than one institution, the weight of their contribution to each article is divided and given equally to both institutions. Table 9 shows the top institutions ranked by adjusted number of appearances of their faculty in the seven journals during the time period 2000–2015.

To incorporate the role of quality of journal in the scholarly contribution of institutions, we employ a third measure, “weighted appearances,” which assesses the impact of institutions linking it to the quality of the journal in which

**Table 5. Top Authors Ranked by Weighted Appearances**

| <b>Rank</b> | <b>Author</b>                | <b>Weighted Appearances</b> |
|-------------|------------------------------|-----------------------------|
| 1           | Shane, Scott A               | 48.00                       |
| 2           | Agarwal, Rajshree            | 34.00                       |
| 2           | Shepherd, Dean A             | 34.00                       |
| 4           | Sine, Wesley D               | 29.00                       |
| 5           | Ireland, R. Duane            | 26.00                       |
| 6           | Gruber, Marc                 | 25.00                       |
| 7           | Eisenhardt, Kathleen M       | 24.00                       |
| 8           | Baron, Robert A              | 23.00                       |
| 9           | Hitt, Michael A              | 20.00                       |
| 9           | Simsek, Zeki                 | 20.00                       |
| 9           | Zahra, Shaker A              | 20.00                       |
| 12          | Ganco, Martin                | 19.00                       |
| 13          | Ketchen Jr., David J         | 18.00                       |
| 14          | Hsu, David H                 | 16.00                       |
| 14          | Li, Haiyang                  | 16.00                       |
| 14          | McDougall, Patricia Phillips | 16.00                       |
| 17          | Atuahene-Gima, Kwaku         | 15.00                       |
| 17          | Dushnitsky, Gary             | 15.00                       |
| 17          | Glynn, Mary Ann              | 15.00                       |
| 20          | Busenitz, Lowell W           | 14.00                       |
| 20          | Sørensen, Jesper B           | 14.00                       |
| 20          | Venkataraman, S              | 14.00                       |
| 23          | Alvarez, Sharon A.           | 13.00                       |

**Table 6. Top Authors Ranked by Composite Measure**

| <b>Rank</b> | <b>Author</b>          | <b>Composite Measure</b> |
|-------------|------------------------|--------------------------|
| 1           | Shane, Scott A         | 28.60                    |
| 2           | Shepherd, Dean A       | 14.83                    |
| 3           | Baron, Robert A        | 11.57                    |
| 4           | Agarwal, Raishree      | 11.50                    |
| 5           | Gruber, Marc           | 11.00                    |
| 5           | Sine, Wesley D         | 11.00                    |
| 7           | Eisenhardt, Kathleen M | 10.67                    |
| 8           | Ganco, Martin          | 9.33                     |
| 9           | Dushnitsky, Gary       | 9.00                     |
| 9           | Hsu, David H           | 9.00                     |
| 9           | Simsek, Zeki           | 9.00                     |
| 9           | Sørensen, Jesper B     | 9.00                     |
| 9           | Vissa, Balagopal       | 9.00                     |
| 14          | Almandoz, Juan         | 8.00                     |
| 14          | Li, Haiyang            | 8.00                     |
| 14          | Phillips, Damon J      | 8.00                     |
| 17          | Atuahene-Gima, Kwaku   | 7.50                     |
| 18          | George, Gerard         | 7.33                     |
| 18          | Ireland, R. Duane      | 7.33                     |
| 18          | Peng, Mike W           | 7.33                     |



**Table 7. Spearman Rank Correlation of Author Impact Measures**

|                           |                            | AbA             | AdA   | WA    | CM    |
|---------------------------|----------------------------|-----------------|-------|-------|-------|
| <b>Spearman's<br/>rho</b> | Corr                       | 1               | .66** | .73** | .61** |
|                           | Absolute Appearances (AbA) | Sig. (2-tailed) | 0     | 0     | 0     |
|                           | N                          | 618             | 618   | 618   | 618   |
|                           | Corr                       | .66**           | 1     | .59** | .92** |
|                           | Adjusted Appearances (AdA) | Sig. (2-tailed) | 0     | 0     | 0     |
|                           | N                          | 618             | 618   | 618   | 618   |
|                           | Corr                       | .73**           | .59** | 1     | .76** |
|                           | Weighted Appearances (WA)  | Sig. (2-tailed) | 0     | 0     | 0     |
|                           | N                          | 618             | 618   | 618   | 618   |
|                           | Corr                       | .61**           | .92** | .76** | 1     |
|                           | Composite Measure (CA)     | Sig. (2-tailed) | 0     | 0     | 0     |
|                           | N                          | 618             | 618   | 618   | 618   |

\*\*Correlation is significant at the 0.01 level (2-tailed)

their faculty had published the article (Shane, 1997). This score has been calculated by taking the mean quality score (rating) for the journals based on MacMillan's 1993 study in which the article was published summed across all articles for faculty from each institution. Table 10 shows the top institutions ranked by the weighted appearances of their faculty in quality entrepreneurship journals.

