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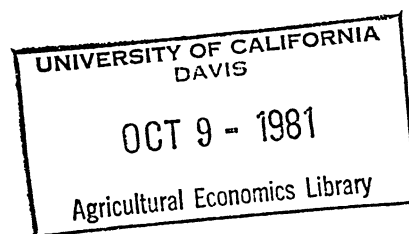
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THE WOMEN WHO BECOME AGRICULTURAL ECONOMISTS

Barbara J. Redman

University of Georgia

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THE WOMEN WHO BECOME AGRICULTURAL ECONOMISTS

Agricultural economics is a field which traditionally has been dominated almost exclusively by men. Until recently it was highly unusual to find a female agricultural economist; even now, women form a minority in agricultural economics degree programs and comprise less than 5% of the AAEA membership. What motivates women to enter an all-male or mostly-male field? How do their family and academic backgrounds differ from these of their male counterparts? What affects whether or not they go on to pursue a Ph.D. degree in agricultural economics?

Personal and Family Characteristics

Contrary to what one would expect from the recent growth in numbers of women in agricultural economics, women agricultural economists in general are older than their male counterparts. 47.8% of the women are over 50 years old, compared to only 26.6% of the men. In contrast, only 9% of the women are under 35, compared to 41.8% of the men. The year in which the Ph.D. was received supports this; 76% of the women who had Ph.D.'s received them before 1960, while this is true of only 51.9% of the male Ph.D.'s. Nor does there appear to be a positive trend among the women; 1975-77 appears to be the highwater mark for female Ph.D.'s, even allowing for different widths of time intervals recorded. It is possible that many of the older women originally received their Ph.D.'s in a specialty other than agricultural economics (such as general economics) and later switched their interests to agricultural economics.

*Biased Reporting.
But how
many are the
women in total?*

Women tend to have received all their degrees at slightly earlier ages than men, possibly because men may have had to take breaks from school to support themselves or a family; the major exception is at the Ph.D.

level, where a larger percentage of women than men over age 40 receive Ph.D.'s. The back-to-school trend currently evident among older women may operate here.

Far fewer women than men are currently married and far more have never married. This may be due to the difficulties of balancing professional and home responsibilities. Of those that do marry, women's spouses are far more likely to have a graduate degree of their own than are men's spouses. Similarly, women's spouses have higher incomes than men's spouses, and women's incomes form a smaller percentage of total family income than do male agricultural economist incomes. This fits with usual demographic patterns, in which the husband usually has at least the same education and income level as the wife, if not greater.

Women were less likely to have ever had children than men, although part of this is due to the higher frequency of never-married status. Of those that have had children, women agricultural economists had their first child at earlier ages than did men. More women than men had already completed their highest degree at the time of the first child's arrival; again, this may reflect a segregation over time of professional and domestic priorities.

The Decision to Enter Agricultural Economics

Most agricultural economists, male and female, made their choice of field during college. However, men were more likely to make this decision at this time than women. Women were relatively more likely to make the choice during graduate school. Agricultural economics, by virtue of its male dominance, may not have occurred to women as a viable career choice during their earlier years of education.

However, in making the choice, women more often than men were guided by interest in the subject area. Men were relatively more likely to consider the personal economic opportunities in this field and to view it as an outlet for use of particular individual skills.

This motivational pattern carries over into women's vs. men's expressed reasons for pursuing their highest degree and (among those who did not pursue a Ph.D.) for leaving school. While both sexes listed the requirements of a career and personal satisfaction as major reasons for getting their highest degree, half the women also listed interest in school as a major reason while only slightly over a third of the men did so. (More than one reason could be listed by a respondent). Conversely, among those who did not pursue a Ph.D., more than twice the percentage of women than of men made this choice because they were tired of school. Somewhat surprisingly, women were less likely than men to discontinue education because of family and other non-career priorities, but this may also reflect the much higher percentage of never-married women. Intellectual interest, then, appears to be the guiding motivation characteristic of women agricultural economists.

