REFEREED ARTICLE

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The Likelihood for Small and Mid-Scale Farmers in Kentucky to Participate in Training and Technical Assistance Programs on the Best Practices of Farm Management

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ABSTRACT

This study analyzed 1-5 scale levels of interests in participating in training and technical assistance programs among small and mid-scale farmers in Kentucky. The study used mail and online survey data collected in 2017 from 129 small and mid-scale famers. An ordered Probit model was employed to analyze the data. Results indicate that beginning full-time farmers, married beginning farmers, educated female farmers, and owners of less profitable farms are willing to participate. Results suggest further that experienced farmers and those with greater confidence/knowledge about farm management practices are less likely to participate. There is no evidence to suggest that agriculture-related education make difference in the likelihood to participate. This study is significant to extension agencies, policy makers, and other stakeholders in agriculture industry as it provides characteristics of those small and mid-scale farmers interested in the educational and technical assistance programs.

KEYWORDS: Small and mid-scale farmers; participation; training and technical assistance

Introduction

The number of small and mid-sized farms in the United States has rapidly declined within the past century (U.S. Department of Agriculture, 2019). Historically, several small and mid-scale farmers obtain their operational skills and knowledge from generations in their families or communities that preceded them. Toffolini *et al*. (2017) indicated that there are many farmers with little knowledge and experience to guide their farming decisions. Their study also showed potential small-scale farmers without the resources of knowledge within their families or communities to help them. Ingram (2008) and Trede & Whitaker (1998) documented similar challenge.

In order to run an effective operation in the 21st century, farmers are expected to have agribusiness managerial skills, entrepreneurial abilities, and basic farming skills (Coombs, Jeong, & Suvedi, 2010). Production and farm management practices should be effective and efficient among small and mid-scale farmers to sustain and/or expand their farm operations. Many technical skills like operating farm machinery and equipment, safety knowledge, pesticide control, and efficient harvesting techniques are vital to farming success. Crucial solutions to sustain small and mid-scale farming include offering programs that provide training and/or technical assistance about the best practices of farm management.

There are numerous courses and programs around the country to educate farmers on various topics (Domoto, *et al*., 2015). However, the amount of literature available showing the interest in these programs is scant. Studies like this are necessary to determine interests of small and mid-scale farmers in participating in educational and assistance opportunities. Consequently, this study primarily determines and explains the likelihood for small and mid-scale farmers to participate in educational/training and technical assistance programs on the best practices of farm management. In the context of this study, the best practices of farm management refer to knowledge, skills, and application of: agricultural production, economic principles, whole farm budgeting, agricultural marketing,

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farm accounting techniques, farm investment analysis, and farm finance.

Specific objectives for this study are to: (i) describe the characteristics of small and mid-scale beginning and experienced farmers in Kentucky, (ii) estimate relative probabilities for the farmers to participate in educational and technical assistance programs, and (iii) explain effects of farmers' characteristics on the probabilities of participating in educational/training and technical assistance programs. We also examine whether the likelihood among beginning farmers is statistically different from those among experienced farmers. This study is significant and beneficial to small and mid-scale farmers, extension specialists, agricultural policy makers, and research community. These stakeholders will use findings from this study when carrying out their daily activities to serve the farming community.

Review of literature

As previously stated, the literature available on this specific topic is limited. Few studies are available regarding likelihood of farmers to participate in educational programs. For example, Cannella, Dolce, and Kitsos (2017) found that 41% of farmers who participated in educational programs increased knowledge and skills to manage farm operations successfully and 56% of them would participate again. Adams *et al*. (2014) posited that 23% of farmers in North Caroline were very willing to participate in educational programs related to climate change and its impact on agriculture; 59% were somewhat willing while only 18% would be not at all willing to participate.

Surls *et al*. (2015) indicated that farmers in urban California were more willing to participate in online educational programs rather than in-person due to convenience factors that impacted their daily routines. Harms *et al*. (2013) documented a need of educational programs and assistance for farmers dealing with soil contamination. Many participants in their study indicated little to no knowledge on soil contamination and that they would benefit from education programs offered by extension agencies. Oberholtzer, Dimitri, and Pressman (2014) found that urban farmers in the U.S. need technical assistance and information about financial planning for farm business, marketing and product development. This gives educational providers an insight regarding courses to offer to farmers particularly within urban areas. On the other hand, Zamudio, Mars, and Torres (2016) found that most of the farmers and ranchers in Arizona do not participate in educational courses and tend to rely on trial and error.

