

## **Beliefs and Attitudes of 4-H Agents About Global Agriculture Issues**

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# Beliefs and Attitudes of 4-H Agents About Global Agriculture Issues

## Abstract

*It is increasingly urgent for 4-H youth to be prepared to enter careers that will provide solutions to complex agricultural challenges including global food security, climate change, and renewable energy resources. Are 4-H agents ready and willing to lead programs that incorporate global concepts and content? According to a national survey of randomly selected 4-H agents nationwide, overall, 4-H agents had favorable personal beliefs and positive attitudes about what youth should learn. They also had a wide variety of personal experiences, but agent beliefs and attitudes did not vary based on those experiences. Results indicate conditions are conducive to agents leading globally-oriented programs. Future research should examine the actual behaviors of 4-H agents.*

## Introduction

*I pledge my head to clearer thinking, my heart to greater loyalty, my hands to larger service, and my health to better living, for my club, my community, my country, and **my world**.*

Each time 4-H youth and volunteers formally convene, they acknowledge the importance of living in a way that improves their world. Recent national initiatives, such as the *One Million New Scientists* campaign, are driven by a desire to “ensure global competitiveness” by using an approach that is “comprehensive and holistic—from agriculture to climate change to alternative energy” (National 4-H Council, n.d., para. 2).

The importance of preparing the future agricultural workforce has been identified as a key priority for the American Association for Agricultural Education (Roberts, Harder, & Brashears, 2016). In fact, the fifth highest ranked research priority question was “What methods, models, and programs are effective in preparing people to work in a global agriculture and natural resources workforce?” (Roberts et al., 2016, p. 6). In addition, the National Research Council (2009) emphasized the importance of preparing students to work in a global context.

Successfully guiding youth to understand issues of national and international importance while positioning them for success in a global economy will require positive guidance from 4-H agents charged with leading county 4-H programs. Are 4-H agents prepared and likely to lead globally-oriented programs? This study addresses this question.

## Theoretical Framework & Review of Literature

Ajzen’s (1991) Theory of Planned Behavior is designed to help predict behaviors and demonstrate the effect of attitudes and personality traits on that behavior. In the Theory of Planned Behavior, three main elements affect a person’s intention to perform a behavior: attitude towards the behavior, subjective norm, and perceived behavioral control (Ajzen, 1991). Attitude towards the behavior includes the person’s perceptions of the consequences of the behavior. The person’s subjective norm is his/her perception of others’ beliefs that the behavior should or should not be performed. Perceived behavioral control is the person’s perceived ease or difficulty

in performing the behavior. These three elements lead to the person's intention to perform the behavior, which leads to actually demonstrating the behavior.

The outcome behavior in question was 4-H agents' leadership of globally-oriented 4-H programming. We focused on the *attitude towards the behavior* element of the Ajzen's (1991) theory. Possible variables influencing *attitude towards the behavior* were identified as agents' attitudes and beliefs about international agriculture, engagement in learning about international agriculture, and past international experiences.

Stevens, Smith, and Downing (2014) found Extension agents in Virginia demonstrated a low interest in engaging in a professional development program to learn about international agriculture. Stevens et al. (2014) postulated "The low interest may be due to the low perceived value of such an experience (by agents or supervisors)...Alternatively, it may have had to do with the difficulty of spending 2 weeks out of the office in May" (Stevens et al., 2014, Conclusions and Future Applications, para. 4). Previous research with county Extension faculty in Florida showed the primary barriers to participation in an international extension experience were financial cost, work obligations, and time commitment (Harder, Lamm, & Vergot, 2010). Agents somewhat disagreed about the barriers of a lack of interest and a lack of supervisor support. The conflicting study results indicate a better understanding of agents' attitudes regarding the value of international engagement is needed.

Specifically within the realm of 4-H, Reaman (1990) found 4-H agents who possessed a positive attitude towards international programs were more likely to be involved in those programs. A 1999 study of Pennsylvania Extension educators found they had an overall positive attitude towards diversity in 4-H/youth development programming (Ingram, 1999). Over 75% of respondents agreed learning about other cultures should be an important part of 4-H (Ingram, 1999).

