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THE IMPACT OF SELECTED FACTORS ON SMALL FARMERS' PROFITS IN ALABAMA

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Abstract

Selected factors may influence small farmers' profits. However, there is limited research on the issue in Alabama. Thus, this study examined the impact of selected factors on small farmers' profits in Alabama. The data were collected from a purposive sample of producers from several counties in Alabama and analyzed using descriptive statistics and ordinal logistic regression analysis. The results showed that a majority had a farming experience of more than 10 years (57%); acreage farmed of 20 acres or less (57%), with 26% of this farming 5 acres or less. Also, a majority had operating expenses of less than $6,000 (69%) and gross receipts of less than $6,000 (65%). As a result of this, a lower proportion had profits of less than $5,000 (31%) but including losses and breaking even the proportion was higher (73%). The ordinal logistic regression analysis showed that, of the selected factors, only gross receipts and annual household income had statistically significant and positive effects on profits. The findings suggest that selected factors, in particular, gross receipts and annual household income, are important to farmers' profits in the study area.

Keywords: Alabama, Farmers' Profits, Profitability, Selected Factors, Small Farmers

INTRODUCTION

Small farms are important to U.S. Agriculture because they are usually one of the bedrocks of communities, especially rural communities. For instance, the United States Department of Agriculture National Agricultural Statistics Service [USDA NASS] (2016) found that 97% of farms were family farms; of these, 88% were considered small family farms with a gross cash farm income (GCFI) of less than $350,000. Indeed, it mentioned that West Virginia, Tennessee, New Hampshire, Alabama, and Oklahoma, were the top five states with small farms as a percent of total farms, respectively, 97%, 95%, 95%, 95%, and 94%. Hoppe, MacDonald, & Korb (2010) defined small farms as those that earn less than $250,000 in GCFI. They explained that those who earned less than $10,000 in GCFI are very small farms and comprise about 60% of all small farms. This latter group consists mainly of part-time farms because the owners depend on off-farm employment; hence, off-farm income. Hoppe et al. (2010) also emphasized that the remaining proportion of small farms are commercial farms; however, the trend of farms, in general, is toward larger operations. Therefore, the long-term trajectory of farm sales from such small commercial farms is on a decline.

GCFI is a measure of income that reflects how much a farm or farmer earns. Hoppe et al. (2010) defined GCFI as “the total revenue received by the farm business in a year. It is the sum of the farm’s cash and marketing contract revenues from the sale of livestock and crops, government payments, and other farm-related income, including fees from production contracts” (p. 2). The USDA Economic Research Service [ERS] (2022) also explained that its farm typology, based on farm size, is rooted in GCFI. It defined GCFI as “the farm’s revenue before deducting expenses, which includes sales, payments made under agricultural programs, and other farm-related cash income including fees from production contracts” (p. 1). It classified small family farms as farms with GCFI of less than $350,000; midsize family farms as farms with GCFI of $350,000-999,999, and large-scale family farms as farms with GCFI of $1,000,000 or more. What is more, Kassell (2022) defined GCFI as “the annual income before expenses. It is the sum of cash receipts, from farm-related cash income, and government direct farm program payments” (p. 2). Additionally, Kassell defined gross farm income as “the total value of agricultural output plus government farm program payments” and net farm income as “income after expenses from production in the current year and is calculated by subtracting farm expenses from gross farm income” (p. 3). The author stated that family farms, overall, made up almost 98% of all U. S. farms in 2020; however, small family farms (that is, those with less than $350,000 in GCFI) comprised about 89% of farms. Yet, large family farms (that is, those with $1,000,000 or more GCFI) comprised 7% of farms. She further emphasized that, although a

majority of farmers usually get off-farm income, small farmers particularly rely on off-farm income as a sizeable proportion of their household income.

