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The roles, needs, and challenges of Arkansas women in agriculture

Carmen C. Albright and Jennie S. Popp†*

ABSTRACT

Participants of the 2005-2007 Arkansas Women in Agriculture conferences were surveyed for this study to identify recent changes in their roles on and off the farm, the factors important to their success, and the problems they face in their businesses. Respondents were broken into two groups—Farm (women owner-operators of farms, ranches, or agribusinesses) and Non-farm (women working in supporting agricultural industries)—for comparisons and responses were also analyzed across years. Farm women most often reported problems keeping good employees each year, while Non-farm women often reported having problems with being respected as a female business person. For Farm women, the factor most often cited as important to success in their business was being able to pass the business on to family; for Non-farm women it was being able to apply their talents and skills. These results suggest that different types of agricultural women hold different attitudes about business and face different challenges. Results across years suggest that successes and problems may change over time. This marks some of the first research on the roles, challenges, and attitudes of Arkansas' women in agriculture. Based on the results of this research, educational efforts are underway across the state to assist Arkansas' women in agriculture. However, given the small sample of women surveyed, further research is still needed to fully understand the roles, challenges, and attitudes of Arkansas' women in agriculture.

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MEET THE STUDENT-AUTHOR

After my graduation from Ozark High School and retirement from serving as an Arkansas FFA State Officer, I moved to Fayetteville to begin classes at the University of Arkansas, where I was awarded a Chancellor's Scholarship to pursue my studies. At the end of my freshman year, I began working for Dr. Jennie Popp as a research assistant. My first project involved creating a presentation for a grant proposal to organize a conference for Arkansas' women in agriculture. From there, we decided to survey and interview the participants of the conference to learn about their changing roles. After studying abroad in Chengdu, China, for one month, I presented the findings of the survey at the 2005 American Agricultural Economics Association Undergraduate Paper Competition in Providence, Rhode Island, and won third place. I then went on to study abroad in Pau, France, for the fall semester and in Accra, Ghana, West Africa, for the spring semester, with financial support from two Honors College Study Abroad grants and the Richard Locke Scholarship through the Dale Bumpers College. Another survey was distributed at the second Arkansas Women in Agriculture conference, and I won the 2006 American Agricultural Economics Association Undergraduate Paper Competition in Long Beach, California, with findings from the two years' surveys and a comparison of them. Focus-group interviews were held with women throughout the state, and I presented that research combined with the quantitative data at the National Conference for Undergraduate Research in San Rafael, California.

When I was not busy with research and my French and global agricultural, food and life sciences minors, I served as a Dale Bumpers College Ambassador and was active in Sigma Alpha, the professional agricultural sorority. I am now preparing to take some time off in Reno, Nevada, before going to graduate school, but I would eventually like to become a professor.



Carmen C. Albright

INTRODUCTION

When the 2002 United States Census of Agriculture was released, a surprising trend was unveiled. Nationally, the number of women principal operators grew about 11% (6% in Arkansas) between 1997 and 2002. Data now show that nationally, 26% (and in Arkansas, 25%) of all women farmers are principal farm operators, meaning they have primary responsibility for day-to-day farm operations. Finally, women are principal operators on 11% of farms nationwide and on 10% of farms in Arkansas (USDA NASS, 2004a; USDA NASS, 2004b).

In addition to these farm women, there are other women who are also important to the agricultural industry. These are women who hold prominent posi-

tions in firms that support agriculture, such as agricultural lending institutions, farm input suppliers, veterinary/animal clinics and agricultural processors. Increasing numbers of women in leadership positions both on and off the farm are explained by three factors. First, more women are inheriting these operations due to death, divorce, and illness. Second, women are making voluntary career changes into agriculture. Third, because of the expansion of educational opportunities, more women are choosing college programs that prepare them for important positions in agricultural industries. The number of women receiving agriculture-related degrees has more than doubled since 1993, to 28,801 in 2000 (USDA REEIS, 2000). Even at the University of Arkansas, the number grew by 50% between 1997 and 2005 (University of Arkansas Institutional Research, 2006).