Women are often overtly and/or subtly discouraged from entering traditionally male fields by parents, other family and friends, and school teachers and counselors (Weitzman, p. 121). However, some research has suggested that whether or not a girl's mother works outside the home may significantly affect a girl's perception of gender differences and appropriate career options (Weitzman, p. 135). A working mother's daughter is less likely than a full-time housewife's daughter to devalue women's abilities (Kreps, p. 115) and more likely to pursue a nontraditional professional career (Weitzman, p. 135). The encouragement a woman receives

from her mother to pursue a professional career may thus affect whether or not she continues on to receive a Ph.D.

Fathers also have an impact; one study (Weitzman, p. 136) found that more highly successful daughters had fathers who not only encouraged their daughters but made their love and approval of the daughters conditional on the daughters' performance. (Similar findings exist for mothers and sons). Professors also may guide student aspirations, and the sex of the professor makes a difference; one University of Chicago study (Freeman) showed that although all "significant others" were more likely to encourage graduate study and careers for males than for females, the difference in percentages of favorable response was much less for female college faculty than for other sources of influence.

In the present survey, men almost always cited males as their most influential role models; most often cited were fathers and teachers. While women also cited fathers and teachers most often, more diversity existed in their responses. In particular, women listed female teachers more often than male teachers, and mothers appeared to exert significant influence. Women identified females almost as often as males as their most influential role models, while men almost never listed females.

Both sexes most often listed professors as the people who most encouraged a professional career; the greatest differences between male and female responses occurred for friends (more important for men) and professors and mothers (more important for women). Almost all men said that no one attempted to dissuade them from a professional career; while the majority of women concurred, women also reported a variety of dissuasive influences.

Academic Background

While men were more likely than women to rank in the upper 25% of their college graduating class, women were more likely to rank in the upper 2%. Men were somewhat more likely to have had statistics and advanced mathematics courses as undergraduates, but women were more likely to have taken calculus, economic principles, and advanced (general) economics. Men were more likely to have been agricultural economics majors as undergraduates, although, like women, many men also turned to graduate agricultural economics from other undergraduate majors. In general, then, women have had more background in general economics than men, while men's academic background has been more agriculturally oriented.

Contrary to what the literature on women's career paths indicates, women Ph.D. recipients were about as likely as men to have interrupted their Ph.D. study. This again may be partly because women agricultural economists are more likely than men to have never married and to never have had children (or at least to begin having children after the highest academic degree was completed); thus, home responsibilities of women and men may be roughly comparable. However, when women did interrupt their Ph.D. study, it was more likely to delay the dissertation and for more extended periods of time. Surprisingly, men were more likely than women to delay the dissertation because of home responsibilities, and women more likely to delay in order to gain job experience. Although women were less likely to receive assistantships, and during Ph.D. coursework provided their own financial support somewhat more often, during the dissertation period they were more likely to rely on fellowship support and less likely to rely on working their way through. During both phases, women were less likely than men to receive aid from relatives as a major source of financial support.

Also contrary to popular opinion, women agricultural economists were more willing to move more than 100 miles to a job which offered higher pay than were men. The increased likelihood that female agricultural economists have never married may contribute to this result, although since for the majority of married couples the man's career still takes priority, one would expect at best an equalization of mobility of men with predominantly single women. However, women were more likely than men to have moved in the past because of family preferences.

Both sexes were more likely to concentrate on agriculture and natural resources as primary professional specialties; of these, women were about evenly divided between agriculture and natural resources. However, women more frequently than men listed consumer economics as their primary specialty (9 of the 13 900-classifications were in 920, consumer economics) and less frequently listed economic growth and development and business.

