

Perceptions of United States Residents:
Animal Agriculture and Meat Products

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Executive Summary

Researchers conducted an online survey of 1,004 nationally representative U.S. residents in July 2014 to understand perceptions of animal agriculture, attitudes toward the growth of livestock industries, food consumption patterns and lifestyle choices, such as visiting agritourism sites and other leisure or educational activities. The majority of residents believed agriculture is important to their state and consider themselves to be educated about food consumption. They indicated that they support growth of the livestock industry and have not experienced negative impacts from livestock operations. They also did not believe livestock operations are environmentally harmful. As for ensuring the proper handling and treatment of animals with respect to welfare, consumers in the study thought the farmer has the highest ability, of all parties in the supply chain, to influence and ensure proper treatment. Production practices of concern continue to include housing of pigs at different stages of the rearing process, especially in crates. The research team investigated consumers' unease regarding production processes and asked questions that sought to understand consumers' self-perceived and true level of knowledge about the pork production process.

Keywords: animal welfare, agritourism, consumer perceptions, pork production

Introduction

The United States is the world's largest meat consumer on a per capita basis (USDA, 2005). Pork consumption per capita is ranked third in the United States, following beef and chicken (USDA, 2005). Americans consume an average of 51 pounds of pork per person per year (USDA, 2005). While there are some differences in the demographics, religious views and personal preferences that impact individual consumption, overall U.S. pork consumption is high and projected to increase due to continued U.S. population growth (USDA, 2005). This study focuses on understanding the nature and level of U.S. consumers' concerns associated with different food animal production systems and the underlying socio-cultural and demographic factors.

Consumers' perceptions of animal rearing and livestock agriculture have impacted the food production processes employed in the United States (and various places across the globe) throughout recent history. There is growing interest in agricultural production practices, including how food is grown and/or processed and, in particular, the treatment of livestock animals. Livestock production practices that are currently used allow for increased efficiencies that facilitate an abundance of reasonably low-cost foods, but this model of animal production has become increasingly contentious. With 1.5 percent of the U.S. population employed in agriculture (Bureau of Labor Statistics, 2013), the majority of consumers are searching for information sources to learn more about food production. Consumers can familiarize themselves with agricultural production in many ways. They can explore special interest groups; follow social media; read articles from a variety of government, industry and university sources; or visit agritourism locations for a more hands-on experience.

Research Methods and Data

Survey Instrument

The Purdue University research team used Qualtrics, an online survey tool, to gather consumers' perspectives in July 2014. Given the flexibility and power the Internet provides for Web-based survey methods, combined with high rates of access to the Internet, online surveys are now common and increasingly considered an acceptable and reasonable survey method. Dillman noted that "while the technology is relatively new, the general principles that govern people's decisions to respond are not new" (Dillman, 2007). More than 93 percent of the U.S. population lives in areas offering wired broadband Internet service, and approximately 98 percent have access to either wired or terrestrial wireless connectivity at speeds of at least 3 Mbps download and 768 Kbps upload (NTIA & ESA, 2013).

To ensure the study's target sample was nationally representative of U.S. households in terms of gender, age, pre-tax income and region of residency, the team employed Global Market Insite (GMI), the manager of a large opt-in survey panel. The researchers defined regions of residency by using "Census Regions and Divisions of the United States" outlined by the U.S. Department of Commerce Economics and Statistics Administration of the U.S. Census Bureau (Accessed 2014). The information collected included general household lifestyle and travel, familiarity with animal agriculture, pork-purchasing behaviors, agritourism experience, and consumer perceptions of pork production and livestock products.

Sample Summary Statistics and Demographics

The national-scale survey sample contains 1,004 completed responses. **Table 1** shows respondent demographics compared with the census statistics for age (U.S. Census Bureau, 2010 Census, Revised 2014), gender (U.S. Census Bureau, 2010 Census, Revised 2014), income (U.S. Census Bureau, 2008-2012) and population by region of residency (U.S. Census Bureau, 2010 Census, Revised 2013). All respondents were required to be at least 18 years old. As seen in **Table 1**, the sample had slightly more respondents from the Midwest and slightly fewer respondents from the West than desired. Also, the sample had slightly fewer respondents from the two highest income categories than desired; the remaining categories were fairly similar to the census data.

The survey also collected demographic information, such as education level, pet ownership and diet style. These additional demographics are of interest particularly when evaluating respondents' meat consumption and perceptions of livestock rearing and farm animal welfare. Given that the study looked primarily at meat consumption, focusing on pork and animal welfare perspectives, it is valuable to understand the percentage of vegetarian and vegan respondents. In this survey, 4 percent of respondents were vegetarian and 2 percent were vegan. A *Vegetarian Times* (2008) study found that 3.2 percent of the U.S. population was vegetarian and 0.5 percent vegan. **Table 2** shows participants' education levels. According to the U.S. Census Bureau (2012), 87 percent of Americans older than 25 were at least high school graduates and 30 percent had completed at least four years of college. This sample is slightly "overeducated," with 98 percent of respondents having graduated from high school and 44 percent receiving a bachelor's degree at minimum. A potential reason for this "overeducation" is

that the Web survey required participants to have access to a computer and Internet, as well as be literate, in order to respond.

Researchers hypothesize that close relations to animals of any species has the potential to influence consumers' perceptions of animal welfare for livestock and food production. McKendree and Widmar (2013) found that 66 percent of U.S. households owned a pet, with 48 percent and 41 percent of households owning dogs and cats, respectively. Similar to their findings, 46 percent of this survey's participants owned at least one dog, and 40 percent indicated they owned one or more cats.

Table 1. Sample Summary Statistics (n=1,004)

Variable Description	Survey	Census
	Frequency (%)	Frequency (%)
Female	50%	51%
Age		
18 to 24 years	8%	13%
25 to 44 years	39%	35%
45 to 64 years	36%	35%
65 years and over	17%	17%
Household Income		
Less than \$25,000	21%	23%
\$25,000-\$34,999	13%	11%
\$35,000-\$49,999	17%	14%
\$50,000-\$74,999	22%	18%
\$75,000-\$99,999	13%	12%
\$100,000-\$149,999	11%	13%
\$150,000 or more	4%	9%
Region		
Northeast	19%	18%
South	38%	38%
Midwest	26%	22%
West	18%	22%

Table 2. Sample Summary Statistics (n=1,004)

Variable Description	Survey
	Frequency (%)
Education	
Did not graduate from high school	2%
Graduated from high school	18%
Attended college, no degree earned	22%
Attended college, associate or trade degree earned	14%
Attended college, bachelor's (BS or BA) degree earned	29%
Attended college, advanced (MS, Ph.D., law school) degree earned	15%
Other	1%
Vegetarian	4%
Vegan	2%
Pet Owner	
Cat owner	40%
Dog owner	46%
Household has experienced in the past six months:	
Divorce	5%
New marriage	7%
Moving	15%
Death	13%
Serious illness	14%
Start of new job	16%
Loss of job	13%
Serious financial distress	18%
Political Affiliation	
Democratic Party	29%
Republican Party	26%
Independent	32%
None of the above	13%
Race	
White, Caucasian	83%
Black, African American	7%
Asian, Pacific Islander	3%
Mexican, Latino	4%
American Indian	0%
Other	2%

