FOCUS AND TRENDS OF THE AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS: 1961-1985

by

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Focus and Trends of the American Journal of Agricultural Economics: 1961-1985

Periodic evaluation of a journal's focus and trends is useful. It can reveal such things as a journal's profile concerning 1) highly publishable areas, versus neglected areas of research, 2) current research methods and tools being used by the profession, and 3) the institutional affiliation and rank/classification of scholars who publish in the journal. Not only can this information assist researchers in the selection of research outlets, and readers to chose the appropriate journal to enhance their professional careers but it can also assist the journal editors to assess whether the journal has been meeting its stated editorial policy. Several journals such as the Journal of Consumer Affairs (Geistfeld and Key), Harvard Business Review and the Journal of Marketing Research (Helgeson, Mayer and Taylor), Home Economics Research Journal (Goldsmith) and the Northeast Journal of Agricultural and Resource Economics (Gempesaw et.al) have conducted similar studies.

An empirical analysis on the content of the American Journal of Agricultural Economics (AJAE) has not been previously conducted. AJAE has the highest subscription rates among the agricultural economics journals (over 3800 in 1985) and, as such, an analysis of this type is especially important for the profession. In addition, the structure of AJAE must have changed significantly during the 70's and 80's due to continuous introduction of theoretical and conceptual frameworks; innovative research methodologies created as a result of more advanced

computer capabilities, and the myriad of issues that have risen due to the internationalization of the U.S. agriculture in the 1970's.

The objective of this study is to evaluate the focus of AJAE for the period 1960-1985. Results should reveal whether the AJAE is fundamentally different today from what it was several decades ago. Moreover, it will reveal the direction the AJAE is heading.

This study proposes the following three hypotheses. The first hypothesis is that more articles are currently being published using innovative quantitative methods. The second hypothesis is that more first authors are at the lower professorial ranks because monetary rewards or tenure decisions are generally determined by the number of published manuscripts in the national and regional agricultural economics journals and finally the third hypothesis is that researchers that have either research and/or teaching appointments published more in AJAE than researchers that have heavy extension appointments or are working with problem-solving oriented institutions such as government and development agencies.

Procedure

One method to develop profiles of journals is using a technique known as content analysis. Content analysis of a journal includes using a range of analytical techniques where information is obtained showing the character of a particular journal over a specific time period. Techniques vary. They can range from simply counting the number of authors to classifying manuscripts published during the time span under consideration. The analysis of the AJAE was conducted using content analysis. Specifically, the analysis included examining 1) the secular trends of analytical methods used, 2) the rank/identification of first authors, 3) the research sub-discipline of the manuscripts, 4) the institutional affiliations of authors 5) the number of authors per manuscript and 6) the 'acceptance rates' of first authors adjusted for rank/classification distribution.

AJAE refereed journal articles from 1961 through 1985 were analyzed and classified. Notes, invited papers, comments and discussions were not included. The data collected from each article included: rank/identification of each author (up to four authors), type of institutional affiliation of each author (up to four), number of authors, year of article, subject area of article, and the analytical method used to conduct the analysis. AAEA membership rank/identification was collected from various issues of the AAEA directory. Some explanation and comments on the data classifications will follow. Subsequently, the findings will be discussed.

Subject areas were grouped into 13 categories. They were production, methodology, resource, international development, trade, development, policy, marketing, finance/taxes, supply/demand/prices, general agricultural economics, academic/research/extension, and consumer economics. The title of each article, and in some cases the accompanying abstract or keyword list, was used in identifying the subject classification of an article. For example, those articles classified under 'international development' dealt with developing countries unless it was trade oriented. In that case, the latter category was used. On the other hand, the 'development' category dealt with domestic economic and rural development issues. Articles that did not fit into any specific categories were classified in the general agricultural economics area. Articles which could have been placed in two or more subject areas were placed in that classification which provided the overriding theme of the study.

