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Departmental Rankings by AJAE Publication Rates

by

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Abstract

National visibility of research programs is an important goal of most agricultural economics departments. The principle strategy for achieving national recognition of research is through publication in peer-reviewed journals. Of those, the American Journal of Agricultural Economics (AJAE) is the primary national journal for the profession. The purpose of this paper is to quantify the national exposure of agricultural economics departments by examining institutional contributions to the AJAE from 1980-89. The study ranks departments both by contribution from those who are Ph.D. recipients from an institution and from those affiliated with a department (faculty, research associates, or graduate students) when the article was published. In addition, total pages, total articles, and per capita measures of pages and articles are used for the various rankings. The results show that, with the exception of only a few departments, such rankings are quite sensitive to the selected measure. The implication is that the use of rankings should be judicious.

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Introduction

Among various goals, national visibility of research programs is an important objective of many agricultural economics departments. Departments with highly visible research output may affect policy at the national level and the direction of research priorities. These departments may also compete more effectively for graduate students, faculty and staff, and outside research funding. The principle strategy for achieving national recognition is publication in peer-reviewed journals. Of those, the American Journal of Agricultural Economics (AJAE) is considered the primary national peer-reviewed journal for the profession. Thus, one way to quantify the national exposure of agricultural economics departments is to look at authorship in the AJAE.

The purpose of this paper is to examine contributions of departments to the AJAE during the period 1980 through 1989. The study ranks departments both by contributions from those who are Ph.D. recipients from an institution and from those currently affiliated with a department (faculty, research associates, or graduate students) when the article was published (hereafter referred to as "currently affiliated"). The results show that such rankings are sensitive to the selected measure. The implication is that the use of rankings should be judicious.

While previous studies focused on productivity aspects of publication rates (Holland and Redman, 1974; Tauer and Tauer, 1984;

Simpson and Steele, 1985), the current study reflects an interest in how rankings change depending on the choice of weighting schemes and measurements. Although there are many contributors to the AJAE from other fields, this article departs from previous studies by concentrating solely on agricultural economists. The results should be of interest to departments in exploring strategic directions for the future, to graduating agricultural economists who are seeking information about particular departments, and to prospective graduate students.

Methodology

The study is based on an examination of all refereed articles and notes which appeared in the AJAE during the period 1980-1989, a total of 767 citations, involving 1530 authors. Comments and replies were not included because they usually have the sole purpose of challenging or correcting an earlier article, while invited papers delivered at annual meetings were not included because they are not peer-reviewed. For each published piece, the current and graduate school affiliations were recorded. Schools were ranked using a variety of measures for each type of affiliation. For the ranking by contributions of recent Ph.D. recipients, the measures include total pages, total articles, pages per Ph.D. recipient, and articles per Ph.D. recipient. Regarding ranking by faculty, staff, and graduate students affiliated with the department at the time of publication, the measures include total pages and total articles and pages and articles per faculty member. In the case of multiple authorship, rankings were calculated using equal weights for each author.[1]

[1] Of the 767 articles, there are: 226 single-authored articles, 353 articles with two authors, 160 articles with three authors, 23 articles with four authors, 4 articles with five authors and 1 article with six authors.

The other major approach used to rank research programs is to count citations of faculty members for each department (Beilock, Polopolus, and Correal, 1986; Opaluch and Just, 1977). This approach is justified on the grounds that it takes into account the quality, impact, or usefulness of research to the profession and is much broader than simply AJAE articles. These studies are useful if one is interested in assessing the impact various departments may have on direction of research priorities. At the same time, ranking agricultural economics departments based on number of articles or pages is useful for determining exposure or visibility of research programs. Also, quantity as well as quality is important in the promotion process.

Counting articles focuses on the exposure provided on an author, while analyzing pages adjusts for the size of the published item. Clearly ranking by pages favors those departments where authors had long articles, while ranking by articles favors a high frequency of publication. In both cases, it is appropriate to compare the absolute counts with the resource base of department in question. Thus, additional criteria are examined which are based on pages or articles per Ph.D. recipient or faculty member. The adjustment for resource base allows for more appropriate comparisons among departments.

Each author's current affiliation was determined from information provided in the article. After eliminating non-agricultural economists, and those who were not in agricultural economic departments at the time of publication, 1302 authors remained to be allocated.[2] Following methodology outlined in Simpson and Steele (1985), faculty size was determined by averaging the figures reported in Professional Workers in

[2] Many authors appeared more than one time in the count of 1302.