A fourth measure, "composite measure" is employed to incorporate both the quality of the journals in which the articles have been published and percentage of authorship for each faculty from the institutions. This measure is calculated by dividing the modal rating for the journals by the number of authors for each article and then summed across articles for faculty from each institution (Shane, 1997). Table 11 shows the top institutions ranked based on composite measure.

To check for any selection bias of journals or coauthors by faculty from various institutions, we compute the Spearman rank correlation for the four institutional impact measures. The results, given in Table 12, show significant convergent validity across the measures and indicate absence of bias.

To summarize, our methodology allowed us to unearth the researchers and institutions credited with publishing entrepreneurship research in top-tier journals in management and organization studies. We were able to assess the absolute productivity of scholars and institutions publishing entrepreneurship papers as well as their weighted productivity based on three different criteria: number of authors on a paper, quality of journal in which the paper was published, and combination of number of authors and quality of journals. The four criteria were found to be highly correlated, albeit with some minor variations in the rankings based on the different criteria.

**Table 8. Top Institutions Ranked by Appearances**

| Rank | Institution                                | Appearances |
|------|--|-------------|
| 1    | Indiana University                         | 32.00       |
| 2    | University of Pennsylvania                 | 32.00       |
| 3    | University of Maryland                     | 24.00       |
| 4    | Texas A&M University                       | 20.00       |
| 5    | Cornell University                         | 19.00       |
| 6    | University of Connecticut                  | 16.00       |
| 7    | Ohio State University                      | 14.00       |
| 7    | University of Washington                   | 14.00       |
| 9    | University of California, Berkeley         | 13.00       |
| 9    | University of Illinois at Urbana-Champaign | 13.00       |
| 11   | Georgia State University                   | 12.00       |
| 11   | Harvard Business School                    | 12.00       |
| 11   | INSEAD                                     | 12.00       |
| 11   | Stanford University                        | 12.00       |
| 11   | University of Alberta                      | 12.00       |
| 11   | University of Minnesota                    | 12.00       |
| 17   | Arizona State University                   | 11.00       |
| 18   | Ecole Polytechnique Fédérale de Lausanne   | 9.00        |
| 18   | Rensselaer Polytechnic Institute           | 9.00        |
| 18   | University of Oklahoma                     | 9.00        |

### Discussion

The purpose of our research was to cast light on the individual and institutional actors publishing entrepreneurship research in top journals. We were interested in understanding whether high-quality scholarship in the area of entrepreneurial studies is concentrated in a few universities and researchers, and in identifying those actors who have had the biggest impact

on the field since the turn of the century. As a result, we focused only on top-tier journals and limited the scope to research published in 2000 and after. Our study provides a systematic and comprehensive assessment of the impact of researchers and institutions on scholarly publications in entrepreneurship. The importance of our study is multifold. The ranking of an individual researcher in the field is an important question for promotion and tenure decisions

**Table 9. Top Institutions Ranked by Adjusted Appearances**

| Rank | Institution                                | Adjusted Appearances |
|------|--|----------------------|
| 1    | University of Pennsylvania                 | 15.75                |
| 2    | University of Maryland                     | 12.75                |
| 3    | Indiana University                         | 11.28                |
| 4    | Cornell University                         | 8.00                 |
| 5    | Ohio State University                      | 6.94                 |
| 6    | Texas A&M University                       | 6.83                 |
| 7    | INSEAD                                     | 6.33                 |
| 8    | Harvard Business School                    | 6.25                 |
| 9    | University of Minnesota                    | 6.08                 |
| 9    | University of Washington                   | 6.08                 |
| 11   | Stanford University                        | 6.00                 |
| 12   | University of Illinois at Urbana-Champaign | 5.83                 |
| 13   | University of Connecticut                  | 5.63                 |
| 14   | University of California, Berkeley         | 5.33                 |
| 15   | Rensselaer Polytechnic Institute           | 5.00                 |
| 16   | Massachusetts Institute of Technology      | 4.83                 |
| 17   | University of Alberta                      | 4.67                 |
| 18   | Ecole Polytechnique Fédérale de Lausanne   | 4.17                 |
| 19   | Georgia State University                   | 4.03                 |
| 20   | University of Texas at Austin              | 4.00                 |
| 20   | University of Wisconsin-Madison            | 4.00                 |