Charatsari, Istenic, and Lioutas (2013) reported that female farmers in Greece were highly willing to participate in educational programs that help them obtain leadership positions within agriculture industry. They found that almost a half of farmers would not be willing to pay to attend any educational program that had a duration of longer than two days. Another study by Suvedi, Ghimire, and Kaplowitz (2017) reported that distance to the extension office and off-farm employment limit participation while education and household size increase it. Since the literature related to this topic is limited, this study brings a timely contribution.

Data collection

This study uses data collected small and mid-scale farmers in Kentucky through both mail and online anonymous surveys. Data collection was completed in 2017. Prior to the actual data collection phase, the survey was pretested. Research team distributed it to 36 local farmers who attended an educational workshop in November 2016. The farmers helped revise some survey questions to improve clarity and relevance.

Respondents were identified through the use of a public directory of farms (Kentucky Department of Agriculture, 2017). All farms in the state, including members of Kentucky Proud program are eligible to register in the public registry. The directory includes farm names, mailing addresses, phone numbers, and websites (if available). We mailed the surveys to addresses of these farms. We included an electronic link to the survey for those farmers who would prefer taking the survey online. Surveys were anonymous to provide comfort for respondents when answering questions about personal characteristics. Participants were offered a chance to win one of five $50 Visa gift cards. We believe this strategy stimulated more participation in this study than it would have been otherwise. Within two months, 138 copies of the survey were completed; 32 online and 106 paper-based. In this study, we only considered 129 responses from small and mid-sized farms classified as small and mid-size farms (U.S. Department of Agriculture, 2013). Since this study is about small and mid-scale farmers, the survey included a question about annual gross farm sales categories [(1) less than $250,000, (2) $250,001-$500,000, and (3) more than $500,000] for the previous year; 2016. Nine responses were excluded because the annual gross sales exceeded $500,000.

The survey included several questions; most of which sought to collect information about farmers characteristics. This analysis focuses on answers to the 1-5 scale question about levels of interest (not interested, slightly interested, somewhat interested, very interested, or extremely interested) that respondents have in participating in a training and technical assistance program on the best practices for farm management. The responses to this question constitute a dependent/explained variable in this analysis.

Model specification

Based on the nature of the explained/dependent variable, an ordered Probit model is the most appropriate analytical approach. As Train (2009) and Kennedy (2008) indicated, such a model is applied when choice options in the dependent variable are presented in a certain order. In this study, the dependent variable consists of responses to the question: "Would you be interested in participating in a program that provides training and/or technical assistance about the best practices of farm management?" Choice options/alternatives were: not interested (1), slightly interested (2), moderately interested (3), very interested (4), and extremely interested (5). Before this question, respondents were given a list of elements of the best practices of farm management. As previously indicated, those elements are: agricultural production, economic principles, whole farm budgeting,

agricultural marketing, farm accounting techniques, farm investment analysis, and farm finance.

Train (2009) indicated that from a modeling perspective, responses of this kind are treated as ordered. In this study, an interest level 5 is higher than 4, which is higher than 3, which is higher than 2, which is higher than 1. Each respondent has certain level of interest in the program. Let that level of interest be represented in an unobservable variable U. Higher values of U indicate greater interests and lower values suggest otherwise. Thus, for individual respondent i choosing a specific j option/alternative from a set of J options/alternatives, his/her U can be decomposed into observed and unobserved components:

$$U_{ij} = V^*_{ij} + \epsilon_{ij} \text{ for } i = 1, \ldots, I \text{ and } j = 1, \ldots, J \quad (1)$$

The V^*_{ij} in (1) is the latent observed/deterministic component and ϵ_{ij} represents the unobserved factors and is considered random. As researchers, we cannot observe ϵ_{ij}. Instead, upon answering to the survey question, we are able to observe the choices made. Such choices are associated with the choosers' characteristics X. As a result, V^*_{ij} can be expressed as follows:

$$V^*_{ij} = \beta' X_{ij} + \mu_{ij} \text{ for } i = 1, \ldots, I \text{ and } j = 1, \ldots, J \quad (2)$$

