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Ranking of 25 Agricultural Economics Departments and Their Faculties by Citation Counts, 1966-1988

by

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A few years ago citations tabulated in the Social Science Citation Index (SSCI) were used to rank departments of agricultural economics (Adams; Beilock, Polopolus and Correal). Because departments change it is useful to periodically update these rankings.

Data Used

Our analysis is limited to 776 economists who were on the faculties of 25 of the largest departments of agricultural economics in the U.S. during Autumn of 1989.[1] These units train most of the Ph.Ds in our profession and also do a substantial part of the research accomplished by agricultural economists in U.S. universities.

Citation information was tabulated manually from the SSCI for the years 1966 to 1988. The Index draws its data from citations in about 1,500 social science journals that, in turn, are most often cited in a larger number of social science journals. Some of the journals of interest to agricultural economists not scanned by the SSCI include the regional journals of agricultural economics. The SSCI records citations included in the journal

[1]The faculty included in this study were determined by the chairperson or head of each department surveyed. In some cases the chairperson chose to include members of their faculty or individuals who may not consider themselves to be agricultural economists. Also, some chairpersons chose to include emeritus faculty in their lists, while others did not.

surveyed, but citations may be to books, unpublished manuscripts, articles in journals outside those surveyed, or even personal communications.

Data Limitations

The SSCI citation information has three technical limitations: (1) it acknowledges only the first author on a cited publication, (2) it includes self citations, and (3) it involves homographs (individuals with the same last name and initials). We dealt with the last two limitations by excluding all self citations (to the first author) and homographs in our manual count. We did not find a practical way to credit with citations individuals whose names appear after the first author.[2]

A more fundamental limitation of using citations to rank departments and individuals is that citations are only associated with part of the goods and services produced by agricultural economists. Citations are largely intra-professional kudos and show the extent to which citing authors--usually other researchers--find a person's work to be useful. Citations do not measure the productivity of teaching, extension, administration, or research done largely for non-research audiences.

Obviously, the citations a person receives partly depends on the number of other authors who are working on similar lines of research. An article on

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[2]Since SSCI compiles information on only the first author, a count that gives credit to other authors must be based on other data. It would be possible to develop this data if all of the 776 individuals in our survey provided a comprehensive list of their publications and then the SSCI was used to count the number of citations to each publication accessed by the name of the first author. This would, of course, expand the survey, and likewise the costs of doing the analysis at least by the average number of publications for individuals in the study. While it was not practical for us to do this, it may be useful for individuals who are concerned about promotion and tenure to compile their own citation counts including citations to publications on which they are not first author.

kumquats, for example, is likely to receive fewer citations than an article on corn. Also, articles that treat theoretical issues, research methods, or publications that are path breaking tend to receive more citations than do other works.

Department Rankings

Four pieces of information are presented in Table 1 about each of the 25 departments surveyed: the number of faculty members surveyed, the department's rank in 1988 based on the total number of citations, the change in their ranking since 1984, and the average number of citations per faculty member per professional year in 1988.

As can be noted, California-Berkeley ranked first in both number of total citations as well as in the average number of citations per professional year for its faculty. The Food Research Institute at Stanford University placed second in terms of number of citations as well as in average number of citations per professional year. Several faculty members with large numbers of citations on both of these faculties, however, would probably be surprised at being called agricultural economists.

As can be noted in column three of Table 1, California-Berkeley also ranked first in 1984 but Stanford and Minnesota switched second and third positions. The information in this column shows some departments moved up the citation ranking three positions or more (V.P.I., Kansas State, Oregon State, North Carolina State, and Ohio State) while other departments declined by three positions or more (Michigan State, Missouri, Oklahoma State, and Pennsylvania State).

Table 1. Ranking of 25 Departments of Agricultural Economics by Number of Citations, 1966-1988.

Rank	Department	No. of Faculty Surveyed	No. of Citations	Change in Rank Since 1984[1]	Avg. No. of Citations[2]
1	U.C.-Berkeley	15	3,889	0	14.6
2	Stanford FRI	13	1,532	+1	7.3
3	Minnesota	44	1,419	-1	2.0
4	Wisconsin	26	1,325	0	2.9
5	Ohio State	38	1,303	+5	2.1
6	U.C.-Davis	30	1,238	0	2.7
7	Cornell	40	1,188	-2	1.8
8	Maryland	22	1,150	+1	3.0
9	N.C. State	36	921	+7	1.8
10	Illinois	37	810	-2	1.4
11	Michigan State	26	717	-4	1.5
12	Texas A&M	41	707	+2	1.2
13	Iowa State	36	668	0	1.2
14	Florida	50	609	+1	0.8
15	Oregon State	35	477	+7	0.9
16	Purdue	41	465	0	0.7
17	Washington State	27	359	+2	0.8
18	Kansas State	21	340	+3	1.4
19	V.P.I.[3]	24	305	+6	0.9
20	Arizona	19	285	-2	1.1
21	Missouri	26	281	-4	0.6
22	Georgia	41	270	+2	0.5
23	Oklahoma State	32	252	-12	0.6
24	Penn. State	30	235	-4	0.5
25	Kentucky	26	190	-1	0.4