Relatedly, the average size of farms in the nation is increasing, and at the same time, the importance of small farms is also increasing, at least in terms of the numbers. The USDA (2019a) reported that the average farm size was 441 acres in 2017, and 434 acres in 2012, a jump of 1.6% (compared to 418 acres in 2007). Also, the USDA (2019b) reported that the very small farms, farms with sales less than $50,000 made up 76% of farms but just 3% of sales. Yet, the largest farms, farms with sales of at least $5m, made up 1% of farms but 35% of sales. The preceding statistics mean that small farms relatively do not make much profits compared to larger farms. Despite this, profits are critical to the survival of all farms, especially small farms because they have a very small margin of error; making profits keeps them in business. Small farmers in Alabama are not an exception to this rule. In fact, as indicated earlier, Alabama is one of the top states with a high proportion of small farms relative to large farms. Yet, there is limited research regarding the factors that affect the profits earned by small farmers in Alabama. Thus, the purpose of this study is to assess the impact of selected factors on small farmers' profits in Alabama. The specific objectives were to (1) identify and describe selected factors, and (2) estimate the extent to which the factors affect profits. The rest of the article covers the relevant literature, methodology, results and discussion, and conclusion.

LITERATURE REVIEW

Several researchers have examined the issue of the effects of factors on farm profitability or income; however, none has examined it from the perspective of Alabama, especially small farmers. The literature covers, chronologically, selected research on the issue. For instance, Mishra, El-Ostu, & Steele (1999) assessed factors affecting the profitability of limited resource and other small farms. They used data from Agricultural Resource Management Survey (ARMS) and analyzed the data by regression analysis. The results showed that, for the limited resource farms, soil productivity and crop insurance had significant and positive effects on profitability; however, age, debt-to-asset ratio, and the proportion of variable costs to total cost had significant and negative effects on profitability. What is more, for the other small farms, farm size, business organization (sole proprietorship), farm diversification, and crop insurance had significant and positive effects on profitability, and age and the proportion of variable costs to total cost had significant and negative effects on profitability.

Further, Safa (2005) evaluated the impact of socioeconomic factors affecting the income of small-scale agroforestry farms in Yemen. They collected data through a survey and analyzed the data using regression analysis. The author reported a mean family size of 9; mean age of

49.4 years; mean years of schooling of 2 years, and a mean farm size of 2.47ha (6.18ac). Education, family size, farm size, and livestock holding had positive and significant effects on farm income. However, age was not significant but had a negative effect on farm income.

Additionally, Mishra, Wilson, & Williams (2009) examined the factors affecting financial performance, measured as return-on-assets, of new and beginning farmers. They obtained data from the 2005 ARMS and assessed the data by regression analysis. They found that the presence of a tenant, farm size, debt-to-asset ratio, using computers for record-keeping, the number of decision-makers, government payments, and the presence of a business plan had significant and positive effects on financial performance. They also found that age, education, off-farm income, the rural nature of farm location, and the proportion of variable costs to total cost had significant and negative effects on financial performance.

Moreover, Patterson-Andrews & Pemberton (2014) analyzed the factors that affect the profitability of small-scale farmers in Southern Trinidad & Tobago. Data were obtained by using a survey and were evaluated by regression analysis. Their results revealed that the mean years of schooling were 8.8 years; the mean age of farmers was 53.4 years; the mean farming experience was 19 years, and the mean farm size was 1.23 acres. They found that farming experience had a significant and positive impact on profitability, and that age had a significant and negative impact on profitability.

Also, Kanyua, Ithinji, Waluse, & Wairimu (2015) investigated the factors influencing the profitability of diversified cash crop farming among smallholder tea farmers in Kenya. They also obtained data by using a survey and assessed the data by regression analysis. They reported that farm size, farming experience, hired labor, and use of fertilizer had significant and positive effects on profitability. However, gender and credit had significant and negative effects on profitability. Household size, age, education, and off-farm income were not significant.

