

## **Examining Opportunity Recognition Research Output: 1995 - 2006**

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*In this paper, we examine opportunity recognition research in order to understand where it fits within the extant body of entrepreneurship literature. Drawing from papers published in 29 journals, and three conference proceedings from 1995 through 2006, we analyzed more than 5,909 entrepreneurship papers. We found the quantity of opportunity recognition research increasing, and that it is making up a greater percentage of the overall entrepreneurship literature. We provide productivity rankings of researchers and institutions publishing on opportunity recognition, and examine the opportunity recognition research output of top-ranked university programs. Implications of our findings are discussed.*

### **INTRODUCTION**

The field of entrepreneurship itself lacks consensus about its boundaries (e.g., Bruyat & Julien, 2001; Shane & Venkataraman, 2000). This is not surprising given that entrepreneurship researchers have not universally agreed on a definition of who an entrepreneur is and what entrepreneurship means (e.g., Carland, Hoy, & Carland, 1988; Dollinger, 2003; Gartner, 1988; Hisrich, Peters, & Shepherd, 2005). Yet, no matter how one defines an entrepreneur or the boundaries that one places on entrepreneurship research, the fundamental activity of entrepreneurship is new venture creation (Gartner, 1985; 1990), and researchers agree that a major component of any entrepreneurial venture is the recognition of the opportunity by the entrepreneur (e.g., Bhave, 1994; Hills, 1994; Shane & Venkataraman, 2000; Timmons, 1994).

In 2000, Shane and Venkataraman published a highly influential framework for the field of entrepreneurship in the *Academy of Management Review* (AMR). Grégoire, Noël, Déry, and Béchar (2006) analyzed 960 full-length articles published in *Frontiers of Entrepreneurship Research* between 1981 and 2004. They found that for the first time in the four periods they researched (1981-1986, 1987-1992, 1993-1998, and 1999-2004), the most frequently cited work was an entrepreneurship-specific piece – the AMR article by Shane and Venkataraman – and not a book on personal psychology or competitive strategy.

In their article, Shane and Venkataraman (2000) present opportunity recognition (OpRec) as a central part of the entrepreneurship process and argue it is a distinct construct that falls within the domain of entrepreneurship research. The authors define entrepreneurship as “the scholarly examination of how, by

whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited” (Venkataraman, 1997)” (Shane & Venkataraman, 2000, p.218). Shane and Venkataraman (2000) encourage entrepreneurship researchers to join in the “quest to create a systematic body of information about entrepreneurship” (Shane & Venkataraman, 2000, p.224), in large part by developing theory around the OpRec construct.

We agree with the basic arguments laid out by Shane and Venkataraman (2000), and the purpose of this study is to examine OpRec research within the literature. More specifically, the focus is centered on the question of whether entrepreneurship scholars heeded the call by Shane and Venkataraman (2000), and increased OpRec research. Research productivity on OpRec was measured in the time periods before the article was published and after the article was published. The goal was to see if there had been a major shift in OpRec research in response to the article. It was expected that based on the magnitude of the article’s influence, that the frequency of papers published on OpRec would be significantly greater during the years following the publication than during the years prior to, and including, the publication.

This paper allows researchers to better understand where OpRec research fits within the extant entrepreneurship literature. The top researchers and institutions that are generating knowledge on the OpRec construct are ranked and discussed. In addition, the research attention placed on OpRec by top-ranked entrepreneurship programs is assessed. The goal is to step back and provide entrepreneurship scholars with information about how the field has developed in recent years, most notably with respect to OpRec.

In terms of the importance of such rankings, many groups are highly interested in the rankings of academic research output. These groups include: 1) constituents internal to universities such as faculty and administrators for the purposes of program assessment, resource allocation, merit awards, and program advertisement; and 2) constituents external to universities such as funding agencies, potential students, and faculty applicants for various decision-making (Chan, Chen, and Cheng, 2006; Chan, Chen, & Steiner, 2004; Cheng, Chan, & Chan, 2003; Mathieu, & McConomy, 2003; Erkut, 2002; Shane, 1997). Moreover, these rankings contribute to the reputation capital of business schools and universities (Chan et.al., 2004; Erkut, 2002).

