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Abstract

As the divide between consumers and producers in the agricultural industry increases, consumers are becoming less connected with the food they purchase. Without first-hand knowledge about the agricultural industry, consumers are relying more on the media to inform them about how their food is produced and processed. A growing form of media available to consumers is entertainment media, including documentary films. This research focuses on the ability of entertainment media to impact consumer perceptions about the agricultural industry, using the documentary film Food, Inc. The film Food, Inc. highlights aspects of the agricultural industry, including animal husbandry practices, governmental regulation of food production, and working conditions in food processing plants. This research uses a pretest and posttest to compare respondents' perceptions about the agricultural industry before and after watching the film. Findings indicate that consumers' perceptions were altered about the agricultural industry by watching the film. Based on this research it is recommended that future researchers and professionals in the agricultural industry work to positively influence and educate consumers about the agricultural industry through entertainment media.

Keywords

consumer perceptions, U.S. agricultural documentaries, Food, Inc., entertainment media, and entertainment documentaries

CONSUMER PERCEPTIONS OF THE U.S. AGRICULTURE INDUSTRY BEFORE AND AFTER WATCHING THE FILM *FOOD, INC.*

Jessica Holt and Dr. Dwayne Cartmell

Abstract

As the divide between consumers and producers in the agricultural industry increases, consumers are becoming less connected with the food they purchase. Without first-hand knowledge about the agricultural industry, consumers are relying more on the media to inform them about how their food is produced and processed. A growing form of media available to consumers is entertainment media, including documentary films. This research focuses on the ability of entertainment media to impact consumer perceptions about the agricultural industry, using the documentary film *Food, Inc.* The film *Food, Inc.* highlights aspects of the agricultural industry, including animal husbandry practices, governmental regulation of food production, and working conditions in food processing plants. This research uses a pretest and posttest to compare respondents' perceptions about the agricultural industry before and after watching the film. Findings indicate that consumers' perceptions were altered about the agricultural industry by watching the film. Based on this research it is recommended that future researchers and professionals in the agricultural industry work to positively influence and educate consumers about the agricultural industry through entertainment media.

Keywords

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Introduction

With the increased technology and availability of various types of media, including entertainment and social media, consumers have nearly unlimited access to information (Brandtzaeg, Heim, & Karahasanovic, 2011). Along with increased access to media, consumers are relying more on media to help inform them about agricultural issues (Verbeke, 2005), and in turn form perceptions and opinions about those issues. One agricultural issue of importance to consumers is food safety. Food safety is of primary concern for most consumers (Verbeke, 2005) because "food consumption is a negotiation about what a person will, and will not, let into his or her body" (Vermeir & Verbeke, 2006, p. 170). With the growing distance between the consumer and those who produce their food, consumers rely on the media to inform them about food safety (Verbeke, 2005).

Ten Eyck (2000) revealed that media coverage of the agricultural industry tend to focus on stories involving crisis situations. When consumers are only exposed to the agricultural industry as a result of a crisis or negative event, the relationship between consumer and producer can become strained. If the consumer is only informed about the agricultural industry when a crisis is happening,

Ten Eyck posited that consumers will tend to view the industry in a negative manner.

As the ever-widening gap between consumers and producers of agriculture continues to expand, the media's role in linking the two groups will become more significant (Thomson & Kelvin, 1996). Unlike prior generations, consumers of today are not as connected with the land, the food grown on the land or the food they consume on a daily basis (Ten Eyck, 2000). Consequently, with the shift away from understanding production within the agricultural industry, consumers are uninformed or misinformed about their relationship with the food system (Thomson & Kelvin). Most importantly, "how the media covers agriculture is important because it can influence consumers' perceptions of how food is produced, handled, or processed" (Meyers & Abrams, 2010, p. 22).

The perceptions consumers hold regarding the food system are not always in agreement with reality, as shown by scientists and researchers in the field (Shank, 1991). Consumers expect food to be risk-free when their food is touted as "safe food." However, scientists and others in the field know that 100 percent safe food is unattainable, but expect food to have the least amount of risk to public health as possible (Shank & Carson, 1992). Food safety crises have led to individuals being more concerned and interested in learning about the safety of the food supply (Verbeke, 2005). If consumers become interested in an issue, they are more likely to search for more information to educate themselves about the topic (Thomson & Kelvin, 1996). Consumers are concerned enough about their food safety to abstain from buying questionable foods, and their willingness to buy products believed to be "safer" has increased (Brewer & Rojas, 2007). In the end, consumers will ultimately form their perceptions about the food supply based on situational and environmental factors (Verbeke).