[1]Dale W Adams, "Assessing the Usefulness of Publications by Agricultural Economists Through Citations." Economics and Sociology Occasional Paper No. 1215, Department of Agricultural Economics and Rural Sociology, The Ohio State University, October 18, 1985, p. 8. The 1984 tabulation included the University of Chicago which ranked 10th that year. In 1988 the University of Chicago was dropped from the analysis.

[2]Total number of citations divided by total number of years faculty members have worked since last degree was granted.

[3]The 1988 citation count was based largely on the 1984 faculty at VPI.

Source: Social Science Citation Index.

Other ways to rank departments are by the number of their graduates who are employed by the 25 departments surveyed and by the number of citations received by these graduates (Table 2). Hiring patterns are a market indication of the quality of a department's graduate program, and the propensity of graduates to receive citations may also be associated with quality of training. As can be noted in Table 2, Michigan State and Iowa State ranked first and second in terms of the number of graduates employed in the 25 departments surveyed. In terms of number of citations received by graduates, however, California-Berkeley and Iowa State ranked first and second respectively.

The information in Table 2 includes individuals who received their final graduate degrees long ago. Restricting the analysis to individuals who received their final degree within the past 15 years provides some indication of recent changes in hiring patterns (Table 3). That is, it shows which departments have been most popular during the past decade and a half as hatcheries for new faculty hired by the 25 departments surveyed. As can be noted, Iowa State and Michigan State ranked one and two in terms of number of graduates hired, but California-Berkeley and Wisconsin ranked one and two in terms of number of citations.

Faculty Rankings

Less than 6 percent (42) of the 776 faculty members in the survey had 100 citations or more.[3] The nineteen individuals with the largest counts are shown in Table 4. Over half of the faculty members in the survey had less than six total citations and nearly one-quarter had no citations. As might be expected,

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[3]In a recent article, Colander reports that 25 economist in the U.S. had more than 1,420 total citations each. It might be hypothesized that the closer to the core of a discipline one does research, the more likely it is that the research will be cited. Conversely, research that is done further from the core--applied research--is less likely to be cited by economist who are working closer to the core or who are working in other applied fields.

Table 2: Universities Ranked by Number of Their Graduates Hired by the 25 Departments Surveyed and Total Number of Citations Received by These Graduates.

Rank	Universities	No. of Graduates Hired	No. of Citations
1	Michigan State	71	1,270
2	Iowa State	67	3,087
3	California-Berkeley	56	4,365
4	Purdue	48	458
5	Wisconsin	46	1,185
6	Illinois	44	575
7	California-Davis	31	587
8	Oklahoma State	29	350
9	Cornell	26	246
10	N. Carolina State	25	316
11	Pennsylvania State	23	346
12	Ohio State	21	174
13	Oregon State	20	927
14	Texas A & M	20	191
15	Missouri	20	164
16	Chicago	18	1,448
17	Stanford	17	838
18	VPI	15	87
19	Harvard	14	1,084
20	Washington State	14	100

Source: Social Science Citation Index.

Table 3: Universities Ranked by Number of Their Graduates With 15 or Less Years of Experience Hired by the 25 Departments Surveyed and the Total Number of Citations Received by These Graduates.

Rank	University	No. of Graduates Hired	No. of Citations
1	Iowa State	29	172
2	Michigan State	27	161
3	Purdue	26	117
4	U.C.-Berkeley	24	392
5	U.C.-Davis	23	127
6	Wisconsin	22	242
7	Minnesota	22	139
8	Illinois	22	130
9	Oklahoma State	15	106
10	Texas A&M	14	77
11	V.P.I.	13	84
12	Stanford	11	140
13	Washington State	10	52
14	Missouri	9	83
15	Chicago	9	33
16	Ohio State	9	23
17	Kentucky	8	36
18	Florida	8	20
19	Oregon State	7	65
20	N.C. State	7	47

Source: Social Science Citation Index.

Table 4. Faculty Members in 25 Departments of Agricultural Economics with the Most Citations, 1966-1988.