Chan et.al., (2004), and Erkut (2002) explain how many universities and colleges take national rankings such as Business Week, U.S. News & World Report, and Financial Times seriously. These researchers quote Financial Times in explaining how strong research capabilities and international diversity enabled the Wharton School to uproot Harvard Business School from its number one spot in 2001. In response to the high interest in academic output rankings, several studies have investigated research output, rankings of programs, and journal quality in various business disciplines (see, for example Chan et.al., 2006; Chan et.al., 2004; Cheng et.al., 2003; and Erkut, 2002.). Moreover, several of the researchers cited above have demonstrated that investigations similar to this one have proven to be invaluable.

In the next section we discuss the data and the methodology used to create the ranking lists. The results and a discussion of those results follow.

## **METHODOLOGY**

As part of a broader study of the entrepreneurship literature, a dataset comprised of 5,909 entrepreneurship papers published in 26 leading journals and the proceedings from three leading entrepreneurship conferences (USASBE, Babson, and the UIC/AMA Symposium on Marketing and Entrepreneurship) was created. The full list of the journals that were examined can be found in Table 1.

Of the total 5,909 papers in the dataset, just over half of these papers consisted of journal articles (3,009), and the remaining consisted of entrepreneurship conference proceedings (2,900). Because conference papers often have lower stringency requirements, and given the earlier stage of development which many of the papers find themselves, all conference papers in the dataset were assigned a weight of 1/10<sup>th</sup> that of journal papers. Therefore, the total of 2,900 papers published in the three conference proceedings were weighted down to an effective total of 290. When this weighted number of proceedings

papers was added to the 3,009 journal articles, the total weighted number of articles examined in the entire dataset equaled 3,299.

To conduct this study's analyses, data is drawn from only those articles and papers that were published on OpRec in the intellectual outlets over the 12-year period. To identify these OpRec papers, each of the dataset's 5,909 papers (totaling 3,299 weighted papers) were searched to determine whether or not the construct opportunity recognition/discovery was a/the major topic of the paper. A combination of title, abstract, and full text searches were visually conducted, and electronically conducted when available. Editorials, book reviews, and teaching cases were not included in the dataset.

In total, prior to weighting, 253 papers in the dataset were published on OpRec. Seventy four of these papers were published in entrepreneurship journals and the remaining 179 papers were published in the three conference proceedings. Again, because proceedings were weighted down, the 253 papers compute to a total of 91.9 weighted papers (74 journal articles + (179 proceedings papers \*.1) = 91.9 weighted papers). The 91.9 weighted papers written on OpRec accounted for 2.79 percent of the total weighted entrepreneurship papers in the dataset.

Based on the overall research objectives of this study, these 91.9 papers constitute the subject of analyses in this study. The papers were broken down into two periods: one prior to, and one after, the Shane and Venkataraman (2000) AMR publication. To examine whether OpRec treatment in the literature increased during the years immediately following the AMR article, a comparison was made between those papers published from 1995-2000 (Period 1), and those published from 2001-2006 (Period 2). To be clear, this study did not conduct content analyses of these papers. Instead, it assessed quantity and not quality or the specific findings within the papers.

Employing the methodologies used by Chan et.al., (2006) and Shane (1997), listings of all authors and their institutional affiliations were computed and ranked. The rankings were determined using weighted numbers of papers, weighted by number of coauthors and co-affiliations for each paper. Weighted number of papers was used to control for high numbers of publications among authors who wrote papers with many coauthors (Shane, 1997). To compute the weighted number of papers rankings lists for authors, each paper was first divided by its number of authors. Then, each of the authors was assigned corresponding weights for each paper in the dataset that they had individually authored or coauthored. Next, the resulting weighted list was rank ordered from greatest to least.

For example, if one author published two articles during the period where she is the sole author on the first, and she is one of three authors on the second, then her assigned weights are computed as 1/1 (one author out of one author) plus 1/3 (one author out of three authors) respectively for her two articles. Thus, her summed weight of 1.33 ( $1/1 + 1/3 = 1.33$ ) places her at a higher rank than a colleague who published only two articles, and is one of three authors on both (his assigned weight is  $1/3 + 1/3 = .67$ ). Using the same methodology, rank listings were computed for institutional affiliations. Similarly, (following et.al., 2006; and Shane, 1997) in cases of multiple author affiliation, publication credit was equally shared among an author's affiliations. To illustrate, for a paper having two authors, with one of the authors having two affiliations and the other author having only one, both authors would each receive a .5 credit, and the former author's affiliations would both receive a .25 credit, while the latter author's affiliation would receive a .5 credit.