Results and Discussion

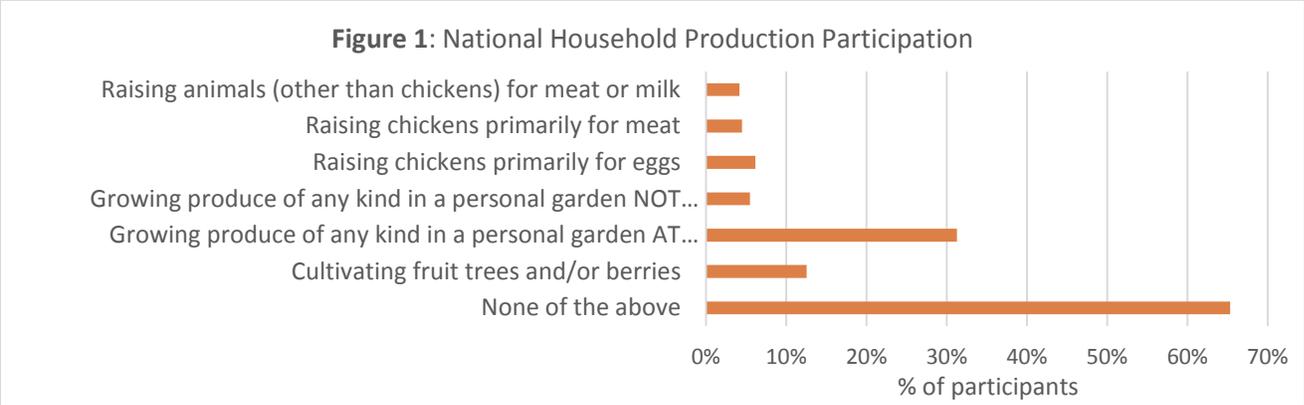
Household Lifestyle and Travel

It is helpful to gain insight into respondents' familiarity with agriculture when trying to understanding individual perceptions of livestock production and farm animal welfare. There are a number of ways that individuals can familiarize themselves with agriculture or food production (in any capacity): operating a farm, having family members operate a farm business, at-home production in the form of raising fruit trees or gardening, or visiting farms and agritourism operations. According to the U.S. Census Bureau (2012), 1.5 percent of the population is employed in agriculture. The majority of respondents, 88 percent, indicated that they had no direct relationship to agricultural business ownership or operation, meaning that they do not operate a farm business, and they do not have a family member who does either. Six percent of participants indicated that they owned or operated a farm business including a partnership or part-owner, and 8 percent had a family member or relative who owned or operated a farm business.

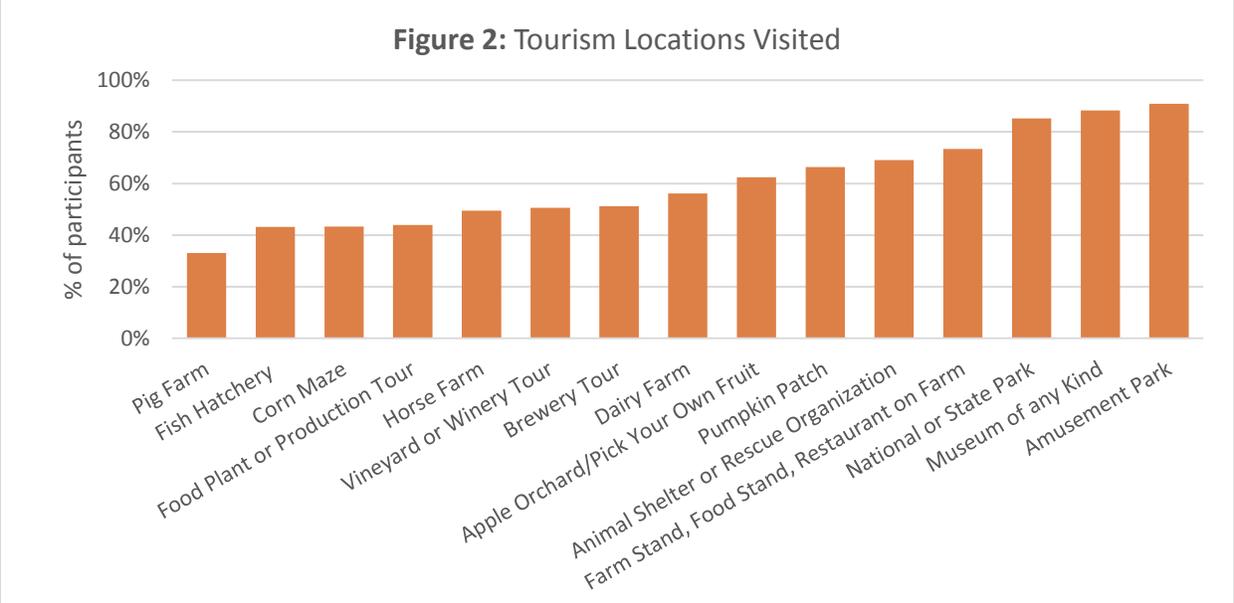
The percentage of participants who owned or operated a farm business of any capacity is high when compared with the 1.5 percent of the U.S. population employed in agriculture (Bureau of Labor Statistics, 2013). Thus, it is of value to note that when respondents were asked to state their industry of employment, 1.6 percent chose agriculture from the following options: agriculture, mining, construction, manufacturing, government, retail, healthcare, transportation, education, self-employed, retired, stay-at-home parent, student, unemployed and other. The research team hypothesizes that the difference between the 1.6 percent who chose agriculture as their industry of employment and the 6 percent who said that they owned or operated a farm business is due to people who are part-owner of a farm operation and employed in other industries. It could also be from people who are employed in other industries, but own entities such as hobby farms.

Even if consumers do not have any relationship with a farm, they can be involved in food production for the purpose of personal consumption. To gain more insight, the survey asked respondents to identify which type of food-producing activities their household participated in during the last three years, if any. The options included: cultivating fruit trees and/or berries, growing produce of any kind in a personal garden at home, growing produce of any kind in a personal garden not at home (in a garden plot or community garden), raising chickens primarily for eggs, raising chickens primarily for meat and raising animals (other than chickens) for meat or milk.

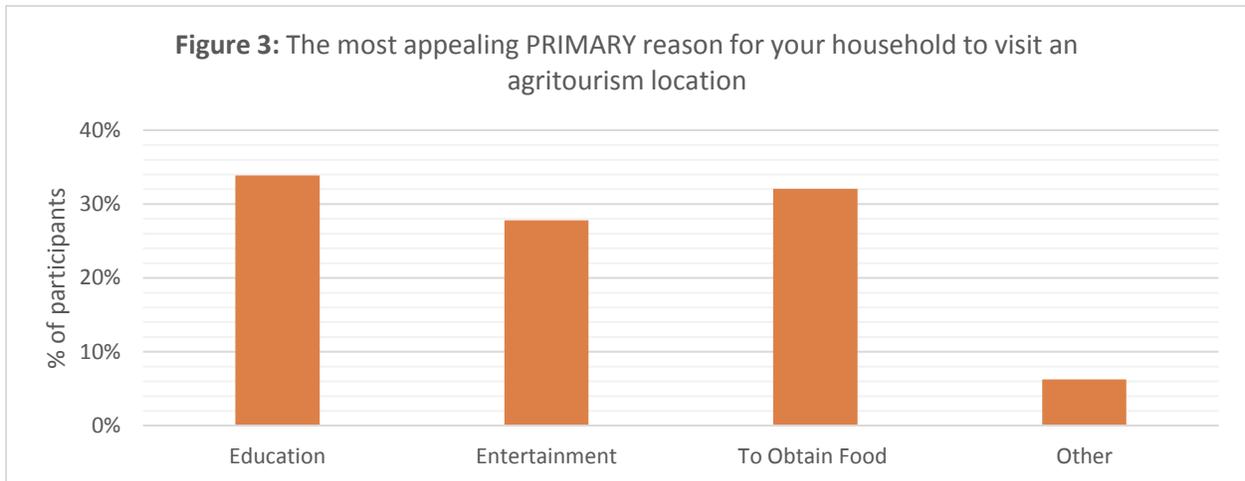
Figure 1 shows that the most common household production practice was growing a personal garden at home; 31 percent of respondents indicated that they have had a personal garden at home in the last three years. The second most common activity was cultivating fruit trees and/or berries, with 13 percent of participants reporting this activity. Sixty-five percent of participants said that their household did not partake in any of the activities during the past three years. Overall, in the last three years, 20 percent of respondents only participated in one of the activities listed; 8 percent participated in two activities; and 6 percent participated in at least three activities.