Analytical methods were classified into 13 categories. They were non-quantitative, simple quantitative, simulation, linear programming, quadratic/other programming, OLS, system regression, time-series, multivariate, risk analysis, modified ordinary least squares, conceptual and others. Non-quantitative referred to purely descriptive and graphical analysis. In the 'simple quantitative' category, articles either used simple deterministic mathematical formulas or descriptive statistics such as means and percentages. The 'simulation' category included articles that ran simulations using coefficients estimated by others or simply

using accounting equations and identities. Two and three stage least squares and maximum likelihood estimates were the main techniques in the 'system regression' category. The 'time-series' category included the ARIMA, vector autoregression and spectral analysis techniques. The multivariate category included those studies that used analysis of variance, logit, probit, tobit and discriminant analysis techniques. The risk analysis category included methods such as mean-variance analysis, portfolio analysis, stochastic dominance and game theory. The 'modified OLS' category included single equation analysis that did not belong to the 'OLS' category such as ridge and stepwise regression. The 'conceptual' category consisted of those articles that employed advance mathematics for conceptualization without empirical analysis. Articles that contained methodologies which did not fit into any of the categories were placed in the 'other' category. Suffice it to say, numerous methodologies were used throughout the years to conduct the studies whose results were presented in the journal. Some of the manuscripts during this analysis used two or more methods which overlapped. As with the subject area classification, the overriding analytical method of the manuscript was determined and chosen to be the methodological classification for that article. The methodological categories used in this analysis were designed to be broad enough to adequately cover the large number of specific methodologies encountered. At the same time they were narrow enough to provide a meaningful and inclusive methodological classification scheme.

Rank/Identification of the authors was categorized into nine groups. They were the three professorial ranks of assistant, associate and full, graduate/research assistant, U.S. government professionals, extension-related professionals, non-U.S. academicians, 'U.S. Other' such as those professionals working for Winrock International, World Bank, Resources for the Future etc. The last category is 'non-U.S. Other' such as those professionals working for development banks, CIMMYT, IRRI etc.

The distribution of AAEA membership by rank/identification was collected from past AAEA directories. The rank/identification assigned to the members was based on their stated current position.

The vast majority of the AJAE articles reviewed had no more than four authors. The rank of the authors during the period 1961 through 1963 was not reported by the journal.

The data was grouped into five periods with five-year intervals. They were 1961-1965, 1966-1970, 1971-1975, 1976-1980 and 1981-1985.

Findings

During the period 1961(1) to 1985(4) the AJAE published 1,063 articles representing 1,788 authors affiliated with numerous domestic and foreign institutions.

Analysis of the 1,063 articles by subject area revealed several interesting trends (Table 1). There was a notable increase in the percent of papers published in the finance/taxes, marketing and consumer economics areas during the period. By 1985

they were 8.7, 18.7 and 8.3 percent respectively of the total published articles. There was a decline in the percent of papers published in the international development, economic development, supply/demand/price, general agricultural economics, economic development and academic/research/extension areas. Between 1980 to 1985 the areas of production and marketing together included nearly forty percent of the articles published. This suggests that the profession places a great deal of emphasis on conducting research to assist producers in improving their productivity and increasing their marketing efficiency. The number of articles published on trade-related issues peaked during the period 1976-80 when U.S. farm economy was becoming increasingly internationalized and affected by the generally volatile and uncertain international markets.

Table 2 shows the analytical method used by authors of the published articles by period of publication. There was a definite decline in the percent of articles published employing non-quantitative, simple quantitative and linear programming for the period 1961-1985. A rise in the percentage share of articles using time-series, multivariate, risk analysis, modified OLS and conceptual methods was observed. Quadratic/other programming, OLS, non-quantitative, simple quantitative, linear programming, and systems regression methods peaked in the 70's. Time-series, multivariate and risk analysis methods began surfacing in the mid-70's . Clearly, there was a proliferation of analytical methods commencing in the 1970's. This has corresponded with the

declining use of traditional analytical tools such as linear programming, OLS , non-quantitative and simple quantitative methods.

