A Response to "Assessing Research Productivity: Important But Neglected Considerations"

Kun Shin Im, Department of Management Science, The University of South Carolina

Kee Young Kim and Joon S. Kim, College of Business Administration, Yonsei University, Seoul, Korea

Kun Shin Im
holds a DBA, an MBA and BS in business administration from Yonsei University, Korea. He is currently pursuing a second doctoral degree in IS from the University of South Carolina. His research interests include business performance of information technology, impact of information technology on organizational structure, and development of constructs related to MIS research.
ksimp9@spanky.badm.sc.edu

Kee Young Kim
is a professor of operations management at Yonsei University, Seoul, Korea. He obtained his Ph.D. and MBA from Washington University, and his BA from Yonsei University. He has published numerous books and articles on operations management, manufacturing strategy, and technology transfer. Dr. Kim founded the Korean Manufacturing Roundtable in 1988. He is currently the vice president of Decision Sciences Institute. Dr. Kim is an associate editor of Decision Sciences. *He was elected as the international eminent research scholar at the Decision Sciences Institute's 25th Annual Meeting.*
kykim@bubble.yonsei.ac.kr

Joon S. Kim
is a professor of accounting and information systems at Yonsei University, Seoul, Korea. He holds a DBA in accounting and MBA at Indiana University, and BS in business administration at Yonsei University. His research interests include the impact of IT on the organizational performance and case studies on the implementation of ERP.
jskim@bubble.yonsei.ac.kr

There are a number of different opinions in the academic world concerning the best IS programs and the most productive researchers. To a large extent, these opinions are based on rather limited personal experience with faculty and students or subjective views about quality research. Admittedly, it takes more than journal publications to make a quality program and a productive researcher. The leading institutions should achieve excellence in several areas. They must have talented faculties and outstanding students, and find a receptive marketplace for their graduates (Niemi, 1987). There are also many dimensions to a researcher's quality such as research, teaching, public service, and other activities. However, research productivity is an important element in the equation for excellence. Productive faculty integrate their findings with those of other observations in order to further knowledge in their chosen field as well as bring current theory and practice into the classroom. In addition, through their research publications in the major journals, faculty members disseminate their research findings around the world. Such scholarly activity brings visibility and prestige to the authors and their affiliated institutions.

The crucial importance of published research is universally recognized in the leading academic institutions, and this is evident in promotion and tenure decisions and salary determination (Niemi, 1987). In a recent issue of *Decision Line* (Im et al., 1998), therefore we made an "objective" attempt to rank the leading IS researchers and institutions based on research productivity as measured by counting the number of articles and the number of article's pages published in the *major* IS related journals. Our stated purpose was "to assess the research productivity of MIS researchers and institutions in the leading MIS journals for the period 1991 through 1996 using measures . . . suggested in previous studies" (p. 8). It must be noted that our study reflected a simple evaluation of one critical, widely accepted aspect of research, and the dissemination of information that might be useful to the field. It was never intended to be a comprehensive assessment of the elusive concept of "true" contribution to the field. For instance, a broader assessment might consider many other important outlets such as books, monographs, and numerous other IS-related journals and practitioner-oriented periodicals. In addition to the research productivity, other dimensions of a quality faculty such as teaching, public service, and other activities that are not reflected in research rankings should be also considered.

Guimaraes (1998) in a later issue of *Decision Line* points out some problems with our research productivity assessment. While critical, he provides very little in terms of practical guidelines on how to go about doing such an assessment. Unfortunately, there are so many diverse viewpoints about the assessment of research productivity and research quality, which range from those of the consummate academic, the practitioner, the junior faculty, the senior faculty, the high profile research school and even the academic administrator. Given the diverse viewpoints, we believe it becomes even more important to assess the research productivity or research quality according to objective criteria. Below, we address the two major points made by Guimaraes.

How Many Journals Should Be Included?