Another possible way to experience agricultural production is through tourism. This study provided respondents with three questions to better understand their tourism participation. The survey asked participants to indicate the last time they visited 15 different tourism location types including museums, amusement parks, animal-related operations and agricultural locations. Five percent of respondents indicated that they had never been to any of the potential tourism locations listed. Sixteen percent of respondents said they had gone to five or fewer of the operations; 37 percent had gone to between six and 10 of the operations; and 42 percent had gone to 11 or more. **Figure 2** shows the number of participants who indicated they had visited each of the different potential tourism locations. Amusement parks, museum of any kind and national or state parks were the top three most visited operation types with 91 percent, 88 percent and 85 percent, respectively. On the other hand, pig farms, fish hatcheries, corn mazes, and food plant or production tours had the fewest visits. Approximately 52 percent of participants indicated that they have traveled more than 250 miles (total round trip) from their home to visit an attraction or for a family outing in the previous six months.

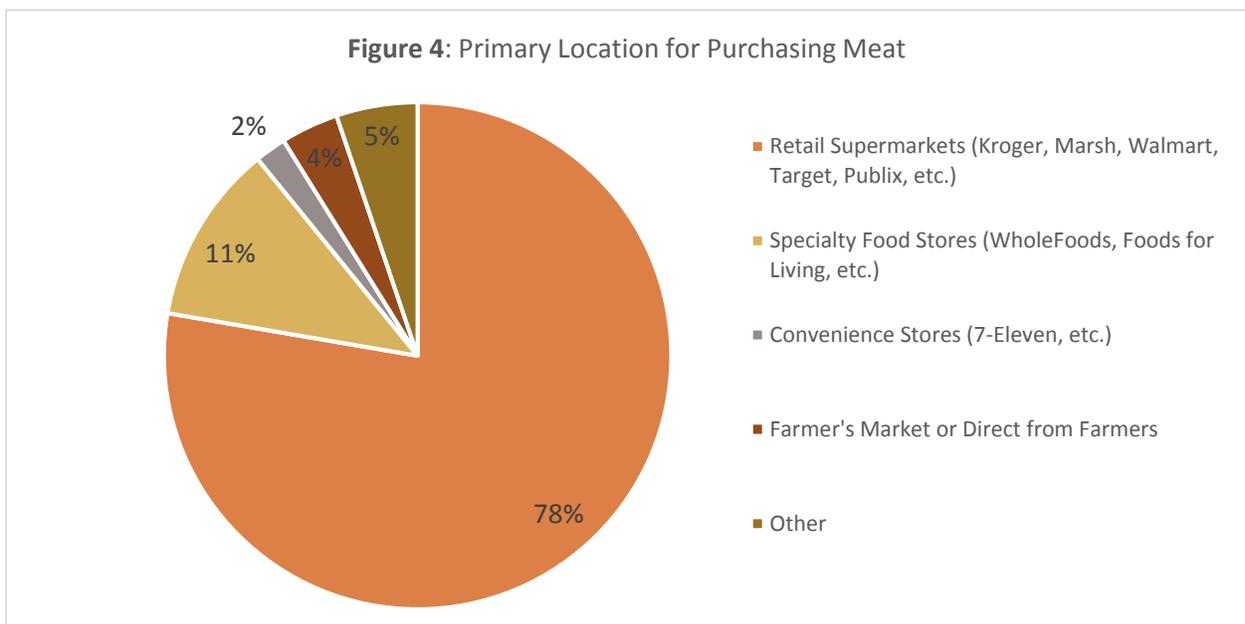


Participants also identified the most appealing primary reason for their household to visit an agritourism location. As seen in **Figure 3**, the largest group of participants, 34 percent, selected education; 32 percent chose to obtain food; 28 percent selected entertainment; and 6 percent indicated other as the primary reason their household would visit an agritourism location.



Consumption of Food Products

This study investigated the food products consumed by respondents in their households, as well as some of the food shopping habits of individuals. Respondents provided information about household weekly food expenditures, locations where the household was purchasing different food categories and how often they purchased pork products. The survey instructed participants to indicate the primary location for food purchases, which were divided into four categories: dairy, meat, produce/fruit/vegetables and “all other food categories.” For every food category, the majority of participants indicated that the primary purchase location was a retail supermarket. Looking at the meat category, as seen in **Figure 4**, 78 percent of respondents said that their primary location for purchasing



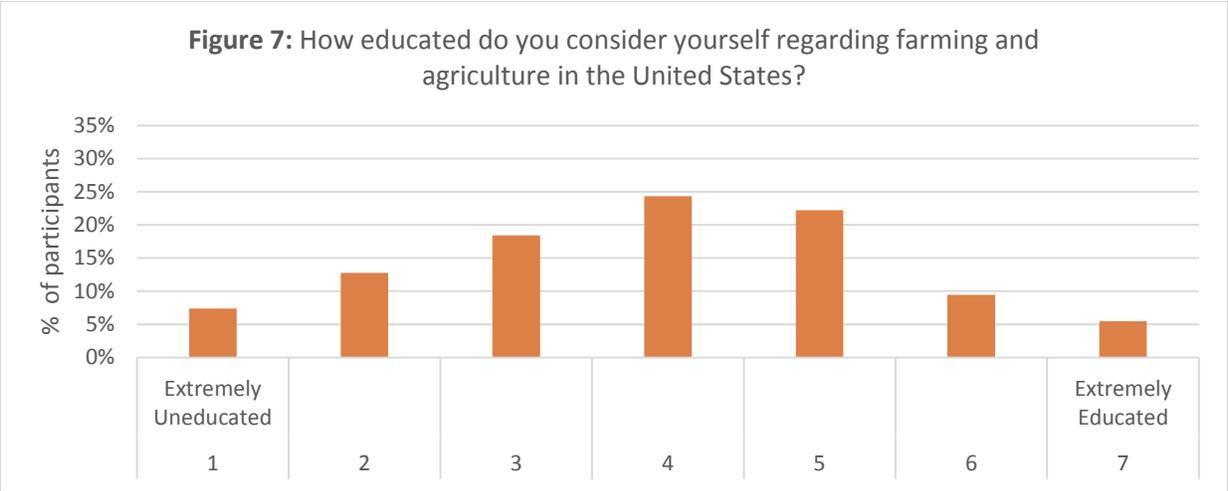
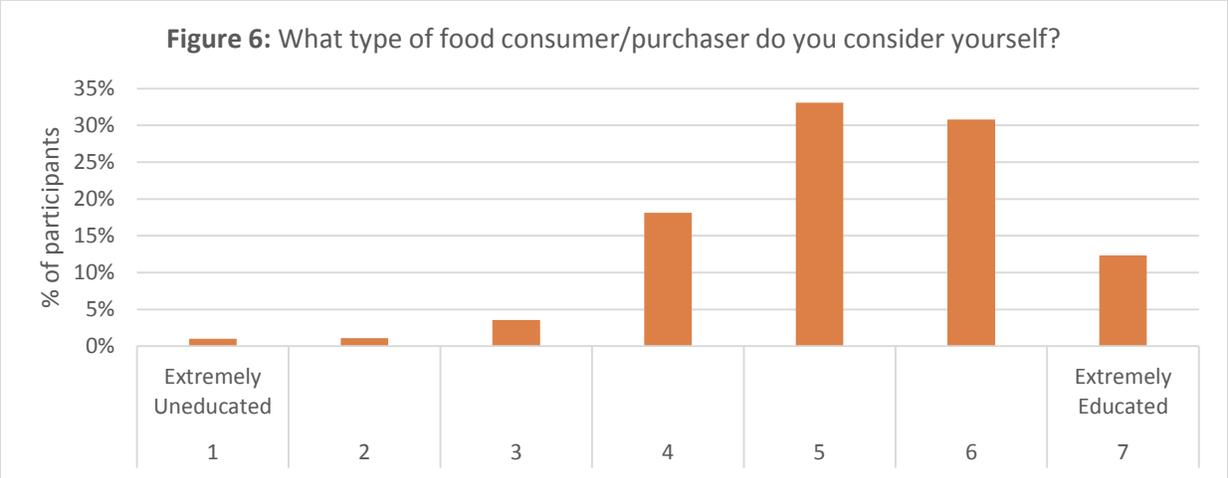
meat was in retail supermarkets, followed by 11 percent who selected specialty food stores. Five percent of participants indicated that they purchased meat at other locations, and 4 percent bought meat at farmers markets or directly from farmers.