State Agricultural Experiment Stations for the beginning and ending time periods (1980-81, 1988-89). Faculty size, in this context, was used to count pages and articles on a per capita basis.

Each author's graduate affiliation was determined by information provided by the authors, from the American Agricultural Economics Association directory, or from annual lists of Ph.D. recipients published in the May issue of the AJAE. After eliminating those who were not graduates of an agricultural economics program, those who received masters degrees, and those whose affiliation was indeterminate, 1231 authors remained for analysis. Students receiving M.S. degrees were not counted in the graduate affiliation ranking because a list of all graduating M.S. students is not published in any single source. The number of Ph.D. degrees granted by each institution during the study period was determined from lists published on an annual basis in the AJAE.[3]

The two general categories of rankings, graduate affiliation and current affiliation, represent quite different concepts, even though in both cases the goal is to examine research output in the AJAE. When ranked by the contributions of their Ph.D. recipients to the AJAE, departments are given credit for the effectiveness of their graduate program. Such rankings imply that a department has bestowed certain training on the student, and in return the department should be credited with the associated publication output. Furthermore, that credit is extended over a fairly long period, implying that graduate training is

[3] Following methodology outlined in Tauer and Tauer, the period 1979-89 was used in counting the Ph.D. recipients, to allow for a lag in publications.

essentially a lifetime endowment that yields benefits throughout the professional career of the recipient.

By contrast, when departments are ranked by the productivity of currently affiliated faculty, it is assumed that publication output is the result of the characteristics of a given department, such as the promotion structure, the resource base, or overall orientation towards research. As such, departments are credited with publication output of its faculty, even when some of the work may have been done earlier during graduate study in a different department, e.g., thesis research is counted for current faculty.

Clearly, neither of these measures is perfect. In fact, the store of human capital that is associated with publication productivity comes both from graduate training *and* from aspects of current professional environment. However, since the appropriate weights for each component probably vary by individual it may be impossible to quantify the true mix. The strategy followed here is to examine each criterion in isolation and look for general patterns. For example, are there departments which score well regardless of the criterion applied? Do others score well only on one criterion?

Results

Publication by Ph.D. Recipients

The results of the rankings based on Ph.D. recipients are reported in Table 1, along with the rankings from Tauer and Tauer (1984), who used the same criterion to rank departments for the period 1973-82. It

Table 1. Comparison of Departmental Rankings Based on Ph.D. Recipents' Contributions to **AJAE**, Streeter-Kaiser (S-K) and Tauer-Tauer (T-T) Studies.

Institution	Pages	S-K Rank[a]	T-T Rank	Articles	S-K Rank	T-T Rank	Pages/ Degree	S-K Rank	T-T Rank	Articles/ Degree	S-K Rank	T-T Rank
U. of CA, Berkeley	299.13	1	1	29.80	1	1	4.27	2	2	0.43	2	2
U. of Minnesota	170.39	2	4	18.67	2	4	1.85	6	6	0.20	5	5
U. of CA, Davis	153.64	3	2	16.34	4	2	2.26	4	3	0.24	4	3
Purdue U.	152.62	4	6	16.46	3	5	2.42	3	13	0.26	3	11
U. of Wisconsin	113.96	5	3	11.90	5	3	1.68	7	7	0.18	8	6
Iowa State U.	79.28	6	7	9.40	6	7	0.86	14	15	0.10	13	15
Cornell U.	73.31	7	10	6.83	11	10	0.92	13	17	0.09	14	16
U. of Chicago	61.00	8	14	6.00	13	17	7.63	1	1	0.75	1	1
N. Carolina State U.	58.90	9	8	7.23	8	8	1.03	10	9	0.13	10	7
Texas A & M	58.45	10	13	6.88	10	14	0.70	16	12	0.08	16	13
U. of Illinois	57.34	11	9	6.99	9	9	0.66	17	14	0.08	17	14
Michigan State U.	54.44	12	5	6.02	12	6	0.47	19	16	0.05	20	20
U. of Missouri	54.41	13	17	7.32	7	13	1.47	8	18	0.20	6	9
U. of Florida	33.60	14	27	3.90	14	22	0.73	15	24	0.08	15	24
Virginia P.I. & S.U.	30.36	15	23	3.15	17	20	1.90	5	22	0.20	7	21
Washington State U.	24.79	16	18	3.16	16	16	0.41	20	21	0.05	19	18
Pennsylvania State U.	21.93	18	12	2.66	18	12	0.95	11	4	0.12	11	4
U. of Maryland	21.50	19	16	2.50	19	21	0.93	12	5	0.11	12	17
U. of Georgia	20.16	20	28	3.24	15	24	1.06	9	8	0.17	9	8
Colorado State U.	15.50	21	25	1.50	22	23	0.60	18	10	0.06	18	12
Oklahoma State U.	12.83	22	11	1.83	20	11	0.22	22	11	0.03	21	10
Oregon State U.	12.14	23	15	1.58	21	15	0.19	24	19	0.02	24	19
Ohio State U.	10.97	24	20	1.33	23	19	0.21	23	23	0.03	23	23
Stanford	10.80	25	19	1.33	24	18	0.24	21	20	0.03	22	22