Table 3 shows the rank/identification of the first author of an article by period of publication. There was a definite rise in the number of assistant and associate professors as first author during the period of observation. During the eighties, 58 percent of the articles published were authored either by assistant or associate professors. As between the two, assistant professors published over 40 percent more than associate professors. Among the three professorial ranks, full professor published the least with only 14 percent. This figure declined from 22 percent in the early 1960's when full professor had the highest number of published articles. The higher percent of assistant professors publishing in the AJAE could be attributed to the higher monetary returns from publishing in the AJAE (Broder and Ziemer). Aside from full professors, first authorships by U.S Government professionals, extension personnel, graduate/research assistants and non-US academicians also declined during the same period (1961-1985). U.S. Government professionals as first authors published about 16 percent in the early sixties, but by 1985 they published less than one percent of the total.

Table 4 allows one to examine the type of institutional affiliation of the authors at the time they conducted the research and the type of subject areas various institutions

focused on. As would be expected, land grant institutions published over 50 percent of the articles in most subject areas except international development and trade. In the trade subject area, U.S. government, foreign academic and non-academic affilated professionals dominated the publications. Once again in the international development area authors affiliated with foreign institutions dominated the publications in the area. Clearly, the Journal has been dominated by authors who are members of the American Agricultural Economics Association.

Table 5 shows the number of authors each article had by subject area. Forty-seven percent of the articles published during the period were written by single authors followed by 40 percent with two authors and 10 percent with three authors. For single authored articles, the subject area of international development ranked the highest with 62 percent. Most other areas had single authorship except in the areas of production, resource and consumer economics. There were more articles published by dual authors than single ones in these areas.

Table 6 shows the type of methods used by multiple authorships. The most popular analytical methods employed by single authors were non-quantitative, simple quantitative, OLS, and time-series. The rest of the analytical methods used in the articles had multiple authorship, with dual authorship dominating. The analytical methods used by dual authorship over 50 percent of the time were simulation, linear programming, system regression, mulitvariate, risk analysis, modified OLS and

conceptual. This suggests that as methods get more advanced the propensity for multiple authorship increases also.

Table 7 shows the trend of the 'acceptance rates' by rank/identification of the first author. The 'acceptance rates' were derived by dividing the number of manuscripts published by the respective number of AAEA members of the same rank/indentification during that period. The assumption is that most of the authors submitting to the AJAE are in fact members of the AAEA. The table shows in general the 'acceptance rate' per member declines through the years from .34 in 1961 to .07 by 1985 indicating keener competition in getting manuscripts published in the AJAE . There were definite declines in the 'acceptance rates' when the first author was full professor, graduate/research assistant, U.S. Government professionals and 'Non-U.S. academia' professionals. The 'acceptance rates' trend for assistant professors shows an increase.

Implications

Clearly, the content of the Journal has changed substantially in the last 25 years. Noteworthy changes are:

1. There has been an increase in the number of papers published in the finance/taxes, marketing and consumer economics areas. This could reflect the shift of research focus beyond the farmgate, specifically addressing the marketing system and consuming sector. The increase in the number of articles in the

finance/taxes area toward the end of the period may be a reflection of the farm financial crisis.

2. There was a definite trend toward employing more innovative quantitative methods to analyze agricultural problems.
3. Increasingly during the period, the senior authors tended to be assistant professors.
4. Over 50 percent of the authors during the 25-year period came from land grant universities.
5. The analytical methods used by most single authored articles were either non-quantitative or simple analytical methods such as OLS, time-series or descriptive statistics.

This study showed some definite structural changes in the AJAE during the period 1961-1985. The results of this study have supported the hypotheses stated earlier in the paper, i.e. articles were much more publishable in recent times using more innovative quantitative analytical methods; more first authors were at the lower professorial ranks and most authors came from land-grant institutions not involved with extension and applied activities.