Furthermore, Tey & Brindal (2015) examined the factors that influence farm profitability. They did their analysis by assessing several previous studies on the subject, using the vote count method. Their findings showed that the effects of education, age, farming experience, and farm size were contradictory; that is, they had mixed results of significant and insignificant effects on profitability. However, overall, they found mostly insignificant effects on profitability. On the flip side, their findings showed that the effects of expenses, output prices, and earnings were also contradictory, but mostly had significant effects on-farm profitability. In other words, financial factors were more likely to influence farm profitability than socioeconomic and/or farmer factors.

Yet, Jenkins (2015) also posited six factors that interact to affect farm profits. These were the number of production units (i.e., number of acres, or number of animals); production

per unit (e.g., yield per acre, or weaning weight); variable costs (i.e., costs that change with production); value per unit (i.e., the price received); enterprise mix, and overhead costs (i.e., indirect costs). The author suggested that farmers should consider/ascertain each factor and deal with it appropriately in order not to “fly blind”, in terms of knowing which particular factors affect their profitability.

In addition, Noack & Larsen (2019) assessed the contrasting effects of farm size on farm incomes and food production in Uganda. They used panel data for rural households and evaluated the data using regression analysis. The authors reported that output per unit of land decreased with increasing farm size. However, farm income increased with farm size; thus, leading to more stable incomes. They also reported that the variance of production increased with farm size, while the variance of farm incomes decreased with farm size.

What is more, Teshome, Hailu, Habte, Deribe, & Amsalu (2020) analyzed factors affecting the profitability of smallholder bean producers in Ethiopia. They used a survey to collect the data and assessed the data by regression analysis. Their findings showed that gender, farm experience, group membership, and target market channel had significant and positive effects on profitability. The findings also showed that age, family size, distance from the market, off-farm income, and fertilizer source had significant and negative effects on profitability.

Finally, Hollas et al. (2021) investigated factors related to the profitability of Agritourism in the United States. The researchers surveyed a group of owners and operators and assessed their data using regression analysis. The results showed that farming experience, farm size, on-farm sales, and offering events and entertainment had significant and positive effects on profitability. Also, gender and off-farm sales had significant and negative effects on profitability.

METHODOLOGY

Research Design and Data Collection

This research derived its data from a questionnaire, which was made up of three sections, including, farm characteristics, record keeping practices, and demographic characteristics. Before the questionnaire was administered, it was submitted to the Institutional Review Board of the researchers’ Institution for review and approval. It was administered to a purposive sample of small farmers, because of the lack of an appropriate sampling frame from which the subjects of interest could be drawn.

The data used in this study were primary data collected by interviewing small farmers in several counties of South Central Alabama, namely, Barbour, Bullock, Dallas, Greene, Hale,

Lowndes, Macon, Marengo, Perry, Sumter, and Wilcox. The interviews were conducted by Extension agents and other outreach professionals in the various counties, from the fall of 2020 to the summer of 2021. Thus, the underpinning research design in the study was a descriptive and analytical one. design. The total sample size was 51 and was considered adequate for the study. The reason is that the number of observations is more than the number of independent variables (Gujarati & Porter, 2009).

Data Analysis

The data analysis was based on descriptive statistics and ordinal logistic regression analysis. The model used was derived from one used by Banterle & Cavaliere (2009), and previously used in other studies by Tackie et al., for example, Tackie, Bartlett, & Nunoo (2019). It is stated as follows:

$$C_j(X_i) = \ln [P(Y>j|X_i)/P(Y\leq j|X_i)] = \beta_1 X_{i1} + \ldots + \beta_{ik} X_{ik} - \tau_j + 1 \quad (1)$$

where $C_j(X_i)$ is the cumulative odds of being at or below category j of an ordinal variable with K categories, $1 \leq j \leq K-1$; i is the number of participants/farmers considered; j is the score for a category (of Y); k is the number of independent variables; Y is the dependent variable; X_{ij} represents the independent variables; β_i represents the coefficients, and τ represents the cut points between categories of the dependent variable.