This topic has also been investigated with other groups with backgrounds similar to 4-H agents. A recent study of secondary agriculture teachers revealed teachers had favorable attitudes regarding what students should learn related to international agriculture (Hurst, Roberts, & Harder, 2015). Personal beliefs of teachers were also positive. Teachers most frequently learned about international agriculture in ways that did not involve travel. International experiences of teachers had negligible impact on teacher attitudes or beliefs (Hurst, et al., 2015).

Although a handful of researchers have examined pieces of this problem, a complete national picture of the beliefs and attitudes of today's 4-H agents related to international agriculture are unknown. This study will fill that gap.

### **Purpose and Objectives**

The purpose of this study was to explore the attitudes and beliefs of 4-H agents concerning global agricultural issues by replicating the work of Hurst et al., (2015). Results of this study could guide the work of people who provide education and training to current and future 4-H agents. The specific objectives of the study were to:

1. Describe the personal beliefs of 4-H agents about global agricultural issues.
2. Describe 4-H agents' attitudes related to what youth should learn about global agricultural issues.
3. Describe how 4-H agents perceive they learn about global agricultural issues.
4. Describe the past international experiences of 4-H agents.
5. Determine if beliefs and attitudes vary based on prior international experiences of 4-H agents.

## Methods

A non-experimental quantitative design was used to study the variables of interest. 4-H agents were randomly selected for participation from the contact list provided by the National Association of Extension 4-H Agents (NAE4-HA) in August 2012. Sample size was determined using a desired precision of five percent, a 95% confidence level, and a variability of 50%, indicating maximum variability (Israel, 1992). Given a population of 2769 4-H agents, Israel's recommendations were used to draw a sample of 333 4-H extension agents. Oversampling was conducted to compensate for non-respondents and ensure a suitable sample size, based on response rates in previous research with this population (Reaman, 1990). In total, 1,000 4-H agents were selected for participation. Of the 1,000 4-H agents, 55 individuals were inaccessible due to invalid email addresses and eighteen individuals did not fit the criteria of working with youth or were no longer agents. This reduced the sample size to 927.

The survey was designed on and conducted through Qualtrics. It was modified to fit this audience based on the work of Wingenbach, Boyd, Lindner, Dick, Arispe, and Haba. (2003). The survey's five sections collected data about knowledge, attitudes, beliefs, past international experiences, and demographics. Based on our theoretical framework (Ajzen, 1991), this study used data from the attitudes, beliefs, and demographic sections. Beliefs and attitudes items used a 6 point Likert-type scale as follows: 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly disagree*, 4 = *slightly agree*, 5 = *agree*, 6 = *strongly agree*. Because the reliability of this instrument was previously established (Wingenbach et al., 2003), the reliability of the instrument was assessed *post hoc*. The attitudes scale about what youth should learn had an alpha of .92 and the belief scale used to assess 4-H agent personal beliefs about global agriculture yielded an alpha of .79.

Participants were contacted through email using the Tailored Design Method (Dillman, Smyth, & Christian, 2009). Pre-notice emails were sent in late September 2012. The pre-notice email was sent from one researcher's university email address. All subsequent emails were sent through the mailing system provided by Qualtrics. Participants received up to five email contacts to maximize response rate. A total of 325 of the 927 4-H agents in the sample completed the survey. An additional 204 agents began or partially completed the survey.

An attempt was made to contact non-respondents by email or by phone in order to compare them to respondents to determine if any significant differences existed (Dillman et al., 2009). Of the 402 4-H agents who did not respond, 155 different agents were contacted by email, eliciting three responses. Since the email follow up to non-respondents was not effective, a random sample of non-respondents was contacted by phone with a request to complete the survey over the phone at that time, online, or to schedule a time to take the survey later. Forty-

two 4-H agents were contacted by phone, resulting in responses from five additional agents, bringing the total number of 4-H agent non-respondents successfully contacted to eight. This resulted in a total of 333 responses for a response rate of 35.9%). Because of the small amount of non-respondent data collected, early and late respondents were compared to determine if any differences existed between the groups (Lindner, Murphy, & Briers, 2001). No significant differences were found to exist between the groups for the variables of interest or demographic characteristics. The respondents' demographic characteristics are summarized in Table 1.

