

Exploring Agritourism Experience and Perceptions of Pork Production

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Abstract

The interest of consumers in farming activities is evident and agricultural producers have responded to this increasing interest in a number of ways, including inviting visitors to farm operations through tourism or farm visits. Livestock industries, in particular, are interacting with the public in numerous ways, including via marketing channels for their products, interacting with community leaders and community members in regard to location siting and regulations, and inviting people onto their operations via agritourism. An improved understanding of who visits agricultural locations (particularly livestock operations) and consumers' perceptions about livestock agriculture is needed in order to begin to understand the possible relationships between on-farm experiences and consumers' perceptions. Thus, it is important to gain a deeper understanding in consumers' interests, including their levels of concern for production process attributes, such as animal welfare, relative to product attributes like price and taste. This analysis investigates the demographics of consumers who have (and have not) visited various agritourism operations, studies differences in preferences for (or perceptions of) animal welfare relative to other pork attributes between consumers who have or have not visited a livestock operation, as well as amongst consumers with varying levels of involvement in household food production. Indeed the relationships explored are between having visited a livestock operation and the perceptions. This study found that 69% of participants had visited a livestock operation (pig farm, dairy farm, and/or horse farm) at some point. The majority of respondents agreed that agriculture was an important industry, yet, those who had visited livestock operations were more likely to note concerns about the impact of livestock operations on water quality in their county.

Keywords

Agritourism, Animal Welfare, Best-Worst Scaling, Pork Production

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1. Introduction

Livestock producers today are interacting with the public in many ways including through the products they sell in stores, communication and marketing of their products, interacting with their neighborhoods and communities, and inviting people onto their farms. Consumers' interest in farming activities is evident and producers have responded to this increasing interest in multiple ways, including inviting consumers to farms through tourism or farm visits. The livestock industry has displayed an increased interest in understanding consumers' perceptions and preferences for different agriculture outputs (food products, mainly) and practices used to produce those products. Thus, it is important to gain a deeper understanding of consumers' interests, including their levels of concern for production process attributes, such as animal welfare, relative to produce attributes like price and taste.

The pork industry has received attention recently regarding the welfare of the pigs raised in specific housing systems or using certain practices. Recent literature on livestock product consumption has demonstrated an increasing concern for how livestock animals are handled and raised [1]-[5]. Consumers' preferences for different production practices and consumers' willingness to pay for verified production practices have been studied at length [2] [5]-[9].

Along with an interest in understanding consumers' preferences for pork attributes, production practices or product attributes, another area of interest is in understanding relationships between preferences for production processes and other factors, such as knowledge or consumer demographics. Showing people what occurs on farms in order to better inform them about daily farming practices and activities is currently a major topic of discussion in animal agriculture. The underlying assumption is that if people can see the farm they will better understand what happens and why, resulting in reduced concern about animal welfare or the production practices used. In order to begin to understand the possible relationships between farm experiences and perceptions, better understanding of who visits agricultural locations (particularly livestock operations) and consumers' perceptions about livestock agriculture is needed. The definition of agritourism differs across much of the literature; agritourism experiences can vary with the amount of contact participants who have with nature, the authenticity of the experience, and whether or not the farm visited is a working farm [10]. As a starting point in this analysis, agritourism is investigated as a function of people's experiences with visiting a farm operation.

There has been discussion in the international literature surrounding agritourism related to tourism and rural development in recent times and especially over the past 20 years [10]. Agritourism is frequently discussed in its relation to rural development, potential impacts of diversification and stabilization of small farm income, or in regard to the analysis of key success factors for the development of an agritourism enterprise. However, little is known about the impact agritourism has on consumers' preferences for agricultural products. Consumers' preferences and perceptions in relation to their experiences with agriculture are particularly important in the discussion of production practices used in livestock production. No research that we are aware of addresses the differences in preferences for (or perceptions of) animal welfare relative to other pork attributes between consumers who have or have not visited a livestock operation.

The goal of this analysis was to first examine the differences between those individuals in the population who have and have not been to a livestock operation. Second, this analysis sought to expand understanding about how respondents who have been to a livestock operation might differ in their preferences for pork production attributes and their perspectives of livestock operation growth compared with those who have not been to a livestock operation. Overall, this study sought to link preferences for pork products with livestock farm experience. Cummins, Widmar and Croney [11] studied consumers' preferences for seven pork attributes (animal welfare, price, taste, environmental impact, pork/food safety, locally raised/farmed pigs, and locally processed pork) to gain an understanding of the relative importance of these attributes for pork. Shares of preference were estimated for each of the seven pork attributes; by design the shares must sum to 100%, thereby allowing relative ranking of each attribute against each other attribute. Cummins, Widmar, and Croney [11] found that the mean preference share for animal welfare was 16% and that animal welfare ranked the third most important (out of the seven attributes studied).