Although the total sample was 51, for the ordinal logistic regression analysis, the number of observations used was 46, after eliminating "no responses" to some questions. The estimation model is stated as:

$$\ln (P\text{PRO}>j/P\text{PRO}\leq j) = \beta_1 \text{FEX} + \beta_2 \text{ACF} + \beta_3 \text{OEX} + \beta_4 \text{GRE} + \beta_5 \text{FAS} + \beta_6 \text{GEN} + \beta_7 \text{RAE} + \beta_8 \text{AGE} + \beta_9 \text{EDU} + \beta_{10} \text{AHI} - \tau + 1 \quad (2)$$

where ln (*P*PRO>j/*P*PRO≤j) is cumulative odds of being at or below a profit (PRO) category; FEX is farming experience; ACF is acreage farmed; OEX is operating expenses; GRE is gross receipts; FAS is farming status; GEN is gender; RAE is Race/ethnicity; AGE is Age; EDU is Education, and AHI is Annual Household Income.

In brief, the estimation model hypothesizes that profits are influenced by farming experience, acreage farmed, operating expenses, gross receipts, farming status, gender, race/ethnicity, age, education, and annual household income. The overall null hypothesis is that all the regression coefficients together are equal to zero or the independent variables together do not affect profits. The hypothesized signs were as follows: farming experience (+/-); acreage farmed (+); operating expenses (+/-); gross receipts (+); farming status (+/-);

gender (+/-); race/ethnicity (+/-); age (+/-); education (+), and annual household income (+). These imply that the sign of farming experience could go either way; the higher the acreage farmed the more the profits; the sign of operating expenses could go either way; it depends on the extent to which it changes. If expenses increase and receipts increase but more than expenses, then the sign will be positive. However, if expenses increase but receipts stay the same or reduce, then the sign will be negative, and the higher the gross receipts the higher the profits. Moreover, full-time producers will have higher profits than part-time producers; the sign on gender could go either way; the sign on race/ethnicity could go either way; the sign on age could go either way; producers with higher education will earn higher profits, and higher annual household income producers will earn more profits. In the study, profit is defined as gross receipts minus operating expenses. The details of the variable names and descriptions used for the model are shown in Appendix Table 1. The ordinal logistic regression analysis was run for the model, using SPSS 12.0© (MapInfo Corporation, Troy, NY). The criteria used to assess the model were the model chi-square, beta coefficients, and *p* values.

RESULTS AND DISCUSSION

The results of the socioeconomic and other farm factors (Tables 1 and 2) are reported in another related study, but they are reported here to provide context for this present study.

Table 1 presents the socioeconomic factors associated with respondents. A majority of them were part-time producers relative to full-time producers (82 vs. 18%); were males relative to females (63 vs. 37%), and were Blacks relative to other races/ethnicities (84 vs. 16%). Furthermore, 6% were 34 years or younger; 59% were 35-64 years, and 35% were 65 years or above. Yet, 53% were 55 years or above. Moreover, 33% had an educational level of at most a high school education; 31% had an educational level of a two-year/technical degree or at the most, some college education, and 35% had an educational level of at least a four-year college degree. Additionally, 45% earned an annual household income of less than $30,000; 27% earned an annual household income of $30,000-49,999; 18% earned an annual household income of $50,000-69,999, and only 6% earned an annual household income of $70,000 or higher. However, 63% earned an annual household income of less than $40,000, and 33% earned an annual household income of $40,000 or higher. In sum, the producers were mostly part-time, males, Blacks, middle-aged or older, had less than a four-year college degree, and earned less than $40,000.

