

AGRICULTURAL ECONOMICS STUDENTS AT SOUTHERN LAND GRANT UNIVERSITIES

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Agricultural economics occupies an unique position in most agriculture programs because it and rural sociology are the only social sciences among a broad array of plant, animal, and technical disciplines.¹ As economic and technological changes have added to the complexity of U.S. agriculture, the relative importance of agricultural economics has increased. The demand for individuals possessing knowledge of the technical aspects of agriculture and the ability to evaluate the social and economic ramifications of alternatives is increasing.

To meet these needs, programs in agricultural economics must attract and retain capable individuals and provide them with the skills desired for employment. Also, as Snodgrass notes, programs should be concerned with "individual development for self understanding and fulfillment, good citizenship, and living harmoniously with other people and the physical environment" (p. 1155). Most writings dealing with teaching programs in agricultural economics have concentrated on curriculum design (Sjo, Orazem, and Biere; Kropp; Manderscheid), training (Snodgrass; Roberts and Lee; Walker), and markets for graduates (Helmsberger). Other studies, such as Coutu's, have analyzed departmental strategies for the profession relative to the overall structure of higher education. There are few comprehensive studies that characterize the primary input (students) into this system. A better understanding of students as a human resource input could improve system management in such areas as student recruitment, curriculum design, and course content and, thus, enhance the quality of educational program outputs.

This article examines selected background characteristics and perspectives of agricultural economics majors in comparison with majors in

the basic agricultural sciences, as well as the aggregate of agricultural students.² Three major sets of issues are addressed: the background characteristics of undergraduate students, their goals and aspirations, and selected attitudes and self-perceptions that they hold.

METHODOLOGY

Data were obtained from a survey of agricultural students at the Land Grant Universities in 13 states composing the Census South, using enrollment lists for Spring, 1977.³ The total undergraduate enrollment of 1890 agricultural students and a 15-percent random sample of 1862 students stratified by university formed the sample.⁴

Mailed questionnaires were completed and returned by 76 and 53 percent of the 1862 and 1890 school students, respectively, giving a weighted regional sample consisting of 3,178 agricultural students.⁵ Among these students were 377 who reported a variety of majors unique to specific universities and not directly identifiable with agricultural education. Eliminating these questionnaires from the analysis resulted in a weighted sample consisting of 2,801 agricultural, 272 agricultural economics, and 1,328 basic sciences students. Freshmen composed 18 percent, sophomores 22 percent, juniors 27 percent, and seniors 33 percent of the sample.

RESULTS

Background Characteristics

Personal. Place of origin of students can have

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¹The term "agricultural economics" is used broadly to encompass those majors that identify with programs which perform similar social science activities in the school or college of agriculture, but possibly under different titles.

²Basic sciences majors included: horticulture (except ornamental); agronomy; and animal, dairy, and poultry sciences (excluding pre-veterinary medicine).

³Thirteen 1862 and 11 of the 1890 institutions providing agriculture education programs are included as part of this study. The 1890 institutions represented are: Alabama A&M University, Alcorn State University (MS), University of Arkansas-Pine Bluff, Florida A&M University, Fort Valley State College (GA), Langston University (OK), North Carolina A&T University, Prairie View University (TX), Southern University (LA), Tuskegee Institute (AL), and Virginia State College. The 1862 institutions are: University of Arkansas-Fayetteville, Auburn University (AL), Clemson University (SC), University of Florida, University of Georgia, University of Kentucky, Louisiana State University, Mississippi State University, North Carolina State University-Raleigh, Oklahoma State University, University of Tennessee, Texas A&M University, and Virginia Polytechnic Institute and State University.

⁴The terms "1862 and 1890 institutions" refer to the separate Morrill Acts that created agriculture schools for whites and blacks in 13 southern and five border states. The 1862 institutions are the larger, predominantly white institutions in each state. In this study, 1890 respondents were approximately 15 percent white, while the 1862 respondents were approximately 5 percent black.