2. Materials and Methods

Survey Instrument and Data

The data used for this analysis comes from an online survey of U.S. households which was administered July

23-August 6 of 2014. A large opt-in panel provider, Light speed GMI, was used to recruit participants who were at least 18 years of age. The survey was targeted to be representative of U.S. households in terms of age, gender, pre-tax income, and region of residency.

According to the U.S. Census Bureau the total U.S. population is 308,745,538 people (2010 Census, Revised 2014). In order to have a sufficient sample size to offer insight, the sample size needed, S , was calculated in the following way: $S = X/[1+(X/P)]$ where P is the total size of the U.S. population and $X = Z \times Z \left[F \times \frac{1-F}{D \times D} \right]$

where Z is the value associated with the confidence interval desired assuming a normal distribution. In this case the confidence interval desired is 95%, thus 1.96 is the value of Z . The value of F is 0.5 which was the frequency of the factor in the study. The variable D was defined to be the maximum difference between the sample and population means that is acceptable, $D = 0.05$ in this study. Thus for the U.S. population the sample size needed to offer insights into U.S. households is 385. The survey collected 1,004 responses, however, a simple validation test was used within the survey and 857 individuals (85.4%) answered this validation question correctly (or, passed the test).

According to Gao, House, and Bi [12] the use of a simple validation test is a way to improve data quality. In their study Cummins, Widmar and Cronney [11] found by testing within their sample that the respondents who passed this validation test had statistically different sample mean and variance values for the size shares of preference for many attributes studied compared to those who didn't pass the validation test. Thus, only the 857 respondents who passed the validation test have been used in this analysis. Given the calculated required sample size of 385, the sample size for this analysis of 857 individuals is more than sufficient.

A recap of survey respondent demographics and level of education for the sample being analyzed is displayed in **Table 1**. According to the U.S. Census Bureau [13] 49% of the U.S. population is male and in this sample 50% were male. According to the U.S. Census Bureau [13] 70% of the U.S. population over the age of 18 was 25 - 64 years old; this sample had 74% of respondents indicate they were between the ages of 25 and 64 years old. The average pre-tax income in the U.S. is \$73,034 [14] and this sample had \$67,453 for the mean income. The four regions of residency according to the U.S. census [15] are Northeast, South, Midwest, and West with 18%, 38%, 22% and 22% of the U.S. population respectively. These numbers are very similar to the sample used in this analysis. According to the U.S. Census Bureau [16] the percentage of the population 25 years and over who have at least a high school degree is 86.9% and 30.1% have at least a bachelor's degree. This sample was slightly more educated than the U.S. population and had 99% of the population (18 years and older) with at least a high school degree and 45% with at least a bachelor's degree.

Along with basic demographic data, information was collected regarding consumers' participation in a wide variety of tourism activities, including having visited different operations, such as livestock or crop farms, and food plants or production facilities. Participants were given the list of operation types and asked when last they had visited each operation. Respondents were asked, for each operation type, to select one of the following responses: "within the last year", "1 - 10 years ago", "over 10 years ago", and "I have never visited such an operation". Individuals who selected "within the last year", "1 - 10 years ago" and "over 10 years ago" were combined and defined as the group who had ever visited the operation type. The full list of operation types and percentage of respondents who had ever visited the respective types are displayed in **Figure 1**. It is important to note that while participants were counted as having visited an operation type when they indicated that they had done so, the purpose of the visit or the depth of the experience was not measured. Since this analysis is focused on gaining deeper insight on the relationships between visiting agritourism operations, particularly focused on livestock, and preferences for pork products, it is of interest to study the group of individuals who have been to one of the livestock operations. Sixty-nine percent of participants indicated that they had visited a livestock operation; in other words, a total of 69% of respondents had been to a dairy farm, pig farm and/or horse farm.

In addition to questions designed to gain an understanding of demographics and tourism participation, several questions were used to identify each participant's familiarity with agriculture, their perception of agriculture and livestock production practices, and their views on livestock operation growth. Cross-tabulations were used to look at relationships between having visited a livestock operation and variables including demographics, household production involvement and views on livestock operation growth. To analyze statistical significance throughout the cross-tabulations, chi-square statistics were analyzed; those presented were all significant at the 5% level. To determine statistically significant differences across categories (at the 5% level) in cross-tabulations a z-score was used.