Table 1. Socioeconomic Factors Associated with Respondents (N = 51)

Variable	Frequency	Percent
Farming Status		
Full-time	9	17.6
Part-time	42	82.4
Gender		
Male	32	62.7
Female	19	37.3
Race/Ethnicity		
Black	43	84.3
Other	8	15.7
Age		
20-24 years	0	0.0
25-34 years	3	5.9
35-44 years	8	15.7
45-54 years	13	25.5
55-64 years	9	17.6
65 years or older	18	35.3
Educational Level		
High School Graduate or Below	17	33.3
Two-Year/Technical Degree	10	19.6
Some College	6	11.8
College Degree	13	25.5
Post-Graduate/Professional Degree	5	9.8
Annual Household Income		
$19,999 or less	9	17.6
$20,000-29,999	14	27.5
$30,000-39,999	9	17.6
$40,000-49,999	5	9.8
$50,000-59,999	4	7.8
$60,000-69,999	5	9.8
$70,000 or more	3	5.9
No response	2	3.9

Table 2 reflects other farm factors. Approximately 37% cultivated crops; 29% raised livestock, and another 29% had mixed enterprises; the distribution of the main enterprises appears fairly balanced. Forty-three percent (43%) had been farming for 10 years or less, and 57% had been farming for more than 10 years. Yet, 29% had been farming for 11-20 years; 16% had been farming for 21-30 years, and 12% had been farming for more than 30 years. Also, a majority, 73% had acreage farmed of 30 acres or less and 24% had acreage farmed of more than 30 acres. However, 33% had acreage farmed of 10 acres or less, and 57% farmed 20 acres or less.

Table 2. Other Farm Factors (N = 51)

Variable	Frequency	Percent
Enterprises		
Crop	19	37.3
Livestock	15	29.4
Both	15	29.4
Other	2	3.9
Specific Enterprises		
Vegetables	13	25.5
Livestock & related enterprises	12	23.5
Timber	1	2.0
Mixed Enterprise	3	5.9
No Response	22	43.1
Farming Experience		
1-5 years	11	21.6
6-10 years	11	21.6
11-15 years	9	17.6
16-20 years	6	11.8
21-25 years	3	5.9
26-30 years	5	9.8
More than 30 years	6	11.8
Total Acreage Farmed		
5 acres or less	13	25.5
6-10 acres	4	7.8
11-15 acres	4	7.8
16-20 acres	8	15.7
21-25 acres	2	3.9
26-30 acres	6	11.8
More than 30 acres	12	23.5
No Response	2	3.9
Estimated Operating Expenses		
$1,999 or less	17	33.3
$2,000-5,999	18	35.3
$6,000-11,999	5	9.8
$12,000-15,999	3	5.9
$16,000 or more	2	3.9
Don’t Know	5	9.8
No Response	1	2.0
Estimated Gross Receipts		
$1,999 or less	18	35.3
$2,000-5,999	15	29.4
$6,000-15,999	6	11.8
$16,000-23,999	4	7.8
$24,000 or more	1	2.0
Don’t Know	7	13.7
Estimated Profits		
Less than Zero (Loss)	11	21.6
Zero (Break-even)	10	19.6
$1-$2,499	10	19.6
$2,500-4,999	6	11.8
$5,000 or more	4	7.8
Don’t Know	9	17.6
No Response	1	2.0

Further in table 2, Regarding finances, 33% had operating expenses of $1,999 or less; 35% had operating expenses of $2,000-$5,999; 10% had operating expenses of $6,000-$11,999; 6% had operating expenses of $12,000-$15,999; 4% had operating expenses of equal to, or greater than $16,000, and 10% did not know their operating expenses. Overall, a higher proportion had operating expenses of less than $6,000 than above it (69%). On the flip side, 35% had gross receipts of $1,999 or less; 29% had gross receipts of $2,000-$5,999; 12% had gross receipts of $6,000-$15,999; 8% had gross receipts of $16,000-$23,999; 2% had gross receipts of equal to, or greater than $24,000, and 14% did not know their gross receipts. Here also, overall, a higher proportion had gross receipts of less than $6,000 than above it (65%). Consequently, 41% of the producers, either made losses, or broke-even; 20% earned profits of less than $2,500; 12% earned profits of less than $5,000; 8% earned profits of equal to, or greater than $5,000, and 18% did not know whether they made profits or not. It appears this particular group of producers are struggling to make money. Since many of them are part-time producers, they may be supplementing their operations with income from other sources. It is not surprising that 18% did not know whether they made profits or not. It speaks volumes about the issue of record keeping. Also, based on the aforementioned findings, the producers in the study may be classified as “very small producers.” That is, they farm relatively small acreages, earn relatively low sales (gross receipts) and profits, and have relatively low financial assets/resources, as measured by annual household income compared to the average producer or average small producer (that is, using the USDA ERS threshold of GCFI of less than $350,000, as a proxy for profit) (USDA ERS, 2022).