Consumers rely on the media to inform them about the happenings in the agricultural industry through a variety of mediums, including entertainment media (Lundy, Ruth, & Park, 2007; Meyers, Irlbeck, & Fletcher, 2011). The American Association for Agricultural Education's National Research Agenda considers research related to technology usage and practices to be a priority in the field (Doerfert, 2011). It is imperative for communication professionals, in research and in practice, to understand how the media impacts consumer perceptions of the agricultural industry to enhance future marketing and education programs in the agricultural industry, and offset any inaccurate information presented to consumers (Meyers, Irlbeck, & Fletcher).

Literature Review

Entertainment Mediums and the U.S. Agricultural Industry

Television offers viewers many different types of entertainment to choose from, including talk shows and reality television. As consumers become less attached to the agrarian way of life and more dependent on the media to stay informed about agricultural issues, it is of the utmost importance to understand entertainment media's impact on the formation of consumer perceptions about the agricultural industry (Ruth, Lundy, & Park, 2005; Lundy, Ruth, & Park, 2007). Lundy, et al. (2007) conducted a study to determine if a reality television show, featuring a view into an agricultural lifestyle, would alter viewers' perceptions of agriculture. Lundy, et al. found their participants "agreed that media shape their opinions and perceptions and even influence their behaviors regarding various issues," (p. 72). The study also revealed some individuals who do not have any first-hand knowledge or experience about an agricultural issue may rely in part, or entirely, on the media to form their perceptions.

The Day After Tomorrow is a film released in 2004, depicting the catastrophic impacts of severe climate change as a result of global warming (Leiserowitz, 2004). Leiserowitz found that after

watching the film, viewers perceived climate change and its associated risks as a potential threat to their lives. This change in perception impacted the intentions of the viewers related to global warming and their anxiety associated with the idea of climate change, and Leiserowitz concluded films “in popular culture can influence public attitudes and behaviors,” (p. 34).

The film *Food, Inc.* was produced by Kenner and Pearlstein in 2007 and 2008 and was released to select theaters in 2008. (Kenner & Pearlstein, 2008). The film “lifts the veil on our nation’s food industry, exposing the highly mechanized underbelly that’s been hidden from the American consumer with the consent of our government’s regulatory agencies, USDA and FDA” (Kenner & Pearlstein, 2008, p. 2). The film discusses laws and regulations related to food safety, working conditions in processing plants, animal husbandry practices and other agricultural industry topics (Kenner & Pearlstein). This study uses the film to understand if consumers will change their perceptions of the agricultural industry after watching *Food, Inc.*

The theory of media dependency is rooted in the understanding that an individual’s relationship with the media system, wherein the individual receives information from the media through a variety of channels, allows the individual to “(a) create and gather, (b) process, and (c) disseminate information” (Ball-Rokeach, 1985, p. 487). In turn, there is a direct correlation between the dependency of the individual’s reliance on the media to fulfill his or her goals and needs, and the significance that individual places on the media system (Whaley & Tucker, 2004). Individuals and consumers use the media system in multiple ways. As Ball-Rokeach and DeFleur (1976) described, people rely on media for multiple facets of their lives; from information gathering to shopping, and from connectiveness to the world to the “need for fantasy-escape from daily problems” (p. 6).

Ball-Rokeach and DeFleur (1976) foretold a transition in the ways in which individuals rely and use the media system. As technology progresses and expands the ways in which individuals can gather information, digest the gathered information, and then disseminate this new information through various realms of technology, individuals can and will serve as a fourth estate, monitoring the information and actions of the government (Ball-Rokeach & DeFleur). Whaley and Tucker (2004) found trust to be the primary indicator of an individual’s dependency on the media system. With this understanding, it is of utmost importance that the media continues to uphold the highest standards when conveying information to the public, to continue a strong relationship with the public, and to gain their trust and reliance upon the disseminated information.