(MacMillan, 1993). Our study provides an objective measurement of the influence of researchers publishing entrepreneurship-related articles in high-quality journals. Universities and institutions are concerned with the scholarly contribution of their faculty. However, publicly available rankings do not consider research publications

in their evaluation. Our study provides a research-based institutional ranking for entrepreneurship-related publications. Finally, studies like ours satisfy the curiosity to know about the intellectual leaders in a field by conducting a relatively exhaustive and specific selection of publications, as opposed to making inferences based

**Table 10. Top Institutions Ranked by Weighted Appearances**

| Rank | Institution                                | Weighted Appearances |
|------|--|----------------------|
| 1    | University of Pennsylvania                 | 102.50               |
| 2    | Indiana University                         | 94.00                |
| 3    | University of Maryland                     | 78.00                |
| 4    | Cornell University                         | 69.00                |
| 5    | Texas A&M University                       | 65.00                |
| 6    | University of Washington                   | 54.00                |
| 7    | University of Connecticut                  | 50.00                |
| 8    | University of Illinois at Urbana-Champaign | 46.00                |
| 8    | University of California, Berkeley         | 46.00                |
| 8    | University of Alberta                      | 46.00                |
| 11   | Stanford University                        | 45.00                |
| 12   | University of Minnesota                    | 44.00                |
| 13   | Ohio State University                      | 41.00                |
| 14   | INSEAD                                     | 39.00                |
| 14   | Georgia State University                   | 38.00                |
| 16   | Harvard Business School                    | 36.50                |
| 17   | University of Wisconsin-Madison            | 32.00                |
| 18   | University of Texas at Austin              | 31.00                |
| 19   | Arizona State University                   | 30.00                |
| 19   | University of Central Florida              | 30.00                |

on arbitrary criteria, intuition, popularity, or haphazard selection procedures.

As mentioned earlier, we found that 2.9 percent of total articles addressed entrepreneurship. This finding compares favorably to the 1.8 percent entrepreneurship-related articles Busenitz et al. (2003: 288) found in their comparable sample, providing empirical support for their predication that the number of entrepreneurship articles

published in top-tier business journals will increase with time. We find that *Strategic Management Journal* (SMJ) published the most entrepreneurship articles during our study period (4.3 per annum) for a total of 70 articles. This finding echoes that of Busenitz et al. (2003) as they too found that SMJ published the highest number of entrepreneurship articles (n =24) for the 15-year period in their study. Notably, while Busenitz et al. (2003)

**Table 11. Top Institutions Ranked by Composite Measure**

| Rank | Institution                                | Composite Measure |
|------|--|-------------------|
| 1    | University of Pennsylvania                 | 52.83             |
| 2    | University of Maryland                     | 40.50             |
| 3    | Indiana University                         | 32.30             |
| 4    | Cornell University                         | 29.33             |
| 5    | University of Washington                   | 23.50             |
| 6    | Stanford University                        | 22.50             |
| 6    | INSEAD                                     | 22.50             |
| 8    | University of Minnesota                    | 22.33             |
| 9    | Texas A&M University                       | 21.67             |
| 10   | Harvard Business School                    | 21.25             |
| 11   | Ohio State University                      | 20.39             |
| 12   | University of Illinois at Urbana-Champaign | 20.00             |
| 13   | University of California, Berkeley         | 19.00             |
| 14   | University of Connecticut                  | 18.83             |
| 15   | University of Alberta                      | 18.00             |
| 16   | Massachusetts Institute of Technology      | 16.83             |
| 17   | University of Wisconsin-Madison            | 16.00             |
| 18   | University of Texas at Austin              | 15.67             |
| 19   | Rensselaer Polytechnic Institute           | 15.00             |
| 20   | Duke University                            | 14.08             |

found *Administrative Science Quarterly* had the highest percentage of entrepreneurship articles for their period of search, we find that this journal not only published the fewest (1.8 per annum) but was also only slightly above *Managerial Science* (1.47%) for least percent of published articles (1.52%).

