ANALYSIS

Factors Related to Farm Management Students' Preferences for Farming as a Career

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Abstract

Discriminant analysis was used to analyze factors related to students preferring a farm to a non-farm career. Majoring in a field other than agricultural economics and concentrating in farm management-finance and community development options in agricultural economics were highly related to a preference for farming. The presence of rather profitable crop and livestock enterprises on the home farm, expected income from non-farm sources and the longer the student had lived on a farm were also highly related to a preference for farming. Major factors related to a preference for a non-farm career were concentrating in the marketing and resource economics, expecting to be a vocational agricultural teacher, having rather unprofitable enterprises on the home farm as well as being married and younger.

Concern about the quantity and quality of farm operators and managers has been expressed by a number of analysts (Beale and Shoemaker; Brannen; Halcrow; Nesius; Wise). The desire to know more about who might choose a career in farming and why, has led to the collection of survey information from farm management students in the Department of Agricultural Economics at the University of Georgia. That data has been collected on a continuous basis since 1974.

This particular analysis hypothesizes that a student's preferences as to whether to farm as a career is related to personal desires, farm vs. non-farm background, sex and other personal characteristics, size and type of home farm, farm income potential, income potential other than farming and college major.

Discriminant analysis was used in this study to analyze the differences between the students planning on farming as a career and those planning a non-farm career. The discriminant analysis technique enables one to statistically distinguish between two or more groups and is described by Klecka (1980). Several specific factors from the categories discussed above were use'd in the model. The data for the analysis were survey results from 1980-1985.

A total of 228 questionnaires were used. Of this total 98 or about 43 percent indicated that they planned on farming as a career and, of course, the remaining 130 (57 percent) indicated an interest in a non-farm career (Table 1). The surveyed students were mostly

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juniors and seniors. Most of them were majoring in Agricultural Economics (about 73 percent), but a number were majoring in Agricultural Education, Animal Science, Agronomy, and General Agriculture. Most of the respondents were males (87 percent), single (89 percent), and had a farm background (57 percent). The average student was in his early twenties and had lived on a farm for about nine years (Table 2). The average size of the home farm was about the average for the state of Georgia. However, the results show a wide range and relatively large variations in all of these variables.

Table 1. Summary of Responses to Survey of Farm Management Students, 1980-1985.

Question	Yes no.	Yes %	No no.	No %
Plan on farming	98	42.98	130	57.02
Plan on farming as only source of income	22	9.78	203	90.22
Expected ag. related income	97	56.07		
Expected income from teaching ag.	25	14.45		
Expected non-ag. related income	56	32.37		
Desire to go back to farm but don't plan to now	99	60.74	64	39.26
Reasons for preferring farming:				
Prefer to be own boss	59	45.38		
Dislike city life	7	5.43		
Financial benefits	15	11.63		
Challenge-business opportunity	19	14.73		
Enjoy farm life	108	83.08		
Male	198	87.22		
Female	29	12.78		
Married	25	11.06		
Single	201	88.94		
Farm background	130	57.27	97	42.73
Residents of Georgia	190	85.59	32	14.41
Main crops on home farm:				
Corn	58	26.01		
Soybeans	38	17.04		
Wheat	9	4.04		
Peanuts	28	12.56		
Tobacco	12	5.38		
Other crops	49	21.97		
Majoring in Ag. Economics	157	73.36	57	26.64
Agricultural Econ. Option:				
Farm management/finance	54	34.84		
Marketing	97	62.58		
Resource economics	4	2.58		
Community development	2	1.29		
Quantitative methods	4	2.58		
General	15	9.68		

Only about 10 percent of the respondents indicated that they plan for farming to be their only source of income (Table 1). Such a result is consistent with the trend toward farm families earning both farm and non-farm income.

Of those students indicating a preference for farming the largest number reported that it was because of their enjoyment of farm life, and the second largest number that it was because of their desire to be their own boss.

The main crops on home farms were corn, soybeans, and peanuts. The main livestock enterprises were beef cows, swine and poultry (Tables 1 and 2). Again a wide range and considerable variability were present in the livestock numbers.

Results

Results of the discriminant analysis are shown in Table 3. The relatively high canonical correlation and the low Wilks' lambda indicate that the discriminant variables produce a high degree of separation between the groups. The relatively large positive group mean (group centroid) for the group preferring a farm career (group 1) and the relatively large negative number for group 2 also indicates that the groups are quite distinct.

The coefficients in the discriminant function are standardized and thus indicate the relative importance of each variable to the function. In general the positive coefficients indicate a preference for farming as a career and the negative coefficients a preference for a non-farm career.

It is, of course, expected that a student interested in a farming career would choose a major or an option within a major closely related to farming. The analysis shows that students in majors other than agricultural economics had a rather strong preference for farming. In contrast students majoring in agricultural economics, over all the options, had a rather strong preference for a non-farm career (note the relatively large negative coefficient). This latter result was expected since many agricultural economics students do

not have a farm background or farm experience. However, students in the farm management-finance and community development options had a rather strong preference for a farm career. The farm management-finance option is the one most closely related to farming and the community development option is broad in scope.

As expected the number of years lived on a farm and having a farm background were variables associated with a farm career. These variables are no doubt correlated, however it is possible to have had a farm background and experience and not have lived on a farm.

Table 3. Results of Discriminant Analysis for Farm Management Students, 1980-1985.