Personal perceptions and opinions about a concept or idea can be formed in several different ways (Hoffman, Glynn, Huges, Sietman, & Thomson, 2007). Hoffman et al. identified three primary components of understanding how public perceptions and opinions are formed as (1) understand how individuals construct their perceptions or opinion, (2) adapt to the pressure of the general public, and (3) are impacted by the messages of the media. Understanding the mass media’s overarching role in disseminating information to the public, Hoffman et al. suggested the media, consciously or unconsciously, implement filters of information that can alter the public’s exposure and knowledge of an issue, and in the long term, potentially, an individual’s created perception of the topic.

How persuasive the messages are delivered through the media system can impact the perceptions and, ultimately, the attitudes of individuals (Petty & Cacioppo, 1986). When forming attitudes, individuals generally use one of two methods. In the first method, the individual thoughtfully processes the information and perceives it to be worthy of merit. The second method is derived from a persuasive message that is usually associated with social superiority and intended to appeal to an individual’s perception of social acceptability rather than rationality (Petty & Cacioppo).

Festinger (1954), in his theory of social comparison processes, evaluated how individuals assessed the appropriateness of their opinions to that of their peers. Perceptions and opinions are subjected to many forms of judgment and individuals are concerned with holding values and opinions approved by of others (Festinger, 1950). In an attempt to conform to group unity, individuals can and will alter their opinions and attitudes (Festinger, 1950). Understanding that individuals are motivated to hold similar perceptions and opinions about issues within society is imperative when attempting to understand how media messages are perceived and interpreted. It is important to understand current consumer perceptions of the agricultural industry because consumers will base their purchases of agricultural products on their perceptions (Brewer & Rojas, 2007; Verbeke, 2005) and will support legislation and guidelines that coincide with their beliefs (Burstein, 2003).

Purpose

Understanding how entertainment media effect consumers' perceptions of the agricultural industry is a vital component for research and communication professionals. As consumers form perceptions about the industry based on what they perceive to be reality from the media, professionals and researchers must understand the methods and practices for educating the public about the true happenings within the agricultural industry, and not those derived from the media and entertainment. Research is needed to understand how film entertainment impacts consumer perceptions about the agricultural industry.

The purpose of this study was to assess the immediate effect the film *Food, Inc.* had on the perceptions of the agricultural industry by those in attendance at the showing of the movie on the campus of a large southwestern university. The following research questions guided this study:

1. What are the attendees' perceptions of the agricultural industry prior to viewing the film *Food, Inc.*?
2. What are the attendees' perceptions of the agricultural industry after viewing the film *Food, Inc.*?
3. Do the attendees' perceptions of the agricultural industry differ after watching the film *Food, Inc.* and the follow-up discussion of the film, as compared to their perceptions prior to watching the film?

Methods

The film *Food, Inc.* was offered as a free show through the University Cineculture organization. The organization recruited people from the university's campus, including students, faculty, and staff, and local citizens in the surrounding areas of the university. Advertisements were posted throughout the public areas of the university, and in the local newspapers to encourage people to attend the film. For this study, a convenient sample of the attendees of the film was used.

The survey was administered to all attendees of the film event. The participants were given a self-administered survey. This method was selected because it would reduce the risk of participants answering in a socially desirable way, which is a concern with personal interviews, and for the scope and size of the study (Dillman, Smyth, & Christian, 2009). Participants were given a pretest prior to beginning of the film, and a posttest to complete after the completion of the post-film discussion. Both surveys were given to the participants with a pre-determined code to ensure anonymity. Upon the conclusion of the film, all attendees of the film were asked to participate in a group discussion,

led by a panel of experts. The panel of experts was chosen by the University Cineculture organization and the University College of Education. The experts represented the poultry industry, animal welfare, and sociology.

Upon the conclusion of the discussion, 110 pretest and posttest surveys were returned by the participants. Of the 110 surveys returned, 15 were found to be incomplete and were removed from the data set, leaving 95 usable surveys.

The instrument was designed to measure the participants' perceptions about the U.S. agricultural industry in relation to the film *Food, Inc.* The instrument was adapted from several existing instruments, including Frick, Birkenholz, & Machtmes, 1995; Pense & Leising, 2004; and Robertson, 2009. The survey used questions from Frick, et al. (1995) to determine agricultural literacy and perceptions. The survey also used questions from Pense and Leising's (2004) instrument, measuring an individual's literacy of agriculture in relation to the food and fiber system. These instruments were used due to their proven reliability in relation to the agricultural industry. The instrument was also reviewed by a panel of experts for face and content validity. It is important to note the research presented is part of a larger body of study.