Finally, the authors' institutional affiliations are compared to the 2007 Entrepreneur Magazine rankings of the top 25 undergraduate and graduate university programs in entrepreneurship. The objective was to see how much research focus the top programs placed on OpRec.

## RESULTS

### Increases in Journal and Proceedings Publications on OpRec

Table 2 (Below) summarizes the research output by journals, by proceedings, and by weighted paper totals. The table shows the breakdown of the OpRec papers by the two time periods, Period 1 and Period 2. Surprisingly, the numbers of entrepreneurship papers published in Period 2 decreased in all three categories (i.e., journal articles, conference proceedings, and weighted entrepreneurship papers) relative

to the numbers published in Period 1. However, the numbers of OpRec papers increased – the number of weighted OpRec papers grew by 51 percent. In addition, OpRec papers made up a greater percentage of the total number of entrepreneurship papers in all three categories. Thus, the number of OpRec research clearly increased from Period 1 to Period 2.

### **Researcher Productivity on OpRec**

From 1995 to 2006, a total of 331 authors published the 91.9 weighted OpRec papers in the 29 publication outlets. Table 3 shows the top 28 authors. During this period, 21 journal articles and 48 (non-weighted) proceedings papers were written by sole authors. The remaining papers were written by between 2 and 9 authors.

In Period 1, a total of 99 authors published the 36.6 papers that appeared in the intellectual contribution outlets we examined in this study. The number of these authors who were a sole author in a journal article is seven. The remaining journal authors collaborated with between one and five coauthors. In the same period, 14 proceedings papers were written by a sole author, and the remaining papers were written by between 2 and 6 authors. Table 4 shows the top ranked authors in Period 1 ranked by numbers of weighted OpRec papers published during the period. This table also shows the authors' most recent affiliations (and countries) listed in all papers.

In Period 2, the number of authors who published the 55.5 weighted OpRec papers nearly tripled to 272 (see Table 5 for the top ranked Period 2 authors). The number of authors who solely published a journal article in Period 2 is 14. The remaining Period 2 authors collaborated with between one and eight coauthors. The number of sole authors writing proceedings papers during this period is 34. The remaining Period 2 papers were written by between two and five authors. The number of authors who published OpRec papers in both periods (i.e., the number of authors who published at least one paper in Period 1, and at least one other paper in Period 2) is 40. The number who published in Period 1 only is 59, and the number who published in Period 2 only, nearly quadrupled to 232.

### **Affiliation Productivity on OpRec**

From 1995 to 2006, a total of 194 affiliations – universities or organizations that research authors were affiliated with – were noted in the 91.9 weighted OpRec papers. Table 6 shows the top 25 of these affiliations based on numbers of weighted OpRec papers published throughout the entire period, from 1995 to 2006. Renssalaer Polytechnic Institute is ranked first with 4.417 weighted papers published on OpRec. Immediately following are University of Nottingham and Babson College with 3.820 and 2.933 weighted papers each.

In Period 1, a total of 70 affiliations were noted in the 36.6 weighted OpRec papers published in the major entrepreneurship outlets. Table 7 summarizes these affiliations for OpRec publications in Period 1 (ranked by weighted OpRec papers). University of Houston and University of Maryland were ranked first with 1.5 weighted OpRec papers each during this period. Monash University and San Francisco State University tied for third with 1.1 weighted OpRec papers each.

In Period 2, a total of 155 affiliations were noted in the 55.3 weighted OpRec papers published in the major outlets (see Table 8 for the top ranked of these affiliations). During this period, the numbers of weighted OpRec papers affiliated with the first and second ranked institutions more than doubled to 3.800 and 3.753. Renssalaer Polytechnic Institute is the top-ranked institution with its 3.800 weighted OpRec papers during this period. In second place is University of Nottingham with 3.753 weighted OpRec papers during the period. The numbers of papers affiliated with the third and fourth ranked institutions also more than double in Period 2. With 2.000 weighted OpRec papers in this period, Eastern Washington University is ranked third. And, with 1.990 weighted OpRec papers in the period, University of Illinois at Chicago is ranked fourth.

