Educational and Occupational Aspirations of Students in Agriculture Majors

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In recent years several studies of students enrolled in agriculture majors in institutions of higher learning have described and established profiles for this group of students. The National Association of State Universities and Land Grant Colleges does this on a limited basis each year by releasing reports showing enrollments in agricultural curricula for colleges in the United States. Daluge and Thompson (1981) introduced a time variable into their investigation of students applying for admission to the University of Wisconsin-Madison College of Agricultural and Life Sciences. These researchers studied both the characteristics of students applying for admission in the fall of 1975 and their status four years later.

A regional study funded by the USDA/Cooperative State Research Service (CSRS), Project S-114, was conductted in 1977 to describe higher education in agriculture and home economics in the South. Data were collected from a sample of students enrolled in agriculture at 26 institutions, all but one was classified as a land-grant institution. This data bank, consisting of 3,075 students, has been used by researchers to provide in-depth analyses on selected sub-groups of students (Dunkelberger, Molnar, & Adrian, 1981; Dunkelberger, Haynes, & Molnar, 1981; Adrian, Dunkelberger, & Molnar, 1981; Molnar & Dunkelberger, 1981).

Despite the scope and depth of this regional project (13 states), its use is limited to descriptions and projections for only one point in time, 1977. Researchers at Mississippi State University (MSU) believed their college of agriculture students had changed since 1977, and a new investigation was needed. Since another regional project was not possible, the researchers replicated the regional study using only students at MSU.

By collecting data at a five-year interval, it would be possible to introduce a time factor when describing and making projections about college of agriculture students. As noted by the Van Dalen (1979, pp. 341-342), however, long range predictions are mere estimates and sometimes reverse short term predictions. Van Dalen also indicated that short term projections possess greater certainty as opposed to long range. This study permitted short term analyses of data about agricultural education as well as other college of agriculture majors.

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Objectives of the Study

The design of the study permitted an analysis and description of trends that were developing over five years. Specifically, the study sought:

1. to describe and compare selected characteristics of students enrolled in colleges of agriculture in the South in 1977 and those at Mississippi State University in 1977 and 1982;

2. to assess the influence of selected individuals and variables on the majors chosen by college of agriculture students; and

3. to ascertain whether education goals of college of agriculture students may be determined using selected variables.

Methods and Procedures

Previously collected data on agriculture students enrolled in 26 institution in 13 Southern states were extracted from the USDA/CRS regional project, S-114 (Parent, 1979; Howell & Parent, 1979). This data bank included 131 Mississippi State University students who responded to the 1977 mailed questionnaire (131 of 173 students returned the instrument). The response rate for the region was 69.4% (3,417 of 4,924 students responded) for the instrument developed and validated by the researchers who conducted the S-114 project. These researchers took a 15% stratified random sample of agriculture majors at 1862 land-grant institutions and a census of the 1890 land-grant agriculture majors. After collecting the data, all graduate students and any students who were not black or white were eliminated from the study; thus, the sample included 3,075 students. The sample was then weighted to reduce the influence of the 1890 institutions since a census of these institutions had been used (Howell and Parent, 1979).

The design and instrumentation for the 1982 study were identical to those of the 1977 study; data collection procedures differed slightly. A randomly selected sample stratified by agriculture major was chosen. This sample consisted of 312 agriculture students enrolled in the College of Agriculture and Home Economcs at MSU during the 1982 spring semester. These students received the same instrument used in the 1977 study. Four weeks were used to collect the data, beginning April 19 and ending May 14. Copies of the instrument were distributed to a faculty contact for each major; students were instructed to return the instrument to the contact persons or to the researchers doing the study.

After two weeks, students who had not returned the questionnaire were mailed a second copy. Reminder telephone calls were placed during the fourth week. These strategies resulted in 229 or 73.4% of the questionnaires being returned. Using data available from several sources, the nonrespondents were compared with the

respondents on five variables. The two groups were statistically very similar on each variable: high school grade point average (t=1.60, df=161, p>.05), college grade point average (t=.82 df=222, p>.05), ACT score (t=.75 , df=222, p>.05), classification (chi square=5.79, df=3, p>.05), and sex (chi square=1.72, df=1, p>.05).

Findings

The findings will be reported under three headings to correspond with the objectives of the study.

Characteristics of Students

As shown in Table 1, colleges of agriculture in the South in 1977 had a 73% male enrollment, however, 93% of the students majoring in agricultural education were males. A five percent drop in male enrollment in agriculture majors at Mississippi State University was noted from 1977 to 1982. Agricultural education majors in the Southern Region in 1977 tended to be graduates of public high school (97%) and had studied vocational agriculture in high school (82%). Although 88% of the agriculture majors in the Region in 1977 were graduates of public high schools, only 25% had studied vocational agriculture. Similar percentages of the 1977 and 1982 MSU agriculture students had studied vocational agriculture. Two notable changes in the composition of the MSU agriculture student body took place between 1977 and 1982. The percentage of married students dropped from 16% to seven percent while the percentage graduating from public high schools dropped from 68% to 57%. The mean age for the MSU students, however, remained constant. Table 1 presents data on several other characteristics of the students.

Factors Influencing Major Choice

The students in the study indicated they chose their major to prepare for a specific career and to lead a desired lifestyle. The desire to help others, prior experiences, and a good income were other highly ranked factors. A coefficient of Concordance (W) of .90 indicated the four groups of students listed in Table 2 were in very high agreement on how important 13 selected factors were on their choice of major.