The survey consisted of demographic questions and questions related to perceptions of agricultural production, processing, and purchases. The question construction remained the same for both the pretest and posttest; however, the order of the questions was not identical to help mitigate the respondents' likelihood of learning from the previous test, and enhance the internal validity of design. Also, the posttest survey included questions to determine the participants' reactions to the film and the follow-up discussion.

The data from the surveys was coded using a 5-point Likert scale; with one representing "strongly disagree," two representing "disagree," three representing "unsure," four representing "agree," and five representing "strongly agree." Seven of the survey questions were reversed coded to accurately portray the opinions of the participants. Those reverse-coded questions implied the participants did not agree with current agricultural industry practices, while the remainder of the questions implied the participants agreed with current industry practices.

A reliability analysis was calculated, post-data collection, for the pretest and posttest. The pretest survey had a Cronbach's alpha coefficient of 0.722, and the posttest survey was found to have a Cronbach's alpha coefficient of 0.779.

The data was then analyzed to determine any change in perceptions from the pretest to the posttest using mean, standard deviation and frequency using SPSS 16.0 for Windows (2007).

Results

The demographic questions on the survey revealed that 62.1 percent of the respondents ($n = 59$) were between the ages of 18 and 25 years old, while 17.9 percent of the respondents ($n = 17$) were between the ages of 26 and 35 years of age. The remaining 20 percent of the respondents ($n = 34$) were 36 years of age or older.

The first research question was to determine attendees' perceptions of the agricultural industry prior to viewing the film *Food, Inc.* To answer this research question, the participants were asked a series of questions related to the agricultural industry, including the production, processing, and purchasing of agricultural products.

The pretest showed that participants agreed most (see Table 1) with the statement, "Transportation and storage affects the supply of agricultural products" ($M = 4.10$). In the pretest, the partici-

pants most disagreed (see Table 1) with the statement, “Agricultural processing plants maintain a safe and clean working environment” ($M = 2.54$).

Table 1
Respondents Agreement Level with Statements prior to Viewing the Film Food, Inc.

| Statements Participants Agreed With | <i>M</i> | <i>SD</i> |
|---|----------|-----------|
| Transportation and storage affects the supply of agriculture products. | 4.10 | 0.623 |
| I cook meals, at home, regularly. | 4.03 | 1.036 |
| Country of origin labeling should be mandatory in the U.S. | 3.90 | 1.068 |
| An efficient food distribution system is essential to the agricultural industry. | 3.84 | 0.859 |
| Knowledge of a brand/company’s production practices influences my food purchasing decisions. | 3.77 | 1.106 |
| Statements Participants Were Unsure About | <i>M</i> | <i>SD</i> |
| *Organic is a primary factor I consider when purchasing food. | 3.37 | 1.158 |
| The Environmental Protection Agency (EPA) regulated fertilizers, pesticides and herbicides used by producers. | 3.31 | 0.900 |
| I think super centers (Wal-mart, etc.) provide a necessary outlet for food purchases. | 3.20 | 1.199 |
| New technology has helped ensure the safety of agricultural processing. | 3.17 | 1.028 |
| *Organic products require less processing than other modified products. | 3.08 | 0.912 |
| Statements Participants Disagreed With | <i>M</i> | <i>SD</i> |
| Agricultural processing plants maintain a safe and clean working environment. | 2.54 | 1.104 |
| Confinement is an acceptable practice when raising livestock. | 2.52 | 1.161 |
| *Production of organic foods is better for the environment. | 2.50 | 1.003 |
| *Food processing increases the cost of food products. | 2.48 | 0.985 |
| Food additives improve the nutrition of processed foods. | 2.30 | 1.066 |
| There are more farmers in the U.S. than there were 10 years ago | 2.15 | 1.037 |
| *Farmer’s markets are a needed outlet for food purchases. | 2.04 | 0.967 |

In the pretest, the participants expressed the most uncertainty (see Table 1) about the statement, “Organic is a primary factor I consider when purchasing food” ($M = 3.37$). It is important to note this question was reverse coded to better interpret the participants’ response. The question did not follow a similar pattern in wording as other questions on the survey.