To respond to the increase of women involved in agriculture, researchers need to understand the challenges women face and the goals they hold so as to be successful in their business endeavors. However, success is measured differently by different people. It could mean maximizing income or profit for some (Hoy, Carland and Carland, 1984); it may be non-financial, such as assisting the community or being able to use a particular skill (Buttner and Moore, 1997; Mayasami, Cooper and Valeria, 1999) or it could be some combination of both. Consumer theory in economics is used to show how different goods or services can be combined to achieve some given level of utility or satisfaction (Nicholson, 2004). The level of utility (or in this case, success) received from goods or services (perhaps profits and community assistance) is closely tied to tastes and preferences of the individual. A person can be said to maximize utility subject to a constraint, such as the amount of time in a week. Different agricultural women will have different preferences and constraints and, therefore, can be expected to reach different levels of success or utility from their on-farm or off-farm business/leadership activity.

The importance of the role of women in agriculture has been acknowledged by many states in recent years. Annual conferences for women in dozens of states provide skills to succeed in agricultural production/business, as well as methods to balance demands of family, business, and their communities. The first statewide conference for Arkansas' women in agriculture was held in 2005 with the goal of enriching lives and empowering women in Arkansas in all aspects of agriculture (production, processing, marketing, and retailing) and in their rural communities. Attendees from this and subsequent conferences agreed to participate in research that examined the roles, challenges, and successes of Arkansas' women in agriculture – some of the first research on women in agriculture in the U.S. This paper presents selected results of a three-year study of Arkansas' women in agriculture.

MATERIALS AND METHODS

Surveys of female participants at the Arkansas Women in Agriculture Conference were conducted in 2005, 2006, and 2007. This survey, constructed according to methods described by Salant and Dillman (1994), consisted of two main parts: questions designed specifically for women who owned farms, ranches, or agribusinesses (Farm women), and questions for all female attendees, whether they were farm employees, worked in supporting (e.g., credit, input) industries, retired, or stu-

dents (Non-farm women). Farm women were given questions about: 1) their operation/business (type, size, location); 2) their role in management; 3) sources of information to assist in that role; and 4) changes in their role and its impact on various decision making and other areas of their lives (use of capital, use of labor, impact on family finances, impact on quality of life for self and others). All female participants—Farm and Non-farm—were asked to respond to questions related to: 1) importance of various characteristics of their work (such as applying their talents to the job, having secure employment, meeting financial needs, balancing work and free time, assisting others in the community, etc.); 2) areas of difficulty in their work (access to credit, networking with others, managing cash flow, marketing products, etc.); 3) farm/community organization involvement, and 4) various demographic characteristics.

For each year, summary statistics were constructed over all questions and all ranges of responses. Responses were then separated into Farm and Non-farm categories. Next, Chi-square and Fisher's Exact tests were used to determine if statistically significant differences existed in the responses. The same tests were used to compare responses between all three years.

RESULTS AND DISCUSSION

A total of 752 female participants at the 2005-2007 Arkansas Women in Agriculture conferences were asked to complete the survey. The response rates were 55% (147 of 269) in 2005; 36% (108 of 300) in 2006; and 49% (89 of 183) in 2007. Only 10% of the 2005 Farm women considered themselves principal operators of their farms or businesses, but 22% in 2006 and 19% in 2007 designated themselves in this role. Between 66% and 75% of Farm women each year responded that they would definitely or probably continue to run the business if something happened to their spouse or business partner. Remaining results focused on the factors important to women in business and challenges they face. Results are presented by year and followed by the comparison between years.

Respondents in 2005

Of the year 2005 respondents, 96 described themselves as farm, ranch, or agribusiness owners (or Farm women). The remaining 51 Non-farm women were employees of ranches and farms, lending institution owner/employees, employees of farm organizations, retirees, and students.

All respondents were asked to indicate whether or not each of 13 factors was important to them in measuring their success in their operation/business. The percent-

ages of Farm and Non-farm women that agreed or strongly agreed with each of the factors are presented in Table 1. Strong significant differences ($p < 0.05$) were found in Farm and Non-farm women's attitudes towards the importance of four factors; a higher percentage of Farm women agreed it was important to be able to pass on the business to family and to provide jobs for the community whereas a higher percentage of Non-farm women agreed it was important to apply talents and skills directly and to be excited about their work.