The survey asked respondents how often they purchased various livestock products, including meat and milk, in addition to where they shopped. Eighty-three percent of respondents stated that they have purchased pork products within the last year. Results presented in **Figure 5** show that the majority of respondents purchased milk on a weekly basis. It also illustrates that they typically purchased bacon, ham lunchmeat, pork chops, ham lunchmeat, pork chops or pork sausage on a monthly basis.



Familiarity with Livestock Agriculture

In addition to household lifestyle and production practice experiences, self-reported familiarity with animal agriculture has been assessed to gain a better understanding of how educated consumers are, or perceive themselves to be, about livestock production. The survey asked two questions: 1) “What type of food consumer/purchaser do you consider yourself?” (**Figure 6**), and 2) “How educated do you consider yourself regarding farming and agriculture in the United States?” (**Figure 7**). The participants responded on a scale of one to seven, where one indicated they considered themselves extremely uneducated and seven indicated they considered themselves extremely educated. The mean response to the type of food consumer/purchaser was 5.23, while the mean response to how educated they considered themselves regarding farming and agriculture in the United States was 3.92.



Looking more specifically at animal agriculture, the survey asked respondents about livestock and animals in general. Participants identified the life expectancy in years (decimals were allowed) for a dairy cow on a dairy farm, beef cow on a beef (cow-calf) farm/ranch, egg producing/laying hen, indoor house cat and pig raised for pork. Results from these questions can be found in **Table 3**.

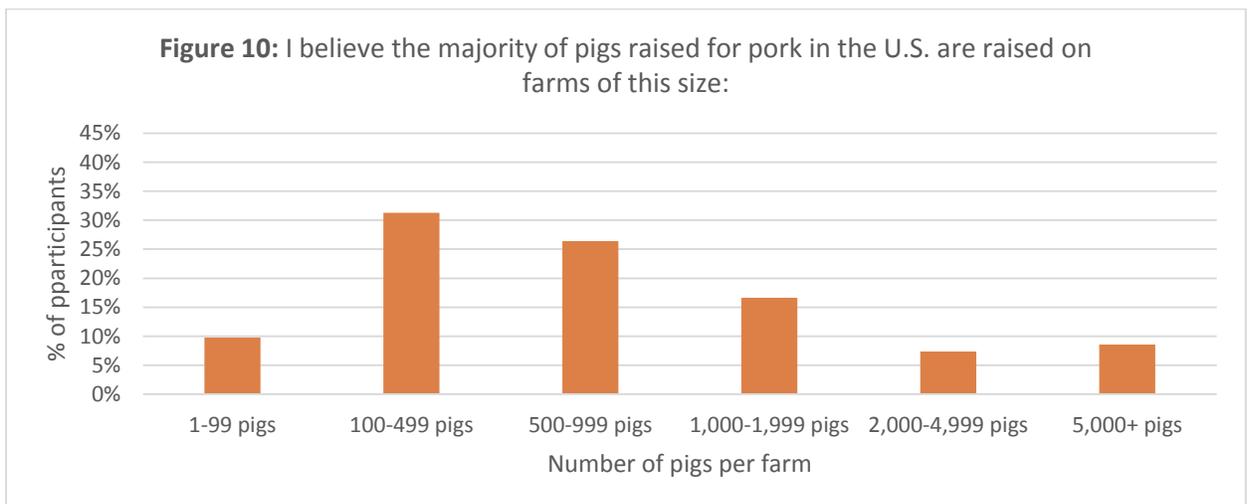
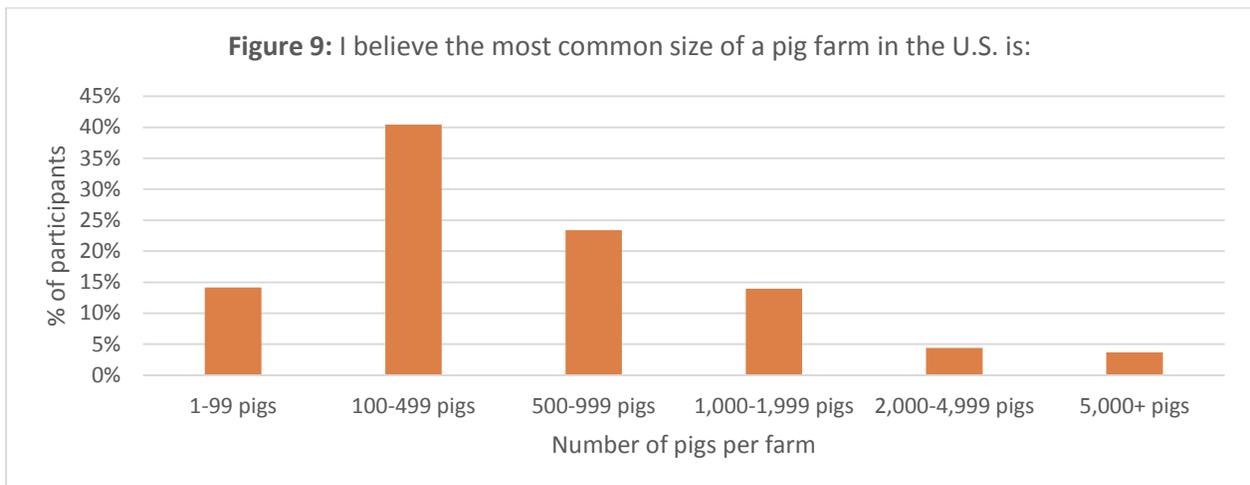
Table 3. Life Expectancy Estimates of Various Animals

	Dairy Cow	Beef Cow	Egg Producing Hen	Indoor House Cat	Pig Raised for Pork
Mean	10.38	6.06	5.00	12.58	4.09
Median	10	4	5	14	3
Mode	10	2	5	15	2

The mean, median and mode life expectancies reported for all animals studied, except the house cat, were significantly higher than the actual average age. The beef cow on a cow-calf operation offers an interesting case in which the mean was approximately 6 years, but the median was 4 years, and the mode was 2 years. Potentially, participants misunderstood the difference between a beef cow, which would generally produce calves annually for a number of years, and a beef animal raised for slaughter.