The second research question sought to determine attendees’ perceptions of the agricultural industry after watching *Food, Inc.* To determine the participants’ perceptions, attendees were given the same survey as the pretest survey. The order of the questions on the posttest survey was randomly changed from the pretest survey.

After watching the film *Food, Inc.* and completing the posttest survey, the participants agreed most (see Table 2) with the statement, “Country of origin labeling should be mandatory in the U.S.” ($M = 4.20$).

When completing the posttest survey, the participants expressed the most uncertainty (see Table 2) about the statement, “I think super centers (Wal-mart, etc.) provide a necessary outlet for purchases” ($M = 3.29$) after watching *Food, Inc.*

After watching *Food, Inc.* and completing the posttest survey, the participants most disagreed (see Table 2) with the statement, “Organic products require less processing than other modified products” ($M = 2.56$). It is important to note this question was reverse coded to better interpret the participants’

Table 2

Statements respondents of the showing Food, Inc. after the film

| Statements: Participants Agreed With | M | SD |
|--|------|-------|
| **Country of origin labeling should be mandatory in the U.S. | 4.20 | 0.774 |
| Transportation and storage affects the supply of agriculture products. | 4.04 | 0.624 |
| Consumer preferences influence farmer/producer decisions about what type of product to grow and how it is processed. | 3.95 | 0.977 |
| I cook meals, at home, regularly. | 3.88 | 1.135 |
| Knowledge of a brand/company's production practices influences my food purchasing decisions. | 3.87 | 0.981 |
| An efficient food distribution system is essential to the agricultural industry. | 3.77 | 0.886 |
| The use of pesticides has increased the yield of crops. | 3.73 | 0.870 |
| Livestock/animal tracking systems should be mandatory in the U.S. | 3.66 | 1.032 |
| Price is a primary factor I consider when purchasing food. | 3.61 | 1.055 |
| Biotechnology has increased the pest resistance of plants | 3.55 | 0.899 |
| Statements Participants were Unsure about | M | SD |
| I think super centers (Wal-mart, etc.) provide a necessary outlet for food purchases. | 3.29 | 1.151 |
| The Environmental Protection Agency (EPA) regulated fertilizers, pesticides and herbicides used by producers. | 3.09 | 0.996 |
| U.S. citizens spend a higher percentage of their income on food than in other countries. | 3.02 | 1.406 |
| I purchase food based on a brand name. | 3.01 | 1.122 |
| The United States Department of Agriculture (USDA) regulates food handling, preparation and storage. | 2.99 | 1.092 |
| *Organic is a primary factor I consider when purchasing food. | 2.96 | 1.138 |
| Animal health and nutrition are important to farmers/producers. | 2.93 | 1.333 |
| Statements Participants Disagreed With | M | SD |
| *Organic products require less processing than other modified products. | 2.56 | 1.037 |
| Food safety is a major concern of the food processing industry. | 2.55 | 1.367 |
| Agricultural processing plants maintain a safe and clean working environment. | 2.42 | 1.107 |
| *If available, I prefer to buy organic food products. | 2.33 | 1.101 |
| *Organic production methods are a realistic alternative to using pesticides. | 2.73 | 1.036 |
| Local laws and regulations have little effect on farmers. | 2.32 | 1.148 |
| Food additives improve the nutrition of processed foods. | 2.24 | 1.031 |
| Confinement is an acceptable practice when raising livestock. | 2.17 | 1.179 |
| *Production of organic foods is better for the environment. | 2.14 | 0.952 |
| There are more farmers in the U.S. than there were 10 years ago | 2.00 | 1.088 |

Note. Classification of statements based on scale: M = 4.20 or higher = Strongly Agree; 3.40 – 4.19 = Agree; 2.60 – 3.39 = Unsure; 1.80 – 2.59 = Disagree; and 1 – 1.79 = Strongly Disagree

Note. * Indicates a question that was reverse scored.

response. The question did not follow a similar pattern in wording as other questions on the survey.

