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Stuart Estes

University of Arkansas, Fayetteville

Leslie D. Edgar

University of Arkansas, Fayetteville

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Consumer perceptions of poultry production in Arkansas: Perceptions analysis

Stuart Estes and Leslie D. Edgar†*

ABSTRACT

Poultry production holds an important place in Arkansas economically and as a food source. The importance of poultry production ultimately hinges on the demands of the consumer. With this in mind, this study surveyed consumers to assess their perceptions of poultry production in Arkansas. The instrument, used to survey consumers, was created by the researcher and an expert committee at the University of Arkansas. Consumers were interviewed through direct communication at grocery stores in northwest Arkansas. Data gathered from the study were analyzed for descriptive and correlational statistics. Two key findings were that consumers were unsure about the use of hormones and antibiotics in poultry production, and consumers agreed that poultry production has a positive effect on Arkansas. Based on these descriptive and correlational statistics, recommendations were made for marketing and education efforts to maintain the viability of poultry production in Arkansas. For example, consumers need to be educated about poultry production practices pertaining to conventional production processes, hiring in the poultry industry, and the use of factory farms to produce poultry.

* Stuart Estes is a senior majoring in Agricultural Education, Communication and Technology with an emphasis in Agricultural Communications.

† Leslie D. Edgar is the faculty mentor and an associate professor in the Department of Agricultural and Extension Education.

MEET THE STUDENT-AUTHOR



Stuart Estes

I am an agricultural education, communication and technology major with an emphasis in agricultural communications in the Department of Agricultural and Extension Education. I am a recipient of a 2013 Student Undergraduate Research Fellowship, which was used to fund this study. In the AEED Department, I am an active member of REPS (Representing Excellence, Pride and Service) and the Agricultural Communicators of Tomorrow. After completing my bachelor's degree, I plan on pursuing a master's degree here at the university in Agricultural and Extension Education.

I chose to participate in this research due to my interest in agricultural communications and how the consumers that drive the industry perceive agriculture. I hope that this study will be useful to the poultry industry that is so important to the state. I look forward to continuing research in these areas during my educational career.

I would like to thank Dr. Leslie Edgar, without whom this research would not have been possible.

INTRODUCTION

Arkansas is known for prolific poultry production (Boehler, 2010). With that in mind, because of the poultry industry's reach, it is one of the most important parts of the agricultural economy and also a significant job creator in the region (Goodwin et al., 2002). The poultry production and processing sector in Arkansas contributes 52,867 jobs to the market, and \$1.8 billion in added value to the Arkansas economy (Goodwin et al., 2002). Additionally, Arkansas is the second-largest commercial-broiler-producing state in the nation (Boehler, 2010).

Along with the importance of the poultry industry economically and as a job market in Arkansas, chicken is one of the most affordable food products in the United States (American Meat Institute, 2009). As of 2007, the average annual per capita consumption of chicken was approximately 85 pounds (American Meat Institute, 2009). In fact, per capita consumption of poultry has increased dramatically over the last 30 years, from 40.2 pounds per person in 1970 to 86.5 pounds per person in 2007 (American Meat Institute, 2009). Even though prices for poultry at the grocery store have increased over the years—approximately \$30 per capita from 1997 to 2007—the increase has been significantly less than other meats such as beef—which had nearly a \$75 per capita increase over the same time period (American Meat Institute, 2009).

It is important to have some understanding of what drives consumers to be active in the market. The theory of reasoned action states that human actions are guided by three considerations: (a) beliefs about the consequences of an action (behavioral beliefs), (b) beliefs about the normative expectations of others (normative beliefs), and (c) beliefs about the presence of factors that may promote or hinder the behavior (control beliefs) (Ajzen and Fishbein, 1980). Applying the theory of reasoned action to consumers who purchase poultry, consumers who believe there will be negative consequences associated with purchasing poultry will be less likely to purchase poultry. Also, consumer behavior will be directly influenced by their reference groups and whether or not they purchase poultry products. Finally, consumer behavior will be affected by their beliefs about the availability of poultry products in the area. The theory of reasoned action weighs heavily on the behavior of consumers, but also plays an important role in understanding consumer perceptions.

The importance of poultry production in Arkansas requires that producers and consumers both possess a certain level of knowledge about the processes and methods that constitute this industry. This is especially true in Arkansas where poultry production is important in so many different ways. Agricultural literacy is defined as the possession of “a minimum level of knowledge of the industry which produces and markets food needed for human survival” (Frick et al., 1995).