Table 1. Sample demographics (n = 857).

Variable Description	Number of Respondents	Frequency (%)
Male	431	50
Age		
18 to 24 years	61	7
25 to 44 years	319	37
45 to 64 years	315	37
65 years and over	162	19
Household Income		
Less than \$25,000	168	20
\$25,000 - \$34,999	100	12
\$35,000 - \$49,999	135	16
\$50,000 - \$74,999	174	20
\$75,000 - \$99,999	116	13
\$100,000 - \$149,999	119	14
\$150,000 or more	45	5
Education		
Did not graduate from high School	10	1
Graduated from high School	150	17
Attended college, no degree earned	188	22
Attended college, associate or trade degree earned	124	15
Attended college, bachelor's (B.S. or B.A.) degree earned	240	28
Graduate or advanced degree (M.S., Ph.D., law school)	144	17
Other	1	0
Region of Residency		
Northeast	158	18
South	317	37
Midwest	214	25
West	168	20

Seven pork attributes (animal welfare, price, pork/food safety, taste, environmental impacts, locally farmed/raised pigs, locally processed pork) were studied in a previous analysis by Cummins, Widmar, and Crony [11]. Allocation of total shares of preference, necessarily summing to 100% across all seven attributes, were completed; these results are referred to as preference shares for each of the attributes. The results of the mean estimated shares of preference for the seven different pork attributes are shown in **Figure 2**. Correlations between the calculated individual shares of preference for the seven pork attributes from Cummins, Widmar and Crony [11] and participants' responses to questions about visiting various agricultural operation types were completed using Pearson correlations and statistical significance at the 5% and 1% levels.

3. Results and Discussion

3.1. Tourism Participation

Several commonly visited operation types were investigated in this analysis, including various agritourism (and food tourism) operations. It was found that people who visited any type of operation investigated were more likely to have reported visiting other location types as well. In other words, there were positive correlations amongst attraction attendance (at the 1% significance level). Being a tourist at one type of attraction was positively correlated with being a tourist at another attraction as well.