As noted in Table 3, fathers and mothers were the individuals influencing major choices for college of agriculture students. One notable departure from this trend was found for the agricultural education majors. This group of students indicated that vocational agriculture teachers had the most influence, with mothers second, and fathers third. College teachers/advisors and college friends were other individuals of high influence. A coeffient of Concordance (W) of .83 indicated the four groups of students agreed on how important the 13 individuals listed in Table 3 were on their choice of major.

Table 1

Selected Characteristics of Students Pursuing Agriculture Majors in 1977 and 1982

Characteristics	Southern region, 1977 All Ag. (n=3,075)	Southern region, 1977 Ag. Ed. (n=258)	MSU students 1977 (n=131)	MSU students 1982 (n=229
1. % Males	73	93	81	76
2. Age (mean years)	21.4	21.5	20.9	21.0
3. Residence status:				
a. % From towns > 10,000	56	47	39	43
b. % Rural nonfarm	23	19	27	26
c. % Rural farm	21	34	34	31
4. % Married	14	16	16	7
5. % Graduating from public h.s.	88	97	68	57
6. Mean high school GPA	3.01	2.88	2.95	2.9
7. % Studying vo ag in h.s.	25	82	23	25
8. % Who attended other colleges	35	22	51	51
9. Work experience:				
a. % With home farm exp.	51	75	62	67
b. % with other farm exp.	50	67	48	54
c. % with other ag. work exp.	61	81	89	88

Table 2

Factors Important to Students When They Chose Agriculture Majors

Factor	Rankings for Southern region, 1977 All Ag. (n=3,075)	Rankings for Southern region, 1977 Ag. Ed. (n=258)	Rankings for MSU students 1977 (n=131)	Rankings for MSU students 1982 (n=229)
Career preparation	1	1	1	1
Style of life	2	3	2	2
Prior ag. experiences	5	4	3	4
Good income	4	5	4	5
Help others	3	2	5	3
College courses	6	10	6	6
College teacher/advisor	9	8	8	8
Scholarships/financial aid	7	7	8	9
Family	10	12	9	7
Friends in major	12	13	10	12
Better grades	11	11	11	11
H.S. counselor	13	9	12	13
H.S. courses	8	6	13	11

W=.90, p<.001

Table 3

Individuals Influencing Choice of Agriculture Major

Individual of influence	Rankings for Southern region, 1977 All Ag. (n=3,075)	Rankings for Southern region, 1977 Ag. Ed. (n=258)	Rankings for MSU students 1977 (n=131)	Rankings for MSU students 1982 (n=229)
Father	1	3	1	1
Mother	2	2	2	2
College teacher/advisor	3	4	3	3
College friend	4	5	4	4
Brother	6	6	5	6
Veterinarian	10	13	6	8
H.S. friend	6	9	7	7
Former student	8	9	8	5
Sister	12	11	9	11
Other teacher/principal	8	7	10	9
H.S. counselor	11	11	11	13
Vo-ag. teacher	9	1	12	10
Extension agent	13	12	13	12

W=.83, p<.001

Educational Goals of Agriculture Majors

Selected Relationships. Relationships were explored concerning educational goals of four groups of agriculture majors. Using the Pearson product moment correlation coefficient as a descriptive statistic and an alpha of .05, it was found that:

1. The level of education possessed by mothers or fathers of the students had negligible (r ranged from -.08 to .21) relationship with the students':

   a) high school or college gradepoint average,

   b) desired or expected level of education, and

   c) desired amount of earnings from their first job after graduation.

2. When levels of education desired and expected by students were correlated, substantial relationships were found for all four groups of students (r ranged from .58 to .68 p<.01).

Degree Expectations. The four groups of students were dichotomized based upon their degree expectations: receive a bachelor's degree or earn a graduate degree. A stepwise discriminant analysis was used to determine whether selected variables could be used to place students into the two degree categories (Klecka, 1981, pp.

49-50). Using the accuracy standard specified by Hair et al. (1979, pp. 100-103), the 1977 MSU students were accurately categorized with the knowledge of four interval level variables: college GPA, college club participation, income expected from first job after graduation, and influence of father on choice of major. Stated differently, those students expecting a graduate degree, as opposed to those wanting a bachelor's, had higher GPA's, were more active in college clubs, expected higher incomes after graduation, and had fathers who greatly influenced their choice of an agriculture major (Canonical R=.44, Wilks' lambda=.80, and Chi square=24.1, df=4, $p<.0001$). No significant models were found to categorize the other three groups of students.

Conclusions and Implications

Based upon the findings of this study, several conclusions and implications are possible to determine. For the MSU students, there appears to be a trend developing in terms of the number of single students and the number of students from private high schools who select agriculture majors. Comparing 1977 agricultural education majors with the other students from either the 1977 or the 1982 sample, the agricultural education majors tended to be from public high schools, have had high school vocational agriculture, and had lower high school grade point averages.

For college of agriculture students, mothers and fathers tended to be most influential in the choice of major, but vocational agriculture teachers were most influential in the choice of major for agricultural education majors. The students selected their majors for style for life and career preparation reasons. Although selected variables were identified that were useful in classifying the 1977 MSU students by type of expected degree, other variables must be identified to improve the classification accuracy before a model of this type is useful for predictive purposes.

Recommendations

The following recommendations are made:

1. A regional study of this magnitude should be periodically conducted to keep abreast of trends that may be occurring.

2. The findings of this study concerning persons influencing choices of major should be used when recruitment programs are being planned.

3. Research on the discriminant analysis classification model should continue because it may be useful to advisors who assess the academic potential of agriculture students.

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