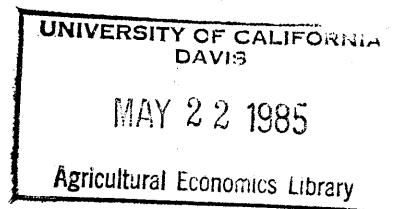


1982

Opportunities for Women in Agricultural Economics

Symposium Presented at
American Agricultural Economics
Association Annual Meetings
Logan, Utah,
August 1-4, 1982



Women

1982

PREFACE

The Committee on the Status of and Opportunities for Women of the American Agricultural Economics Association (COWOP) has recognized two formal discussions of women's comparative status and opportunities in the profession. The first was an invited papers session at the Association meetings at Clemson University in July of 1981. Papers presented at that session were published in Volume 63, Number 5 of the American Journal of Agricultural Economics which appeared in December, 1981. The second was an Organised Symposium held at the Association meetings at Utah State University in August, 1982. The papers presented, that formed the basis for the discussion that followed, appear in this volume. One of the papers is a report of the analysis of data on job search from the survey of women working as agricultural economists authorized by the Executive Board of the American Agricultural Economics Association in July 1980 and conducted in early 1981 (Lundeen and Clauson*). One utilized data from the Committee on the Status of Women in the Economics Profession surveys as well as the COWOP survey. Two are based on further surveys conducted by the authors.

From her survey, Offutt found that although fewer than five percent of the membership of the American Agricultural Economics Association are women, almost a quarter of enrolled graduate students in Departments of Agricultural Economics in 40 universities in the United States are women. Eighty percent of the women were in Master's Degree programs as opposed to 60 percent of the men. The majority of the women in the Cornell sample had urban/suburban background, were single, capable and committed. They tended to specialize in the non-traditional areas of agricultural economics. She concluded that they needed exposure to the traditional areas in the field and career counseling if they are to understand the breadth of career possibilities in agricultural economics and the value of a Ph.D.

Clauson found women averaged more interviews at meetings of the American Agricultural Economics Association but, on average, received fewer job offers as a result of just these interviews. After follow-up interviews women, on average, received more job offers than men. State colleges or universities and government, the two types of prospective employers pressed to conform to Affirmative Action plans accounted for the higher average of job offers for women. Men, on average, received higher salaries on accepting positions with state colleges and universities or private firms, but they were older and had more years of work experience.

*Lundeen, Ardelle A. and Annette L. Clauson, "The Conduct of the Survey on the Opportunities for and Status of Women in Agricultural Economics". Am. J. of Ag. Econ. 63 (1981) : pp. 1010-1021.

Since both the Offutt and Clauson studies are based on small samples, results cannot be said to be definitive but they are indicative.

Gladwin used a telephone survey and a decision model to predict under what circumstances women with Ph.D.s in Agricultural Economics in the United States would limit their job search due to geographic immobility. She found two-career marriages do tend to result in geographic immobility for the women. When job searches are limited to a given geographical area women are likely to settle for a "less suitable" job than they are qualified for unless they also search for a business or government position in a large metropolitan area.

Redman wrote about hiring and tenure prospects for women in agricultural economics. She reported a disproportionate number of those with Ph.D.s were employed outside of academia, primarily by the federal government. Compared to men, very few women with Ph.D.s obtained their first job in agricultural economics departments. Her sample was too small for any firm conclusions but her tentative conclusions were that discrimination does exist and has existed at the hiring level in academic agricultural economics. She added that discrimination at this level is eroding but slowly, too slowly for evidence on sex discrimination in the tenure decision, made between five and seven years after hiring, to be conclusive at present.

In short, women are now enrolled in graduate programs in agricultural economics in significant numbers but despite Affirmative Action programs, they still have some barriers to overcome if they are to move into the profession on a par with men.

TRAINING AGRICULTURAL ECONOMISTS:

ARE WOMEN DIFFERENT?

by Susan E. Offutt*

Agricultural economics is a discipline dominated by men with farm backgrounds, but the number of women is growing. Thus, questions can be raised about the backgrounds, career goals, and career-related problems of women in agricultural economics. For example, what factors encourage or discourage women from entering agricultural economics? Such questions were addressed by the American Agricultural Economics Association (AAEA) Committee on Women's Opportunities (COWOP), but their survey's sample was small and included very few graduate students. This paper provides additional evidence about the motivations and career goals of women graduate students in agricultural economics based on a survey of students at Cornell University.