⁵Weights were developed to account for differential sampling rates across 1862 and 1890 strata and differential non-response across universities. The weight acted to adjust for stratification and non-response to the entire instrument, while maintaining the original sample size. See Howell and Parent for details of the weighting procedure.

important implications for curriculum design and alternative teaching methods for agricultural faculty. Agricultural economics students were much more likely to come from farm backgrounds than were students in either of the other categories (Table 1).⁶ More than a third of the agricultural economics students were farm reared, while only a fifth of all agricultural students had farm origins. More than half of all students (57%) were from city backgrounds, involving places larger than 10,000 population; whereas, only 39 percent of the agricultural economics students had comparable city origins.

During the past decade, increased attention has been focused on enrollment of women in agricultural curricula. While females composed a fourth of all students surveyed, their presence in the agricultural economics curriculum was notably less (11%). Predominance of men in agricultural economics reflects the traditional male involvement in farm management and production agriculture, although increased numbers of women are choosing farming and agribusiness as a career (Pearson).

Agricultural economics students were more likely to be non-white and single than were either basic sciences or all majors. They were also more

likely to be foreign citizens than were all majors, but less likely than basic sciences majors.

Family. Education and occupation characteristics of fathers can have important influences on children, especially in agriculture because of the family farm tradition in the United States. Occupational endeavors of fathers are an important source of knowledge about alternative careers and entry paths to various occupations. Almost half of agricultural economics students, 35 percent each of the basic sciences, and all agriculture majors had fathers who were farm reared (Table 1). Also, fathers of agricultural economics students were much more likely to farm, 34 percent, and less inclined to hold non-farm managerial or professional jobs than students in other categories. Thus, for fathers of agricultural economics majors, farm origins and occupations seemed to be especially important factors in the child's selection of a college major.

Parents of agricultural economics students were much more likely to live on a farm and to own or rent a farm than were other parents. Also, farming was a more important source of income for parents of agricultural economics students, 43 percent versus 35 and 32 percent for parents of basic sciences and all majors, respectively.

High School and College. Exposure to agriculture either directly on the farm or through agricultural course work can affect occupational orientation and selection of a career. Majors in agricultural economics showed a stronger tendency to be involved in agricultural activities in high school than basic sciences or all majors (Table 2). Approximately 40 percent of the agricultural economics majors had completed agriculture courses or had been members of 4-H or FFA organizations while in high school. This was in contrast to the 25 to 30 percent of the basic sciences and all majors.

Student transfers among colleges, and within a college among disciplines, are important to agricultural programs. Approximately a third of the agricultural economics and agricultural majors and almost two-fifths of the basic sciences majors transferred to their current college of residence from junior or other college programs, with each source contributing almost equally. Fifty-nine percent of the agricultural economics majors indicated that they had changed majors during their college career, while 54 percent of the basic sciences and half of all majors experienced similar changes in their programs.

Agricultural Work. Since the majority of agricultural students do not have farm backgrounds, the acquisition of practical skills and

TABLE 1. Selected Personal and Family Background Characteristics of Students in Agricultural Economics, Basic Sciences, and All Agriculture

| Characteristic | Students | | |
|---|------------------------|----------------|-----------------|
| | Agricultural economics | Basic sciences | All agriculture |
| | percent | | |
| Personal: | | | |
| Residence most of life | | | |
| Farm | 37.8 | 23.3 | 21.0 |
| Rural nonfarm (less than 10,000 population) | 23.3 | 22.0 | 22.6 |
| Urban (10,000-500,000 population) | 30.8 | 39.5 | 41.2 |
| Major metro (above 500,000 population) | 8.1 | 15.2 | 16.2 |
| Sex - female | 10.9 | 32.3 | 25.4 |
| Race - nonwhite | 13.8 | 10.7 | 10.2 |
| Citizenship - foreign | 3.5 | 4.7 | 3.1 |
| Marital status - married | 12.5 | 16.1 | 13.4 |
| Family: | | | |
| Father's residence | | | |
| Reared on a farm | 51.4 | 35.3 | 34.5 |
| Reared in a city (50,000 or more) | 11.4 | 21.7 | 21.8 |
| Father's occupation | | | |
| Managerial or professional | 38.9 | 53.1 | 51.2 |
| Farm production | 36.3 | 18.6 | 15.9 |
| Ag. related nonproduction | 6.2 | 6.7 | 5.2 |
| Lives on farm | 43.9 | 29.0 | 26.5 |
| Own or rents farm | 63.1 | 41.8 | 39.6 |
| Primary income is from farming | 43.2 | 35.2 | 32.3 |