The final research question sought to determine if the attendees' perceptions of the agricultural industry differed after watching *Food, Inc.* and participating in the follow-up discussion of the film, as compared to their perceptions prior to watching the film. The data from the pretest and posttest was analyzed for mean and standard deviation to determine if there was any significant change in the participants' perceptions of the U.S. agricultural industry after watching the film (see Table 3). Also, to further answer this question and determine if there was a significant difference in the participants' perceptions of the U.S. agricultural industry, a paired-samples t-test was performed on the mean of

Table 3
Comparison of means of responses from the pretest and posttest surveys with t-test significance

| Statement | Pretest | Posttest | 99 % CI |
|--|----------|----------|----------|
| | <i>M</i> | <i>M</i> | <i>p</i> |
| *Production of organic foods is better for the environment. | 2.50 | 2.14 | .000 |
| Animal health and nutrition are important to farmers/producers. | 3.45 | 2.93 | .000 |
| Confinement is an acceptable practice when raising livestock. | 2.52 | 2.17 | .000 |
| There are more farmers in the U.S. than there were 10 years ago | 2.15 | 2.00 | .000 |
| Local laws and regulations have little effect on farmers. | 2.60 | 2.32 | .000 |
| Biotechnology has increased the pest resistance of plants | 3.54 | 3.55 | .000 |
| An efficient food distribution system is essential to the agricultural industry. | 3.84 | 3.77 | .000 |
| *Organic products require less processing than other modified products. | 3.08 | 2.56 | .000 |
| Transportation and storage affects the supply of agriculture products. | 4.10 | 4.04 | .000 |
| Agricultural processing plants maintain a safe and clean working environment. | 2.54 | 2.42 | .000 |
| Knowledge of a brand/company's production practices influences my food purchasing decisions. | 3.77 | 3.87 | .000 |
| Price is a primary factor I consider when purchasing food. | 3.56 | 3.61 | .000 |
| I purchase food based on a brand name. | 2.76 | 3.01 | .000 |
| *Farmer's markets are a needed outlet for food purchases. | 2.04 | 1.80 | .000 |
| I think super centers (Wal-mart, etc.) provide a necessary outlet for food purchases. | 3.20 | 3.29 | .000 |
| Food safety is a major concern of the food processing industry. | 3.00 | 2.55 | .001 |
| *Organic is a primary factor I consider when purchasing food. | 3.37 | 2.96 | .001 |
| U.S. citizens spend a higher percentage of their income on food than in other countries. | 2.93 | 3.02 | .003 |
| The Environmental Protection Agency (EPA) regulated fertilizers, pesticides and herbicides used by producers. | 3.31 | 3.09 | .019 |
| The United States Department of Agriculture (USDA) regulates food handling, preparation and storage. | 3.44 | 2.99 | .022 |
| New technology has helped ensure the safety of agricultural processing. | 3.17 | 2.77 | .052 |
| *Organic production methods are a realistic alternative to using pesticides. | 2.73 | 2.33 | .109 |
| *If available, I prefer to buy organic food products. | 2.71 | 2.33 | .246 |
| Country of origin labeling should be mandatory in the U.S. | 3.90 | 4.20 | .252 |
| The use of pesticides has increased the yield of crops. | 3.64 | 3.73 | .485 |
| Consumer preferences influence farmer/producer decisions about what type of product to grow and how it is processed. | 3.72 | 3.95 | .521 |
| *Food processing increases the cost of food products. | 2.48 | 2.65 | .590 |
| Livestock/animal tracking systems should be mandatory in the U.S. | 3.50 | 3.66 | .776 |
| Food additives improve the nutrition of processed foods. | 2.30 | 2.24 | .908 |

Note. Classification of statements based on scale: M = 4.20 or higher = Strongly Agree; 3.40 – 4.19 = Agree; 2.60 – 3.39 = Unsure; 1.80 – 2.59 = Disagree; and 1 – 1.79 = Strongly Disagree

Note. * Indicates a question that was reverse scored

sums from the pretest and posttest data. The analysis revealed a 95 percent confidence level in the correlation of the mean of sums from the data on the pretest and posttest surveys. The analysis gave a significance of 0.000. Having a significance that is less than 0.001 revealed the difference in the sum of means of the pretest and posttest is statistically significant. Also, the Cohen's D for the treatment was 0.378, indicating a small to medium effect size.