While the number of entrepreneurship articles published in top-tier management and organization

journals has increased over time, it seems to still be quite low. Our observation of relatively fewer entrepreneurship publications in elite business management journals gains greater salience when one considers that the Entrepreneurship Division is among the largest in the Academy of Management (Wiklund, Davidsson, Audretsch, Karlsson, 2011). Critics may charge that our perception about top journals not publishing much entrepreneurship

research is motivated by the “passion syndrome” (Ireland, Reutzell, & Webb, 2005)—researchers believe journals do not publish greater numbers of articles on a chosen discipline only because they are passionate about their area. In fact, as far as entrepreneurship research in top journals is concerned, the numbers we present speak for themselves. For example, Kirkman and Law (2005) found that *Academy of Management Journal*, which takes prides in its multifaceted and eclectic nature, published 116 articles on international management during a five-year period (2000–2004) compared to only 61 articles on entrepreneurship over the 16-year period in our research. The difference in frequency of publications between international management scholarship and entrepreneurship research in *Academy of Management Journal* is starker when one compares annual average: 23.1 and 3.8 per year, respectively. Our findings do not counter Davidsson’s (2003: 315) contention that “important works in entrepreneurship appear in high respected, mainstream journals,” but do reveal an

underemphasis on entrepreneurship research in the top journals. We are unable to examine whether the low frequency of entrepreneurship research in our sample journals is because of fewer submissions or greater rejection rates, an issue we leave for future investigations to untangle.

Turning our attention to researchers publishing entrepreneurship research, our findings seem consistent with the Matthew effect. Specifically, we find that 17 scholars published one-third of all entrepreneurship research published in the top journals during the sample period. The researchers with the most prolific record in terms of absolute frequency were Scott Shane, followed by Dean Shepherd, Rajshree Agarwal, R. Duane Ireland, Robert Baron, Marc Gruber, and Wesley Sine, respectively. Adjusted appearances, which account for the number of authors on a publication, has no effect on the ranking of Shane and Shepherd. The relative rankings of Agarwal, Baron, Gruber, and Sine do change when we consider adjusted appearances, but together these scholars continue

**Table 12. Spearman Rank Correlation of Institution Impact Measures**

|                       |  | AbA   | AdA   | WA    | CM    |
|-----------------------|--|-------|-------|-------|-------|
| <b>Spearman’s rho</b> | Corr                                       | 1     | .92** | .87** | .94** |
|                       | Absolute Appearances (AbA) Sig. (2-tailed) |       | 0     | 0     | 0     |
|                       | N  | 303   | 303   | 303   | 303   |
|                       | Corr                                       | .92** | 1     | .89** | .97** |
|                       | Adjusted Appearances (AdA) Sig. (2-tailed) |       | 0     | 0     | 0     |
|                       | N  | 303   | 303   | 303   | 303   |
|                       | Corr                                       | .87** | .89** | 1     | .92** |
|                       | Weighted Appearances (WA) Sig. (2-tailed)  |       | 0     | 0     | 0     |
|                       | N  | 303   | 303   | 303   | 303   |
|                       | Corr                                       | .94** | .97** | .92** | 1     |
|                       | Composite Measure (CM) Sig. (2-tailed)     |       | 0     | 0     | 0     |
|                       | N  | 303   | 303   | 303   | 303   |

\*\*Correlation is significant at the 0.01 level (2-tailed)

to occupy the top six rankings in our sample. Weighted appearance, which accounts for mean quality of journal based on MacMillan's (1993) ranking, has no influence on Shane's and Shepherd's rankings at the top of the list, while Agarwal moved up to the third position. Finally, using a composite measure, which accounts for quality of journal and number of coauthors simultaneously, reveals Shane as the most prolific author, followed by Shepherd, Baron, Agarwal, Gruber, and Sine. Thus, across all four techniques we adopted to assess individual productivity, Shane remains at the helm of the rankings. Furthermore, regardless of the specific technique we adopt, the six most published scholars in entrepreneurship almost remain unchanged.