Much of the research about agricultural perceptions shows that consumers are losing literacy the farther they are generationally removed from the farm. Frick et al. (1995) showed in their study of rural and urban perceptions that respondents living on farms were more knowledgeable about agriculture than their rural non-farm neighbors, who were more knowledgeable than their urban counterparts. As producers and consumers continue to be separated, tensions between the two parties will continue to grow (Wachenheim and Rathge, 2000). A study, conducted with a questionnaire developed by researchers, on university students showed that students perceive the food supply to be safe and agriculture as having a positive impact, but students in the agricultural programs held more favorable views than those students not in the agricultural programs (Terry and Lawver, 1995).

Although a sufficient amount of research exists to show that the general public is losing agricultural literacy (Frick et al., 1995; Terry and Lawver, 1995; Wachenheim and Rathge, 2000), not much research has been conducted to address consumer perceptions of specific areas of agriculture. Because agriculture is a consumer-driven industry, it is important that producers and the industry understand the perceptions held by consumers. This will allow for proactive marketing and public relations activities tailored to inform consumers, and to educate and overcome inaccurate information. This study identified current perceptions held by consumers of one of the most prominent agricultural industries in the state, namely, poultry production.

The purpose of this study was to understand the perceptions of the poultry industry by Arkansas consumers so that educational and marketing recommendations can be made to improve the longevity and acceptance of the poultry industry. It is vital to Arkansas poultry production that producers and consumers see eye-to-eye, as development of agricultural literacy “drives the development of policies which are mutually beneficial for both consumers and producers” (Frick et al., 1995).

MATERIALS AND METHODS

This study used descriptive survey methodology. The survey consisted of 13 questions that assessed consumer perceptions of poultry production in Arkansas, as well as questions to assess consumer knowledge of poultry production and a demographic section. The statistical analysis was descriptive in nature and the instrumentation followed Dillman’s Tailored Design method (Dillman, 2007) to ensure accurate question development. The representative sample for this study was consumers in three select areas in northwest Arkansas. A convenience

sample of 353 respondents was assessed; there were 198 respondents agreeing to participate. Participants were selected on a random basis through direct communications at grocery stores.

The survey created to conduct this research consisted of three parts: (a) a section that assessed consumer perceptions of poultry production in Arkansas, (b) a section that assessed consumer knowledge of poultry production and the industry, and (c) a demographic section.

Content validity for the survey was achieved by faculty experts from the University of Arkansas reviewing the instrument. Instrument stability for the survey was 0.8 (Gall et al., 2006). Data were assessed for descriptive and correlational statistics using SAS v. 9.3 (SAS Institute, Inc., Cary, N.C.). Open-ended responses were analyzed using open coding (Creswell, 2007; Glense, 2006; Strauss and Corbin, 1990).

RESULTS AND DISCUSSION

Respondents were first assessed for their perceptions about poultry production in Arkansas (Table 1.1). Consumers agreed that poultry is more affordable than beef or pork ($M = 4.81$, $SD = 1.09$). Consumers believed it is healthier to eat organically produced poultry than conventionally produced poultry ($M = 4.47$, $SD = 1.39$). When asked about their perception of hormone and antibiotic use in poultry production, consumers disagreed that hormones and antibiotics were never given to poultry during production ($M = 1.91$, $SD = 1.05$; $M = 1.84$, $SD = 0.96$). Consumers were unsure as to whether conventionally produced poultry contained unsafe levels of hormones or antibiotics ($M = 3.68$, $SD = 1.45$). Respondents disagreed that poultry is the cause of most foodborne illness ($M = 2.21$, $SD = 0.99$). Consumers moderately agreed that poultry producers care about the welfare of the poultry they produce ($M = 4.01$, $SD = 1.41$). Consumers were unsure if farmers use humane production practices ($M = 3.81$, $SD = 1.42$). When asked about poultry production’s effect on the environment, respondents moderately disagreed that poultry production is harmful to the environment ($M = 2.90$, $SD = 1.30$). Consumers were unsure if poultry processing employed a large number of illegal immigrant workers ($M = 3.93$, $SD = 1.36$). Respondents moderately agreed that most Arkansas poultry was grown on factory farms ($M = 4.15$, $SD = 1.37$). Consumers disagreed that if they lived in a rural area, they would like to live near a poultry farm ($M = 2.20$, $SD = 1.33$). Overall, consumers agreed that poultry production has a positive effect on Arkansas ($M = 4.92$, $SD = 1.07$).

After respondents were assessed regarding their perceptions of poultry production, they responded to the

section of the survey that assessed their knowledge of the poultry industry. Consumers were unsure as to whether they were very knowledgeable about poultry production processes ($M = 3.70$, $SD = 1.36$). The majority of consumers surveyed did not work in the poultry industry, nor did any members of their immediate family ($M = 1.18$, $SD = 0.39$).