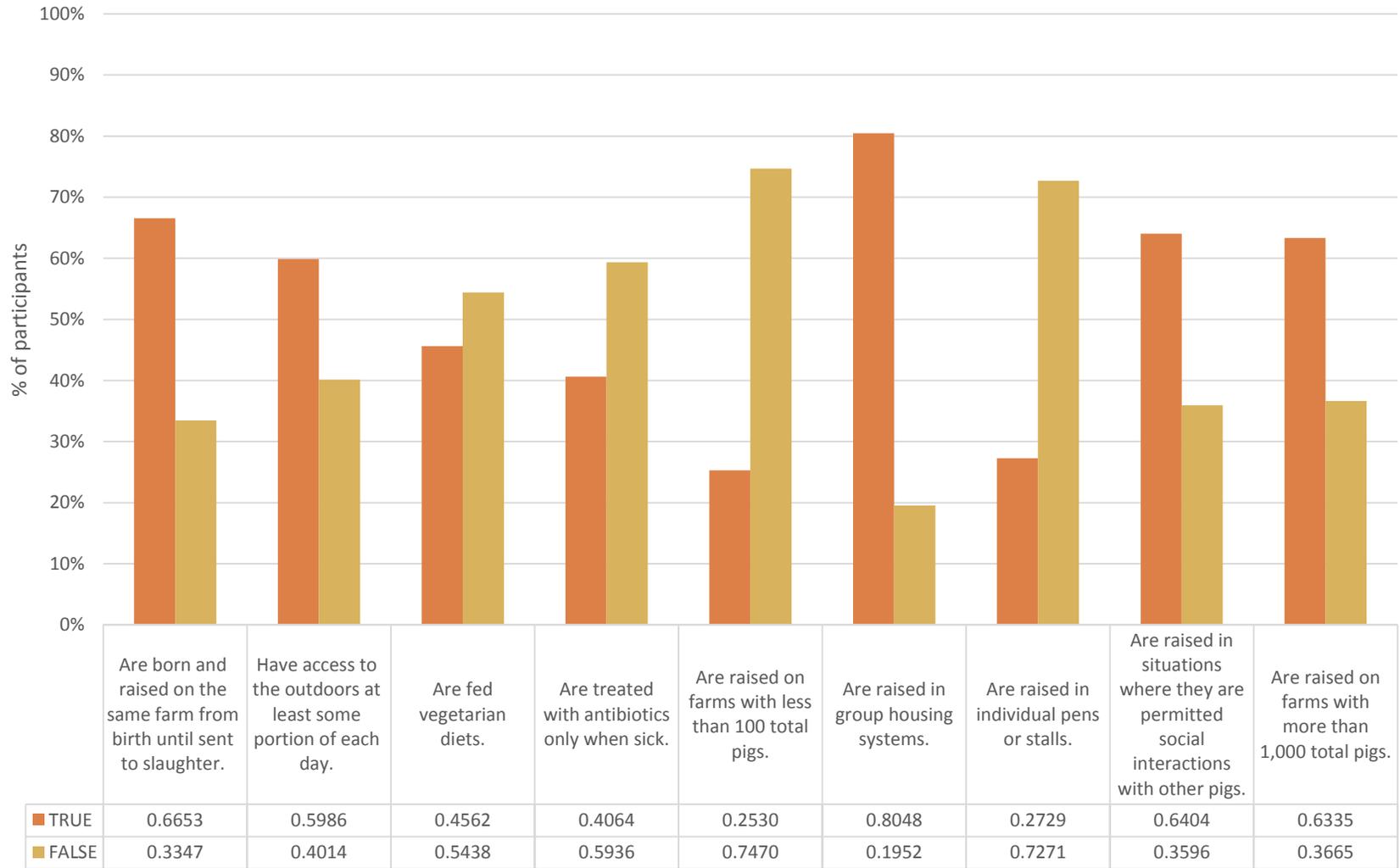
However, aside from the beef cow, the significant overestimation of age is thought-provoking. In general, the mean age reported by consumers is significantly higher than the actual ages of these production animals. Researchers may explore the impact of providing information about the actual life expectancies of these animals in future studies.

The study also asked participants what they believe is the most common size of a pig farm, as well as what farm size represents a majority of the operations used to raise pigs for pork in the United States. According to the USDA-NASS (2013), 71 percent of U.S. pig farms have zero to 99 pigs. Only 5 percent of U.S. pig farms have more than 5,000 pigs (USDA-NASS, 2013). The majority of pigs raised in the United States, 62 percent, come from farms with more than 5,000 pigs (USDA-NASS, 2013). Therefore, while the majority of pig farms are small, most pork originates from pigs raised on large operations that are limited in number. **Figures 9 and 10** illustrate that the majority of survey participants believed the most common pig farm has 100 to 499 pigs, which is slightly larger than reality. They also indicated that they believed the majority of pork originated from a farm that has far fewer pigs than is typical for U.S. pork suppliers.



To gain deeper insight into consumers' knowledge about pork production, study participants answered a set of nine statements regarding pigs raised for pork in the United States. The survey asked participants to identify the provided statement as true or false. Most respondents indicated that they believed the majority of pigs raised for pork in the United States are born and raised on the same farm, have access to the outdoors for some portion of each day, are not fed vegetarian diets, are treated with antibiotics in times other than when sick and are not raised on farms with less than 100 total pigs. They also believed that the pigs are raised in group housing systems, are not raised in individual pens, are raised in situations where they are permitted to have social interactions with other pigs, and are raised on farms with more than 1,000 pigs. **Figure 11** illustrates the responses to these statements. The majority of responses were incorrect, indicating that respondents are unfamiliar with how pigs are currently raised for pork in the United States. Regardless of how individuals self-reported their knowledge level, it is clear that there are some gaps in basic knowledge.

Figure 11: To the best of my knowledge, the majority of pigs raised for pork in the United States:

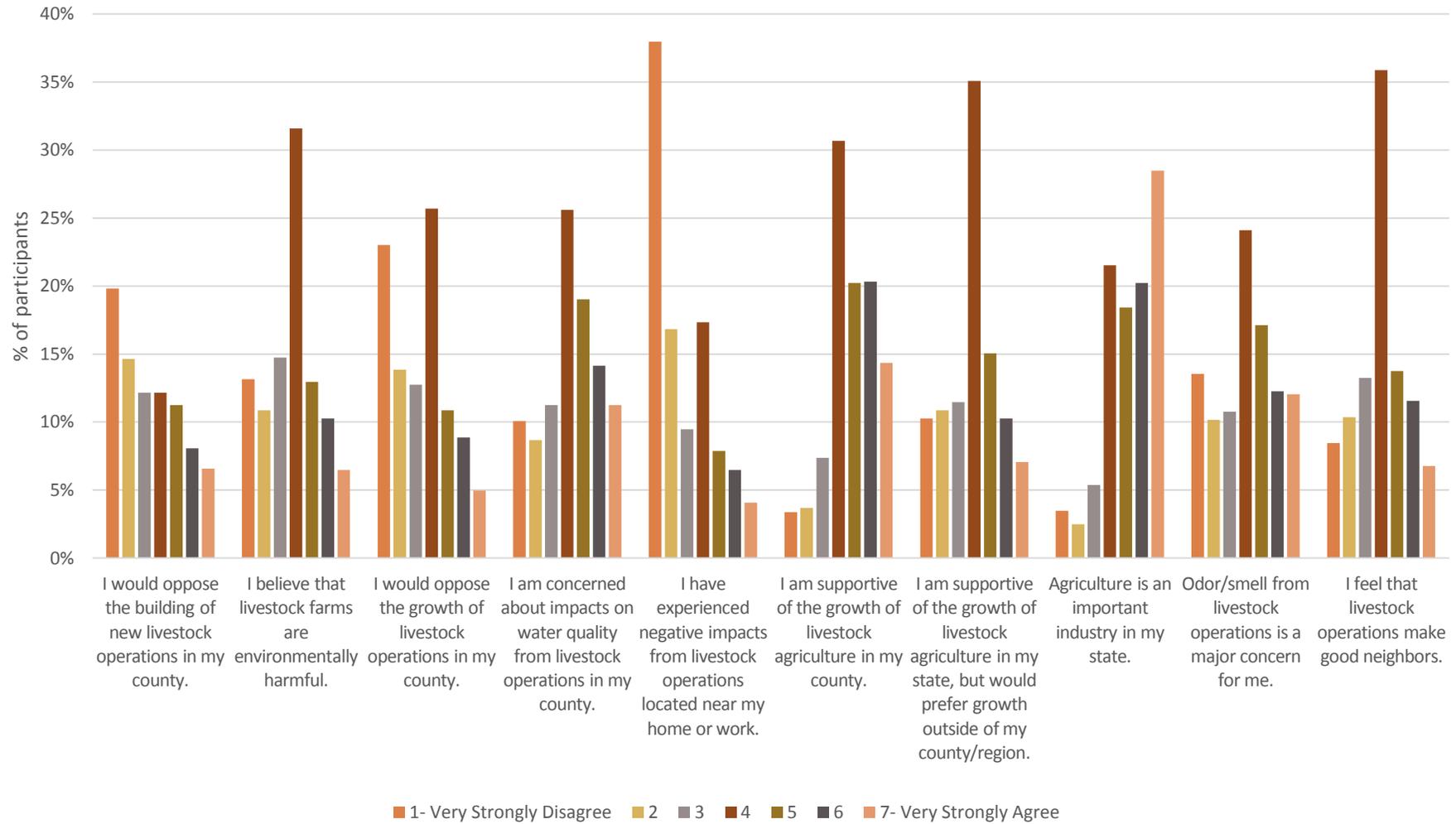


Views on Livestock Production and Growth

To identify U.S. consumers' views on livestock production, researchers asked questions to obtain participants' perspectives on growth and expansion of livestock operations. The survey provided statements about animal agriculture growth, and respondents indicated their level of agreement with the statements on a scale where one was strongly disagree and seven was strongly agree. The results of these questions can be seen in **Figure 12**.