Table 3 shows the estimates for the model, selected factors, and their effects on the profits of small producers. It reflects the overall statistical significance of the model (p = 0.000), i.e., at least one or all of the independent variables jointly explain the variation in the dependent variable (profits), or at least one of the selected factor regression coefficients is not equal to zero. Gross receipts and annual household income had statistically significant and positive effects on profits, respectively, p = 0.000 and p = 0.046. The coefficient for gross receipts means that for one unit increase in gross receipts, the expected ordered log-odds increases by 1.248 moving from one category to the next higher category of profits earned, all things equal. Similarly, for annual household income, it implies that for one unit increase in annual household income, the expected ordered log-odds increases by 0.421 moving from one category to the next higher category of profits earned, all things equal. Identical explanations apply to the other variables in the model. In other words, gross receipts and annual household income contribute greatly to profits earned. The higher the gross receipts, the higher the profits earned, and the higher the annual household income, the higher the profits earned.

Table 3. Estimates for Selected Factors and their Effects on Profits

Variable		β	*p*
Faming experience		0.202	0.300
Acreage farmed		-0.082	0.600
Operating expenses		0.302	0.285
Gross receipts		1.248***	0.000
Farming status		-0.545	0.532
Gender		-0.146	0.837
Race/ethnicity		0.328	0.773
Age		-0.043	0.882
Education		-0.371	0.166
Annual household Income		0.421**	0.046
Chi-square	df = 10	42.871*** (*P* = 0.000)	
Nagelkerke R^2	0.626		

***Significant at 1%; **Significant at 5%

The results regarding gross receipts and annual household income are not unexpected. For instance, for gross receipts, it is expected that as farmers earn more gross receipts, all things equal, they would attain more profits. Similarly, for annual household income, it is expected that as farmer households earn more annual household income, all things equal, they would be able to acquire more resources to invest in their operations, and thus be able to earn more profits. The result on gross receipts agrees with Hollas et al. (2021), who reported that on-farm sales had a statistically significant and positive effect on profits. Farming experience, acreage farmed, operating expenses, farming status, gender, race/ethnicity, age, and education were not statistically significant. Despite this, they were in the order of the expected signs, except acreage farmed and education, which were negative. This means that farmers with more experience are more likely to earn more profits; farmers that have more expenses, yet, the expenses increase less than receipts are likely to earn relatively more profits; part-time farmers are less likely to earn more profits, and female farmers are less likely to earn more profits. Additionally, farmers of other races/ethnicities are more likely to earn more profits, and younger farmers are less likely to earn more profits. As indicated earlier, it was expected that higher acreage farmed and education would result in more profits; however, it turned out not so. For acreage farmed, the reason for the counterintuitive finding may be attributed to the relatively smaller sizes of farms; 61% farmed 25 acres or less; 57% farmed 20 acres or less, with 26% of these farming 5 acres or less, and 41% farmed 15 acres or less. Also, for education, the reason for the counterintuitive finding may be due to the sizeable proportion of respondents with less

than four-year college education (65%), or high school education or lower (33%). Furthermore, on the issue of only two of the factors being significant and others not, lines up well with Tey & Brindal's (2015) finding that the literature on factors that affect farm profitability is generally contradictory; that is, in some studies, particular factors were significant, while in other studies these same factors were not.