[a] University of Guelph ranked 17th, with 23.5 pages, but is not reported here because it was not included in the Tauer and Tauer study.

is interesting to compare performance across different criterion as well as look at how rankings have changed from the previous study.[4]

In general, during the 1980-89 period, departments are ranked in a similar order when looking at either rank by absolute number of pages or articles. (The simple correlation coefficient between articles and pages is 0.96.) Notable exceptions are the Universities of Illinois and Missouri, which move into the top ten schools if ranked by articles instead of pages, and Cornell and the University of Chicago which move out of the top ten if ranked by articles instead of pages. The ranking results change even more noticeably when departmental size is accounted for by dividing by number of degrees granted between 1979 and 1988. The correlation between absolute and per capita measures is relatively low (e.g., 0.68 for pages and pages per degree and 0.72 for articles and articles per degree). For instance, the University of Chicago and VPI move into the top five schools in terms of pages per degree. These two schools also fare much better using a ranking of articles per degree, as do the Universities of Missouri and Georgia. On the other hand, Iowa State, Cornell, and Texas A&M drop out of the top ten when measured on a per capita basis for pages and articles.

There are also some interesting comparisons between the two study periods. Looking at ranks by pages, the departments that experienced a greater than five position increase in rankings from the earlier period to the 1980-89 period include University of Chicago, University of Florida, VPI, and Georgia. Those experiencing a greater than five position decrease in ranking include Michigan State, Pennsylvania State, Oklahoma State, Oregon State, and Stanford. Both

[4] The two studies have an overlap of three years, from 1980-82.

the University of Illinois and Michigan State dropped out of the top ten schools in the more recent study period. In terms of pages per Ph.D. recipient, the results are similar, but not identical. For example, the departments experiencing a greater than five position increase include Purdue and the University of Missouri, as well as the University of Florida and VPI.

There are many potential influences which could have affected the rankings of departments in the two studies. The relative size of departments has changed between the two periods. The loss of a prolific graduate student from one period to the next might account for some of the differences between rankings. Some programs may have experienced a shift toward foreign students who would be more likely to return to their native countries to publish and work. Peer-reviewed output in the more recent period may have been directed more heavily to any of the regional journals, journals with a different focus, or new journals created since the previous studies.

Publications by Current Affiliation

Table 2 presents the rankings of the top 20 departments using current affiliation by authors. Unlike the results before, the rankings are not as sensitive to whether an absolute or per capita measure is used. The simple correlations between absolute and per capita measures are much higher than in the case of graduate affiliation (i.e., 0.93 for pages and pages per faculty and 0.92 for articles and articles per faculty). This table also shows how departmental rankings based on pages and pages per faculty have changed between the Simpson and Steel study (1973-79) and the current one. With respect to pages ranking, Oklahoma State, Oregon State, Michigan State, and the Universities of California-

Table 2. Comparison of Departmental Rankings Based on Faculty Contributions to AJAE, Streeter-Kaiser (S-K) and Simpson-Steele (S-S) Studies.