Fewer than five percent of the AAEA's membership are women. While almost a quarter of presently enrolled graduate students are female, they remain a minority group within the profession. The assimilation of an increasing number of women can be expected to have an impact on the profession to the extent that the orientation and motivation of women differ from that of traditional agricultural economists. This survey seeks to illuminate the nature and extent of possible differences and considers their implications for women's future experiences in the discipline. In addition, the reciprocal effects of women on the profession are examined. The criteria by which the differences are judged are: socio-economic characteristics; motivation for pursuing graduate study in agricultural economics (and at Cornell in particular); areas of specialization and prior academic background; and expectations about graduate education.

In the past, women have perceived the existence of barriers to their advancement as professional agricultural economists. While the experiences of older women will have been different than those of their younger colleagues (who benefit from the achievements of those who go before), these barriers may still be an influence on the assimilation

*Susan E. Offutt is currently an Assistant Professor at the University of Illinois. At the time of the study she was a research support specialist in the Department of Agricultural Economics, Cornell University. The author would like to thank Shanna Ratner for her assistance in formulating and analyzing the summary and Dr. Olan Forker, Chairman for the Department's financial support of the survey.

of women into the field. Using the results of the 1981 COWOP survey, Lane determined that the women

...had, for the most part, been dissuaded from becoming agricultural economists, found they had problems with consumption management, had spouses with negative attitudes toward their working, lacked role models, found they were professionally or socially isolated on the job, felt that they had employers who lacked perception of their potential, and had been questioned excessively about family affairs during interviews. (p. 1029)

While some of these barriers (in particular, the last three on the list) do not come into play until after a woman's entrance to the job market, their existence can be anticipated by women currently in graduate school. The results of this survey can be used to determine the extent to which women in graduate school now feel they have been discouraged from becoming economists and have suffered from a scarcity of role models. A number of barriers are associated with a woman's marital status, i.e., consumption (household) management, spouse's attitude, and employer's interest in family affairs. Thus, married women might face greater impediments to career advancement than single women. The survey can identify marital status and future plans which bear on these issues.

Women's acceptance and participation in the profession may be reflected in their graduate school experience and also influenced by their choice of academic specialization. In particular, the survey results can provide the basis for comparison between men's and women's academic achievements which determine their relative quality as students and thus their opportunities and attractiveness in the job market. The existence of colleges of home economics at land grant institutions has left its imprint in the proportion of women concentrating in consumer and human resource economics. Does the present generation share this predilection or are women interested in traditional areas such as farm management and production? Again, the survey results will provide information on these facets of women's experiences.

The original COWOP questionnaire (itself based on an American Economics Association form) provided the basis for the Cornell survey, although modifications were necessary to make it relevant for graduate students. Both female and male students were sampled. The results of the survey provide new information on the status and future of women in agricultural economics through its concentration on graduate students. Further, a prototype questionnaire has been developed that can be used in constructing a form for use in a comprehensive survey of all graduate schools of agricultural economics. In addition, the department at Cornell should obtain some insight into its appeal to both males and females as a place for graduate study.

CONDUCT OF THE SURVEY

The Cornell graduate student population available for sampling in the fall of 1981 was composed of 23 females and 68 males. All women were surveyed. A matching sample of 23 men was chosen randomly. The only restriction on the sample of men was that the proportion of foreign students did not exceed that found in the departmental student population. This limit was deemed necessary because over 85 percent of the women were domestic U.S. citizens. Therefore, to help assure some degree of comparability between the two groups, the proportion of foreign students could not be too great. No control was made so that the number of Ph.D. men in the sample reflected that of the male population, although the drawing did come out approximately correct (about one-third of the men's sample were doctoral candidates, compared to slightly less than fifty percent in the total male population).

The survey was distributed through intradepartmental mail; students were allowed ten days to complete and return it. The response was 19 out of 23 for the women and 20 out of 23 for the men. All completed questionnaires were used in reporting and analyzing the results. Although the identities of the respondents were known to the researchers, the completed questionnaires were coded numerically to preserve anonymity. A copy of the complete questionnaire is included in the appendix. Further information on responses is available from the author upon request.