Table 1  
*Frequencies and Percentages of Demographic Characteristics for Respondents (n = 333)*

	<i>f</i>	%
Gender		
Male	72	22.6
Female	246	77.4
Years of Experience ( <i>M</i> = 13.29, <i>SD</i> = 9.95)		
1-5	78	25.2
6-10	79	25.5
11-15	43	13.9
16-20	37	11.9
21-25	26	8.4
26-30	22	7.1
31-35	21	6.8
36+	4	1.3
Area in which participant works		
Rural	215	68.0
Suburban	62	19.6
Urban	39	12.3
Family Ancestry		
European	298	93.1
Native American	12	3.8
African	8	2.5
Mexican/Latin American	5	1.6
Asian	4	1.3
Other Caribbean ancestry	2	0.6
Puerto Rican	1	0.3
Pacific Islander	0	0
Arabic	0	0

## Data Analysis

Objectives 1 through 4 were assessed with descriptive statistics, including frequencies, means, and standard deviations. Objective 5 was analyzed using ANOVA with partial Eta squared ( $\eta_p^2$ ) as a measure of effect size. All significance tests used an alpha level of .05.

## Findings

### Objective 1: Describe The Personal Beliefs Of 4-H Agents About Global Agricultural issues

4-H agents had overall favorable beliefs about global agricultural issues. The overwhelming majority agreed to some level with all ten statements. The overall scale mean was 5.00 ( $SD = .49$ ). The most agreed upon statement was *international agriculture involves more than farming* ( $n = 307$ , 97.7% agreed or strongly agreed). Agents least agreed with the statement *competition between producers worldwide keeps food prices low in my grocery store* ( $n = 140$ , 44.6% agreed or strongly agreed). Complete results about agent beliefs are presented in Table 2.

Table 2  
4-H Agent Beliefs About Global Agricultural Issues ( $n=333$ )

Belief Statement	Frequency					
	1	2	3	4	5	6
International agriculture involves more than farming	0	0	0	7	115	192
Natural disasters affect the price of food in my local grocery store	0	2	3	16	127	166
Global food production allows me to eat a variety of products all year	0	1	8	33	139	133
Global agriculture is different from one country to another	0	0	9	36	155	114
Understanding other cultures helps U.S. producers market their products abroad	0	1	6	57	168	81
Understanding global politics helps U.S. producers market their products abroad	0	0	8	62	172	72
In times of famine, the U.S. should help other countries with food aid	1	4	15	76	136	82
U.S. agricultural products are superior in quality to products from other countries	2	12	40	107	95	56
The U.S. should actively help other countries develop their agricultural industries	1	0	14	88	126	84
Competition between producers worldwide keeps food prices low in my grocery store	2	14	52	105	100	40
Scale Mean = 5.00; $SD = .49$						
Scale Alpha = .79						

Note. 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree.

### Objective 2: Describe 4-H Agent Attitudes Related To What Youth Should Learn About Global Agricultural Issues

Overall, 4-H agents had favorable attitudes about youth learning about global agricultural issues (scale mean = 5.20,  $SD = .65$ ). 4-H agents agreed with all nine statements. Agents most agreed youth should learn about *agriculture and its importance to the world economy* ( $n = 298$ , 93.1% agreed or strongly agreed). The least agreed upon statement was that youth should learn

the differences between developed and developing countries ( $n = 236$ , 73.7% agreed or strongly agreed). Complete results are presented in Table 3.

Table 3  
4-H Agent Attitudes About What Youth Should Learn Related to Global Agricultural Issues ( $n = 333$ )

Youth should learn more about...	Frequency					
	1	2	3	4	5	6
agriculture and its importance to the world economy	4	1	0	17	133	165
how world events affect local agriculture in their community	3	1	4	22	141	147
how world agriculture affects food prices in the local grocery store	3	2	2	26	134	152
agricultural products that their home state sells to other countries	3	1	5	26	153	131
their state's agricultural industry and its connections to world trade	3	1	2	35	141	137
the agricultural products from other countries that are consumed in their state	3	2	3	37	160	113
the cultures of other countries	2	0	8	58	124	127
other countries' markets for U.S. agricultural products	3	2	5	65	153	91
the differences between developed and developing countries	2	2	6	74	149	87
	Scale Mean = 5.20; $SD = .65$					
	Scale Alpha = .92					

Note. 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree.