Institution	Pages	S-K Rank[a]	S-S Rank	Articles	S-K Rank	Pages Per Faculty	S-K Rank	S-S Rank	Articles Per Faculty	S-K Rank
Purdue U.	326.4	1	5	39.8	1	6.94	3	8	0.85	3
Texas A & M	283.1	2	3	36.0	2	4.04	7	12	0.51	7
U. of CA, Berkeley	274.5	3	10	28.2	5	14.84	1	1	1.52	1
U. of CA, Davis	263.3	4	3	30.3	3	6.42	5	3	0.74	5
U. of Illinois	229.4	5	9	30.0	4	4.41	6	15	0.58	6
U. of Maryland	209.7	6	NA	24.2	6	9.75	2	NA	1.12	2
N. Carolina State U.	187.3	7	8	22.5	7	6.57	4	11	0.79	4
Iowa State U.	180.8	8	2	19.2	10	3.93	8	3	0.42	8
Cornell U.	177.0	9	12	20.3	9	3.44	9	13	0.39	9
U. of Florida	170.0	10	15	22.3	8	2.76	12	17	0.36	10
U. of Minnesota	142.1	12	7	18.0	11	2.84	11	10	0.36	11
U. of Wisconsin	122.4	13	1	14.6	12	2.85	10	4	0.34	12
Pennsylvania State U.	106.7	14	19	12.3	13	2.13	14	23	0.25	15
U. of Georgia	86.3	16	18	11.5	14	1.90	16	21	0.25	14
Virginia P.I. & S.U.	85.3	17	22	9.6	16	2.71	13	19	0.31	13
Oklahoma State U.	82.5	18	6	10.5	15	1.92	15	5	0.24	16
U. of Missouri	69.8	20	16	7.8	18	1.24	20	18	0.14	20
Ohio State U.	66.0	21	21	7.5	19	1.26	19	25	0.14	19
Oregon State U.	65.7	22	14	8.7	17	1.46	17	16	0.19	17
Michigan State U.	64.3	23	11	7.0	20	1.38	18	9	0.15	18

a The following rankings are not reported because they did not appear in the rankings by Ph.D. recipients: Montana State (11th), University of Kentucky (15th), and University of Arizona. The Simpson-Steele rankings are for pages and pages per faculty only because they did not do an article count.

Berkeley and Wisconsin experienced a greater than five position change between periods. In terms of pages per faculty ranking, the University of Illinois, North Carolina State, Pennsylvania State, Virginia Tech, Oklahoma State, Ohio State, and Michigan State experienced a greater than five position change between periods. Another interesting comparison is to look at the difference in the way programs are ranked by graduate or current affiliation.

Figures 1 and 2 illustrate that rankings are highly sensitive to whether graduate or current affiliation is used in the assessment. While some departments (UC Berkeley, UC Davis, Purdue) rank high whether rated by faculty or by publishing graduate students, other schools are ranked higher in one category and weaker in the other. For example, the Universities of Minnesota and Wisconsin rank among the top five departments in terms of total pages published by their recent graduates. However, these schools fall to 12th and 13th when ranked by total pages by faculty. Even more striking is the University of Maryland, which ranks 19th in pages published by their recent graduates while ranking 6th in pages published by their faculty. Finally, Texas A&M, Michigan State and the Universities of Illinois and Missouri have large differences in rankings between Ph.D. recipients and faculty. The correlation coefficient between total pages by Ph.D. recipient and total pages by current affiliation is only 0.64.

There are also some large differences in pages per department between degrees granted and current affiliation. For example, while the University of Maryland ranks 12th in pages published per Ph.D. recipient, it ranks second in pages per faculty. The University of Illinois ranks 7th in pages per faculty, but 17th in pages per degree. Other