⁶No statistical tests of comparison are presented because many of the percentages are selected cells from more complex cross-tabulations. Statistical tests would be inappropriate without benefit of the full table. As the sample is large, the strategy of analysis is to compare percentage differences on a large number of characteristics. We consider differences of 5 percentage points or more to be substantively more meaningful and less likely attributable to measurement or sampling error.

knowledge of farm production practices is a concern for curriculum planners and potential employers (Thrift and Robertson). Agricultural economics majors were much more predisposed (80%) to have agricultural work experience than basic sciences (65%) or all agriculture (61%) students (Table 2). Almost half of all agricultural and basic sciences students had some home farm work experience, while slightly more than two-thirds of the students in agricultural economics had been so involved. Agricultural economics majors were also more likely to have other agriculture-related work experience.

TABLE 2. Selected School and Work Experiences of Students in Agricultural Economics, Basic Sciences, and All Agriculture

| Experiences | Students | | |
|---|------------------------|----------------|-----------------|
| | Agricultural economics | Basic sciences | All agriculture |
| | percent | | |
| School: | | | |
| High school | | | |
| Completed agriculture course | 39.1 | 24.5 | 24.7 |
| 4-H Club member | 40.6 | 28.2 | 25.4 |
| FFA member | 42.0 | 25.6 | 25.8 |
| College | | | |
| Transferred from: | | | |
| Junior college | 15.7 | 21.6 | 18.0 |
| Other college | 16.6 | 20.9 | 16.6 |
| Has changed major | 59.4 | 54.4 | 49.7 |
| Agricultural work: | | | |
| On home farm or ranch | 70.8 | 53.9 | 48.8 |
| Hired labor (farm or ranch) | 65.9 | 50.7 | 48.5 |
| Either home farm or hired farm labor experience | 80.3 | 65.2 | 60.5 |
| Other agricultural work | 66.6 | 61.7 | 58.9 |

Aspirations and Goals

Occupation. A fundamental reason for college education is occupational or career preparation. College students are generally assumed to select a curriculum that will enhance their potential for achieving occupational goals. Aspirations of students in agricultural economics differed from aspirations of students in the other categories (Table 3). Agricultural economics majors indicated less desire for professional and technical careers (27% versus 54%) and greater desire for farm-related employment, especially when related to all majors (31% versus 18%). Also, agricultural economics majors (26%) were more predisposed to careers involving non-farm management and administration than basic sciences (19%) or all agricultural (13%) majors.

Individuals tend to differentiate their occupational aspirations from their more realistic career expectations (Kuvlesky and Bealer). Differences in desired and expected occupations were reflected in two ways across all curricula types (Table 3). First, there was an increase in the number of students who revealed uncertainty about their expected occupation. While approximately 11 percent of the students in all categories failed to indicate their occupational aspirations, almost 25 percent failed to identify an expected occupational goal. Second, the number of students expecting to enter professional and technical occupations and farming declined from their original aspirations.

Only 21 percent of the agricultural economics students expected to be farm operators and managers, a reduction of 10 percentage points from the desired career goal. A similar reduction of 10

TABLE 3. Desired and Expected Occupational and Educational Categories for Students in Agricultural Economics, Basic Sciences, and All Agriculture

| Category | Students' desire (aspiration) | | | Students' expectation | | |
|-----------------------------------|-------------------------------|----------------|-----------------|------------------------|----------------|-----------------|
| | Agricultural economics | Basic sciences | All agriculture | Agricultural economics | Basic sciences | All agriculture |
| | percent | | | percent | | |
| Occupational: | | | | | | |
| Professional & technical | 25.6 | 40.3 | 54.4 | 15.3 | 27.8 | 42.0 |
| Nonfarm managers & administrators | 25.9 | 19.0 | 13.4 | 32.5 | 22.2 | 15.4 |
| Farm operators & managers | 30.7 | 26.9 | 18.3 | 20.7 | 21.0 | 13.8 |
| All other nonfarm | 6.0 | 2.8 | 2.8 | 7.9 | 6.2 | 5.2 |
| Not reported | 11.8 | 10.9 | 11.1 | 23.7 | 22.8 | 23.6 |
| Educational: | | | | | | |
| Professional degree | 16.4 | 15.9 | 21.8 | 2.9 | 7.5 | 13.8 |
| Graduate degree | 39.1 | 45.2 | 46.1 | 26.0 | 27.7 | 29.2 |