All respondents were also asked to state their opinion regarding potential problems they face in their work. Results are presented in Table 2. First, on a pure percentage basis, more Farm women reported that problems existed than Non-farm women, with the exception of gaining access to credit. Strong statistical differences were found in attitudes towards three problems; more Farm women reported problems with finding and qualifying for government programs and keeping good employees.

Respondents in 2006

Sixty-nine of the respondents were Farm women; the remaining Non-farm women held jobs and/or memberships in agribusiness, lending institutions, or farm organizations.

Three significant differences existed in Farm and Non-farm women's attitudes regarding important factors in their work life. Farm women felt more strongly that it was important to be able to pass on the business to family, whereas Non-farm women felt more strongly that it was important to feel secure about their employment future and have flexible work hours.

There were also strong significant differences in Farm and Non-farm women's attitudes toward two problems. More Farm women again reported problems with qualifying for government programs and keeping good employees. In addition, significantly higher percentages of Farm women agreed that they face problems of knowing where and how to market their products and keeping financial records.

Respondents in 2007

Of the year 2007 respondents, 45 were Farm women, and 44 were Non-farm women.

Statistical analysis resulted in strong significant differences regarding four factors. Non-farm women were more likely to agree with the importance of applying their talents and skills, trying new ways of doing things, and improving their standard of living. Farm women agreed more with the importance of passing the business on to a family member. Comparisons of the problems faced by each group of women resulted in only one significant difference—more Farm women agreed that they have a problem keeping good employees.

Comparison of all years

Statistical comparison across the three years' of responses yielded very few significant differences (see Table 3). A comparison of Farm women responses across years revealed only two significant differences. First, by 2007 the data suggest that the percentage of Farm women who faced problems being respected as a female businessperson and keeping financial records had fallen from 41% to 33% and from 41% to 25%, respectively. Second, by 2007, data also suggest that the importance of meeting current financial needs in their work success had increased from 82% to 90% for Non-farm women. When comparing all responses across years, only one significant difference was found. Across all respondents, the importance of having flexible work hours in their work decreased between 2005 and 2007. However, as many of the participants in the study varied across years, further research is needed to determine whether these differences exist due to real changes over time or due to changes in participants over time.

Discussion

This research suggests that Farm and Non-farm women share some of the same problems in business as well as the factors they find important to their success. However, because of their diverse backgrounds and dissimilar job responsibilities, their opinions on matters such as the importance of passing on the business to family and having employment security and the problem of keeping good employees are significantly different.

Findings also suggest the importance of conducting research on women in agriculture at different points in time. While the demographic and agricultural information of both years was similar, the needs of these women show different results from the previous year based on the changes of importance on certain factors and the problems they face.

As women become more involved in state and national agriculture, they, like their male counterparts, will experience challenges and, hopefully, success. Currently research and educational efforts are working to address the needs of these women in terms of skill-building and networking, but more research is needed to fully understand the roles, challenges, and goals of different groups of agricultural women at different points in time.

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Table 1. Percentages of women that agreed or strongly agreed with the importance of 13 factors in business.