The μ_{ij} represents an error term; which is assumed to be normally distributed N (0, Ω) so that Probit model becomes appropriate (Train, 2009). The parameter β is to be estimated and differs across choice options/alternatives. The chooser's outcome y is based on the value of his/her V^*. since the outcomes are presented in a certain order, if V^*_{ij} is above some cutoff, which we label c_1, the respondent chooses the highest choice option "extremely interested." If V^*_{ij} is below c_1 but above another cutoff, c_2, then he/she chooses the next lower choice option "very interested" and so on. Hence, the respondent's choice decision (y) is represented in (2) below:

$$y = 1 \text{ if } 0 < V^*_{ij} \le c_1,\ 2 \text{ if } c_1 < V^*_{ij} \le c_2,\ \ldots, \text{J if } c_{J-1} < V^*_{ij} \le c_J \quad (3)$$

The c's are the unknown threshold parameters to be estimated along with the parameter vector β. Because respondents expressed their ordered levels of interests, this model results in ordered log-odds. For each explanatory variable in the X_{ij} in equation (2), the β's are log-odds that provide a measure of its impact on the chances of interests falling into the highest category (extremely interested) over chances of falling into categories of lesser interests (very interested, moderately interested, slightly interested, and not interested). Dummy variable effects are measured and interpreted as the probability difference between X_{ij} values of zero and one. From equation (3), the probability that y will take on a particular value for an individual respondent i is given by:

$$\text{Prob}\,(y = j|\text{X}) = \exp\left(\beta' X\right) / \left[1 + \exp\left(\beta' X\right)\right] \quad (4)$$

The null hypothesis in this study is that there is no relationship between chooser's characteristics and the levels of interests in participating in programs aimed at training and/or providing technical assistance; i.e. H_0: $\beta_k = 0$ where k denotes an explanatory variable. The alternative is that there are significant relationships between respondent's characteristics and the levels of interests; i.e. H_1: $\beta_k \neq 0$.

Results

Results from this study consists of (i) descriptive statistics for variety of farmer characteristics among small and mid-scale farmers, (coefficient estimates, and (iii) marginal effects. Table 1 displays the mean values of farmer responses for beginning farmers and experienced farmers. The first column displays variable names and information

Table 1: Mean Values by Farming Experience (Beginning or Not)

Variable name	Description	Mean Values		
		Beginners	Experienced	Total
BeginningFarmers	Beginning farmer	1.00	.00	.42
Fulltime_Beginners	Fulltime beginning farmer	.27	.00	.11
Married_Beginners	Married beginning farmer	.69	.00	.29
Beginning_Female	Female beginning farmer	.48	.00	.20
Educated_Beginner	Beginning farmer with college degree	.54	.00	.23
FiftyandOlder	Is at least 50 years older	.39	.66***	.56
Female	Female	.48**	.30	.37
Married_Female	Married female	.41***	.21	.29
Educated_Female	Female with a 4-year college degree	.30***	.14	.21
FourYearCollGrad	Respondent has at least a 4-year college degree	.54	.45	.49
GovFundUser	Uses any government funded farm program	.06	.10	.08
BPFM_User	Thinks he/she uses best practices of farm management	.71	.88**	.81
EntryFarmers	Less than 5 years of farm experience	.61	.00	.26
MentorNewFarmer	1-5 scale interest level in mentoring a new farmer	2.98	2.88	2.92
HowProfitable	1-5 scale level of farmer's feeling about profitability	2.8***	2.37	2.54
StrategicPlan	Has a farm business plan	.27**	.12	.19
AgRelated_Educa	Studied agriculture	.41	.33	.36
HowOftenExteUse	1-5 scale of the frequency use of extension programs/services	2.75*	2.05	2.40
KnowConfideBPFM	1-5 scale levels of knowledge confidence about best practices of farm management	2.79	2.90	2.85

*, **, and *** indicate 10%, 5%, & 1% p-values for mean differences between "beginners" and "experienced."
Note: All variables with .XX are dummy (binary) with the description taking the value of 1, and 0 otherwise.

about what each variable represents. Subsequent columns contain mean/average values for beginning farmers, experienced farmers, and total; respectively. As previously noted in the introductory section, this study is also interested in assessing whether interests among beginning farmers are different from those of experienced farmers. In the United States, beginning farmers are defined as farmers with at most 10 consecutive years of farming experience (U.S. Department of Agriculture, 2010).