### Objective 3: Describe How 4-H Agents Perceive They Learn About Global Agricultural Issues

4-H agents learned about global agricultural issues from a variety of ways. The majority of agents ( $n = 186$ , 58.1%) only agreed or strongly agreed *professional development* helped them learn about global agricultural issues. Less than half of the agents agreed or strongly agreed with the remaining six statements. The least agreed upon statement was *listening to selected radio programs* ( $n = 91$ , 28.4% agreed or strongly agreed). Complete results are presented in Table 4.

Table 4

*4-H Agent Perceptions About How They Learn About Global Agricultural Issues (n = 333)*

I learn about global agricultural issues from ...	Frequency					
	1	2	3	4	5	6
professional development	5	11	22	88	127	59
my college classes	22	33	25	89	103	34
participating in study abroad programs	44	56	32	42	72	65
taking vacations in other countries	36	49	32	69	82	42
watching selected television programs	13	34	28	121	94	23
attending events such as fairs or shows	19	45	49	101	77	21
listening to selected radio programs	22	51	42	107	67	24
	Scale Mean = 3.95; SD = .93					
	Scale Alpha = .79					

Note. 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree.

**Objective 4: Describe The Past International Experiences Of 4-H Agents**

4-H agents were asked to indicate if they had personally experienced any of ten international or global activities. Greater than half of the agents had *traveled internationally for personal reasons (i.e. vacation, etc.)* ( $n = 199, 63.2\%$ ) and *participated in professional development workshop(s) with a global focus* ( $n = 172, 54.6\%$ ). The fewest 4-H agents *lived outside the U.S. for long periods of time for personal* ( $n = 13, 4.1\%$ ) or *professional reasons* ( $n = 13, 4.1\%$ ; see Table 5).

Table 5

*Past International Experiences of 4-H Agents*

Experience	<i>f</i>	%
Traveled internationally for personal reasons (i.e. vacation, etc.)	199	63.2
Participated in professional development workshop(s) with a global focus	172	54.6
Took a globally focused course as a <u>student</u>	117	37.1
Integrate global examples or case studies in classes you teach	115	36.6
Participated in a short term study abroad experience as a <u>student</u> (1 to 3 weeks)	55	17.5
Participated in a long term study abroad experience as a <u>student</u> (> 3 weeks)	39	12.4
Lived outside the U.S. for a short duration for <u>professional</u> reasons (< 1 year)	32	10.2
Lived outside the U.S. for a short duration for <u>personal</u> reasons (< 1 year)	22	7.0
Lived outside the U.S. for a long duration for <u>personal</u> reasons (> 1 year)	13	4.1
Lived outside the U.S. for a long duration for <u>professional</u> reasons (> 1 year)	13	4.1

**Objective 5: Determine If Beliefs And Attitudes Vary Based On Selected International Experiences Of 4-H Agents**

4-H agent beliefs about global issues did not differ if they *had traveled internationally for personal reasons (i.e. vacation, etc.)* ( $F = .007, p = .94, \eta_p^2 = .00$ ). Agent beliefs also did not vary if they had *participated in professional development workshop(s) with a global focus* ( $F = .094, p = .76, \eta_p^2 = .00$ ). Complete results are presented in Table 6.

Table 6

*Differences in 4-H Agent Beliefs About Global Agricultural Issues Based on Selected International Experiences*

Experience		<i>f</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Traveled internationally for personal reasons (i.e. vacation, etc.)	Yes	199	5.00	.49	.007	.94	.00
	No	114	5.00	.50			
Participated in professional development workshop(s) with a global focus	Yes	172	4.99	.48	.094	.76	.00
	No	141	5.01	.50			

Similarly, 4-H agents' attitudes about what youth should learn did not vary if they had *traveled internationally for personal reasons (i.e. vacation, etc.)* ( $F = .77, p = .38, \eta_p^2 = .002$ ). Nor did they vary if the agent had *participated in professional development workshop(s) with a global focus* ( $F = 1.61, p = .21, \eta_p^2 = .005$ ). Complete results are presented in Table 7.