percentage points occurred among agricultural economics students expecting professional and technical careers. These declines were offset primarily by increased proportions expecting to be non-farm managers and administrators. This reflects a shift highly consistent with the educational training received by students in agricultural economics and business curricula.

Closely allied with occupational aspirations and expectations are residential preferences. Traditionally, agricultural careers have been identified with farms, ranches, or small rural trade centers. This is not necessarily true today with the rapid expansion of occupations in the agribusiness sector, especially in the facilitative area. Thus, residential preferences of agricultural students are of interest. Forty-four percent of the agricultural economics majors and 40 and 54 percent of all agricultural and basic sciences students, respectively, desired to live on a farm or ranch. Further, 39 percent of the agricultural economics majors and 46 and 45 percent of the basic sciences and all agriculture majors, respectively, expected to own a farm or ranch someday.

Education. A college education usually presents multiple career opportunities for the student. Among these are opportunities to pursue business, professional, or academic career lines requiring advanced education. Slightly more than 20 percent of all agricultural students aspired to a professional degree, while 46 percent aspired to a graduate degree (Table 3). However, when evaluated on an expectations basis, only 14 and 29 percent, respectively, felt they would attain these goals. Students in agricultural economics expressed less interest both in professional and graduate programs. Only 16 percent aspired to a professional degree, and 39 percent expressed the desire for a graduate degree. However, they were not optimistic that these goals would be reached. Only 3 percent felt they would attain a professional degree, while 26 percent expected to complete a graduate degree. Variable job markets and differential returns to an undergraduate degree influence the proportion of students willing to defer gratifications in pursuit of advanced degrees.

Attitudes and Perceptions

Perceptions of Influentials. In attempting to gain insight into reasons why college students select a particular curriculum in agriculture, an analysis of interpersonal contacts with selected individuals was conducted. These individuals may be influential because of their personal relationship with the student, or because of the special knowledge and prestige inherent in their positions.

A student's choice of college major was found

to be influenced by many people. Dominant among these were the student's parents. This perceived influence probably emanates from socialization during the childhood and teenage years, plus the financial dependence of many students. No other individuals were considered to be influential by a majority of the agricultural economics students. However, other contact groups were noted as being important by more than a fourth of these students. In order of importance, these were college teacher or advisor, college friends, other relatives, high school friends, brother, college alumni, vocational agriculture teacher, and the agricultural dean.

Perceptions of Important Experiences. Students were asked to identify reasons for their choice of an agricultural major in order to evaluate their motivations for entering the field. Career preparation was the reason offered by a sizable majority (about 75%) of the students in each curriculum grouping. Also, approximately half of the students in each grouping noted their "preference for country life" as being important. The only notable differences among curriculum groupings were that agricultural economics majors were much less inclined to select agriculture for their desire to help others (16% versus 27% for basic sciences and 29% for all agricultural majors), and more inclined to select it for economic reasons (23% versus 16% and 16%, respectively). Also, successful agricultural experiences were more important for agricultural economics majors than for all students (31% versus 24%).

Perceptions of Agricultural Students. A consideration affecting choice of major and eventually an occupation is the individual's perception of people in or associated with a particular major or line of work. Students visualize the occupational choice as a point of reference for making plans or evaluating their performance (Shibutani). During college, the critical reference group is composed of students who are enrolled in agriculture. Students were asked to compare students enrolled in agriculture with non-agricultural students for selected characteristics.