Beginning farmers who participated in this study constitute 42%. We found that only 27% of these beginning farmers consider themselves fulltime, 69% of them are married, 48% are female, and 54% have at least a 2-year college degree. We found that although beginning farmers seem to indicate higher interests in training and technical assistance programs than experienced farmers, the difference is not statistically significant. Overall, the level point suggest that small and mid-scale farmers are moderately interested. Likewise, this study seems to suggest that small and mdi-scale farmers in Kentucky are moderately interested in mentoring entering/new farmers.

As expected, the percentage of experienced farmers with more than 50 years old (66%) is significantly greater than that of beginners (39%). The difference between females and experienced females who participated in this study is statistically different from zero. The percentage of beginning females (48%) is greater. Coincidently, the percentage of beginning married females (40%) is significantly higher that the percentage of married experienced females (21%). Likewise, the percentage of beginning females who are educated (30%) is significantly higher that the percentage of educated females that have been farmers for more than 10 years (14%).

We found no evidence to suggest that the percentage of beginning farmers with at least 4-year college degree is significant from experienced farmers with similar education level. Another question of interest we asked was about the 1-5 scale levels (extremely low, slightly low, fairly knowledgeable, very knowledgeable, extremely knowledgeable) of knowledge confidence about the best practices of farm management. There is no evidence to suggests significant difference between the two groups. Overall, we found that the farmers believe they have a fair level of knowledge confidence.

We further found that only 19% of the farmers have some form of a written farm business plan. This finding seems incompatible with the fact that the vast majority claim to be users of the best practices of farm management. One would expect that users would possess written strategic plans for their farming operations. On average, the percentage of beginning farmers (27%) is significantly higher than the percentage of experienced farmers (12%). The descriptive statistics displayed in Table 1 indicate that 41% of beginning farmers were educated in agriculture-related studies while 33% of the experienced ones did so. However, the statistical test indicated no significant difference between these two means. We also found no evidence to suggest a group-based difference in interests in mentoring new farmers. Both beginning and experienced farmers exhibit moderate degrees of interest in mentoring new farmers.

Results in the last column indicated mean values for the entire sample regardless of the farming experience. For example, 42% of all study participants are beginning farmers, 11% are fulltime beginners, and 29% are married beginning farmers. The majority (56%) is more than 50 years old. We found that 36% have a written strategic plan for their farming business.

Table 2 presents coefficient estimates obtained from the Ordered Probit Regression. As previously indicated, the dependent variable consists of the varied interest levels in participating in a training and technical assistance programs about the best practices of farm management. The statistics show that the likelihood ratio chi-square of 78.87 with a p-value of 0.0000 implies that the ordered Probit model we chose is statistically significant as a whole. As noted previously in the section of theoretical model, the cut1, cut2, cut3, and cut4 indicate thresholds where the latent variable is cut to make the five levels that we observe in the data. The thresholds results show that respondents with any level less than 1.711 are clearly not interested at all. Those with levels between 1.712 and 2.776 are slightly interested. Those with levels between 2.777 and 3.800 are somewhat interested. Those with levels between 3.801 and 4.495 are very interested while those with levels between 4.496 and 5 (max) are extremely interested in the training and technical assistance programs. The coefficient estimates are log-odds that provide a measure of the impact a corresponding independent variable has on the chances that the interests fall into the highest category (extremely interested) over chances of falling into categories of lesser interests (very interested, moderately interested, slightly interested, and not interested).

As expected, we found that beginning farmers are more likely to participate in the training and technical assistance programs. The log-odds of being highly interested increase by .796 for beginning farmers (compared to experienced ones), given all of the other variables in the

Table 2: Coefficient Estimates from the Ordered Probit Regression

Independent Variables	Coef. Estimates	Std. Err.
BeginningFarmers	.7964*	.456
Fulltime_Beginners	1.4566***	.423
Married_Beginners	1.2545***	.418
Beginning_Female	-.4453	.467
Educated_Beginner	-.3443	.441
FiftyandOlder	-.4610**	.224
Female	-.6389	.487
Married_Female	-.4921	.454
Educated_Female	1.3439***	.441
FourYearCollGrad	-.2568	.310
GovFundUser	-.2748	.443
BPFM_User	-.5243**	.285
EntryFarmers	.2198	.342
MentorNewFarmer	-.5547***	.105
HowProfitable	.2232*	.121
StrategicPlan	-.2206	.297
AgRelated_Educa	-.0522	.235
HowOftenExteUse	-1.201	.111
KnowConfideBPFM	-.2655**	.146
/cut1	1.711***	.764
/cut2	2.776***	.773
/cut3	3.800***	.792
/cut4	4.495***	.814
Observations	129	
LR chi2(2)	78.87	
Prob > chi2	0.0000	
Pseudo R2	.198	