Out of the total 194 institutions affiliated with the OpRec papers published in the 29 publication outlets from 1995 to 2006, 32 published OpRec papers in both Period 1 and Period 2. The number of authors' affiliations that were identified on papers in Period 1 is 70. But, the number that published in Period 2 more than doubled to 155.

### **Productivity by “Top Ranked” Programs**

Finally, this study examined which of the universities with top-ranked entrepreneurship programs published OpRec papers over the 12-year period that was analyzed. A total of 37 universities comprise the two Top 25 lists in Entrepreneur Magazine's 5th Annual Top 50 Entrepreneurial Colleges for 2007 (undergraduate and graduate programs combined). The reason why the number of universities comprising this list is 37, and not 50, is because 13 universities are ranked on both lists (see Table 9).

Of these 37 top entrepreneurial universities, only 20 published any OpRec papers in the intellectual outlets included in this study over the 12-year period (see Table 10). Ten of these top universities published OpRec papers in Period 1, and during Period 2, this number increased to 18 universities. Two of the 20 universities had published OpRec papers in Period 1 only. Eight of the ten universities publishing OpRec papers in Period 1 also published OpRec papers in Period 2. Ten universities published their first OpRec papers in Period 2.

## **DISCUSSION OF FINDINGS**

At the outset of this study, we sought to examine if there had been growth in the number of OpRec research articles following the publication of Shane and Venkataraman's (2000) highly influential article on the field of entrepreneurship. The results clearly indicate a substantial increase took place. Of the 3,299 weighted papers published in the 29 publication outlets analyzed in this investigation, the proportion of OpRec papers is 2.8 percent. The percentage of OpRec papers out of all weighted entrepreneurship papers published in the Period 1 was 2.1 percent (36.6 papers). By the second period this percentage had increased to 3.5 percent (55.3 papers). These findings indicate slightly more than a 51 percent increase in the number of OpRec papers published from Period 1 to Period 2.

Moreover, increases are also observed in the number of researchers who published OpRec papers in Period 2 over Period 1; as well as increases in the number of institutions affiliated with OpRec publication. The numbers of researchers who published OpRec papers increased dramatically from 99 in Period 1 to 272 in Period 2. The number of affiliations assigned to the OpRec papers also increased drastically from 70 in Period 1 to 155 in Period 2.

### **Opportunities for Researchers**

Again, this study does not look at content, but instead, queries the state of the overall body of literature on OpRec in terms of quantity of articles that focus on the subject. Given the growing numbers of papers, it is clear that there has been robust and growing interest in OpRec. We will be examining papers since 2006 and plan to provide an update on research published from 2007 to 2012 once all of those papers are available. This will allow us to examine the continuing trends, if any.

In addition to the quantity figures, further research is needed to better understand and integrate the growing content on the subject. A fundamental issue is that there is a lack of consensus on how the construct should be defined (Hansen & Shrader, 2006; Shane & Venkataraman, 2001; Singh, 2001). It would seem that there is a need to integrate the literature and possibly define the construct more clearly. In addition, an analysis of the overall content and findings, or perhaps even a meta-analysis, may now be in order to try to isolate the most important aspects of the OpRec process. Using the OpRec papers identified in this dataset, we aim to embrace such an analysis in the near future.

Given the importance of the area and the fact that so few of the top entrepreneurship programs have published papers advancing OpRec knowledge, it still appears that OpRec remains a good niche area of research. Scholars who are still relatively unknown, and/or are from smaller or “lesser-known” entrepreneurship programs can certainly establish themselves and their programs by publishing just a few papers in this area.

This is the only paper that we are aware of that empirically analyzes the total output and knowledge generated in leading intellectual outlets on OpRec. This helps scholars pause and consider how the field is developing. In addition, as stated in the introduction, there are many groups who are interested in the rankings of academic research output including faculty and administrators for the purposes of program assessment, resource allocation, merit awards, and program advertisement. It also allows constituencies

who are external to universities such as funding agencies, potential students, and faculty applicants to be better informed for various decision-making (Chan, Chen, & Cheng, 2006; Chan, Chen, & Steiner, 2004; Cheng, Chan, & Chan, 2003; Mathieu, & McConomy, 2003; Erkut, 2002; Shane, 1997). Moreover, these rankings contribute to the reputation capital of business schools and universities (Chan et.al., 2004; Erkutt, 2002).