Table 7

*Differences in Agent Attitudes About What Youth Should Learn Based on Selected International Experiences*

Experience		<i>f</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Traveled internationally for personal reasons (i.e. vacation, etc.)	Yes	199	5.18	.68	.77	.38	.002
	No	116	5.25	.59			
Participated in professional development workshop(s) with a global focus	Yes	172	5.25	.62	1.61	.21	.005
	No	143	5.15	.69			

4-H agents also had a variety of different international experiences that occurred while they were college students. To minimize the effects of time since each agent was in college, only agents with 5 or fewer years of experience ( $n = 81$ ) were included in these analyses. 4-H agents' beliefs did not vary if they had *participated in a short term study abroad experience as a student (1 to 3 weeks)*, *participated in a long term study abroad experience as a student (> 3 weeks)*, or *took a globally focused course as a student*. Complete results are presented in Table 8.

Table 8

*Differences in Early Career 4-H Agent Beliefs About Global Agricultural Issues Based on Selected International Experiences*

Experience		<i>f</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Participated in a short term study abroad experience as a <u>student</u> (1 to 3 weeks)	Yes	20	5.05	.62	.004	.95	.00
	No	61	5.06	.51			
Participated in a long term study abroad experience as a <u>student</u> (> 3 weeks)	Yes	14	4.93	.65	.98	.33	.012
	No	67	5.09	.50			
Took a globally focused course as a <u>student</u>	Yes	37	4.97	.52	1.81	.18	.022
	No	44	5.13	.54			

4-H agents' attitudes about what youth should learn were also compared on selected international experiences (see Table 9). Agent attitudes did not vary based on if the had *participated in a short term study abroad experience as a student (1 to 3 weeks)*, *participated in a long term study abroad experience as a student (> 3 weeks)*, or *took a globally focused course as a student*.

Table 9  
*Differences in Early Career 4-H Agent Attitudes About What Youth Should Learn Based on Selected International Experiences*

Experience		<i>f</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Participated in a short term study abroad experience as a <u>student</u> (1 to 3 weeks)	Yes	20	5.33	.54	.14	.71	.002
	No	61	5.26	.77			
Participated in a long term study abroad experience as a <u>student</u> (> 3 weeks)	Yes	14	5.14	.56	.58	.45	.007
	No	67	5.30	.75			
Took a globally focused course as a <u>student</u>	Yes	37	5.34	.48	.58	.45	.007
	No	44	5.22	.87			

### Conclusions, Recommendations, and Implications

Overall, 4-H agents had favorable beliefs about international agricultural issues. The scale mean of 5.0 was very similar to Hurst et al.'s (2015) findings with secondary agriculture teachers. Both groups of educators (agents and teachers) most agreed with the statement *international agriculture involves more than farming*. Results from our study were also consistent with Reaman's (1990) and Ingram's (1999) findings from Pennsylvania Extension educators. From a theoretical perspective, 4-H agent favorable beliefs about international agriculture will influence their attitudes towards the behavior and thus their intention to perform the behavior (Ajzen, 1991). Therefore, 4-H agent positive beliefs mean conditions should be favorable for professional development for 4-H agents and for expanding 4-H programming in this area. State 4-H Specialists should take a closer look at their respective states and programming efforts to identify opportunities in this area.

4-H agents had positive attitudes about what youth should learn about global agricultural issues. This was also very similar to what Hurst et al. (2015) found with secondary teachers, although 4-H agents had a slightly higher scale mean (5.20) than teachers (5.06). Agents agreed with all nine statements and most agreed youth should learn about *agriculture and its importance to the world economy*, which was very similar to their teaching counterparts (Hurst et al., 2015). As noted above, positive 4-H agent attitudes about what youth should learn will also influence their attitudes about international agriculture programming and thus their intentions for the behavior (Ajzen, 1991). Personal beliefs of agents, coupled with favorable attitudes towards what you should learn create a great environment for programming in this area. State 4-H Specialists should examine existing curricula and programming to determine how agents' attitudes about specific topics are addressed.