The *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

model are held constant at their mean levels. Indeed, fulltime beginning farmers and married beginners exhibit significant log odds to participate. The log-odds increase by 1.4566 and 1.2545 for full time beginning farmers and female beginning farmers; respectively. The fact that fulltime beginning farmers are clearly willing to receive training and technical assistance suggests that these farmers seek to sustain their farming operations on which their livelihood depends. Results indicate that educated beginning farmers have the same interests as those of the less educated beginning farmers. There is no statistical evidence to suggest the difference. This means that whether a beginning farmer is educated does not matter when it comes to interests in receiving further training and technical assistance. This seems to support the fact that learning is a life-long process. We further found that the log-odds of participation increase by 1.3439 for educated females. This implies that females with at least a 4-year degree are more likely to participate in training and technical assistance programs than their counterparts.

Results in Table 2 further illustrate that being more than fifty years old and the willingness to mentor new farmers reduce the log odds of participating in training and technical assistance programs. Likewise, higher levels of knowledge about and applying the best practices of farm management lower the chances of participation. These results align well with what one would expect. It makes sense for those who feel competent in mentoring entry farmers to not have appetite for training and/or assistance. It is also not surprising for an older farmer to decline the participation. Once we hold other variables in the model at their mean values, the log odds for these older folks are .4610 lower compared those with 49 years old and under. Results show that a one level increase in the knowledge confidence about the best practices of farm management reduces the log odds for participation by .2655. A one level increase in the willingness to mentor a new farmer leads to .5547 reduction in the log odds of participating in the training and technical assistance programs.

Table 3 displays marginal effects each explanatory variable has on the likelihood/probability of participating in training and technical assistance programs. Marginal effects are shown for each of the five levels of interest. We provided probabilities for each level. This analysis indicates that the relative probability for small and mid-scale farmers in Kentucky to be not interested is nine percent, 17% for slightly interested, 39% for somewhat interested, 27% for very interested, and 7% for extremely interested. Our discussion focuses on those variables with statistically significant effects for the three highest levels of interests (somewhat interested, very interested, and extremely interested).

We start with those factors with positive impact on the probabilities of being somewhat interested, very interested, and/or extremely interested. All things being equal, the probability that beginning farmers are very interested in training and technical assistance programs is 18% greater. The likelihood that beginning farmers are extremely interested in training and technical assistance programs is roughly 10% higher. We found that fulltime beginning farmers are 15% more likely to be very interested and 38% to be extremely interested in participation. Similarly, married beginning farmers are almost 22% more probable to be very interested and 25% to be extremely interested in the programs. These findings clearly indicate that beginning farmers have strong interests in programs aimed at providing training and technical assistance to operate their farms successfully.

This study found out that educated female farmers are barely 20% more likely to be very interested in participation. They are 30% more extremely interested. We further found out that entry farmers (those with at most five years of experience) are 3% more likely to be extremely interested. This likelihood impact seems pretty low, maybe because this category of farmers is still depending on the knowledge they acquire prior to entering the farming industry. For example, a recent college graduate who enters the industry might not feel a need for training immediately after graduation. This individual

Table 3: Marginal Effects

Independent Variables	Not interested	Slightly Interested	Somewhat Interested	Very Interested	Extremely Interested
	Prob. = 9%	Prob. = 17%	Prob. = 39%	Prob. = 27%	Prob. = 7%
BeginningFarmers	.1454	-.1205**	.0136	.1776**	.1018*
Fulltime_Beginners	-.1180***	-.1750***	-.2345***	.1477***	.3798***
Married_Beginners	-.1537***	-.1761***	-.1362**	.2160***	.2499**
Beginning_Female	.0877	.0685	-.0032	-.1032	-.0499
Educated_Beginner	.0645	.0541	.0026	-.0802	-.0409
FiftyandOlder	.0744**	.0733**	.0224	-.1045**	-.0657**
Female	.1186	.0981	.0072	-.1454	-.0786
Married_Female	.0938	.0762	.0015	-.1136	-.0578
Educated_Female	-.1389***	-.1786***	-.1808**	.1946***	.3038**
FourYearCollGrad	.0428	.0412	.0102	-.0593	.0349
GovFundUser	.0528	.0430	-.0001	-.0643	-.0315
BPFM_User	.0701**	.0822**	.0488	-.1112**	-.0899
EntryFarmers	-.0339	-.0354	-.0131	.0501	.0324*
MentorNewFarmer	.0919***	.0896***	.0226	-.1288***	-.0754***
HowProfitable	-.0370*	-.0360*	-.0091	.0518*	.0303*
StrategicPlan	.0401	.0351	.0035	-.0516	-.0271
AgRelated_Educa	.0087	.0020	.0020	-.0121	-.0070
HowOftenExteUse	.0214	.0053	.0053	.0299	-.0175
KnowConfideBPFM	.0440*	.0108	.0108	-.0617*	-.0361*