We find even stronger evidence for the Matthew effect when we consider institutions publishing entrepreneurship research. Specifically, when ranked by appearance, 20 institutions were credited for 307 of the 371 articles in our samples, representing 95.6 percent of the total articles in our sample. Of these, Indiana University and University of Pennsylvania ranked at the top with 32 articles in each. The University of Pennsylvania's appearance at the top of the list should come as no surprise. Shane (1997) had found University of Pennsylvania to be the leading institution for publishing entrepreneurship research during the 1987–1994 period ( $n = 51$  appearances), way ahead of the second-ranked Purdue University and Georgia Institute of Technology ( $n = 20$  each). University of Pennsylvania was also recognized for being the top-cited institution in management studies during the 1981–2004 time period (Podsakoff et al., 2008). The surprising institutional actor here is Indiana University, which was ranked 14 by Shane for entrepreneurship research during the 1987–1994 period, but ranked at the top of our list for the most recent 16-year period.

It is possible that institutional rankings based on appearance are skewed toward universities where multiple authors appear on the same article. When we consider adjusted appearances—accounting for number of authors on an article—University of Pennsylvania remains at the top, followed by University of Maryland and Indiana University, respectively. For weighted appearance, which considers quality of journal based on MacMillan (1993), University of Pennsylvania remains ahead of Indiana University (2) and University of Maryland (3). Finally, when considering composite measure, which accounts for journal quality and number of authors on the article, University of Pennsylvania is still at the top, followed by

Maryland (2) and Indiana (3). Together, these results reveal that University of Pennsylvania is undoubtedly the top institutional actor for entrepreneurship research in top journals, followed by Indiana University and University of Maryland as the other two top-ranked players.

While our findings suggest that few researchers and some prestigious institutions have the most influence on entrepreneurship research in terms of being published in the highest quality mainstream journals, our research design precludes us from delving into the mechanisms through which such influence comes to be. It is possible that prolific actors have better ideas, superior methods, and access to good data, all of which are not available to others. It is also possible that prolific actors have networks with greater access to top journals. Another possibility is that the gatekeepers at top journals are more receptive to works from prolific actors and from more reputable institutions, creating a self-reinforcing effect. We can only speculate as to why some actors are drastically more prolific than others. Future research is needed to illuminate the mechanisms underlying our findings.

Our explicit goal in this study was to conduct a contribution-based assessment of the research published on entrepreneurship in top-tier management journals. All researchers and universities mentioned in our rankings made a substantial contribution to the development and progress of scholarship in entrepreneurial studies. Despite the potential contributions of our research endeavor, we acknowledge that assessment of scholarly contribution is fraught with problems. For instance, we focused on quantity and quality of articles, ignoring the content of those articles. A logical follow-up study would involve examining the topical areas in entrepreneurship that have been published in elite journals considered here. Furthermore, it is also possible that an article published in a journal not included in our study makes a substantial impact on the field. Another issue is that the findings of our study are mostly descriptive and hence have little predictive efficacy, in that our methodology or findings cannot be used to predict researcher or institutions that will have the most impact on the field in the future. While past performance is usually a good predictor of future performance (Bamberg, Ajzen, & Schmidt, 2003), publications are a dynamic phenomenon in that they may be altered as actors or their motivations and resources change. Lastly, our study provides a snapshot of entrepreneurship research for one specific time

period (2000-2015; both inclusive). Changing the time period may reveal a different picture of productivity in entrepreneurship research. For example, if we look at just the 2005-2015 time period, the most prolific authors in entrepreneurship research considered here are Rajshree Agarwal, Robert Baron, Marc Gruber, and Wesley Sine, all sharing the top position.

Notwithstanding some limitations of our study, we provide a robust and in-depth assessment of the performance of individual and institutional actors contributing to entrepreneurship-related research. We are hopeful that our findings will be of relevance to resource providers who manage the flow of support to institutions and faculty; tenure, promotion, and reward committees; doctoral students seeking academic advisors; and institutions interested in comparing their performance on research productivity. We believe

people interested in learning where and by whom high-quality entrepreneurship research is published in top-tier managerial and organizational journals will find our study useful. Based on our findings, we predict that entrepreneurship research published in elite journals will increase going forward, but we are concerned that more entrepreneurship researchers will be competing for limited journal space compared to other fields of inquiry. Finally, given the strong evidence we found for the Matthew effect, we hope our findings will lead to some consideration of whether the current publication system at elite journals favors incumbents over new entrants. In all, if we are able to stimulate conversations and discussions about the status of entrepreneurship research published in top-tier journals, this research effort would be worthwhile.

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