Factors Which Affect Completion of a Ph.D. Degree

Based on the factors discussed above, a ^{logit} model was constructed to explain the decisions of women and men to pursue and complete a Ph.D. degree. First, the later in school the person made the choice of field, the more immediate the possibility of getting the Ph.D. and the more likely that it would be undertaken and completed. Second, the primary reasons for choice of field were considered; perhaps if one chose the field because of personal interest in it, one would continue as far as possible in its study, while if one chose it because of economic opportunity one could find sufficient opportunity at the bachelor's or master's levels. The encouraging influences of father, mother, and teacher were discussed

previously; also included in the model were the lack of any encouragement and the lack of any discouragement. Those of highest academic ability were hypothesized to be more likely to complete the Ph.D.; those never married were presumed to have been more free to concentrate on graduate study.

As expected, men and women responded differently to these factors; however, not all of the predicted effects held at the 10% level of significance. Most unexpected was the negative effect of never-married status. It appears that for both sexes, the married individuals are more likely to complete the Ph.D. For both sexes, the later in life the decision was made to enter agricultural economics the more likely the Ph.D. completion. No effect of reasons for choice appeared for either sex. College academic rank (1 = highest, 5 = lowest) was a significant factor for men but not for women. Men and women responded completely oppositely to most encouraging (and discouraging) influences. Men responded favorably to encouragement from fathers and teachers, although they apparently needed some challenge against which to respond as seen from the negative effect of lack of discouragement. Mother's influence could not be analyzed for men because very few men listed mothers as the people who most encouraged their careers. Either women responded negatively to encouragement from fathers and teachers (and surprisingly, not at all to mothers) or, more likely, the professional careers women were encouraged to undertake did not require a Ph.D. The model explained Ph.D. completion better for men than for women.

Conclusions

Women agricultural economists do differ from their male counterparts primarily in family situation and professional motivation. They are more

likely to have never married, or at the least to have completed academic preparation before turning to child-rearing. When married, they are more likely to have married men of equal or higher education background and income, and to possess a Ph.D. degree, but yet at the same time they appear to have largely resolved problems of career mobility. They are likely to be older than the males, on the whole (partly because of greater numbers of returning women students), and to have been more greatly influenced by female role models. Although they tend to have had a more general-economics-oriented academic background than the men, they presently specialize to no lesser extent in agriculture and natural resources. In keeping with the academic stereotype, however, they do choose human-oriented specialties more often than business-oriented specialties, while for men the reverse is true. The distinctive career motivation among women agricultural economists is intellectual interest, as compared with greater emphasis by men on market considerations. It will be interesting to see if these patterns continue over time as women's participation in agricultural economics increases, and whether the character of agricultural economics research output changes as a result.

REFERENCES

- Freeman, Jo, "How to Discriminate Against Women Without Really Trying" in Jo Freeman, ed., Women: A Feminist Perspective. Palo Alto, Calif: Mayfield Publishing Co., 1975, p. 194-208.
- Moore, Kristin A. and Isabel V. Sawhill, "Implications of Women's Employment for Home and Family Life" in Juanita M. Kreps, ed. Women and the American Economy: A Look to the 1980's, Englewood Cliffs: Prentice-Hall, Inc., 1976; p. 102-122.
- Weitzman, Lenore J., "Sex-Role Socialization," in Jo Freeman, ed. Women: A Feminist Perspective. Palo Alto, Calif: Mayfield Publishing Co., 1975, p. 105-144.

	<u>Year of Birth</u>					
	Before 1931	1931-1940	1941-1945	1946-1950	1951-1955	After 1955
Women	47.8%	9.0%	6.0%	4.5%	3.0%	1.5%
Men	26.6	19.0	12.7	21.5	15.2	5.1

	<u>Year of Ph.D.</u>					
	Before 1960	1960-1969	1970-1974	1975-1977	1978-1979	After 1979
Women	76.0%	5.2%	4.2%	8.3%	3.1%	3.1%
Men	51.9	19.0	11.4	8.9	2.5	6.3

	<u>Age at which received BA/BS</u>					
	≤ 21	22	23	24-25	26-29	≥ 30
Women	19.6%	55.4%	12.0%	5.5%	4.3%	3.3%
Men	10.6	46.0	18.4	11.9	9.2	3.9