CONCLUSION

The study assessed the impact of selected factors on small farmers' profits in Alabama. Particularly, it identified and described selected factors, and estimated the extent to which the factors affect profits. The data were collected using a questionnaire and were analyzed by descriptive statistics and ordinal logistic regression analysis. The results revealed that a majority of the producers were part-time farmers; were males; were middle-aged or older; had some college education or lower educational level, and had an annual household income of less than $40,000. Furthermore, there was a fair balance among the major enterprises; a majority had a farming experience of more than 10 years (57%); acreage farmed of 20 acres or less (57%), with 26% of this farming 5 acres or less; also, a majority had operating expenses of less than $6,000 (69%); had gross receipts of less than $6,000 (65%). A sizable proportion made profits of less than $5,000 (31%). The ordinal logistic regression analysis showed that selected factors, namely, gross receipts and annual household income had statistically significant and positive effects on profits; the signs were expected. However, the other factors were not statistically significant.

The findings suggest that, at least, gross receipts and annual household income are important to profits. It is plausible that other factors may also be important to profits, though not observed in this study. Probably, policies to enhance gross receipts or sales of small farmers may be in order. This could be done at the state and federal levels, as well as at the non-profit or private levels. For instance, at the federal level, more small farmers could be made eligible for price support, direct payment, and insurance programs. These programs could be particularly tailored and/or targeted at small farmers. It should not be a "one-size fits all" approach. This will go a long way to shore up the incomes of small farmers being that many of them struggle to make profits in farming as this study shows. The main contribution of the study is the indication that selected factors, gross receipts, and annual household income, matter in the profits of small farmers in the study area. What is more, this research has laid the groundwork for further studies. Future studies may entail, but are not limited to, replicating this study, using a larger sample size, and/or covering a larger geographical area.

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APPENDIX

Variable Definitions and Description of Data for the Various Models

Table 1. Variable Definitions and Description of Data for Selected Factors and Profits Model (N= 46)

Variable	Description	Mean	Standard Deviation
Farming experience	1 = 1-5 years 2 = 6-10 years 3 = 11-15 years 4 = 16-20 years 5 = 21-25 years 6 = 26-30 years 7 = More than 30 years	3.39	2.00
Acreage farmed	1 = 5 acres or less 2 = 6-10 acres 3 = 11-15 acres 4 = 16-20 acres 5 = 21-25 acres 6 = 26-30 acres 7 = More than 30 acres	4.17	2.32
Operating Expenses	1 = $1,999 or less 2 = $2,000-5,999 3 = $6,000-11,999 4 = $12,000-15,999 5 = $16,000 or more 6 = Don't know	2.37	1.54
Gross Receipts	1 = $1,999 or less 2 = $2,000-5,999 3 = $6,000-$15,999 4 = $16,000-23,999 5 = $24,000 or more 6 = Don't know	2.50	1.68
Farming status	1 = full-time 2 = part-time	1.85	0.36
Gender	1 = male 0 = female	0.65	0.48
Race/ethnicity	1 = Black 2 = Other	1.15	0.36
Age	1 = 20-24 2 = 25-34 3 = 35-44 4 = 45-54 5 = 55-64 6 = 65 or above	4.48	1.28
Education	1 = high school or less 2 = two-year/technical 3 = some college 4 = college degree 5 = post-graduate/professional	2.56	1.41

Annual Household income	1 = $19,999 or less 2 = $20,000-29,999 3 = $30,000-39,999 4 = $40,000-49,999 5 = $50,000-59,999 6 = $60,000-69,999 7 = $70,000 or more	3.00	1.76
Profits	1 = Less than zero (loss) 2 = Zero (break-even) 3 = $1-$2,499 4 = $2,500-4,999 5 = $5,000 or more 6 = Don't know	3.13	1.77