Variable	Unit	Standardized discriminant function coefficients for variable
Expected ag. related income	yes, no	1.502
Expected income from teaching ag.	yes, no	-2.121
Expected non-ag. related income	yes, no	0.546
Reasons for preferring farming:		
Prefer to be own boss	yes, no	-0.072
Dislike city life	yes, no	-3.362
Financial benefits	yes, no	-1.000
Challenge-business opportunity	yes, no	3.853
Enjoy farm life	yes, no	-0.038
Sex	1 = male, 0 = female	0.308
Marital status	1 = married, 0 = single	-0.099
Age	years	0.150
Farm background	yes, no	0.098
Years lived on a farm	years	0.335
Resident of Georgia	yes, no	0.082
Size of home farm (owned)	acres	-0.006
Additional land rented	acres	0.037
Main crops on home farm:		
Corn	yes, no	0.181
Soybeans	yes, no	0.342
Wheat	yes, no	-1.252
Peanuts	yes, no	0.280
Other crops	yes, no	0.352
Typical number of livestock on home farm:		
Beef brood cows	head	-0.023
Other beef animals	head	-0.042
Dairy cows	head	-0.132
Sows	head	-0.059
Other swine	head	0.095
Broilers	no.	0.064
Layers	no.	-0.006
Other livestock	no.	0.112
Majoring in Ag. Economics	yes, no	-1.069
Agricultural Economics Option:		
Farm management/finance	yes, no	1.007
Marketing	yes, no	-1.759
Resource economics	yes, no	-2.297
Community development	yes, no	2.754
Major other than Ag. Economics	yes, no	1.071
Group 1 (farm career) mean		1.522
Group 2 (non-farm career) mean		-1.147
Canonical correlation		0.799
Wilks' lambda		0.362

Table 2. Age, Farm Experience, and Selected Characteristics of Home Farm for Farm Management Students, 1980-1985.

Variable	Mean	Standard Deviation	Range	C.V.
Age (years)	22.463	3.646	18-57	16.232
Years lived on a farm	8.827	9.958	0-35	112.810
Size of home farm (owned, acres)	308.622	1265.594	0-18,000	410.080
Additional land rented (acres)	87.631	316.107	1-2,300	360.727
Typical number of livestock on home farm:				
Beef brood cows	33.455	118.286	0-1,000	353.568
Other beef animals	12.414	59.551	0-600	479.696
Dairy cows	10.641	50.382	0-400	473.455
Sows	6.604	44.309	0-500	670.983
Other swine	27.270	172.506	0-2,000	632.578
Broilers	5,565.541	47,725.258	0-500,000	857.513
Layers	182.081	2,690.635	0-40,000	1,477.710
Other livestock	64.623	767.770	0-11,000	1,188.080

The fact that respondents who expected income from an agricultural and a non-agricultural related source preferred a farm career is no doubt related to the desire to operate a part-time farm. Farm income variables that contributed to a student preferring the farm were the major home farm crops of peanuts, soybeans, corn and "other." Larger swine herds and broiler flocks were associated with a preference for farming. Whereas beef, dairy, and layers were associated with a preference for a non-farm career. It is worthy of note at this point that enterprises can represent income potential but can also represent a source of satisfaction or dissatisfaction. It was expected that the larger the size of the home farm the greater the tendency to prefer farming. However, the results show that owned acreage was associated with a preference for a non-farm career. On the other hand, larger rented acreage was associated with a preference for farming. This result no doubt reflects the fact that most farmers own some land but have expanded by renting additional acreage.

The preference for farming because of the challenge and business opportunity was also an important variable. The positive sign on the sex variable suggests that male students have more of a tendency to choose the farm. Married students tended not to choose farming, but is probably related to the lack of income potential for supporting a family. The results for "age" suggest that the older students tend to prefer farm opportunities, or conversely the younger students tend to prefer non-farm opportunities.

The classification functions developed in this study correctly classified about 90 percent of the original cases. Such a result provides additional strong evidence that the variables selected accurately discriminate between the groups. The classification functions can be used to predict the likelihood of non-sample students preferring a farm vs. a non-farm career. However, this was not a major emphasis of this study since it would be necessary to survey the students in order to determine their values for the discriminating variables. Given this necessity one could also inquire about their career preferences.

Concluding Statement

This study attempted to identify the characteristics of students who prefer farming as a career vs. those who prefer a non-farm career. The discriminant analysis technique and the variables selected for study proved to be highly useful since about 90 percent of all the students were correctly classified.

Majoring in an agricultural field other than agricultural economics tended to be highly associated with plans to farm. Concentrating in the farm management-finance and community development options of agricultural economics were highly associated with a preference for farming. However, in general majoring in agricultural economics was highly associated with

non-farm careers. The farm as a "challenge and business opportunity" was also highly associated with preferring to farm. A number of income related variables such as the number of swine, broilers and miscellaneous livestock on the home farm were related to the desire to farm. Main crops produced on the home farm such as soybeans, peanuts, corn and miscellaneous crops were also associated with a preference for farming. The potential income from agricultural and non-agricultural related sources was also important, indicating a preference to farm part-time. Finally, the longer a student had lived on a farm plus that of having some farm background was related to planning a farm career.

The major variables associated with the preference for a non-farm career other than being an agricultural economics major and an "expected" vocational agricultural teacher were farm enterprises that tend not to be very profitable; for example, beef brood cows, other beef animals, and dairy cows. Married students as well as younger students also tended not to choose farming. Finally the marketing and resource economics options were associated with the non-farm choice.

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