Most participants, 67 percent, indicated with some level of agreement that they believe the agriculture industry is important to their state of residence. The majority also said that they would not oppose the building or growth of livestock operations in their county. Most participants also indicated that they are supportive of the growth of livestock agriculture in their county. Thus, the majority of participants are generally in favor of livestock operation growth. Most participants said they were neutral to the statement that livestock operations make good neighbors, and most strongly disagreed with the statement, "I have experienced negative impacts from livestock operations near my home or work."

Figure 12: Perspectives of Consumers on Animal Agriculture Growth

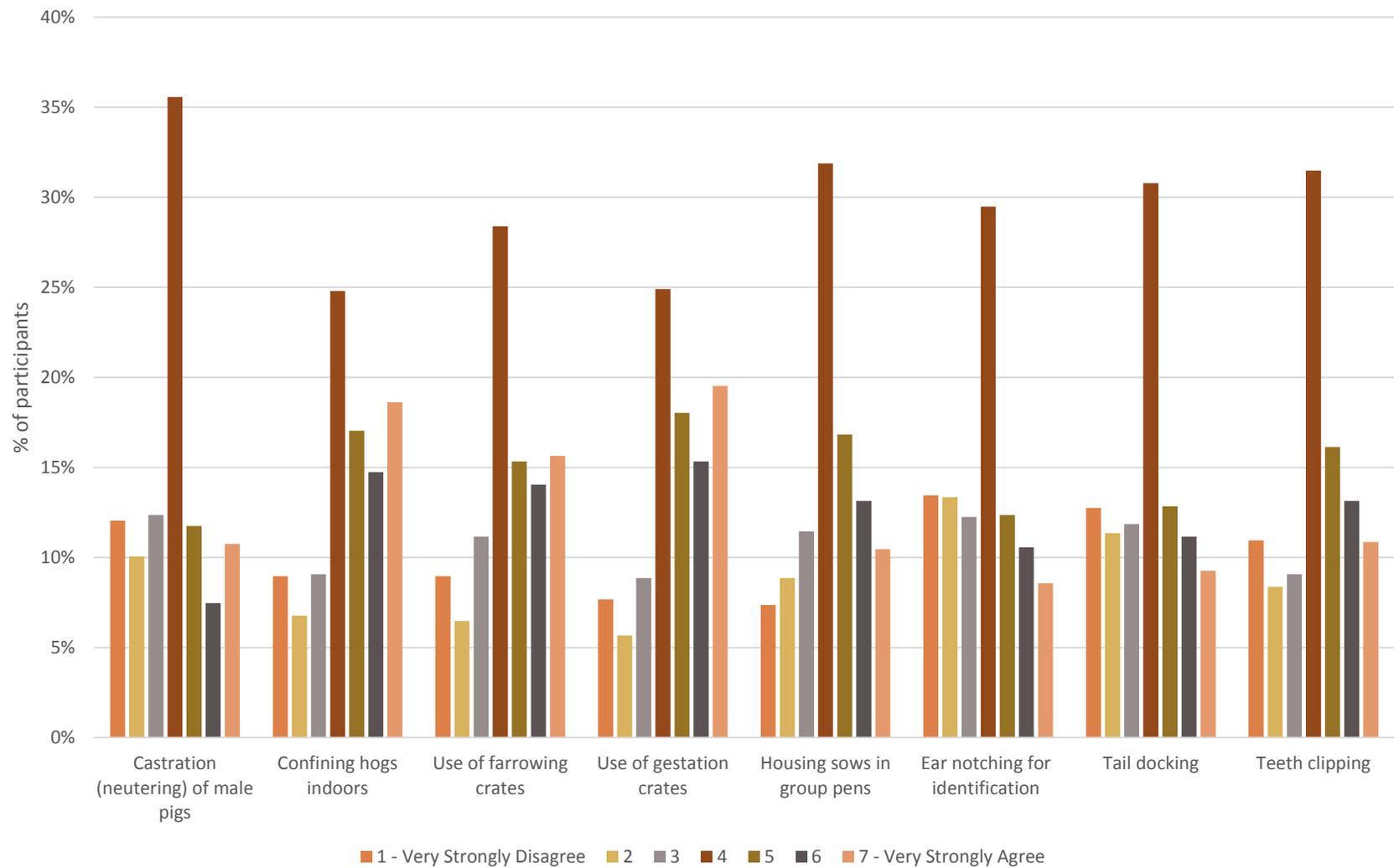


Perceptions of Animal Welfare

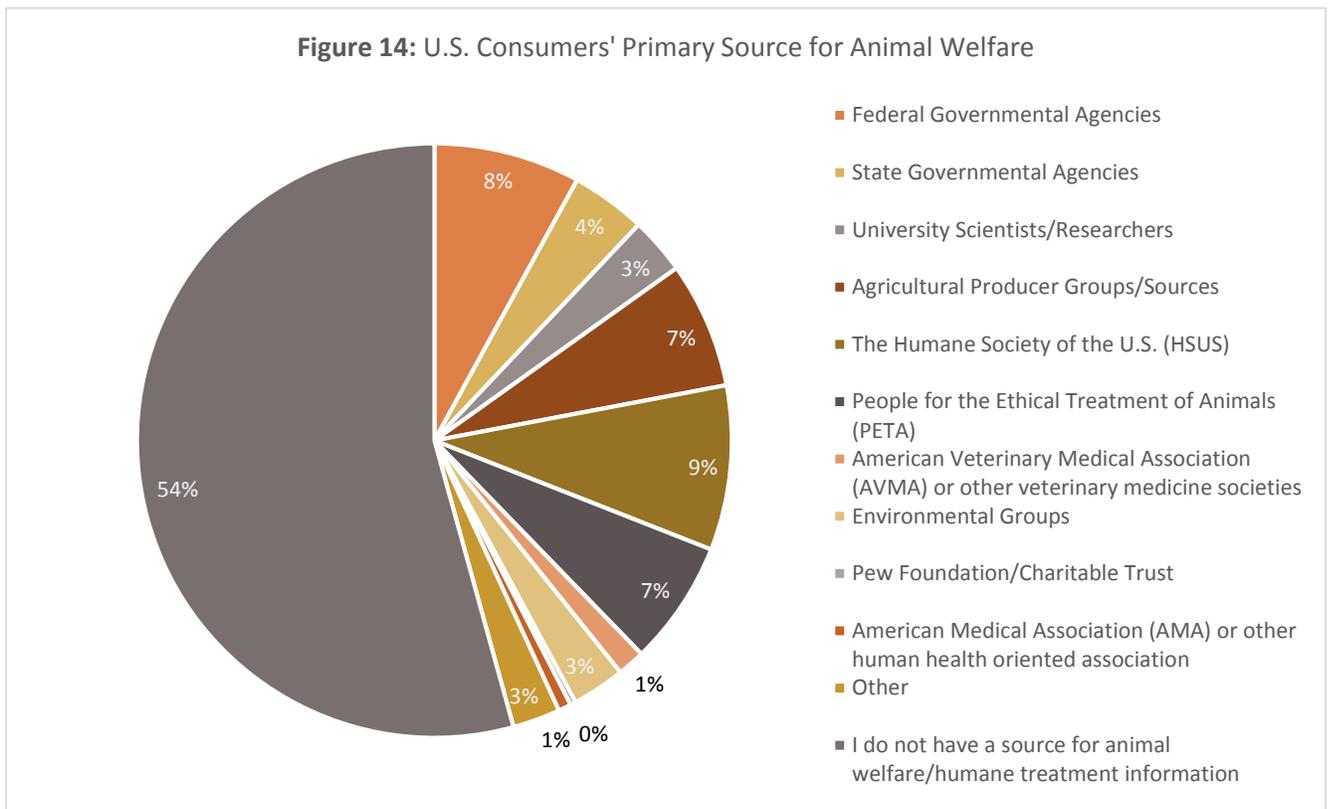
When studying animal welfare, particularly concerning pork production, one step is to understand which practices consumers believe seriously reduce animal welfare. This survey asked participants to review a list of practices related to the welfare/humane treatment of pigs and indicate, on a scale, their level of agreement or disagreement. Results can be found in **Figure 13**.