Name	Current Univ.	Degree Univ.	Prof. Years	No. of Citations	Avg. No.[1]
Adelman IG	Calif-B	Calif-B	34	1,472	43
Judge GG	Calif-B	Iowa State	38	842	22
Ruttan VW	Minnesota	Chicago	37	556	15
Johnston B	Stanford	Stanford	36	441	12
Fisher AC	Calif-B	Columbia	21	409	19
Tweeten, LG	Ohio State	Iowa State	27	407	15
Gallant AR	NC State	Iowa State	19	399	21
Burt OR	Calif-D	Calif-B	28	397	14
Just RE	Maryland	Calif-B	17	390	23
DeJanvry A	Calif-B	Calif-B	23	361	16
Mueller WF	Wisconsin	Vanderbilt	34	326	10
Yotopoulos PA	Stanford	Calif-LA	27	318	12
Randall, A	Ohio State	Oregon St	19	287	15
Gardner BL	Maryland	Chicago	21	262	12
Norman DW	Kansas	Oregon St	23	250	11
Bishop RC	Wisconsin	Calif-B	18	249	14
Peterson WL	Minnesota	Chicago	23	215	9
Tomek WG	Cornell	Minnesota	28	195	7
Eicher CK	Michigan St.	Harvard	28	190	7

[1]Calculated by dividing total citations by number of professional years.

Source: Social Science Citation Index.

most of the people in the top 19 have 20 or more professional years since they received their last graduate degree.

Table 5 provides a ranking of the 20 faculty members in the survey with 15 or less professional years since they received their last graduate degree who had received 40 citations or more. Also shown are the average number of citations received per professional year by these 20 individuals. It is noteworthy that one-quarter of the people on this list were trained at California-Berkeley and that another six received their last degree from private universities. There is a relationship between the number of citations young people receive in the early part of their career and the number of citations received by the faculty of the department where they received their last degree. Departments whose research is being cited by other authors tend to produce students whose later work also tends to be cited. These departments also do more theoretical work than do departments whose research is less often cited.

Citation Bias

A complaint about using citations to rank individuals is that, in practice, assigning the position of first author on multi-author publications may often depend on alphabetical order. That is, others things being equal, individuals with family names that begin with letters at the front of the alphabet would receive more credit for citations than would people whose last names begin with letters at the end of the alphabet. To test this proposition, we divided the 776 individuals in our study into two alphabetical groups--the low (M-Z) and upper (A-L) half of the alphabet. The results of the Chi Square test show a statistically significant difference between these two groups. That is, faculty members with last names in the upper half of the

Table 5. Individuals With 15 or Less Professional Years and 40 Plus Citations

Name	Current Univ.	Degree Univ.	Prof. Years	No. of Citations	Avg. No.
Chambers RG	Maryland	Calif-B	11	93	8.5
Runge CF	Minnesota	Wisconsin	8	79	9.9
Gladwin CH	Florida	Stanford	13	79	6.1
Hueth DL	Maryland	Calif-B	15	74	4.9
Hanemann WM	Calif-B	Harvard	11	68	6.2
Berck P	Calif-B	MIT	13	66	5.1
Carter CA	Calif-D	Calif-B	9	62	6.9
Bredahl ME	Missouri	Minnesota	15	61	4.1
Wright BD	Calif-B	Harvard	13	60	4.6
Chavas JP	Wisconsin	Missouri	11	60	5.5
Bockstael NE	Maryland	Rhode Island	13	57	4.4
Bessler DA	Texas A&M	Calif-B	12	56	4.7
Penson JB	Texas A&M	Illinois	15	53	3.5
Lopez RE	Maryland	Brit. Col.	8	52	6.5
Sonka ST	Illinois	Iowa State	15	50	3.3
Perloff JM	Calif-B	MIT	13	46	3.5
Chern WS	Ohio State	Calif-B	14	46	3.3
Kramer RA	VPI	Calif-D	9	44	4.9
Abbott PC	Purdue	MIT	13	40	3.1

Source: Social Science Citation Index.

alphabet have more citations than those with last names in the lower half of the alphabet.

Conclusions

Like any measure of performance, citation counts have their limitations when applied to departments or to individuals. Still, if faculty members (or departments) justify a major part of their existence on research output, citations are an efficient measure of the usefulness of part of that output. Citations document the extent to which other researchers find one's publications useful, they are a partial proxy for the overall usefulness of research, and they provide valuable information on the demand for research. In our opinion, they are a better measure of research performance than are page or publication counts. Despite incentives that propel us to publish, we should periodically ask ourselves: Are we publishing something that is useful to a significant number of others? Citations provide a concrete, though partial, answer to this question.

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