Table 1: Subject Area of Article by Period of Publication

Subject Area	1961-65 No.	%	1966-70 No.	%	1971-75 No.	%	1976-80 No.	%	1981-85 No.	%	Percent of Grand Total
Production	38	16.2	29	16.2	30	18.1	29	15.0	46	18.3	16.1
Methodology	22	9.4	12	5.4	10	6.0	8	4.1	14	5.6	6.2
Resource	19	8.1	11	4.9	10	6.0	21	10.8	24	9.5	7.9
International Development	25	10.7	23	10.3	19	11.5	11	5.7	13	5.2	8.5
Trade	5	2.1	11	4.9	8	4.8	22	11.3	16	6.4	5.8
Economic Development	18	7.7	24	10.7	16	9.6	11	5.7	10	4.0	7.4
Policy	15	6.4	14	6.3	12	7.2	14	7.2	16	6.4	6.6
Marketing	34	14.5	34	15.2	19	11.5	26	13.4	47	18.7	15.0
Finance/Taxes	4	1.7	10	4.5	10	6.0	11	5.7	22	8.7	5.3
Supply/Demand/Prices	22	9.4	27	12.1	9	5.4	16	8.3	9	3.6	7.8
General Agr. Economics	12	5.1	9	4.0	10	6.0	3	1.6	2	0.8	3.4
Academic/Research/Extension	15	6.4	15	6.7	6	3.6	8	4.1	12	4.8	5.2
Consumer Economics	5	2.1	5	2.2	7	4.2	14	7.2	21	8.3	4.9

Table 2. Analytical Method of Article by Period of Publication.

Methods	1961-65 No.	%	1966-70 No.	%	1971-75 No.	%	1976-80 No.	%	1981-85 No.	%	Percent of Grand Total
Non-Quantitative	61	26.2	38	17.0	12	7.32	10	5.13	12	5.0	12.6
Simple Quantitative	81	34.8	49	21.9	28	17.1	35	18.0	29	12.0	21.0
Simulation	2	0.9	9	4.0	10	6.1	21	10.8	16	6.6	5.5
Linear Programming	17	7.3	14	6.3	18	11.0	19	9.7	14	5.8	7.8
Quadratic/Other Programming	6	2.6	10	4.5	14	8.5	18	9.2	20	8.26	6.4
OLS	45	19.3	71	31.7	39	23.8	32	16.4	48	19.83	22.2
System Regression	1	0.4	15	6.7	8	4.9	10	5.1	12	5.0	4.4
Time Series	0	0.0	0	0.0	1	0.6	2	1.0	4	1.7	0.7
Multivariate	0	0.0	0	0.0	2	1.2	5	2.6	14	5.8	2.0
Risk Analysis	0	0.0	0	0.0	1	0.61	4	2.1	10	4.13	1.4
Modified OLS	0	0.0	3	1.3	8	4.9	12	6.2	27	11.2	4.7
Conceptual	16	6.9	6	2.7	12	7.3	15	7.7	29	12.0	7.4
Others	4	1.7	9	4.0	17	6.7	12	6.2	7	2.9	4.0

Table 3. Rank/Identification of First Author by Period of Publication.

	1961-65		1966-70		1971-75		1976-80		1981-85		Percent of
Rank/ID	No.	%	No.	%	No.	%	No.	%	No.	%	Grand Total
Assistant Professor	20	15.1	66	29.5	54	32.5	56	28.7	86	34.0	29.1
Associate Professor	20	15.2	37	16.5	17	10.2	36	18.5	63	24.9	17.8
Professor	30	22.7	47	21.0	29	17.5	25	12.8	37	14.6	17.3
Graduate/Research Assistant	16	12.1	28	12.5	14	8.4	18	9.2	13	5.1	9.2
ERS/USDA	21	16.0	21	9.4	13	7.8	9	4.6	8	3.2	7.4
Extension Specialist	1	0.8	1	0.5	1	0.6	6	3.1	2	0.8	1.1
Non-U.S. Academia	0	0.0	0	0.0	12	7.2	7	3.6	2	0.8	2.2
Non-U.S. Other	13	10.0	6	2.7	5	3.0	9	4.6	18	7.1	5.3
U.S. Other	11	8.3	18	8.0	21	12.7	29	14.9	23	9.1	10.5

Table 4: Subject Area of Articles by Type of Institutional Affiliation.