Guimaraes asserts that "Artificially restricting the number of journals in the IS area to six . . . leads to a superficial assessment of research productivity, and it is not conducive to effectively addressing the questions stated as the motivators for the study" (p. 18). This is true. However, if we included all the journals receptive to all members of the IS research community, possibly over 100 journals, we could be subjected to the criticism that our measures would be extremely diluted. Moreover, there are many diverse viewpoints regarding which journals should be included in the assessment of the research productivity. Senior academics might recommend the journals with which they have the benefit of publishing experience or with which they are affiliated. Junior academics might rely on the philosophy espoused in the Ph.D. program where some journals were touted as more important or better. Practitioner-oriented academics who want to directly disseminate results back to practice might place more emphasis on applied journals but less emphasis on the more prestigious academic ones. Finally, many academics who want to focus their research on specific areas like journals which promote a specific reference discipline such as management science, organization theory, accounting, strategy, management, computer science, etc. These views are not wrong, but parochial and human. The only way to partially resolve this is to use objective or consensus methods to select journals. Concurrently, it is also necessary to limit the number of journals into a manageable range.

Therefore, we selected the six leading IS journals (*Communications of the ACM*, *Decision Sciences*, *Information Systems Research*, *Journal of MIS*, *Management Science*, and *MIS Quarterly*) according to the highly cited survey conducted by Gillenson and Stutz (1992) which ranked the leading IS journals. Interestingly, the exactly same journals are ranked as the top six outstanding journals for IS research in the recent survey by Hardgrave and Walstrom (1997). Right or wrong, these are the collective viewpoints of the main stakeholders in IS research. Nevertheless, we do not disagree on Guimaraes' assertion that practitioners' opinions should be considered and other IS journals or other discipline journals should be included. However, because other IS journals like *Information & Management*, *OMEGA*, and *EJIS* are not well known to the general IS academic community as he mentioned, including these journals could rather increase the superficiality of the research productivity assessment or decrease confidence in the results. Thus, we should focus on the widely accepted core journals to reduce the superficiality of the assessment.

How Do We Measure Research Productivity?

From the nature of the research productivity, it is very difficult to have clear metrics to measure it. Guimaraes (1998) argues that "None of which—our three measures of the research productivity—can possibly account for the highly desirable practice of developing new researchers . . . . On the other hand, all three assessment approaches used inflate the research productivity of some senior professors widely known as authorship hounds . . . . Last, defining research productivity by counting the article's number of pages seems extremely bureaucratic and totally unrelated to the quality of the article or its contribution to the literature" (p. 22). Again, this is true. But then what is the solution? Some kind of multidimensional evaluation scale? The challenge in doing this is apparent if we consider a number of arguments that occur in evaluating authors' contribution to individual papers. It is not uncommon to find three very different viewpoints on a three-authored piece. And how do we discount for authorship hounds? Hopefully, we believe that over the long run they sustain their position through their contribution to the literature.

The problem is that Guimaraes raises concerns but fails to provide practical solutions. We do agree that if we were to try to assess " true contributions," the best way would be through more comprehensive methods, including opinion survey, citation analysis, estimation of number of reader, and our three metrics. While our metrics are not the perfect measures of the research productivity, they are objective and much easier to interpret than other methods. Among our three methods, the first method, that is, normal count approach (the counting method to credit a unit count to each of authors) is popular among most IS faculty and other parties such as tenure and promotion committees. The second method—adjusted count (the counting method to credit a fraction of unit count to each of authors based on the proportion of their authorship)—has been used by IS researchers and other discipline researchers (Lindsey, 1980; Jackson and Nath, 1989). Finally, counting the article's number of pages, which we called "productivity score," has also been employed a number of times in more mature disciplines such as finance and marketing (e.g., Klemkosky and Tuttle, 1977; Niemi, 1987; 1988). For example, Niemi (1988) argues that the pages of published scholarship provide a more exact measure of the volume of research output than the number of articles published. Thus, we also assume that because each journal has a limitation in the number of articles' pages, the number of each published article's pages can be an indicator measuring each article's contribution to the overall literature. No claims were either made in our article that the three scores are the only measure of productivity. Moreover, we kept trying to accomplish the stated purpose of our study.