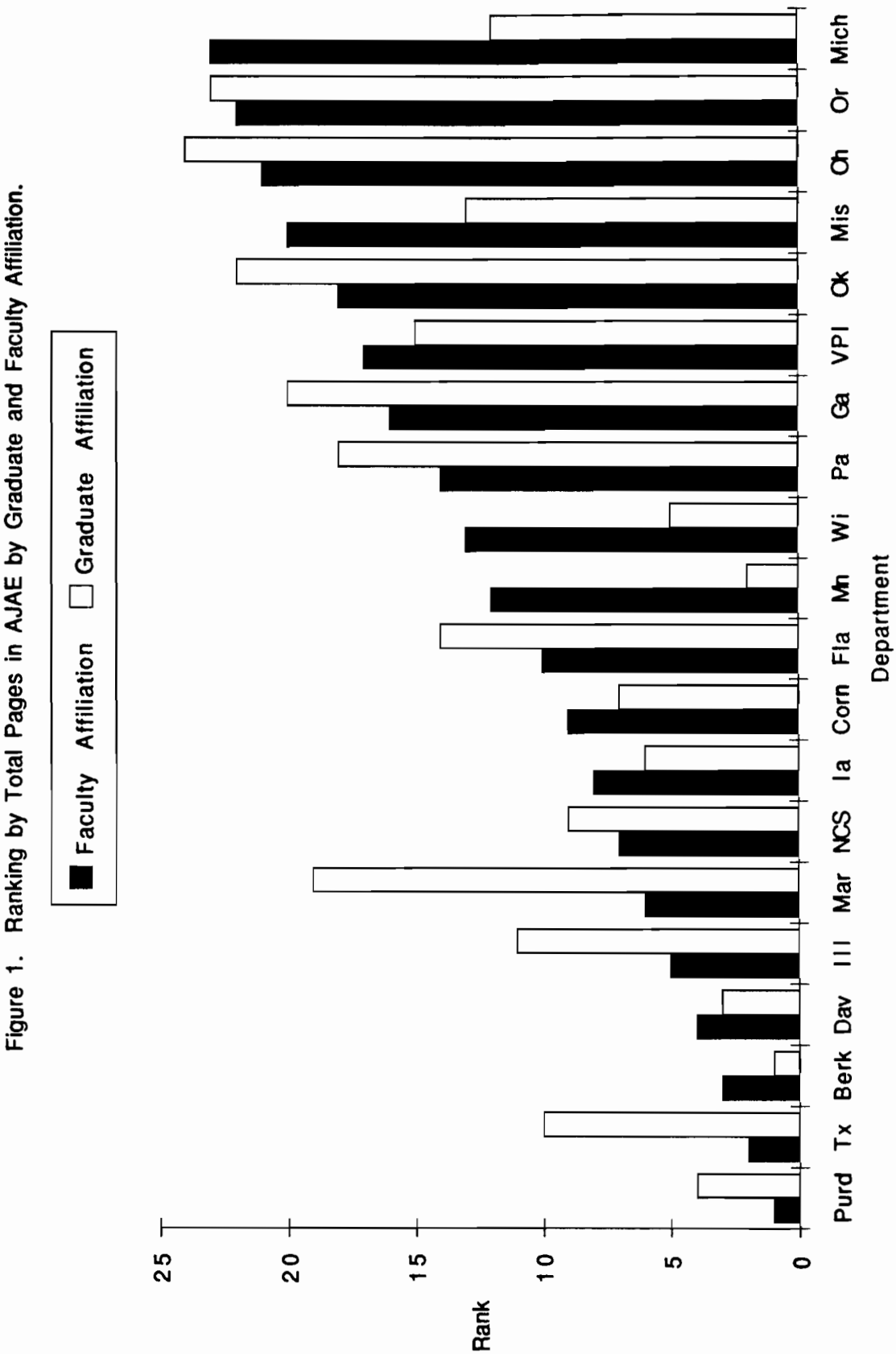

Figure 1. Ranking by Total Pages in AJAE by Graduate and Faculty Affiliation.