The most common response for each practice listed was the number four, which indicated neutral. This response can be interpreted two different ways, either “respondent does not know” or “respondent has no strong feelings either way.” When looking to those who selected something other than the number four, more consumers believed that confining hogs indoors, using farrowing and gestation crates and housing sows in group pens seriously reduced the welfare/humane treatment of the pig. On the other hand, participants indicated that castration (neutering) of male pigs, ear notching for identification, tail docking and teeth clipping were all practices that did not seriously reduce the welfare/humane treatment of pigs. These findings are identical to those of McKendree and Widmar (2013), which hypothesized that the reason people are more tolerant of castration, ear notching, tail docking and teeth clipping is because these are common or known practices for household pets and that “respondents could also assume that pigs, like pets, are given analgesia or anesthesia during ear notching, castration and tail docking” (McKendree and Widmar, 2013).

Figure 13: How much do you agree that the following practices seriously REDUCE the welfare/humane treatment of pigs?



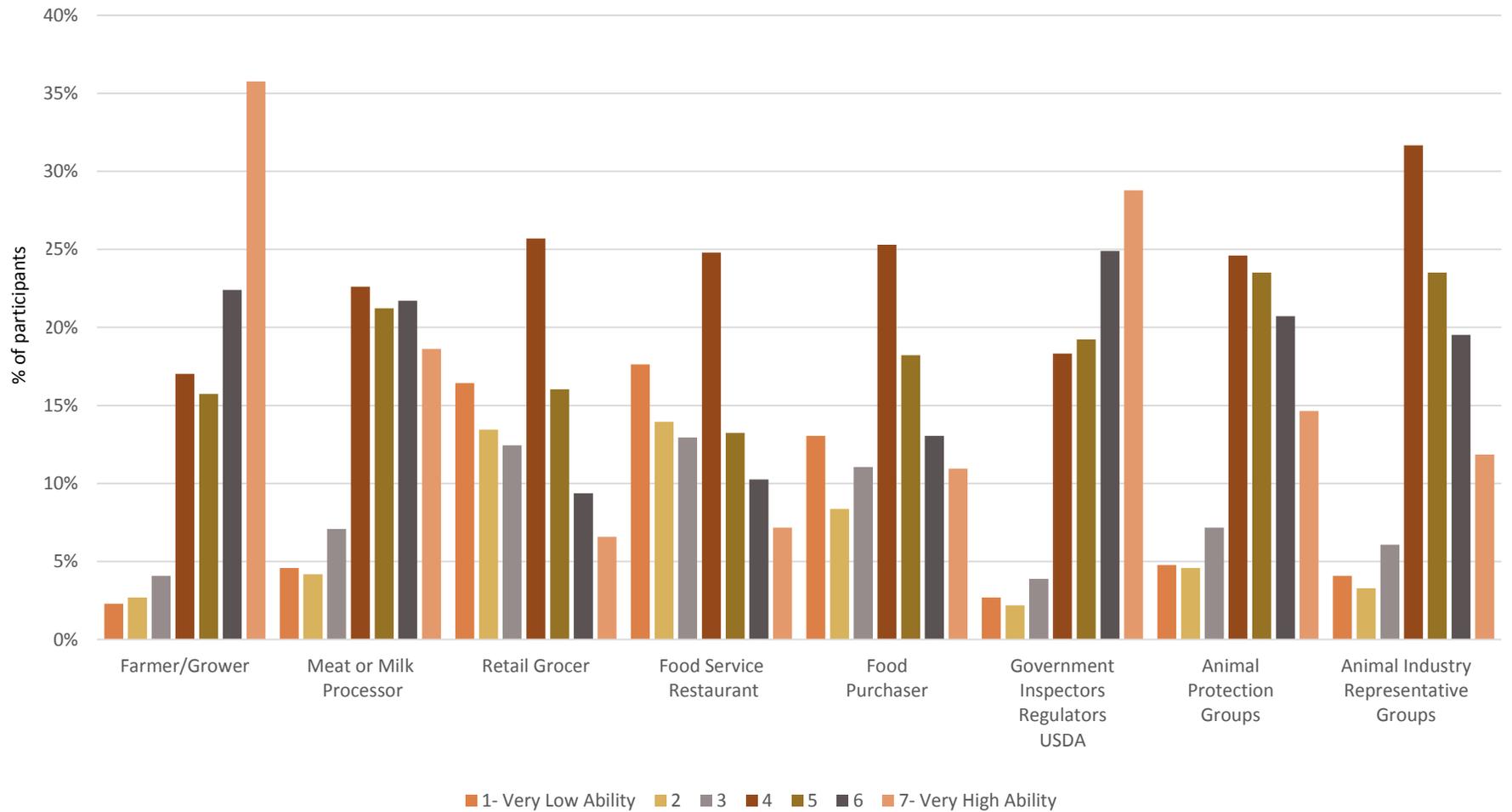
This survey inquired about respondents' primary source for animal welfare information (**Figure 14**). According to McKendree et al. (2014), "Understanding the primary sources of information that are used by the general public is key in understanding to whom consumers look for guidance on animal welfare issues." This survey found that the majority of participants, 54 percent, had no source for animal welfare information. The most common primary sources were the Humane Society of the United States (HSUS), federal government agencies, agricultural producer groups/sources and People for the Ethical Treatment of Animals (PETA). McKendree et al. (2014) found in their nationally representative survey taken in 2012, the majority of respondents, 56 percent, also indicated they did not have a source, and of those who did, the most common source for animal welfare used was the HSUS. Some differences between the findings of McKendree et al. (2014) and this study include a slightly larger percentage of respondents who indicated their primary source was state government agencies (2 percent in 2012 compared with 4 percent in this survey). McKendree et al. (2014) looked into relationships between the different sources and people's reported concern for animal welfare and found that the differences in levels of animal welfare concern were better correlated with having or not having a source, rather than which sources were used (McKendree et al., 2014).



The survey asked participants to rate the ability different parties have to influence and ensure the proper animal welfare/humane treatment practices. These parties included: farmer/grower, meat or milk processor, retail grocer, food service restaurant, food purchaser (consumer), government inspectors/regulators/USDA, animal protection groups and animal industry representative groups.

Approximately 36 percent of participants believed that the farmer/grower group had a very high ability to influence and ensure proper animal treatment practices. This was larger than any other party in the supply chain. Participants also perceived government and meat or milk processors to have a high level of influence on treatment practices. The three parties that the majority of participants indicated they believed had low ability to influence and ensure proper animal treatment practices were the retail grocers, food service restaurants and food purchasers. A full presentation of the findings can be found in **Figure 15**.

Figure 15: How much ability does each of the following parties have to influence and ensure proper animal welfare/humane treatment practices?



McKendree and Widmar (2013) found in their U.S. consumer sample that 14 percent of respondents reduced their pork consumption due to animal welfare concerns in the three years prior to their study. The average reduction reported was 56 percent (McKendree and Widmar, 2013). In this survey, 15 percent of respondents indicated that they had reduced consumption due to animal welfare concerns. Of that group, the mean reduction was 57 percent.

Fair Oaks Farms (FOF)

This study included elements that assessed the impacts of agritourism on consumer perceptions of agriculture and animal welfare. In order to study this in relation to pork production, the survey asked respondents if they had heard of and/or had visited Fair Oaks Farms (FOF)¹. Fifteen percent of respondents said they had heard of FOF, and of that group, approximately 45 percent had visited. Thus, 7 percent of the total survey respondents had visited FOF. Of those who visited, the majority, 69 percent, came with their family, and 43 percent had visited multiple times.