	<u>Age at which received MS</u>					
	≤ 22	23-25	26-28	29-31	32-34	≥ 35
Women	5.3%	46.7%	23.6%	14.5%	3.9%	3.9%
Men	1.5%	42.7	30.9	13.2	5.9	5.9

	<u>Age at which received Ph.D.</u>						
	≤ 24	25-27	28-30	31-33	34-36	37-39	≥ 40
Women	4.3%	17.4%	34.7%	17.4%	13.0%	0.0%	12.6%
Men	2.3	7.0	35.0	27.9	16.3	7.0	4.6

	<u>Marital Status</u>		
	Currently Married	Have been married	Never married
Women	46.7%	12.0%	41.3%
Men	81.0	2.5	16.5

	<u>Spouse's level of education</u>						
	< High School	High School	Some College	BA/BS	Some Graduate School	Graduate School	N/A
Women	1.5%	3.0%	4.5%	6.0%	9.0%	47.8%	28.4%
Men	0.0	10.3	19.1	27.9	8.8	27.9	5.9

		Spouse's Income									
		Unemployed	< \$5,000	\$5,000-9999	\$10,000-14999	\$15,000-19999	\$20,000-24999	25,000-29999	\$30,000-39999	\$40,000-49999	≥\$50,000
Women		1.5%	3.1%	7.7%	10.8%	7.7%	7.7%	13.8%	7.7%	4.6%	6.1%
Men		24.2	33.3	6.1	9.1	15.2	6.1	1.5	0.0	0.0	0.0
Percentage of total family income which respondent's income comprises											
Not Married		0-24%	25-49%	50%	51-74%	75 - 100%					
Women		53.3%	3.3%	18.8%	8.9%	9.9%	5.5%				
Men		20.8	0.0	2.6	1.3	18.1	57.2				
Have ever had children											
Women		27.7%									
Men		58.4									
Age at which had first child											
<22		22-25	26-29	30-33	34+						
Women		22.9%	15.3%	26.9%	26.8%	7.7%					
Men		9.0	28.6	30.3	25.0	7.2					
Had completed highest degree at time of first child											
Women		46.2%									
Men		33.9									
Time of decision to enter agricultural economics											
During High School		During College		During Graduate School		During Employment					
Women		4.2%	44.8%	27.1%	24.0%						
Men		6.3	59.5	10.1	24.1						
Reason for choice of agricultural economics											
Interest in Subject		Male field	Economic gain	Social service	Use particular skills	Circumstance	Other				
Women		50.0%	1.1%	15.9%	13.6%	8.0%	6.8%	4.5%			
Men		31.9	0.0	31.9	11.1	18.1	1.4	5.6			
Major reasons for getting highest degree											
Needed for career		Interest in school		Good Stipend	Personal Satisfaction and non-market benefits						
Women		79.5%	50.0%	13.4%	71.9%						
Men		79.5	35.3	18.2	78.3						
Reason for not pursuing a Ph.D.											
Tired of School		Other job-related Priorities		Finances	Family and non-market Priorities		Other				
Women		37.1%	34.3%	14.3%	2.9%	11.4%					
Men		16.7	33.3	11.1	11.1	27.8					

	<u>Primary Role Model</u>		Male Relatives	Female Relatives	Male Teacher	Female Teacher	Other Males	Other Females
	Father	Mother						
Women	24.1%	15.2%	5.1%	2.5%	15.2%	22.8%	7.6%	5.1%
Men	29.9	6.0	10.4	0.0	37.3	3.0	12.0	1.5

	<u>Person who most encouraged a professional career</u>					Other relatives	Friends	Employer
	No one	Professors	Father	Mother	Spouse			
Women	14.0%	52.7%	11.8%	10.8%	2.2%	1.1%	5.4%	2.2%
Men	13.0	45.5	15.6	3.9	1.3	5.2	14.3	1.3