Finally, consumer demographics were gathered as a part of the survey. The average age of respondents was 49.47, ranging from 19 to 92 years old. Most consumers surveyed lived in a suburban area ($M = 3.23$, $SD = 0.99$). In regard to education level, respondents possessed an average education of an associate degree ($M = 3.91$, $SD = 1.46$). The majority of respondents were women ($M = 1.65$, $SD = 0.48$). Correlations between demographics and perceptions can be found in Table 1.1.

Recommendations for marketing and consumer education were made based on the data collected in this study. First, consumers need to be educated about poultry production practices pertaining to conventional production processes, hiring in the poultry industry, and the use of factory farms to produce poultry to improve agricultural literacy (Frick et al., 1995) and ultimately ensure the importance of poultry production in Arkansas (Goodwin et al., 2002). Second, consumer education efforts must adequately address the use of antibiotics and hormones in poultry production due to the finding that consumers make purchases based on the perceived health benefits of poultry, as detailed in the theory of reasoned action, which states that consumers make decisions based on the consequences associated with a purchase (Ajzen and Fishbein, 1980). These recommendations should prove helpful to the poultry production industry as it strives to remain viable in Arkansas.

This study to assess consumer perceptions of poultry production in the state of Arkansas revealed consumer perceptions in regard to a variety of parts of the poultry production industry. Consumers held mostly unfavorable perceptions regarding conventional production processes, hiring in the poultry industry, and the use of factory farms to produce poultry; however, consumers viewed poultry as a more inexpensive food source, and also perceived poultry production as having an overall positive influence on the state. The perceptions found in this study should be used to more effectively tailor marketing and education efforts to maintain the importance of poultry production in Arkansas through improving agricultural literacy (Frick et al., 1995).

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Table 1. Consumer perceptions and relationships between statements and demographic characteristics.

| Relationships between Statements and Demographic Characteristics | | | | | | | | |
|---|------|--------------------|------------------------|-----------------------------------|------------------|--------------------------------|------------------------|---------------------|
| Statement | Mean | Standard Deviation | Knowledge ^a | Industry Affiliation ^b | Age ^a | Area of Residence ^c | Education ^c | Gender ^b |
| Poultry is more affordable than beef or pork. | 4.81 | 1.09 | -0.01 | 0.11 | 0.21** | 0.04 | 0.00 | -0.04 |
| It is healthier to eat organically produced poultry than conventionally produced poultry. | 4.47 | 1.39 | -0.06 | 0.05 | -0.12 | -0.05 | -0.09 | -0.04 |
| Hormones are never given to poultry. | 1.91 | 1.05 | 0.13 | 0.07 | -0.07 | 0.05 | -0.12 | -0.15* |
| Antibiotics are never given to poultry. | 1.84 | 0.96 | 0.03 | 0.05 | 0.08 | -0.10 | -0.11 | -0.12 |
| Conventionally produced poultry contains unsafe levels of hormones or antibiotics. | 3.68 | 1.45 | 0.15 | -0.02 | 0.08 | 0.02 | -0.09 | 0.19** |
| Eating poultry is the cause of most food-borne illness. | 2.21 | 0.99 | 0.04 | -0.05 | -0.12 | -0.09 | -0.07 | 0.15* |
| Poultry producers care about the welfare of the poultry they produce. | 4.01 | 1.41 | -0.04 | 0.16* | 0.08 | -0.03 | -0.08 | -0.03 |
| Poultry farmers use humane production practices. | 3.81 | 1.42 | 0.03 | 0.17* | 0.11 | -0.04 | -0.09 | 0.04 |
| Poultry production is harmful to the environment. | 2.90 | 1.30 | -0.03 | -0.11 | -0.03 | 0.11 | 0.15* | 0.12 |
| Poultry processing employs a large number of illegal immigrant workers. | 3.93 | 1.36 | 0.08 | -0.07 | 0.003 | 0.05 | -0.21** | 0.11 |
| Most Arkansas poultry is grown on factory farms. | 4.15 | 1.37 | 0.01 | -0.10 | -0.03 | 0.06 | -0.04 | -0.04 |
| If I lived in a rural area, I would like to live near a poultry farm. | 2.20 | 1.33 | 0.11 | 0.18 | -0.07 | -0.17 | -0.14 | -0.07 |
| Overall, the poultry industry has a positive effect on Arkansas. | 4.92 | 1.07 | 0.04 | 0.09 | 0.10 | -0.10 | -0.05 | -0.11 |

^aPearson Product-Moment Correlation.

^bPoint by Serial Correlation.

^cSpearman Rank-Order Rho.

Notes: N = 198; Likert Scale is 1 = Strongly Disagree; 2 = Disagree; 3 = Moderately Disagree; 4 = Moderately Agree; 5 = Agree; 6 = Strongly Agree; * $P < 0.05$; ** $P < 0.01$.