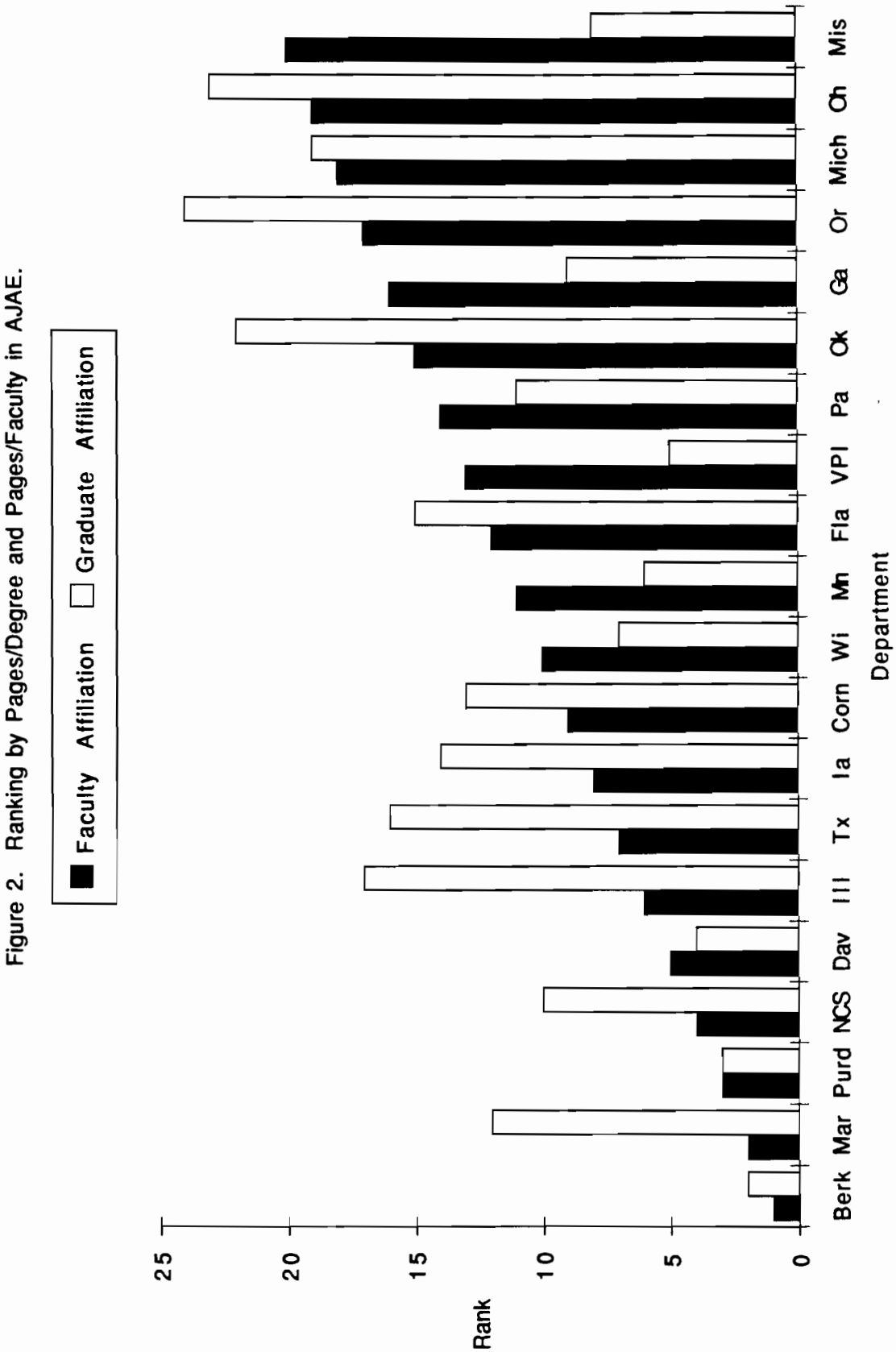

Figure 2. Ranking by Pages/Degree and Pages/Faculty in AJAE.

departments having large differences in rankings between pages per degree and pages per faculty include: North Carolina State, Texas A&M, Iowa State, and VPI. The correlation coefficient between pages per Ph.D. recipient and pages per faculty is 0.50.

The differences in rankings may be a result of several factors. Departments with a particularly prolific graduate or current faculty member will rank very differently depending on the criterion chosen. Some departments may not have strong incentives for faculty to publish in the AJAE but tend to place their graduate students in departments where such publication is emphasized. In addition, some graduate programs may be small but have the good fortune of at least one student who goes on to publish many articles.

Conclusions

The purpose of this paper was to quantify the contributions of departments to the AJAE from 1980 to 1989. Unlike previous studies, this one rated departments both by contributions from those who are Ph.D. recipients from a given institution and from those currently affiliated with a department (faculty, research associates, or graduate students).

While publication in the AJAE is too narrow a measure to be used to judge departmental research "productivity," it is a legitimate measure of national visibility within the agricultural economics profession. It is therefore important to departments in recruiting prospective graduate students, faculty, and staff. Nonetheless, the measure used to create rankings based on AJAE publications must be selected with care. The

results of this study show that the ranking of a particular department can be highly sensitive to the criterion selected.

If one is interested in seeing where graduate students are encouraged to publish after graduation, then it is useful to examine the rankings by pages per Ph.D. recipient. If one is interested in finding a departmental bias towards an AJAE publication emphasis, then it is more useful to look at the rankings by current affiliation, adjusted for resource base. Rankings can be influenced by the emphases of programs, by the strength of "mentoring" efforts in departments, and by the role of AJAE publications in the promotion process.

The study provides interesting direction for future work. It would be useful to measure productivity more broadly and to explore allocating the yield of the individuals more accurately between their graduate training and their current professional environment. The study suggests that use of the ranking in isolation can be misleading and that the results of any individual department should be examined to obtain a clearer picture of what forces are at work.

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