Conclusions/Discussion

The film *Food, Inc.* did impact the perceptions of some individuals about the agricultural industry, as shown by the results from this research. The film had the greatest impact on participants' views of organic food production, farmers' concern with animal health and welfare, and confinement practices. After the film, participants' believed organic food was safer than traditionally produced food, that farmers are not as concerned with animal welfare as the participants thought prior to the film, and participants viewed confinement practices of livestock in a more negative light after the film. Similar to Leiserowitz's (2004) findings, the perceptions of the participants in this study were impacted by watching a film. Professionals and researchers in the agricultural industry should understand that entertainment media does have an impact on consumer perceptions about the industry, and could ultimately impact their buying behaviors.

Food, Inc. primarily focused on areas of agriculture that have been linked to food crisis, such as food-borne illnesses and diseases related to food consumption. As Ten Eyck (2000) presented, when the agricultural industry is portrayed negatively by the media, this will strain the relationship between consumers and producers. This was shown by the participants' change in responses related to the agricultural industry after watching the film. Attendees were more likely to purchase products from companies which held similar values to their own. Future research should be conducted to determine how consumers research and decide which companies hold similar values and ethics to their own.

The respondents' perceived knowledge of the governmental regulation of the agricultural industry was impacted as a result of the film *Food, Inc.*, as demonstrated by the responses on the posttest survey related to the agricultural regulation questions. Whether the respondents understand the actual role of the governmental agencies in a positive or negative light, or their role in creating regulations is unknown. This change in perception is important for anyone associated with the agricultural industry because it illustrates the power of entertainment media to influence viewer perception of the government. As Ball-Rokeach and DeFleur (1976) predicted, consumers are becoming a fourth estate, with regards to the government monitoring and regulating of the agricultural industry. Burnstein (2003) also stated "public opinion influences public policy," (p. 29). If the film, *Food, Inc.* has the power to influence public opinion, it only stands to reason that public policy will also be influenced as well.

Also, the respondents indicated a significant change in perception, after the film, with the two questions related to animal welfare and the concern of farmers related to the care of livestock ("Animal health and nutrition are important to farmers/ producers" and "Confinement is an acceptable practice when raising livestock"). This change in perception could be attributed to the respondents' lack of knowledge and/or experience with farmers and producers. In turn, the respondents are relying upon the film *Food, Inc.* for their information in this area. As Thomson and Kelvin (1996) mentioned the divide between the consumer and producer is increasing at an exponential rate. This fissure between the consumer and the agrarian way of life can be detrimental to the relationship of the consumer and producer, as illustrated by the responses of the survey. How damaging this divide is

between the two groups should be explored in future research. Researchers and professionals should seek to better understand this relationship because of its effect on consumers' buying and consumption behavior.

As Meyers, Irlbeck, and Fletcher (2011) stated, researchers and professionals in the agricultural industry should explore potential methods to offset the negative impacts entertainment media can have on the industry. Marketing efforts should focus on counteracting misleading information presented to consumers through entertainment media. Results from this research further solidify the need for in-depth research in this area to better understand consumer behavior and perceptions. Also, future research should aim to understand if how the documentary presents the agricultural idea using imagery and sound effects plays a role in the consumers' perception of the documentary and the agricultural industry.

Consumers are interested and concerned enough with the agricultural industry to voluntarily attend a showing of a film related to agriculture. Thomson and Kelvin (1996) noted that consumers will become more engaged with an issue when it is of importance to them and their lives. Understanding that consumers are interested in knowing where their food comes from is empowering for agricultural professionals. Consumers are engaging with information being disseminated about the industry; therefore, professionals in agriculture should use this to their advantage in marketing educational programs aimed at consumer awareness.

This research is limited in its scope and generalizability. This study used a convenient sample, and therefore the findings from this research cannot be generalized to the entire public. Also, the instrument used to collect data gave participants the option of selecting "unsure." Due to the number of participants who selected "unsure" future studies should consider using a different term to measure participants' perceptions. The "unsure" selection did shed light on the areas these participants were most unfamiliar with; however, it is difficult to know if the participants' held a positive or negative perception of the issue.

This research has shown that entertainment media, at least in the form of a documentary film, can impact the immediate perceptions of consumers. Future research should seek to determine any long-term effects of documentary films and entertainment media on consumers' perceptions of the agricultural industry. Entertainment media has shown, in this research, to be a tool consumers use to form perceptions about the agricultural industry. Research should focus on how the agricultural industry can use this type of media to positively promote the agricultural industry.

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