STATISTICAL OVERVIEW

In order to provide some basis for comparison on enrollment composition, 40 other graduate departments of agricultural economics in addition to Cornell were queried about relative numbers of men and women in total and by degree program. The departments surveyed enrolled about 1900 total graduate students, of which some 460 women. Table 1 shows the percentage breakdown by sex and degree category for all schools surveyed.

TABLE 1

NATIONAL SURVEY : ENROLLMENT BY CATEGORY

DEGREE PROGRAM	% OF TOTAL	
	WOMEN	MEN
M.S.	19	45
Ph.D.	5	31

This table shows that 24 percent of the graduate enrollment is composed of women, most of whom are Master's candidates. Looking at the national

data: another way, 30 percent of all M.S. candidates and 14 percent of all Ph.D. students are women. At Cornell, women also represent 24 percent of the total graduate population. Between degree categories, 31 percent of Cornell's M.S. and 16 percent of its Ph.D. students are female. This distribution is quite similar to that found in the national survey.

To put these figures in perspective, consider that, according to National Science Foundation data, 23 percent (about 4000) of all 1981 doctorates in engineering and the physical, mathematical, life and social sciences were awarded to women (Vetter, p. 1314). (A decade earlier, the figure was only ten percent). Of these Ph.D.'s earned by females, 86 percent were in the life sciences (33 percent) and social sciences (53 percent). Within the social sciences, 35 percent of all 1981 doctorates were awarded to women.

While enrollment is not an accurate predictor of degrees awarded in any one year, the data would suggest that agricultural economics lags behind its sister disciplines in the social sciences in the proportion of Ph.D.'s which are earned by women. The performance of agricultural economics, though, is slightly better than that of economics, in which 12 percent of the 1980/81 Ph.D.'s were women (Bailey, p. 439). This rate of participation of women is comparable to that of the physical sciences, in which only 12 percent of 1981 doctorates were female (Vetter, p. 1314).

As for M.S. degrees, Vetter states, "Although women with master's degrees make up half of all women scientists (the figure is 37 percent for men), we know relatively little about the status of women scientists below the doctoral level" (p. 1314). In the graduate student body in the 40 departments surveyed, eighty percent of the women enrolled are M.S. students. For graduate men, sixty percent are M.S. students. These proportions are the same for graduate students in economics awarded M.A. and Ph.D. degrees (Bailey, p. 439). The higher overall fraction of M.S. students in agricultural economics and economics compared to the total science population is probably attributable to the fact that it is less usual to award master's degrees in other than the social sciences. Within agricultural economics, however, the general case, that proportionately fewer women than men hold doctorates or are studying for same, is reflected.

SURVEY RESULTS

BACKGROUND CHARACTERISTICS

Students come to graduate school from different backgrounds, with different academic and family experiences, and at different stages of their lives. All these factors can be expected to influence an individual's intellectual orientation and career aspirations. To determine whether women and men displayed consistent differences in these background

characteristics, data on age, marital status, family characteristics, and academic achievement and preparation were obtained from each respondent. These results are reported in Table 2.

In general, the women tend to be younger than the men (an average age of 26 versus 28.5) and are more likely to be single (an interesting aside - all married females are Ph.D. candidates). In terms of family characteristics, a higher proportion of women's than men's fathers hold college and advanced degrees; for mothers, the differences are not so marked. An optional question about family income was included. Among those who responded (more than 75 percent), women's families appear more affluent. Sixty percent of their families had annual incomes over \$50,000, compared to about 30 percent of those of the men. Ninety percent of the women were raised in urban or suburban areas; only two thirds of the men were. Men were more likely to have been raised in New York state (one third) than were women (one tenth).

As for academic preparation, half of the women attended private undergraduate institutions, versus a quarter of the men. Another third of the men graduated from land grant institutions, as did one fifth of the women. Taken together, land grant institutions were attended by thirty percent of the total sample. By comparison, Schrimper reports that, during the period 1975-1977, two thirds of all Ph.D.'s in agricultural economics had attended land grant universities as undergraduates (p. 17). Cornell, therefore, may be atypical among graduate schools of agricultural economics in drawing a large proportion of students from other public, non-land grant and private schools.