Subject Area	Land Grant		Nonland Grant		U.S. Non-Academic		U.S. Government		Foreign Academic		Foreign Non-Academic	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Production	91	53.5	14	8.3	15	8.8	14	8.3	30	17.6	6	3.5
Methodology	37	56.9	4	6.2	4	6.2	10	15.4	8	12.3	2	3.1
Resource	46	55.4	8	9.6	5	6.0	15	18.1	6	7.2	3	3.6
International Development	40	44.4	5	5.6	10	11.1	1	1.11	14	15.6	20	22.2
Trade	27	43.6	3	4.8	5	8.1	7	11.3	13	21.0	7	11.3
Development	49	62.0	5	6.3	4	5.1	14	17.7	5	6.3	2	2.5
Policy	37	52.1	7	9.9	3	4.2	11	15.5	10	14.1	3	4.2
Marketing	98	61.6	10	6.3	17	10.7	16	10.1	14	8.8	4	2.5
Finance/Taxes	38	66.7	2	3.5	2	3.5	9	15.8	4	7.0	2	3.5
Supply/Demand/Prices	46	55.4	11	13.3	4	4.8	8	9.6	11	13.3	3	3.6
General Ag. Economics	23	63.9	2	5.6	3	8.3	5	13.9	3	8.3	0	0.0
Academic/Research/Extension	35	62.5	2	3.6	3	5.4	6	10.7	9	16.1	1	1.8
Consumer Economics	30	57.7	5	9.6	4	7.7	7	13.5	5	9.6	1	1.9

Table 5: Number of Authors by Subject Area.

Subject Area	Author Numbers 1	2	3	4
		-- percent --		
Production	38.0	42.7	15.8	3.5
Methodology	53.0	37.9	6.1	3.0
Research	39.3	42.9	15.5	2.4
International Development	62.2	32.2	5.6	0.0
Trade	40.3	40.3	17.7	1.6
Development	53.2	38.0	8.9	0.0
Policy	52.9	34.3	12.9	0.0
Marketing	43.8	41.3	11.3	3.8
Finance/Taxes	45.6	42.1	12.3	0.0
Supply/Demand/Prices	46.3	46.3	6.1	1.2
General Agr. Economics	58.3	38.9	0.0	0.0
Academic/Research/Extension	56.4	40.0	3.6	0.0
Consumer Economics	42.3	44.2	11.5	1.9
Total	47.1	40.3	10.7	1.9

Table 6: Number of Authors by Analytical Methods.

Methods	Author Numbers 1	2	3	4
	-- percent --			
Non-Quantitative	78.0	18.2	3.0	0.8
Simple Quantitative	59.0	33.3	6.8	0.9
Simulation	22.4	58.6	13.8	5.2
Linear Programming	29.6	54.3	16.1	0.0
Quadratic/Other Programming	27.9	50.0	22.0	0.0
OLS	43.8	41.6	12.9	1.7
System Regression	26.7	55.6	11.1	6.7
Time Series	71.4	14.3	14.3	0.0
Multivariate	23.8	61.9	14.3	0.0
Risk Analysis	23.1	53.9	23.1	0.0
Modified OLS	26.7	53.3	13.3	6.7
Conceptual	23.3	60.0	13.3	3.3
Others	36.0	50.0	10.0	4.0
Total	47.3	40.3	10.6	1.8

Table 7. Adjusted Acceptance Rates of First Author by Rank/ID

Rank/ID	1961-1965		1966-1970		1971-1975		1976-1980		1981-1985	
	No.[1]	%[2]	No.	%	No.	%	No.	%	No.	%
Assistant Professor	20	17	66	35	54	19	56	15	86	25
Associate Professor	20	38	37	33	17	5	36	13	63	18
Full Professor	30	54	47	57	29	5	25	5	37	9
Graduate/Res.Asst	16	23	28	11	14	4	18	4	13	2
U.S. Government	21	11	21	6	13	2	9	2	8	2
Extension Specialist	1	2	1	3	1	1	6	5	2	2
Non-U.S. Academia	0	0	0	0	12	11	7	7	2	1
Non-U.S. Other	11	12	18	8	21	6	29	4	23	2
TOTAL	232	34	224	15	166	6	195	6	252	7

1 Articles published in AJAE

2 Acceptance rate=No. of articles published/No. of AAEA member