The *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

might need technical assistance more than he/she needs a training. Thus, showing some interests in training and technical assistance, but not much so.

Regarding factors with negative effects, results show that after accounting for all other variables in the model, being 50 years or older reduces the probability of being very interested in the program by 10%. There is almost 7% lower in the likelihood of being extremely interested. These aging farmers may think that they are not in need of new knowledge and practices because of the years of farming experience they likely possess. Furthermore, those small and mid-scale farmers who consider themselves to be users of the best practices of farm management are 11% less likely to be very interested.

We further found that an additional level of interests in mentoring a new farmer translates into almost 13% lower in the likelihood of being very interested in being part of training and technical assistance programs. Likewise, that additional level of interests reduces the probability of extremely willing to participate by 8%. These findings suggest that farmers who are willing to mentor new farmers feel like they have obtained knowledge and/or experience regarding farming practices. In similar fashion, an additional level of confidence in knowing the best practices of farm management reduces the likelihood of being very interested and extremely interested by 6% and 4%, respectively. Unlike Charatsari *et al*., (2013) who reported that female farmers in Greece exhibited significant interests in participation, this study found no significant difference in interests of participation between male and female farmers in Kentucky, in general. However, results also indicate that educated females are almost 20% more likely to be very interested and 30% more probable to be extremely interested in training and technical assistance programs.

Concluding remarks

This study sought to primarily explain the likelihood for small and mid-scale farmers to participate in educational/training and technical assistance programs on the best practices of farm management. We used survey data collected from 129 small and mid-scale farmers in 2017 using a mail and online strategies. Using descriptive statistics, we have illustrated the characteristics of small and mid-scale beginning and experienced farmers in Kentucky. Applying an ordered Probit model, we estimated relative probabilities for the farmers to participate in training and technical assistance programs.

Results indicate that the likelihood for not interested is 9%, 17% for slightly interested, 39% for somewhat interested, 27% for very interested, and 7% for extremely interested. Factors that predict positively the likelihood of participating in the programs are: being a beginning farmer, full-time beginning farmer, married beginning farmer, educated female farmer. Factors with significant negative impact were found to be at least fifty years old, using the best practices of farm management, interests in mentoring a new farmer, and levels of confidence in knowing the best practices of farm management.

With reference to the findings, this study clearly calls for training/educational and technical assistance programs for beginning farmers. The programs should include elements of best practices of farm management as defined in the context of this study: agricultural production, economic principles, whole farm budgeting, agricultural marketing, farm accounting techniques, farm investment analysis, and farm finance. Results suggest that fulltime beginning farmers, educated females, farmers who are younger than 50 years old, and married beginning farmers constitute a clear target for the programs. They have indicated strong interests in participation. Furthermore, we believe it is in everyone's best interest that small and mid-scale farmers succeed. Therefore, encouraging those farmers with less interests in participating and explaining the benefits of participation could potentially spark interests. Knowing what groups of farmers are more (or less) likely to participate in training and technical assistance programs helps entities who plan to provide and execute the programs to have a better, more sound idea of what to offer and who to target. Farmers can profit from the educational opportunities when they apply the learned concepts to their own specific operations.

It is important to mention some limitations of this study. First, it is limited the small and mid-scale farmers who are registered in the public registry of farms in Kentucky. Thus, we recommend further studies that could investigate this topic at a regional or national level. Second, the study reflects interests by respondents at one time point when they completed the survey. It would be interesting to find out whether the interests change over time. Therefore, we recommend studies that could investigate the possibility of a longitudinal study about this topic. Further studies are also recommended to provide more understanding about reasons why some small and mid-scale farmers with specific characterizes are not at all or less likely to be part of programs aimed at increasing their knowledge and providing technical assistance.

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