Agents indicated they learned about global agricultural issues in a variety of ways. Agents agreed most that *professional development* helped them learn about global agricultural

issues. Agents and teachers varied in their most agreed statement, with teachers most agreeing they learned about global agriculture issues from *watching selected television programs* (4th out of 7 items for agents), although the overall scale means were very similar (3.95 for Agents, 3.97 for teachers; Hurst et al., 2015). The differences in learning preferences for agents and teachers may be an indication of differences in job responsibilities and organizational cultures within each profession. Further research on could provide greater insight on this difference. Our results on agents learning through professional development on international agriculture issues contrasts with what Stevens et al. (2014) found in Virginia.

The majority of 4-H agents had *traveled internationally for personal reasons (i.e. vacation, etc.)* and *participated in professional development workshop(s) with a global focus*. These two experiences were high on the teachers' list of experiences, but fewer than half the teachers had either experience (Hurst et al., 2015). In contrast, Harder, Lamm, Ganpat, and Lindner (2011) found a majority of extension agents in Trinidad were willing to travel internationally for professional reasons, especially if it provided hands-on work with other extension professionals. Perhaps those agents had access to different resources. Teachers frequently *integrate global examples or case studies in classes you teach* (56.6%, Hurst et al., 2015), while our results showed only about one-third of agents do the same. Agents least frequently lived outside the U.S. for long periods of time, which was similar to teachers (Hurst et al., 2015). Our result that the majority of agents had participated in a professional development program focused on global agriculture stands in contrast to what Stevens et al. (2014) found, but may be in alignment with Harder et al.'s (2010) observations about interest not being a barrier. Personal experiences of agents likely influence their attitudes, and thus their intentions to integrate international issues in their 4-H programming (Ajzen, 1991). It would be interesting to see how specific international experiences influence individual 4-H agent programming in this area. With over half of the agents traveling internationally for personal reasons, are they using those opportunities to enhance their professional activities at home? Future research should explore this in much greater detail.

4-H agents personal beliefs about international agriculture and their attitudes about what youth should learn did not vary if they had *traveled internationally for personal reasons* or *participated in professional development workshop(s) with a global focus*. This was slightly different than their teaching peers (Hurst et al., 2015) whose personal beliefs were slightly different if they had professional development in the area and attitudes varied if they had traveled abroad, although both differences were very small. Our research did not examine any specific details about professional development experiences or international travel. It is plausible the scope and breadth of agent experiences were quite variable. Future research should take a closer look at specific types of international experiences and professional development programming.

Early career 4-H agents' beliefs and attitudes did not vary if they *participated in a short term study abroad experience as a student (1 to 3 weeks)*, *participated in a long term study abroad experience as a student (> 3 weeks)*, or *took a globally focused course as a student*. This is pretty similar to secondary agriculture teachers (Hurst et al., 2015), although teacher attitudes did vary slightly if they had taken a globally focused course. As noted above, the quality of those individual experiences is unknown. Future research could examine these in much greater detail.

With most colleges of agriculture being called to globalize their programs (National Research Council, 2009), it is reasonable to expect future 4-H agents to leave college with more global experiences than previous generations. Examining the outcomes of specific experiences can provide better insight into the impacts on 4-H agents and ultimately the youth who engage in their programming.

Overall, 4-H agents had favorable personal beliefs and positive attitudes about what youth should learn. They also had a wide variety of personal experiences, but those experiences did not impact their beliefs or attitudes. Results indicate conditions are conducive to agents leading globally oriented programs (Ajzen, 1991). Overall, agents were very similar to their teaching peers (Hurst et al., 2015). Opportunities may exist for collaborative efforts to globalize both 4-H programming and secondary agricultural education curricula.

This study only examined 4-H agent attitudes and beliefs. Globalizing 4-H program will involve changes in behaviors by 4-H agents. Future research should establish benchmarks for the current situation and also examine barriers to implementing global 4-H programming. Longitudinal research examining the impacts of such programming on the youth who participate would also be very helpful.

Researchers intending to survey 4-H agents should take note of the difficulties in obtaining a high response rate. We oversampled the target population by a significant percentage in order to reach the desired sample size, based on response rates obtained by other researchers. It is possible the low response rate may be attributed to (a) low level of interest in agents in the survey topic, (b) low name recognition of the lead researcher with the target population, or (c) general fatigue by a population often surveyed. Future researchers may be well served to consider alternative methods of obtaining data from 4-H agents, such as qualitative methods, particularly when the topic of investigation is not perceived as critical to the role or programming of the target population.

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