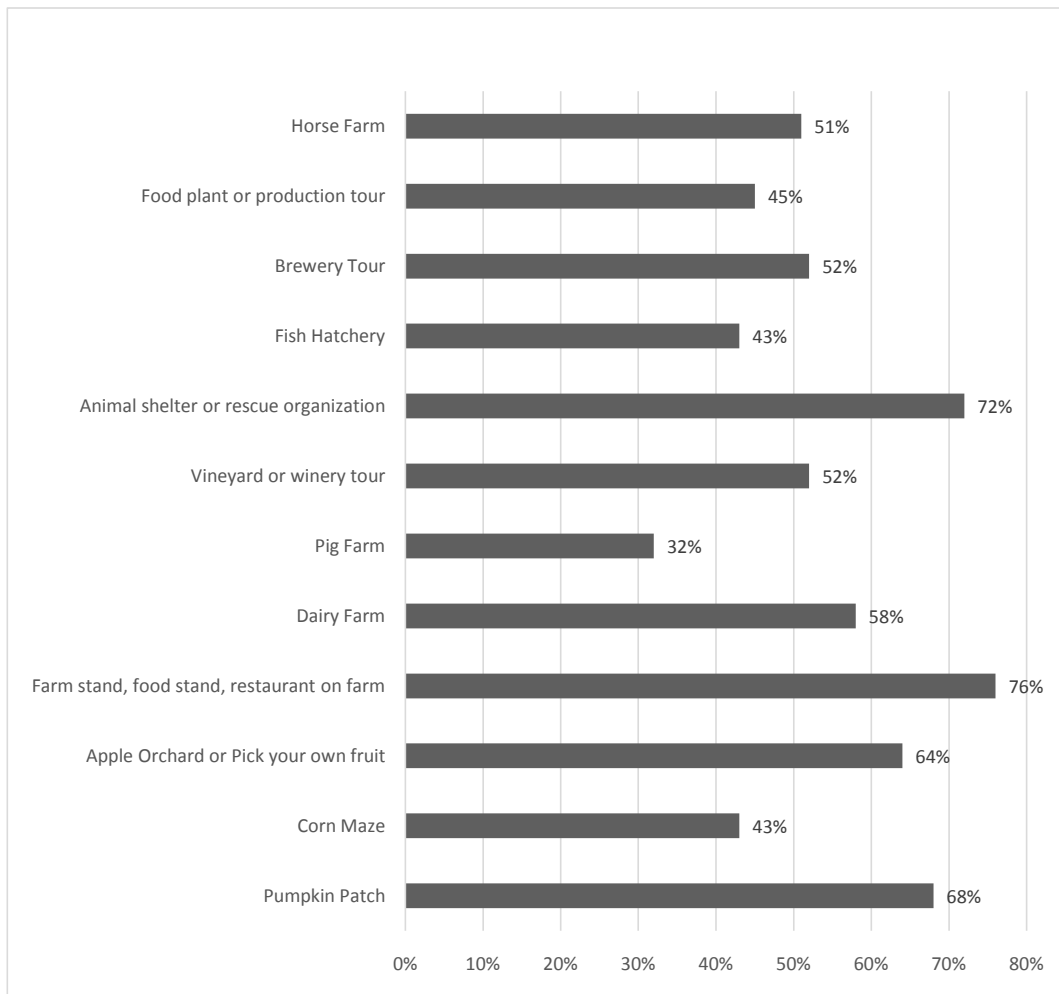


Figure 1. Percent of respondents who have ever visited the operation types investigated (n = 857).

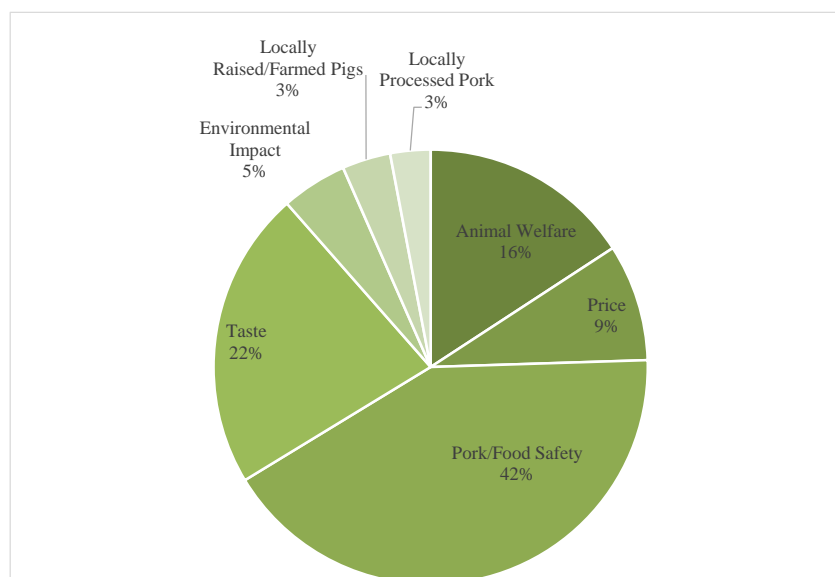


Figure 2. U.S. consumer shares of preference for pork attributes (n = 857).

Relationships between gender, age, income, and respondents who had been to each operation type were investigated using cross-tabulations (Table 2). In addition, relationships between region of residence and having visited the various operation types investigated are presented in Table 3. The values in each of the cells in the table represent the percentage of those in the corresponding demographic group that have been to the particular operation type (e.g. 70.8% of males have been to a livestock operation). Men more frequently reported having been to a dairy farm, pig farm, fish hatchery, brewery tour and food plant or production tour than did women. In

Table 2. Cross-tabulations of basic demographics and having ever visited the operation type (n = 857).