Finally, partially in response to the concerns raised by Guimaraes, we have updated our research productivity rankings by including 1997 IS articles (see Table 1 and 2). We followed the same procedure that we used in our previous paper (Im et al., 1997). Additionally, we provide a ranking based on the mean scores of the recent Hardgrave and Walstrom survey (1997). The mean scores are 3.72, 3.71, 3.58, 3.49, 3.32, and 3.28 for *MISQ*, *ISR*, *MS*, *CACM*, *JMIS*, and *DS*, respectively. In Table 1 and 2, productivity score 1 indicates the productivity score calculated using the mean scores of Gillenson and Stutz's survey (1991), whereas productivity score 2 is computed using those of Hardgrave and Walstrom's study (1997). Table 1 lists 38 researchers who have authored at least six articles. Table 2 lists top 50 institutions.

Hopefully, including a larger sample will be more reflective of the research productivity in the 1990s. We believe that the

No.	Rank N	Rank A	Rank P1	Rank P2	Researcher	Institution	Score* N	Score* A	Score* P1	Score* P2
1	1	1	1	2	Igbaria, Magid	Claremont Graduate School	16	6.90	448.58	491.59
2	1	2	2	1	Grover, Varun	University of South Carolina	16	6.32	447.20	503.68
3	3	17	12	12	Nunamaker, Jay F., Jr.	University of Arizona	15	3.69	262.66	298.68
4	4	4	3	3	Jarvenpaa, Sirkka L.	University of Texas, Austin	13	5.82	427.10	459.21
5	5	3	5	5	Clemons, Eric K.	University of Pennsylvania	12	5.99	386.01	430.86
6	5	11	16	16	Mukhopadhyay, Tridas	Carnegie Mellon University	12	4.09	230.57	249.17
7	5	12	10	10	Dennis, Alan R.	University of Georgia	12	4.03	276.64	304.57
8	8	6	4	4	King, William R.	University of Pittsburgh	11	5.50	387.48	435.38
9	8	7	7	7	Benbasat, Izak	University of British Columbia	11	5.16	328.77	350.03
10	8	14	9	8	Kettinger, William J.	University of South Carolina	11	3.99	296.12	328.28
11	11	5	6	6	Brynjolfsson, Erik	MIT	9	5.75	335.54	353.68
12	11	15	11	11	Guimaraes, Tor	Tennessee Technological University	9	3.82	268.16	299.10
13	11	26	17	14	Teng, James T. C.	University of South Carolina	9	2.90	229.24	256.31
14	11	29	37	36	Valacich, Joseph S.	Washington State University	9	2.80	154.82	165.19
15	11	40	26	26	Vogel, Douglas R.	University of Arizona	9	2.40	181.17	200.84
16	16	8	18	18	Vessey, Iris	Indiana University	8	4.33	221.78	240.50
17	16	19	13	13	Bostrom, Robert P.	University of Georgia	8	3.49	249.94	283.34
18	16	19	15	17	Higgins, Christopher Alan	University of Western Ontario	8	3.49	231.82	248.76
19	19	8	25	27	Robey, Daniel	Georgia State University	7	4.33	182.68	190.71
20	19	16	19	19	George, Joey F.	Florida State University	7	3.78	211.47	228.99
21	19	21	23	22	Baroudi, Jack J.	New York University	7	3.33	187.99	208.50
22	19	23	20	20	Todd, Peter A.	Queen’s University	7	3.16	204.19	212.83
23	19	25	34	35	Seidmann, Abraham	University of Rochester	7	2.91	156.48	171.18
24	19	28	39	34	Rainer, R. Kelly, Jr.	Aurburn University	7	2.82	150.85	172.95
25	19	33	29	29	Whinston, Andrew B.	University of Texas, Austin	7	2.52	178.38	186.92
26	19	36	38	40	Barua, Anitesh	University of Texas, Austin	7	2.48	154.11	162.42
27	27	22	21	25	Kemerer, Chris F.	University of Pittsburgh	6	3.25	196.66	203.43
28	27	24	32	30	Sethi, Vijay	Nanyang Technological University	6	3.00	165.07	184.01
29	27	27	24	21	Weber, Bruce W.	Queensland University	6	2.83	187.75	210.02
30	27	30	22	24	Ives, Blake	Southern Methodist University	6	2.66	188.26	205.51
31	27	30	27	23	Row, Michael C.	New York University	6	2.66	180.30	207.01
32	27	30	36	37	Barki, Henri	Ecole Des Hautes Etudes Commer.	6	2.66	155.51	164.43
33	27	34	30	32	Wetherbe, James C.	University of Memphis	6	2.49	167.92	179.72
34	27	34	40	39	Watson, Hugh J.	University of Georgia	6	2.49	150.23	163.35
35	27	37	35	38	Banker, Rajiv D.	University of Texas, Dallas	6	2.41	155.65	164.37
36	27	42	33	33	Kraemer, Kenneth L.	University of California, Irvine	6	2.25	161.38	173.38
37	27	44	41	41	Raman, K. S.	National University of Singapore	6	1.99	129.69	145.02
38	27	47	46	46	Briggs, Robert O.	University of Arizona	6	1.51	87.78	102.60