## CONCLUDING REMARKS

This study shows who the most prolific OpRec scholars are and which institutions have led in answering Shane and Venkataraman's (2000) call for researchers to explore their framework in order to systematically advance the field. In doing so, the study also serves as evidence of the field's continued advancement, and maturation. There are two major findings. First, that there has been a major increase in the number of OpRec papers since Shane and Venkataraman (2000) published their AMR piece. And second, surprisingly, only a small portion of the papers published on OpRec are generated by the leading entrepreneurship programs. These findings provide further support for the substantial influence of Shane and Venkataraman's (2000) article to the field. To our knowledge, this paper provides a first detailed assessment of research productivity on a specific and major component of any entrepreneurial venture: the recognition of the opportunity by the entrepreneur. There are ongoing needs to better analyze the content and draw from the growing literature to establish boundaries and widely acceptable definitions of OpRec. Even with the growing body of literature, much research is still needed to better understand the processes and keys to successful OpRec.

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**APPENDIX**

**TABLE 1  
RESEARCH OUTLETS EXAMINED IN THIS STUDY**

Academy of Management Journal	Journal of Small Business Mgmt*
Academy of Management Review	Journal of Business Venturing*
Administrative Science Quarterly	Journal of High Tech Mgmt Research*
American Journal of Sociology	Journal of Management
American Sociological Review	Journal of Management Studies
California Management Review	Journal of Small Business Economics*
Economics of Innovation and New Technology*	Management Science
Entrepreneurship and Regional Development*	Organizational Dynamics
Entrepreneurship Theory & Practice*	Organization Science
Harvard Business Review	Organization Studies
Industry and Innovation*	Sloan Management Review
International Small Business Journal*	Stanford Social Innovation Rev.
Journal of Entrepreneurship*	Strategic Management Journal

\* Denotes entrepreneurship-specific journals.

**TABLE 2  
SUMMARY OF ENTREPRENEURSHIP PAPERS BY PERIOD**

Item	1995-2006	Period 1 (1995-2000)	Period 2 (2001-2006)
Total Number of Entrepreneurship Papers Published in Journals	3009	1,573	1,436
Total Number of Opportunity Recognition Papers Published in Journals	74	29	45
% of Entrepreneurship Papers in Journals that Focused on Opportunity Recognition	2.5%	1.8%	3.1%
Total Number of Entrepreneurship Papers Published in Proceedings	2900	1,510	1,390
Total Number of Opportunity Recognition Papers Published in Proceedings	179	76	103
% of Entrepreneurship Papers in Proceedings that Focused on Opportunity Recognition	6.2%	5.0 %	7.4%
Total Weighted Number of Entrepreneurship Papers Published	3299	1,724	1,575
Total Weighted Number of Opportunity Recognition Papers Published	91.9	36.6	55.3
% of Weighted Entrepreneurship Papers that Focused on Opportunity Recognition	2.8%	2.1%	3.5%