Ever visited the following operation type	Gender ¹		Age (in years) ²					Income ³						
	Female (*)	Male (**)	18 - 24 (a)	25 - 44 (b)	45 - 64 (c)	65 + (d)	<\$25,000 (A)	\$25,000 - \$34,999 (B)	\$35,000 - \$49,999 (C)	\$50,000 - \$74,999 (D)	\$75,000 - \$99,999 (E)	\$100,000 - \$149,999 (F)	\$150,000 + (G)	
Livestock operation	67.1	70.8	60.7	64.6	72.7	73.5	59.5 F	67.0	68.1	67.8	75	81.5A	66.7	
Pumpkin patch	70.2	65.0	67.2	71.2	66.7	62.3	50.6DEFG	63.0F	65.2F	71.3A	73.3A	82.4ABC	80.0A	
Corn maze	43.9	42.9	67.2 _{cd}	50.8 _{cd}	37.8 _{ab}	30.9 _{ab}	25.6DEFG	27.0DEFG	40.0F	47.1ABF	51.7AB	67.2ABCD	57.8AB	
Apple orchard or pick your own fruit	60.8	66.4	52.5	65.5	63.8	63.6	48.2 DFG	56.0F	63.0F	64.9AF	66.4	83.2 ABCD	75.6A	
Farm stand, food stand, restaurant on farm	75.4	77.0	59.0 _{cd}	72.1	80.3 _a	82.7 _a	64.9EF	68.0F	74.8F	78.2	83.6A	89.9ABC	77.8	
Dairy farm	54.0**	61.3*	42.6 _{cd}	52.7 _d	61.3 _a	66.0 _{ab}	47.0EF	55.0	57.0	55.7	66.4A	70.6A	55.6	
Pig farm	24.6**	40.1*	29.5	35.4	30.2	32.1	26.2F	24.0F	30.4	32.8	37.1	48.7AB	24.4	
Horse farm	50.0	51.0	52.5	49.5	54.3	46.3	44.0F	45.0F	46.7F	44.8F	57.8	71.4ABCD	53.3	
Vineyard or winery tour	48.6	55.2	32.8 _{cd}	49.5 _d	51.4 _{ad}	64.8 _{abc}	26.8CDEFG	38.0EFG	53.3AFG	54.0AFG	61.2AB	74.8ABCD	80.0ABCD	
Animal shelter or rescue organization	74.4	69.6	67.2	71.5	73.7	71.6	66.1	69.0	71.9	75.9	72.4	79.0	66.7	
Fish hatchery	36.2**	49.7*	26.2 _{cd}	39.5 _d	44.4 _a	53.1 _{ab}	28.6EF	34.0EF	40.0	44.3	55.2AB	57.1AB	51.1	
Brewery tour	45.3**	58.5*	37.7 _d	50.8	52.1	59.3 _a	31.0DEFG	40.0FG	45.9F	54.6AF	59.5AF	79.8ABCDE	71.1AB	
Food plant or production tour	40.1**	49.4*	36.1	45.1	46.3	44.4	33.3EF	31.0EF	43.0F	44.8F	53.4AB	63.9ABCD	51.1	

¹Significant differences at the 5% level are marked by * and **; ²Significant differences at the 5% level are marked by a, b, c, d; ³Significant differences at the 5% level are marked by A, B, C, D, E, F, G.

Table 3. Cross-tabulations between region of residency and having ever visited the operation type (n = 857).

Ever visited one of the following tourism locations	Region			
	Midwest (α)	South (β)	West (γ)	Northeast (δ)
Livestock operation	72.4	64.0	69.0	74.1
Pumpkin patch	72.9 _β	59.6 _{αγ}	72.6 _β	70.9
Corn maze	49.5	37.9	44.6	44.9
Apple orchard or pick your own fruit	70.1 _β	55.8 _{αδ}	60.1 _δ	74.1 _{βγ}
Farm stand, food stand, restaurant on farm	77.6	72.6	75.6	82.3
Dairy farm	62.6	52.1	57.7	62.0
Pig farm	39.3 _δ	31.5	33.3	24.1 _α
Horse farm	53.3	48.6	50.0	53.2
Vineyard or winery tour	51.9	47.0	59.5	53.8
Animal shelter or rescue organization	72.0	68.5	78.6	72.2
Fish hatchery	45.8	36.3 _γ	54.8 _β	39.9
Brewery tour	55.1	50.8	49.4	52.5
Food plant or production tour	45.8	40.7	50.6	45.6

Significant differences at the 5% level are marked by α, β, γ, and δ.

general, those reporting higher income levels (up to \$150,000) more frequently reported having been to each of the operations studied, with the exception of those who had attended an animal shelter or rescue organization where no statistical differences were found between income levels. Individuals living in the Midwest or West more frequently reported having been to a pumpkin patch than did those living in the South. Individuals who lived in the Midwest statistically more frequently reported having been to a pig farm than those living in the Northeast. These regional differences are not surprising in that it is reasonable to assume that those living in the vicinity of the respective operations have easier access to an operation type, and are therefore more likely to have had the opportunity to visit one.

Six operation types were found to have differing levels of reported attendance across age groups, namely corn maze, “farm stand, food stand, restaurant on farm”, dairy farm, vineyard or winery tour and brewery tour. In each of the eight, with the exception of having been to a corn maze, those in the age category 65 and older more frequently reported having been to the operation than did individuals in the age category 18 - 24. This finding is probably due in to increased experience over time. There were no statistical differences in age categories of those who had attended pumpkin patches, apple orchards or pick your own fruit locations, pig farm, horse farm, animal shelter or rescue organization or food plant/production tour.