Agricultural economics students' perception showed some differing tendencies from those displayed by basic sciences and all agricultural majors. Agricultural economics majors perceived students in agriculture as being friendlier and more altruistic, more sure of their career orientation, more seriously concerned with the state of the nation and world, and more willing to accept new ideas. They also perceived students in agriculture as being slightly less interested in making a lot of money.

Attitudes Toward Agriculture. Approximately 90 percent of students in each curriculum group-

ing agreed that good career opportunities existed in agriculture. Similarly, 92 percent of the students indicated that agriculture was not a declining industry. These attitudes reflect the positive orientation expected among students preparing themselves for agricultural occupations.

SUMMARY AND IMPLICATIONS

The goals and aspirations of agricultural students, as examined in this paper, exhibit much diversity, which is reflected to some extent by the variety of curricula encompassed in schools or colleges of agriculture. The small proportions of students who desired or expected occupations in production agriculture reflect the shifting structure of the industry. Fewer individuals are directly involved in the production process, but many play a role in supporting the farmer in such areas as research, technical assistance, marketing, and the provision of inputs and services. Our teaching programs must adequately reflect these shifts in needs.

Profiles of agricultural students enrolled in Land Grant Universities in the South varied considerably from the stereotyped image of the traditional agricultural student, since only about half had some experience on the home farm or ranch, and a similar portion had hired farm labor experience. Of the groups analyzed, agricultural economics majors more nearly reflected this image because they were more often from farm backgrounds, had greater educational and work experience in agriculture, and were more devoted to a career in production agriculture. They seemed to have a stronger allegiance to farming as a source of income and way of life. The more frequent farm origins of their parents, students' farm work experiences, and the possibility of inheriting the land resource evidently affected this attitude.

The fact that the number of 18-year olds and high school graduates in the U.S. population peaked in 1979 (Helmberger) presents an important issue for consideration by agricultural administrators and faculty in the recruitment area. Agricultural economics will probably continue to draw heavily from students having family ties to production agriculture. However, growth in student enrollments most likely will come from among students lacking farm backgrounds and experience.

Parents were perceived as the primary influences affecting the student's decision to enroll in an agriculture-related major. College-related friends were a second source of influence. Also, personal motivations on career preparation and the associated desire to have a career compatible with country living affected this decision. As the

number of farms and farmers declines, how do administrators and faculty cope with fewer role models and influentials for agriculture? Can increased recruiting efforts effectively substitute for this void, or will economic factors in the job market provide sufficient incentives?

The challenge for faculty in agricultural economics is to develop and incorporate experiential learning opportunities outside the traditional classroom settings. This may include more attention being given to cooperative education arrangements with farm and ranch organizations with a variety of agribusiness firms. Internship programs with on-site faculty visitation similar to those used by schools or colleges of education may be another source of agricultural experience for individuals with non-farm backgrounds. Also, it may be important to expose students who lack farm experience to the realities of agriculture by providing contact early in their college programs with the range of agricultural careers. Perhaps, a course taught on an interdisciplinary basis, which describes the various disciplines in agriculture, plus the diverse opportunities available within each discipline, would facilitate career decisions by students. Perhaps more complete knowledge of occupational alternatives early in the student's program would reduce shifts among curricula and enhance allocation of the human resource.

Curriculum and course content should be augmented to compensate for agricultural deficiencies in the backgrounds of the students. Also, since almost a third of the students in agriculture transferred from junior and other colleges, administrators and faculty must be conscious of the nature of these programs and strive to enhance the educational experience. Faculty and administrators can no longer assume that students have a basic familiarity with the industry as a whole, or with any of its major subdivisions. Failure to recognize and deal with this situation could result in students' having undue difficulty in completing their programs, or, even worse, being able to graduate with only a cursory understanding of the meaning of agriculture. These concerns gain added significance when one considers that many of the leaders in agriculture come from our land grant college campuses.

Agriculture is a more complex industry than it was in years past. Also, the agricultural student is different. Educators in agriculture and agricultural economics must cope with these shifts by taking students who have fewer farm experiences and less understanding of agriculture and develop in them the skills necessary to contribute to a more complex environment. Success in this endeavor will likely necessitate new or expanded forms of field experiences and innovative teaching techniques in all agriculture curricula.

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