	<u>Person who most discouraged a professional career</u>					Other relatives	Friends	Employer
	No one	Professors	Father	Mother	Spouse			
Women	77.5%	4.5%	1.1%	3.4%	2.2%	3.4%	5.6%	2.2%
Men	92.1	1.3	3.9	2.6	0.0	0.0	0.0	0.0

	<u>Academic Rank in college class</u>					Don't Know
	Upper 2%	Upper 10%	Upper 25%	Upper 50%	Lower 50%	
Women	19.8%	42.7%	16.7%	10.4%	1.0%	9.4%
Men	13.9	45.6	29.1	5.1	2.5	3.8

	<u>College subjects taken</u>		Calculus	Advanced Mathematics	Statistics	Ag Econ Majors
	Economic Principles	Advanced Economics				
Women	72.6%	57.6%	62.7%	38.5%	69.1%	31.0%
Men	67.7	48.4	54.0	45.7	73.6	50.7

	<u>Interruption in Ph.D. Study</u>	<u>Delay of dissertation if interruption in study</u>
Women	33.3%	84.6%
Men	30.4	76.9

	<u>Length of delay of dissertation</u>		
	0-5 months	6-12 months	13-60 months
Women	30.0%	20.0%	70.0%
Men	10.0	50.0	40.0

Major reason for delay of dissertation

	Need to support self	Home responsibilities	Need for job experience	Illness	Lack of motivation
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Women	50.0%	9.1%	30.0%	9.1%	9.1%
Men	54.5	12.5	14.3	0.0	0.0

Major source of financial support during Ph.D. coursework

	Fellowship	Assistantship	Working own way through	Own savings (full-time study)	Support from relatives
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Women	31.3%	68.4%	20.0%	7.3%	4.2%
Men	34.3	78.6	11.4	8.9	21.5

Major source of financial support during dissertation

	Fellowship	Assistantship	Working own way through	Own savings (full-time study)	Support from relatives
--	------------	---------------	-------------------------	-------------------------------	------------------------

Women	32.3%	55.9%	24.1%	5.2%	9.4%
Men	26.5	76.3	31.6	5.1	16.4

Have changed jobs and moved because of family preferences

	Willing to move to a better job
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Women	17.8%	65.3%
Men	5.4	41.0

Primary professional specialty

Economic growth, development & planning	Econ. statistics	Monetary	International	Business	Industrial Organization
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Women	9.6%	8.5%	1.1%	6.4%	7.4%	1.1%
Men	14.3	7.8	1.3	3.9	16.9	1.3

Agriculture & Natural Resources	Labor	Welfare, Consumer, Urban/Regional
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Women	44.7%	2.1%	17.0%
Men	42.9	2.6	7.8

DETERMINANTS OF PH.D. COMPLETION

<u>Variable</u>	<u>Women</u>			<u>Men</u>		
	<u>Coeff.</u>	<u>X²</u>	<u>P</u>	<u>Coeff.</u>	<u>X²</u>	<u>P</u>
Intercept	-0.5763	0.22	0.6383	1.8385	1.01	0.3155
Time of career decision	0.6920	6.14	0.0133	0.6449	2.83	0.0924
Chose field because of interest	-0.4013	0.65	0.4198	-1.0235	1.90	0.1680
Chose field for economic gain	-0.3495	0.24	0.6254	-0.1703	0.05	0.8202
Father most encouraging	-1.7280	3.00	0.0833	1.4594	2.23	0.1353
Mother most encouraging	-1.0028	1.03	0.3096	-----		
Teacher most encouraging	-1.5074	3.89	0.0486	1.5426	4.10	0.0429
No one encouraged career	-1.9495	3.96	0.0466	0.1836	0.04	0.8452
No one discouraged career	0.2834	0.30	0.5864	-2.0508	3.00	0.0830
Academic rank in college	-0.1678	0.96	0.3266	-0.7697	5.17	0.0230
Never married	-0.9180	3.80	0.0514	-3.7444	10.41	0.0013
% correct prediction		67.7%		77.2%		
Predictive Accuracy Coefficient		0.137		0.345		