Correlations between the size of preference shares for pork attributes and individuals who had attended each operation type were analyzed; these correlations are displayed in **Table 4**. Reporting having visited an animal shelter or rescue organization was positively correlated with the size of the share of preference for animal welfare when purchasing pork. This result is consistent with previous findings. The idea that individuals with connections or interactions with animals, primarily pets such as cats or dogs, tend to be more concerned about the welfare of all animals, including livestock, is not novel. Rothgerber and Mican [17] found that individuals who owned pets as children had stronger empathy for animals. McKendree, Croney and Widmar [3] postulated that

Table 4. Pearson correlations between having ever visited an operation type and the size of the share of preference for pork attributes (n = 857).

	Animal welfare	Price	Pork/Food safety	Taste	Environmental impacts	Locally raised/farmed pigs	Locally processed pork
Pumpkin patch	0.004	-0.086*	0.050	0.020	0.050	0.063	0.068*
Corn maze	-0.028	-0.064	0.050	0.016	0.054	0.076*	0.095**
Apple orchard or pick your own fruit	-0.045	-0.082*	0.063	0.057	0.034	0.072*	0.098**
Farm stand, food stand, restaurant on farm	0.005	-0.079*	0.062	0.000	0.026	0.057	0.035
Dairy farm	-0.042	-0.035	0.027	0.001	0.094**	0.098**	0.112**
Pig farm	-0.011	-0.057	-0.013	0.054	0.069*	0.134**	0.173**
Horse farm	-0.029	-0.083*	0.077*	-0.002	0.042	0.114**	0.096**
Vineyard or winery tour	0.000	-0.078*	0.012	0.041	0.091**	0.112**	0.116**
Animal shelter or rescue organization	0.140**	-0.113**	-0.003	-0.028	0.060	0.062	0.046
Fish hatchery	0.000	-0.054	0.002	0.013	0.070*	0.131**	0.139**
Brewery tour	-0.021	-0.052	-0.005	0.049	0.079*	0.125**	0.130**
Food plant or production tour	-0.033	-0.055	-0.005	0.074*	0.099**	0.094**	0.121**

Note: Statistical significance (2-tailed) at the 5% and 1% level is represented by * and ** respectively.

human-animal interactions or relationships, particularly pet ownership, had the potential to influence people's perceptions of livestock animal welfare, and found that in U.S. households, pet owners were significantly more concerned about livestock animal welfare than those who did not own dogs and/or cat. The findings of Cummins, Widmar and Croney [11] also included that the ownership of a dog and/or cat was positively correlated with the size of the share of preference for animal welfare in the seven different pork attributes examined. Thus, finding that individuals who have visited animal shelters or rescues, which are predominantly directed towards species commonly classified as pets, are more sensitive to animal welfare concerns is supported by past studies.

Further, it is interesting to note that of all the tourism locations investigated, having visited an animal shelter/rescue organization was the only visit experience correlated with the size of the share of preference for the pork attribute of animal welfare. In particular, given the popularity of agritourism as a way to communicate with the general public by agricultural circles, it is indeed interesting to note that having visited a livestock operation was not significantly correlated with the size of the preference share for animal welfare.

3.2. Household Production and Involvement in Agriculture

In addition to visiting agricultural operations, people have many different ways of being exposed to agriculture and food production practices; direct ownership and/or household production of food can be among these. Participants were therefore asked, "Do you, a family member or relative own or operate a farm business (in any capacity, including a partnership or part-owner)?" Respondents selected all responses that applied from the list: "Yes, I own or operate a farm business", "Yes, I have a family member or relative who owns or operates a farm business", and "No." Eighty-eight percent of respondents did not report any familial ties (including self) to anyone who owned or operated a farm business in any capacity.

Cross-tabulations revealed that individuals who reported having been to a livestock operation more frequently also reported being an owner or operator of a farm operation and also more frequently reported having family members or relatives who owned or operated a farm business than those who had not been to a livestock operation. The cross-tabulation analysis revealed that individuals who had visited a livestock operation more frequently reported having been involved in each of the household production practices individually assessed. Individuals reporting having never been to a livestock operation more frequently reported not being involved in any of the household production practices examined in the previous three years.