**TABLE 3**  
**TOP 28 AUTHORS FOR WEIGHTED OPPORTUNITY**  
**RECOGNITION PAPERS (1995 - 2006)**

<b>Rank</b>	<b>Total Wtd Papers</b>	<b>Author</b>	<b>Affiliation</b>	<b>Country</b>
1	2.50	Scott A. Shane	University of Maryland	U.S.
2	2.33	Robert A. Baron	Rensselaer Polytechnic Institute	U.S.
3	2.00	Lowell W. Busenitz	University of Oklahoma	U.S.
	2.00	Gregory G. Dess	University of Kentucky	U.S.
	2.00	Maria Minniti	Babson College	U.S.
6	1.94	S. Venkataraman	University of Virginia	U.S.
7	1.87	G. Thomas Lumpkin	University of Illinois at Chicago	U.S.
8	1.62	Dean A. Shepherd	Indiana University, Bloomington	U.S.
9	1.60	Connie Marie	San Francisco State University	U.S.
10	1.50	Thomas B. Ward	University of Alabama	U.S.
11	1.43	Norris F. Krueger Jr	Boise State University	U.S.
	1.43	Deniz Ucbasaran	University of Nottingham	United Kingdom
	1.43	James O. Fiet	University of Louisville	U.S.
14	1.20	Robert P. Singh	Morgan State University	U.S.
15	1.15	Andrew C. Corbett	Rensselaer Polytechnic Institute	U.S.
	1.15	Paul Westhead	University of Warwick	United Kingdom
17	1.05	Pia Arenius	University of Lausanne	Switzerland
18	1.00	Silvia Dorado	University of Massachusetts	U.S.
	1.00	Truls Erikson	Manchester Metropolitan University	United Kingdom
	1.00	Denise E. Fletcher	University of Sheffield	United Kingdom
	1.00	Benson Honig	University of Haifa	Israel
	1.00	Elaine Mosakowski	University of Calif. Las Angeles	U.S.
	1.00	Joel Podolny	Stanford University	U.S.
	1.00	Diamanto Politis	Lund University	Sweden
	1.00	Robert D. Russel	Pennsylvania State University	U.S.
	1.00	Raymond W. Smilor	Kauffman Foundation	U.S.
	1.00	Robert Sternberg	Yale University	U.S.
1.00	Toby E. Stuart	Columbia Business School	U.S.	

**TABLE 4**  
**TOP 26 AUTHORS FOR WEIGHTED OPPORTUNITY RECOGNITION**  
**PAPERS IN PERIOD 1 (1995 - 2000)**

<b>Rank</b>	<b>Total Wtd Papers</b>	<b>Author</b>	<b>Affiliation</b>	<b>Country</b>
1	1.500	Lowell W. Busenitz	University of Houston	US
	1.500	Scott A. Shane	University of Maryland	US
3	1.200	Norris F. Krueger Jr	Boise State University	US
4	1.033	James O. Fiet	Jonkoping University	Sweden
5	1.000	Elaine Mosakowski	University of Calif. Las Angeles	US
	1.000	Raymond W. Smilor	Kauffman Foundation	US
	1.000	Robert D. Russel	Pennsylvania State University	US
8	0.717	G. Thomas Lumpkin	University of Illinois at Chicago	US
9	0.500	D. Ray Bagby	Baylor University	US
	0.500	Julian Birkinshaw	Stockholm University	Sweden
	0.500	William D. Bygrave	Babson College	US
	0.500	Gregory G. Dess	University of Texas at Arlington	US
	0.500	Nick Fry	University of Western Ontario	Canada
	0.500	James G. Hunt	Texas Tech University	US
	0.500	Mariann Jelinek	College of William & Mary	US
	0.500	E. Sendil Misra Kumar	University of Pennsylvania	US
	0.500	Chung-ming Lau	Chinese University of Hong Kong	Hong Kong
	0.500	Joseph A. Litterer	University of Massachusetts	US
	0.500	G. Dale Meyer	University of Colorado at Boulder	US
	0.500	Maria Minniti	Babson College	US
	0.500	Sasi Misra	Indian Institute of Management	India
	0.500	Leslie E. Palich	Baylor University	US
	0.500	Arja Ropo	University of Tampere	Finland
	0.500	Dean A. Shepherd	University of Colorado at Boulder	US
	0.500	S. Venkataraman	University of Virginia	US
0.500	G. Page West III	Wake Forest University	US	