In Table 2, the distribution of undergraduate majors reflects the types of undergraduate institutions attended. More men than women majored in agricultural economics, as more men attended land grant colleges where the major would be part of the curriculum. Sixty percent of the men majored in agricultural economics or economics, compared with about fifty percent of the women. More women than men (42 versus 25 percent) majored in fields outside the social sciences. As for rank in college class, 75 percent of the women graduated in the upper decile versus 45 percent of the men. However, men were slightly more likely to have finished in the upper two percent (25 versus 16 percent). In terms of subjects taken, women tend to have had more economics and calculus but fewer courses in applied quantitative subjects (econometrics, linear programming) than men (perhaps, again, reflecting the fact that these latter subjects are more likely to be offered in an undergraduate agricultural economics than economics department.) This data dispels ideas about women's supposed deficiencies in mathematics.

TABLE 2

BACKGROUND CHARACTERISTICS OF SAMPLED STUDENTS,
CORNELL UNIVERSITY 1982

	% OF TOTAL	
	WOMEN	MEN
<u>PERSONAL</u>		
Current age		
21 - 23	26	17
24 - 26	37	0
27 - 29	21	50
30 or over	16	33
Marital status		
Single	84	40
Married	16	60
Father's education (by degree)		
Advanced	50	35
College	28	10
High School, other	22	55
Mother's education (by degree)		
Advanced	17	5
College	33	30
High School, other	50	65
Family Income (optional)		
\$25,000 or less	9	16
\$26,000 - \$50,000	33	56
\$50,000 or more	58	28
Type of area where raised		
Rural	10	35
Urban/Suburban	90	65

TABLE 2. (Cont.)

% OF TOTAL

WOMEN MEN

State where raised

New York	8	30
Other and foreign country	92	70

ACADEMIC

Type of undergraduate institution

Land grant	19	35
Other public	31	41
Private	50	24

Undergraduate major

Agricultural economics	5	25
Economics	42	35
Other social science	11	15
Other sciences	21	10
Humanities	11	5
Other	10	10

Rank in College class

Upper 2%	16	25
Upper 10%	58	20
Upper 25%	6	30
Upper 50%	10	5
Not applicable/available	10	20

College subjects

Principles of economics	90	85
Additional economics	74	50
Calculus	74	55
Advanced mathematics	11	10
Statistics	68	75
Econometrics	26	35
Matrix algebra	32	40
Linear programming	5	25

TABLE 2. (Cont.)

	% OF TOTAL	
	WOMEN	MEN
First year graduate GPA		
4.3 - 4.0	18	9
3.9 - 3.7	18	23
3.6 - 3.3	32	41
3.2 - 3.0	9	23
3.0 and below	13	4
Primary academic speciality		
Intl. trade & development	39	25
Natural resources	26	20
Farm management	5	15
Ag. finance	0	15
Ag. marketing	10	10
Agribusiness management	0	5
Research methods	0	5
Ag. policy	10	5
Human resources	5	0
Consumer economics	5	0

In general, then, women and men appear equally capable and well-prepared for graduate study in agricultural economics. To see how each group subsequently fared over their first year of graduate coursework, the cumulative grade point average (GPA) for this year was obtained for each respondent (these figures were delivered to the researchers in a random order with no names attached). On average, women had a GPA of 3.49 and men one of 3.44. Table 2 shows the distribution across letter grade divisions. That for men is bell-shaped and symmetric; that for women is more evenly distributed over the higher grades. However, the cumulative distribution above 3.3 is about the same for both sexes, about seventy percent. Judging by this information, which may be an imperfect indicator of overall success in graduate school, men and women perform equally well, although women are more likely to be at the very top or bottom of the grade distribution.

Areas of primary academic specialty which indicate future professional orientation were reported by each respondent (Table 2). Sixty-five percent of the women and forty-five percent of the men listed concentrations in international trade and development or natural resources. The proportion of men in traditional specialities within the discipline (management, finance, marketing) was 45 percent, compared with only 15 percent of the women, who were more likely to be in policy analysis or human resource and consumer areas. Redman, in analyzing