Respondents who had either heard of or been to FOF answered additional questions regarding their experience and perspectives. Researchers also compared their responses to the rest of the survey with those who had not heard of or been to FOF to see if differences existed between the groups in demographics, household lifestyle, consumption behaviors, familiarity with animal agriculture, views on animal agriculture growth and views on animal welfare. The research team compared the two groups using crosstabs and z-scores generated in SPSS. All findings referenced as being statistically significant are significant at the 5 percent level.

Participants who had heard of FOF shared their perspectives of its credibility as a livestock operation. The majority of participants, 56 percent, stated that they felt the pigs were raised in average conditions. Of those who had heard of FOF, 38 percent stated that they believed the pigs raised at FOF are in above average conditions, and 6 percent stated in below average conditions. Similarly, the majority, 54 percent of those who have heard of FOF, stated they believed the cows were raised in average conditions, and 37 percent believed the cows were raised in above average conditions; the remaining 9 percent stated in below average conditions.

Participants also indicated if they felt the practices employed at FOF with respect to environmental management and preservations were above average, average or below average. The majority, 54 percent, selected average. Forty-one percent of respondents selected above average, and 5 percent selected below average. The majority of participants who had heard of FOF believed that the welfare/humane treatment conditions under which pigs and dairy cows are raised at FOF was good. They could choose from the following options: very poor, poor, fair, good and excellent.

¹ Fair Oaks Farms is located in Fair Oaks, Indiana. “The goal for Fair Oaks Farms is to educate the public about modern farming procedures while providing a transparent look at everything we do, taking care of our animals and our planet and providing the best, most nutritious products to our customers” (from <http://fofarms.com/blog/>).

Lifestyle Differences

The study compared and contrasted demographic factors between the two groups of respondents – those who had heard of or been to FOF and those who had not. Those who had heard of or been to FOF tended to be younger. They also had higher levels of income and education compared to those who had not visited FOF.

A larger percentage of those who had been to or heard of FOF indicated that they had a family member or relative who owned or operated a farm or that they owned and operated a farm. A larger percentage of those who had been to FOF had pets, as well.

Tourism Differences

When examining the differences in tourism between those who had been to FOF and those who had not, a larger percentage of people who had been to FOF indicated that they traveled more than 250 miles (round trip) from their home to visit an attraction of any kind. Also, a larger percentage of those who had been to FOF also attended a higher percentage of the other tourism attraction locations investigated compared with those who had not been to FOF, implying that those who attended FOF tend to be tourists.

Consumption Differences

A larger percentage of people who had been to FOF indicated that they had reduced pork consumption in the last three years due to animal welfare concerns, as opposed to those who had not been to FOF. There was also a larger percentage of those who had been to FOF who self-reported to be vegan or vegetarian.

Familiarity with Animal Agriculture Differences

A larger percentage of people who had been to FOF considered themselves highly educated about food. Also, the researchers found that a larger percentage of those who had been to FOF identified themselves as educated about farming and agriculture in the United States.

The series of true/false questions about management practices on U.S. pig farms showed differences between those who had been versus those who had not been to FOF. A larger percentage of people who had been to FOF stated that they believed the following statements were true: Pigs are treated with antibiotics only when sick; pigs are raised on farms with less than 100 total pigs; and pigs are raised in individual pens or stalls. All of the other true/false statements investigated had no statistically different responses based on if the respondent had been to FOF or not.

Views on Animal Agriculture and Growth Differences

For those who had been to FOF compared with those who had not, the research team identified many differences in perspectives about animal agriculture and growth of operations. A larger percentage of those who had been to FOF agreed to all of the statements studied.

Animal Welfare Perceptions Differences

Practices

The study examined differences in animal welfare perceptions based on if respondents had been to FOF. For those who had been to FOF versus those who had not, a larger percentage stated that they agreed that castration (neutering) of male pigs, confining hogs indoors, using farrowing and gestation crates, housing sows in group pens, ear notching for identification, tail docking and teeth clipping seriously reduced the animal welfare of pigs.

Sources of Animal Welfare Information

Respondents were asked to identify their primary source of animal welfare information; a larger percentage of those who had been to FOF had a source for animal welfare.

Conclusions and Impacts

The majority of U.S. household consumers indicated that they consider themselves to be educated about food, but less educated about agriculture. Fifty-four percent of participants said that they do not have a source for animal welfare information. While only a small percentage were directly employed in the agriculture industry, 35 percent of respondents indicated that they were involved in some form of household food production in the last three years. Of those who participated in the survey, the largest group reported that the primary reason to attend an agritourism location would be for education, followed by obtaining food. The majority of participants were supportive of growth in the livestock industry and believed that agriculture is important in the state they reside. They were concerned with animal rearing practices involving the use of crates for pork production and believed that of all the parties in the chain, the farmer has the highest ability to influence and ensure proper treatment of animals in the production process.

References

- Bureau of Labor Statistics. (2013, December). Employment by major industry sector. Retrieved from http://www.bls.gov/emp/ep_table_201.htm
- Dillman, Don A. (2007). *Mail and Internet Surveys: The Tailored Design Method: 2007 Update with New Internet, Visual and Mixed-mode Guide*. 2nd ed. Hoboken, N.J: John Wiley.
- McKendree, M.G.S. and Olynk Widmar, N. (2013). Consumer Perceptions of Livestock Products and Animal Welfare. Center for Food and Agricultural Business, Purdue University. CAB RP 13.1. Retrieved from <<http://agribusiness.purdue.edu/files/resources/r-7-2013-mckendree-olynk-widmar.pdf>>.
- McKendree, M.G.S., C.C. Croney, and N.J.O. Widmar (2014). Effects of demographic factors and information sources on United States consumer perception of animal welfare. *Journal of Animal Science*, 2013. Retrieved from <https://www.animalsciencepublications.org/publications/jas/pdfs/92/7/3161?search-result=1>
- National Telecommunications and Information Administration and Economics and Statistics Administration in the US Department of Commerce. (2013). *Exploring the Digital Nation: America's Emerging Online Experience*. Retrieved from: http://www.ntia.doc.gov/files/ntia/publications/exploring_the_digital_nation_-_americas_emerging_online_experience.pdf
- U.S. Census Bureau. (2012). *Statistical abstract of the United States: 2012*. Retrieved from <http://www.census.gov/compendia/statab/2012/tables/12s0229.pdf>
- U.S. Census Bureau. (2010 Census, Revised 2013). *Annual Estimates of Housing Units for the United States Regions, Divisions, States and Counties: April 1, 2010 to July 1, 2013: 2013 Population Estimates*. Accessed June 24, 2014 at: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2013_PEPANNHU&prodType=table
- U.S. Census Bureau. (2010 Census, Revised 2014). *DP-1 Profile of General Population and Housing Characteristics: 2010, 2010 Demographic Profile Data*. Accessed June 24, 2014 at: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1&prodType=table
- U.S. Census Bureau. (2008-2012). *DP01: Selected Economics: 2008-2012 American Community Survey 5-Year Estimates*. Accessed June 24, 2014 at: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_5YR_DP03&prodType=table

U.S. Department of Commerce Economics and Statistics Administration U.S. Census Bureau
Census Regions and Divisions of the United States. Accessed June 24, 2014 at:
http://www.census.gov/geo/maps-data/maps/pdfs/reference/us_regdiv.pdf

USDA. (2005). Factors Affecting U.S. Pork Consumption/ LDP-M-130-01. Retrieved from
http://www.ers.usda.gov/media/326138/ldpm13001_1_.pdf

USDA-NASS. (2013, February). U.S. Hog Operations Number of Operations and Percent of Inventory,
2012. Retrieved from http://nass.usda.gov/Charts_and_Maps/Hogs_and_Pigs/hopin_e.asp

Vegetarianism in America. Vegetarian Times. Retrieved from
http://www.vegetariantimes.com/features/archive_of_editorial/667

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