**TABLE 5**  
**TOP 25 AUTHORS FOR WEIGHTED OPPORTUNITY RECOGNITION**  
**PAPERS IN PERIOD 2 (2001 - 2006)**

<b>Rank</b>	<b>Total Wtd Papers</b>	<b>Author</b>	<b>Affiliation</b>	<b>Country</b>
1	2.150	Robert A. Baron	Renssalaer Polytechnic Institute	US
2	1.570	Dean A. Shepherd	Indiana University, Bloomington	US
3	1.500	Connie Marie Gaglio	San Francisco State University	US
	1.500	Maria Minniti	Babson College	US
	1.500	Thomas B. Ward	University of Alabama	US
6	1.440	S. Venkataraman	University of Virginia	US
7	1.400	Deniz Ucbasaran	University of Nottingham	UK
8	1.150	Andrew C. Corbett	Renssalaer Polytechnic Institute	US
	1.150	G. Thomas Lumpkin	University of Illinois at Chicago	US
10	1.117	Paul Westhead	University of Warwick	UK
11	1.050	Pia Arenius	University of Lausanne	Switzerland
12	1.025	Robert P. Singh	Morgan State University	US
13	1.000	Nancy J. Birch	Eastern Washington University	US
	1.000	Gregory G. Dess	University of Kentucky	US
	1.000	Silvia Dorado	University of Massachusetts	US
	1.000	Truls Erikson	Manchester Metropolitan Univ.	UK
	1.000	Denise E. Fletcher	University of Sheffield	UK
	1.000	David J. Hansen	University of Illinois at Chicago	US
	1.000	Benson Honig	University of Haifa	Israel
	1.000	Joel Podolny	Stanford University	US
	1.000	Diamanto Politis	Lund University	Sweden
	1.000	Scott A. Shane	University of Maryland	US
	1.000	Sukhpal Singh	Institute of Rural Management	India
1.000	Robert J. Sternberg	Yale University	US	
1.000	Toby E. Stuart	Columbia Business School	US	

**TABLE 6**  
**TOP 26 AFFILIATIONS FOR TOTAL WEIGHTED OPPORTUNITY**  
**RECOGNITION PAPERS (1995-2006)**

<b>Rank</b>	<b>Affln Wtd Papers</b>	<b>Affiliation</b>	<b>Affln Country</b>
1	4.417	Renssalaer Polytechnic Institute	US
2	3.820	University of Nottingham	UK
3	2.933	Babson College	US
4	2.907	University of Illinois at Chicago	US
5	2.600	San Francisco State University	US
6	2.500	University of Maryland	US
7	2.000	Eastern Washington University	US
8	1.944	University of Virginia	US
9	1.930	University of Colorado at Boulder	US
10	1.723	University of Louisville	US
11	1.717	University of Western Ontario	Canada
12	1.650	Baylor University	US
13	1.551	Jonkoping University	Sweden
14	1.500	University of Alabama	US
	1.500	University of California Las Angeles	US
	1.500	University of Houston	US
	1.500	University of Massachusetts at Boston	US
18	1.292	Indiana University, Bloomington	US
19	1.267	Boise State University	US
20	1.217	University of Texas at Arlington	US
21	1.167	University of California at Berkeley	US
22	1.133	University of Minnesota, Minneapolis	US
23	1.100	University of Aberdeen	Scotland
24	1.058	University of the Pacific	US
25	1.050	Clemson University	US
	1.050	Stockholm University	Sweden

**TABLE 7**  
**TOP 28 AFFILIATIONS FOR TOTAL WEIGHTED OPPORTUNITY RECOGNITION**  
**PAPERS IN PERIOD 1 (1995-2000)**

<b>Rank</b>	<b>Total Wtd Papers</b>	<b>Affiliation</b>	<b>Country</b>
1	1.500	University of Houston	US
	1.500	University of Maryland	US
3	1.100	Monash University	Australia
	1.100	San Francisco State University	US
5	1.000	Babson College	US
	1.000	Baylor University	US
	1.000	Boise State University	US
	1.000	Clemson University	US
	1.000	Kauffman Foundation	US
	1.000	Pennsylvania State University	US
	1.000	University of California Las Angeles	US
12	0.917	University of Illinois at Chicago	US
13	0.700	Stockholm University	Sweden
14	0.617	Renssalaer Polytechnic Institute	US
	0.617	Renssalaer Polytechnic Institute	US
16	0.583	University of Colorado at Boulder	US
17	0.550	University of Texas at Arlington	US
18	0.500	Chinese University of Hong Kong	Hong Kong
	0.500	College of William & Mary	US
	0.500	Indian Institute of Management	India
	0.500	Northeastern State University	US
	0.500	Texas Tech University	US
	0.500	University of Massachusetts	US
	0.500	University of Pennsylvania	US
	0.500	University of Tampere	Finland
	0.500	University of Virginia	US
	0.500	University of Western Ontario	Canada
0.500	Wake Forest University	US	