To further understand households involved in home production of food products, participants were asked, "in the last three year time period, has your household been actively involved in producing food for your own family through any of the following ways?" The options included producing fruits and berries, growing produce in a garden at home or in a community garden, raising chickens for eggs or meat and raising other animals for meat or milk as well as the option of "none of the above." The results revealed that in the previous three year period, 13% of participants' households had been involved in cultivating fruit trees and/or berries, 33% of their households grew produce of some kind in a personal garden at home, 5% grew produce of some kind in a personal garden not at home, 6% raised chickens primarily for eggs, 4% raised chickens primarily for meat, and 4% raised animals (other than chickens) for meat or milk. Sixty-five percent of households reported not being involved in any household production. Participation in any type of household production was positively correlated with being involved in all other household production practices (at the 1% significance level) and negatively correlated with having self or familial ties to owning or operating a farm operation (at the 1% significance level). In other words, those individuals who produced one type of food for their household use were more likely to produce other types of food. In addition, those who owned or operated a farm were less likely to grow food for their own household consumption.

Individuals who reported having visited a livestock operation more frequently participated in household cultivation practices than those who had not visited a livestock operation. Correlations between the size of the preference shares for pork attributes and involvement in household production (in the past three years) as well as non-familial ties to farm ownership or operators is displayed in [Table 5](#). Having indicated that the respondent and/or their relatives did not own or operate a farm business was negatively correlated (at the 1% significance level) to the size of the shares for environmental impacts, locally raised/farmed pigs, and locally processed pork. Involvement in any household production in the previous three year time period was statistically significant and negatively correlated to the size of the share of preference for price and positively correlated with the size of the shares of preference for locally raised/farmed pigs and locally processed pork. Involvement in all household

Table 5. Pearson correlations between involvement in agriculture and size of the share of preference for pork attributes (n = 857).

	Animal welfare	Price	Pork/Food safety	Taste	Environmental impacts	Locally raised/farmed pigs	Locally processed pork
Respondent, a family member or relative do NOT own or operate a farm business in any capacity, including a partnership or part-owner)	-0.024	0.056	0.044	-0.029	-0.126**	-0.161**	-0.169**
Household Production (In the last three years)							
Cultivating fruit trees and/or berries	0.021	-0.080*	0.022	-0.002	0.072*	0.129**	0.135**
Growing produce of any kind in a personal garden at home.	0.011	-0.069*	0.014	0.033	0.023	0.099**	0.111**
Growing produce of any kind in a personal garden not at home (in a garden plot or community garden)	0.043	-0.097**	-0.011	-0.003	0.135**	0.220**	0.207**
Raising chickens primarily for eggs	0.031	-0.082*	-0.066	0.076*	0.158**	0.174**	0.280**
Raising chickens primarily for meat	0.038	-0.091**	-0.028	0.022	0.171**	0.182**	0.186**
Raising animals (other than chickens) for meat or milk	0.059	-0.117**	0.017	0.023	0.079*	0.104**	0.156**
None of the above household production	-0.017	0.079*	-0.009	-0.037	-0.045	-0.118**	-0.139**

Note: Statistical significance (2-tailed) at the 5% and 1% level is represented by * and ** respectively.

production activities except for growing produce in a personal garden not at home” was positively correlated with the size of the share of preference for environmental impacts.

3.3. Perceptions of Agriculture and Growth

Participants were shown a series of 10 statements about agriculture or livestock growth and asked to respond with how much they agreed or disagreed on a Likert-scale of one through seven, where one was “very strongly disagree” and seven was “very strongly agree.” The statements provided and the mean responses received are as follows: “I would oppose the building of new livestock operations in my county” (3.36), “I believe that livestock farms are environmentally harmful” (3.67), “I would oppose the growth of livestock operations in my county” (3.21), “I am concerned about the impacts of water quality from livestock operations in my county” (4.18), “I have experienced negative impacts from livestock operations located near my home or work” (2.54), “I am supportive of the growth of livestock agriculture in my county” (4.83), “I am supportive of the growth of livestock agriculture in my state but would prefer growth outside of my county/region” (3.84), “agriculture is an important industry in my state” (5.32), “odor/smell from livestock operations is a major concern for me” (3.99), and “I feel that livestock operations make good neighbors” (3.91).

Cross-tabulations between participant’s responses to the agriculture and livestock growth statements and whether they had been to a livestock operation were assessed and are reported for a subset of those statements (Table 6). Respondents who indicated that they had been to a livestock operation more frequently selected response “6” and less frequently selected “4” in response to the statement, “I am concerned about impacts on water quality from livestock operations in my county” than did those who had not been to a livestock operation. The most significant differences in responses between those who had and had not been to a livestock operation were responses to the statements “I am supportive of the growth of livestock agriculture in my county.” In response to this statement, those who had been to a livestock operation more frequently selected response options “5”, “6”, and “7” and less frequently selected options “2” and “4” than those who had not been to a livestock operation. Thus, respondents who had been to a livestock operation more frequently indicated agreement that they were supportive of the growth of livestock agriculture in their county.