Factors	2005			2006			2007		
	Percentage of respondents that agree/strongly agree this is important		Probability	Percentage of respondents that agree/strongly agree this is important		Probability	Percentage of respondents that agree/strongly agree this is important		Probability
	Farm	Non-farm		Farm	Non-farm		Farm	Non-farm	
I can apply talents and skills directly	87.4	97.8	0.0451	87.7	94.1	0.2727	78.6	100.0	0.0376
I feel secure in my employment	67.9	88.6	0.1318	72.3	94.1	0.0452	78.6	91.3	0.1565
I can make key decisions	62.8	39.5	0.1209	50.0	32.4	0.1214	57.1	54.6	0.3372
I can meet current financial needs	75.6	81.8	0.8526	75.0	87.9	0.1558	71.4	90.9	0.2899
I can try new ways of doing things	81.2	91.1	0.3663	81.0	97.0	0.1324	65.9	90.9	0.0348
I can participate in environmental conservation programs (ag and non-ag)	81.2	67.4	0.2171	76.2	71.9	0.5363	73.2	68.2	0.5276
I am excited about my work	86.2	89.1	0.0376	84.1	87.9	0.8525	80.5	82.6	0.9800
I have flexible work hours	82.8	80.9	0.4794	69.8	56.3	0.0694	68.3	56.5	0.6481
I can balance my work and free time	64.7	80.9	0.2285	57.1	78.8	0.2872	68.3	82.6	0.5011
I can be involved in my community	83.9	95.7	0.3350	85.7	78.8	0.1275	70.7	78.3	0.6200
I improve my standard of living	77.4	91.3	0.3766	73.0	78.8	0.8190	65.9	95.5	0.0022
I can pass on the business to a family member	79.3	18.6	<0.0001	65.6	16.1	<0.0001	63.4	25.0	0.0233
I can provide jobs for my community	58.8	27.9	0.0094	50.0	42.4	0.5489	42.5	27.3	0.5484

Table 2. Percentages of women that agreed or strongly agreed with problems faced in business.

Factors	2005				2006				2007			
	Percentage of respondents that agree/strongly agree this is a problem		Probability	Percentage of respondents that agree/strongly agree this is a problem		Probability	Percentage of respondents that agree/strongly agree this is a problem		Probability	Percentage of respondents that agree/strongly agree this is a problem		Probability
	Farm	Non-farm		Farm	Non-farm		Farm	Non-farm		Farm	Non-farm	
Networking with others	23.5	12.5	0.1224	15.3	27.3	0.3358	20.0	27.3	0.7515			
Finding good information about best management practices for my business	26.5	21.4	0.6636	19.7	17.4	0.1258	17.5	13.6	0.8917			
Finding information about government programs related to my work	37.4	17.2	0.0452	32.2	22.7	0.7821	30.0	22.7	0.4313			
Qualifying for government programs related to my business	33.7	17.9	0.0039	40.7	23.8	0.0423	41.0	21.1	0.3361			
Knowing where/how to market my products	30.6	14.3	0.2945	28.8	13.6	0.0691	25.6	20.0	0.9570			
Keeping up with environmental regulations regarding my business	40.0	25.0	0.3976	33.9	14.3	0.1778	25.0	30.0	0.7504			
Keeping financial records	41.4	14.8	0.1614	33.9	17.4	0.0558	25.0	40.0	0.4705			
Finding/affording a good lawyer	42.4	29.6	0.1940	34.5	22.7	0.3942	35.0	15.8	0.2637			
Keeping good employees	48.8	25.0	0.0374	51.7	13.6	0.0184	43.6	35.0	0.0708			
Handling my cash flow	29.8	19.2	0.5290	29.3	19.0	0.3219	25.0	31.6	0.7525			
Gaining access to credit	16.5	22.2	0.1295	10.5	14.3	0.3259	20.0	15.8	0.9273			
Completing loan forms and other important paperwork	24.7	18.5	0.3481	15.5	4.8	0.1126	23.1	21.1	0.9892			
Being respected in my industry as a female business person	41.2	37.9	0.4902	39.0	36.4	0.2428	32.5	47.6	0.7546			

Table 3. Significant differences among 2005, 2006 and 2007 respondents.

Factors	2005	2006	2007	Probability
	Percentage of respondents that agree/strongly agree this is a problem	Percentage of respondents that agree/strongly agree this is a problem	Percentage of respondents that agree/strongly agree this is a problem	
Farm women (problems in business)				
• Keeping financial records	41.4	33.9	25.0	0.0353
• Being respected as a female business person	41.2	39.0	32.5	0.0342
Non-farm women (important factors in business)				
• Meeting current financial needs	81.8	87.9	90.9	0.0992
All respondents (important factors in business)				
• Having flexible work hours	82.0	65.6	64.1	0.0278