**TABLE 8**  
**TOP 34 AFFILIATIONS FOR TOTAL WEIGHTED OPPORTUNITY RECOGNITION**  
**PAPERS IN PERIOD 2 (2001-2006)**

<b>Rank</b>	<b>Total Wtd Papers</b>	<b>Affiliation</b>	<b>Country</b>
1	3.800	Renssalaer Polytechnic Institute	US
2	3.753	University of Nottingham	UK
3	2.000	Eastern Washington University	US
4	1.990	University of Illinois at Chicago	US
5	1.933	Babson College	US
6	1.723	University of Louisville	US
7	1.500	San Francisco State University	US
	1.500	University of Alabama	US
	1.500	University of Massachusetts at Boston	US
10	1.451	Jonkoping University	Sweden
11	1.444	University of Virginia	US
12	1.347	University of Colorado at Boulder	US
13	1.292	Indiana University, Bloomington	US
14	1.217	University of Western Ontario	Canada
15	1.167	University of California at Berkeley	US
16	1.100	University of Aberdeen	Scotland
17	1.033	University of Minnesota, Minneapolis	US
18	1.000	Columbia University	US
	1.000	Drexel University	US
	1.000	Free university	Netherlands
	1.000	Institute of Rural Management	India
	1.000	Lund University	Sweden
	1.000	Manchester Metropolitan University	UK
	1.000	Memorial University of Newfoundland	Canada
	1.000	National University of Singapore	Singapore
	1.000	Stanford University	US
	1.000	University of Auckland	New Zealand
	1.000	University of Haifa	Israel
	1.000	University of Kentucky	US
	1.000	University of Lausanne	Switzerland
	1.000	University of Maryland	US
	1.000	University of Sheffield	UK
	1.000	University of the Pacific	US
1.000	Yale University	US	

**TABLE 9**  
**ENTREPRENEUR MAGAZINE'S 5TH ANNUAL TOP-RANKED ENTREPRENEURIAL COLLEGES FOR 2007**

Top 25 Undergraduate Colleges		Top 25 Graduate Colleges	
Rank		Rank	
1	Babson College	1	University of Southern California
2	University of Houston	2	Babson College
3	Drexel University	3	The University of Arizona
4	The University of Arizona	4	University of North Carolina, Chapel Hill
5	University of Dayton	5	DePaul University
6	Chapman University	6	University of California, Los Angeles
7	DePaul University	7	Drexel University
8	Temple University	8	Chapman University
9	University of North Dakota	9	University of South Florida
10	Loyola Marymount University	10	University of Illinois at Chicago
11	Wichita State University	11	Loyola Marymount University
12	Syracuse University	12	Temple University
13	University of Notre Dame	13	Monterey Institute of International Studies
14	University of Maryland	14	University of Colorado, Boulder
15	University of Oklahoma	15	Tulane University
16	University of Illinois, Urb.-Chmpgn	16	Syracuse University
17	Xavier University	17	Indiana University, Bloomington
18	The University of Alabama	18	University of Maryland
19	University of Southern California	19	San Diego State University
20	Ball State University	20	University of Washington
21	The University of Iowa	21	University of Illinois, Urbana-Champaign
22	Brigham Young University	22	Rice University
23	Baylor University	23	University of California, Riverside
24	Northeastern University	24	Northwestern University
25	The Ohio State University	25	University of Notre Dame

**TABLE 10**  
**TOP RANKED UNIVERSITIES (BY ENTREPRENEUR MAGAZINE) THAT PUBLISHED**  
**OPPORTUNITY RECOGNITION PAPERS**

<b>Number</b>	<b>OpRec Publishing by “Top 50”</b>	<b>Period 1 only</b>	<b>Period 2 only</b>	<b>Period 1 + Period 2</b>
1	Babson College	✓	✓	✓
2	Baylor University	✓	✓	✓
3	Brigham Young University		✓	
4	Chapman University		✓	
5	DePaul University	✓		
6	Drexel University		✓	
7	Indiana University, Bloomington		✓	
8	Northeastern University	✓	✓	✓
9	Ohio State University		✓	
10	University of Alabama		✓	
11	University of California, Los Angeles	✓	✓	✓
12	University of Colorado, Boulder	✓	✓	✓
13	University of Houston	✓		
14	University of Illinois at Chicago	✓	✓	✓
15	University of Illinois, Urbana-Champaign		✓	
16	University of Iowa		✓	
17	University of Maryland	✓	✓	✓
18	University of North Carolina Chapel Hill		✓	
19	University of Oklahoma		✓	
20	University of Southern California	✓	✓	✓
	TOTALS:	10	18	8