When asked to respond with their level of agreement or disagreement with the statement “agriculture is an important industry in my state” those who had been to a livestock operation more frequently selected options “6” and “7” (levels of agreement), and less frequently selected options “1” (very strong disagreement) or “4”

Table 6. Cross-tabulations between perspective on agriculture and livestock growth with having visited a livestock operation (n = 857).

	I would oppose the building of new livestock operations in my county. ¹		I am concerned about impacts on water quality from livestock operations in my county. ³		I have experienced negative impacts from livestock operations located near my home or work. ⁴		I am supportive of the growth of livestock agriculture in my county. ⁵		Agriculture is an important industry in my state. ⁶		I feel that livestock operations make good neighbors. ⁷	
Ever visited a livestock operation	No (a)	Yes (b)	No (*)	Yes (**)	No (α)	Yes (β)	No (•)	Yes (••)	No (□)	Yes (□□)	No (φ)	Yes (θ)
Very strongly disagree 1	20.7 _b	21.8 _a	10.9	10.5	45.1	41.1	4.9	2.5	6.4 _{□□}	1.7 _□	12.0 _θ	7.3 _φ
2	12.4	18.1	9.0	9.8	11.7 _β	22.0 _α	6.0 _•	2.9	3.4	2.4	13.9	10.3
3	9.0	13.7	10.2	12.5	10.5	8.6	7.9	6.8	6.4	4.4	15.8	13.9
4	33.1 _b	21.5 _a	29.3 _{**}	19.8 _*	19.5 _β	11.0 _α	39.8 _{••}	24.2	27.1 _{□□}	15.6 _□	38.7	32.3
5	12.0	10.0	21.4	19.5	7.9	6.8	16.2 _•	22.3	15.4	19.8	10.5	14.9
6	6.0	9.3	10.9 _{**}	16.2 _*	3.8	6.1	14.3 _•	24.7	16.2 _{□□}	23.4 _□	6.8 _θ	13.7 _φ
Very Strongly Agree 7	6.8	5.6	8.3	11.7	1.5 _β	4.4 _α	10.9 _•	16.6	25.2 _{□□}	32.8 _□	2.3 _φ	7.6 _φ

¹Significant differences at the 5% level are marked by *a* and *b*; ²Significant differences at the 5% level are marked by A and B; ³Significant differences at the 5% level are marked by * and **; ⁴Significant differences at the 5% level are marked by α and β; ⁵Significant differences at the 5% level are marked by • and ••; ⁶Significant differences at the 5% level are marked by □ and □□; ⁷Significant differences at the 5% level are marked by φ and θ.

(neutral). This implies that those who had been to a livestock operation felt that agriculture is an important industry in their state.

4. Conclusions

The focus of this analysis was to examine individuals who have visited livestock operations and determine how they might differ in their preferences for pork attributes, their involvement in agriculture, and their perceptions about agriculture overall (and specifically growth in the agriculture sector). The results showed that 69% of participants had visited a livestock operation (pig farm, dairy farm, and/or horse farm) at some point. Results also showed that those who had visited livestock operations did not differ in gender, age, or region of residency, but they tended to have higher incomes. Those who had been to a livestock operation were more likely to have also owned or were related to someone who owned or operated a farm business than those who had not been to a livestock operation. Similarly, those who had visited a livestock operation more frequently participated in each of the home production practices examined. This suggests that those who had been to a livestock operation had more familiarity with agricultural practices (whether for production or personal purposes).

While the majority of participants indicated that they agreed that agriculture was an important industry in their state, those who had been to a livestock operation stated stronger levels of agreement than those who had not been to a livestock operation. Despite the belief that agriculture is important in their state, those who had been to a livestock operation more frequently agreed with the statements “I would oppose the growth of livestock operations in my county”, and “I am concerned with the impacts on water quality from livestock operations in my county”. While this study sought to measure levels of concern and agreement with various statements about animal agriculture, a limitation of this analysis is that there was not data collected specific to why respondents may or may not be concerned. Additional insights into the factors (beyond agritourism involvement) that may be influencing levels of agreement with beliefs or perceptions of agriculture should be explored in future studies.

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