Table 1: List of top 38 researchers and their university. (*N=Normal count; A=Adjusted count; P1=Productivity score 1; P2=Productivity score 2)

Rank		Institution	Score*		Rank		Institution	Score	
P1	P2		P1	P2	P1	P2		P1	P2
1	1	Arizona	1747.85	1946.81	26	26	Ecole Des Hautes Etudes Comm.	414.80	452.88
2	2	South Carolina	1323.48	1485.80	27	27	Case Western Reserve	407.99	449.32
3	3	Minnesota	1278.81	1370.66	28	28	Hawaii	402.13	437.87
4	4	MIT	1171.26	1230.79	29	29	Maryland	399.85	427.03
5	6	Carnegie Mellon	1131.28	1202.52	30	30	Southern California	389.43	417.91
6	5	NYU	1116.44	1217.03	31	32	Western Ontario	381.36	406.82
7	7	Pennsylvania	973.96	1089.37	32	31	Illinois, Urbana Champaign	376.70	409.51
8	9	Texas, Austin	962.46	1028.27	33	33	London Business School	359.51	391.25
9	8	Georgia	929.50	1029.76	34	34	Southern Methodist	357.42	381.95
10	10	Pittsburgh	901.51	978.68	35	35	Houston	344.83	372.72
11	13	California, Irvine	808.16	847.88	36	37	Rutgers	328.11	357.36
12	12	British Columbia	807.31	860.16	37	36	Boston Univ.	323.13	357.63
13	11	National U., Singapore	773.09	870.71	38	39	South Florida	320.47	342.49
14	14	Drexel	717.51	778.32	39	42	IBM	319.73	330.10
15	15	Georgia State	696.85	733.59	40	40	Rochester	319.54	342.13
16	17	Florida International	658.18	713.57	41	38	Harvard	319.12	350.52
17	16	Florida State	651.79	713.79	42	43	Washington	317.61	326.50
18	18	Texas A&M	621.87	682.78	43	41	Florida Atlantic	314.79	338.86
19	19	UCLA	586.58	630.86	44	44	Tel Aviv	293.00	326.49
20	20	Indiana	551.28	596.66	45	45	Michigan	292.48	315.75
21	21	Penn State	503.33	561.73	46	46	Georgia Tech	289.72	313.88
22	22	Colorado, Boulder	464.69	500.40	47	49	Bellcore	288.64	297.16
23	24	Queen's	454.29	483.63	48	47	SUNY, Buffalo	281.69	305.35
24	23	Hong Kong, Science & Tech.	431.77	490.49	49	50	Northeastern	277.64	293.33
25	25	Auburn	422.90	478.92	50	48	Tennessee Technological	268.16	299.10

Table 2: List of top 50 IS institutions. (*P1=Productivity score 1; P2=Productivity score 2)

"ongoing" dissemination of such objective information about research productivity could enable us to avoid misconceptions based on personal experiences, parochial interests and institutional stereotyping. We really hope that our list can motivate other IS researchers as well as ourselves to contribute further to the IS literature. ■

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Dr. Shawnee Vickery
Department of Management
College of Business
239 Eppley Center
Michigan State University
East Lansing, MI 48824
517-353-6381
fax: 517-432-1112
email: 22645skv@msu.edu