A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

# Opinions of Florida Farm Bureau Federation Advisory Committee Members Regarding The Strength And Economic Development Of Their Communities

Lyndall Brezina
Graduate Student
Department of Agricultural Education and Communication Extension
University of Florida

Research Paper

Acknowledgements: The author would like to thank Becky Raulerson and the Center for Public Issues Education for providing assistance and data collection. Funding was provided by The Florida Federal Farm Bureau.

Contact Information: All correspondence should be sent to Lyndall Brezina, 3515 sw 39th Blvd, Apt #4C, Gainesville, Florida 32608. Phone: (352)392-2010. Fax: (352)392-3958. Address e-mail to lbrezina@ufl.edu

# Opinions Of Florida Farm Bureau Federation Advisory Committee Members Regarding The Strength And Economic Development Of Their Communities


## Abstract

The Florida Farm Bureau Federation's mission is to strengthen communities. The FFBF representative advisory committee members were each issued a survey to gauge support among members for a new campaign to strengthen communities through support to family farms. This paper is the synthesis of the census survey that describes opinion leaders' understanding of the main components of a community, their representative community's strengths, what strengthens a community, and the barriers to the FFBS's agenda for supporting family farm social capital for community strength. Analysis of the 117 respondent data yielded results that were utilized to make recommendations for the Florida Farm Bureau Federation's "Strengthening Your Community" campaign. Defining a community, the respondents gave similar answers as to a group with shared values and shared location, and results concerning the importance for strengthening communities were polarized. Barriers were seen as the lack of linkages and partnerships, especially between permitting agencies and government agencies. Improvement of a community was given to be a function of better schools, and community involvement, but the role of economic development was recognized along with agriculture as one factor in strengthening communities. Water was also a key identified for economic development.



Keywords: community, strength, Florida Farm Bureau Federation, partnership, opinions, economic, development

## Introduction/Purpose

Agriculture is an important economic engine, generating more than $100 billion in annual economic impact as stated in the Florida Department of Agriculture and Consumer Sciences Annual 2009 Report (FDACS, 2009). It may be taken for granted that food is cheap; increasingly concentration has been placed on production and processing, neglecting a very important sector in agriculture: the local farms. Ninety-one percent of farms in the United States are small farms (USDA Census of Agriculture, 2007) and according to a paper by Hamilton (1996), "changes in the economic structure of agriculture threaten the independence and profitability of farming". A part of Hamilton's proposal of a new agriculture concerns building strong community food systems which would bring increased attention to local and family farms, which represent the intermediate social structures that bridge the formal and informal sectors of the economy (Lyson, Gillespie & Hilchey, 1995).

Sustainability of the food system is dependent on these links that are often overlooked due to the emphasis on large-scale agricultural production. The effect of this is the creation of false divisions in society, such as between farmers and consumers, and between farmers and conservationists (Hamilton, 1996). Another identified problem is the inequality of farmer contract relations, in which farmers are treated as independent contractors who take on most of the economic risks with few of the benefits or protections given to other workers in society, allowing others to capture the profits, and potentially allowing agri-businesses to falsely represent farmers in setting food and agricultural policy (Hamilton, 1996). In rural communities, there may be an absence of social capital, defined by Durston (1998) as "ethos and a behavioral pattern of trust, cooperation and civic activity." It is comprised of formal and informal systems of norms, institutions and organizations that promote trust and cooperation in communities and

also in wider society. The Florida Farm Bureau (FFB) is one such organization whose stated mission is, "to increase the net income of farmers and ranchers and to improve the quality of rural life" (Florida Farm Bureau, 5/28). The FFB is the largest agricultural organization in the state of Florida in membership, and had its start as a support to farmers of Florida after the great depression, creating insurance and lobbying services for Florida farmers (Florida Farm Bureau, 5/28). In order to communicate the function of FFB in strengthening communities, the Bureau prepared to gain the perspective of community opinion leaders within the Florida Farm Bureau Advisory Committee. The Center for Public Issues Education in Agriculture and Natural Resources (PIE Center) was recruited as an unbiased third party to conduct the research.

According to the FFB president, John Hoblick (2007), the support of family farms will increase partnerships of community members and support the growth of agriculture and related industries, thereby promoting support of the state's economy. Family farm support is a means for creating social capital and partnerships, thereby strengthening the community. Was this perspective shared by community opinion leaders? The purpose of this study was to understand how FFBF members and opinion leaders perceived their own communities' strength and the concept's potential use as a framework for a new FFBF initiative. The research objectives for the study were: (1) to assess members' perceptions of the strength of the communities in which they live, (2) to determine members' perception as to the need for the initiative and the potential barriers to community strengthening that could be identified and addressed, and (3) to identify the perceived barriers of economic development in Florida communities.

## Methods/Procedures

The study was conducted using a descriptive survey research design, and questionnaire items were developed according to Dillman's tailored design method (2009), which included an

intitial cover letter email sent to respondents with an embedded online link to the survey followed by 1 reminder sent to non-respondents. Qualtrics, an on-line tool, was utilized for the surveys and aided analysis. Before participants were sent the letter and invitation to the Qualtrics survey, the questionnaire was reviewed by a panel of experts for face and content validity. The population was comprised of 191 members of FFB's 15 commodity themed statewide committees. A total of 115 respondents completed the survey for a response rate of 60%, which was deemed adequate to minimize any potential threats to validity caused by non-response error. The questions consisted of multiple choice, fill in the blank, and five point Likert-type questions designed to assess the opinion of the advisory committee members' community strengths and barriers in regards to community development and further strengthening. Possible historical threats to validity were eliminated by the coordinated time of sending all the surveys at once. Instrumentation Is addressed by the same survey being delivered to each participant. All respondent were kept anonymous in order to reduce the risk of subject effects.

## Results/Findings

The participants of the online survey who agreed to participate range across 42 counties in Florida, a total of 115 out of potential population of 191. Ninety percent (n=83) of participants were male, and the largest group (61%, n=56) was between ages 46 and 65. Sixty-one percent of respondents also have bachelor's degrees or higher education. Ninety percent have had at least some college. Respondents were across 42 Florida counties, the most respondents received from Highlands (8), then Alachua (7) and Palm Beach (6) counties. Not all counties in Florida were represented, but all fifteen Florida Farm Bureau Advisory Committees were represented by participants, which makes the study a census survey of Florida Farm Bureau opinion leaders.

The first objective of the study was to assess perceptions of the strength of the communities in which advisory committee members live. The majority of the respondents—67% (n=77) agreed that their communities were strong, while 19% disagreed, 10% strongly agreed, and then 4% strongly disagreed. In answer to the question, "How important do you think it is to strengthen your community," 45% deemed strengthening to be very important, while 30% deemed it very unimportant. Eighty percent affirmed that there are or there have been barriers to economic development in the community.

The second objective was to determine members ' perception as to the need for an initiative for strengthening their community, along with the potential barriers of strengthening community that would need to be addressed. The top 6 responses that defined a "strong community" were (1) works together for the benefit of all (unity), (2) shared goals and values, (3) sustainable economy with either employment opportunities or diverse business and business opportunities, (4) education (both educated citizens and a strong educational system), (5) civic engagement (involvement of citizens) and (6) strong leadership. Of the eight total respondents to the question asking for 5 characteristics of what makes their particular community strong, the top 6 answers were (1) a history of people always coming together, (2) common values and beliefs, (3) high quality school system and community involvement in school, (4) strong leadership, (5) agriculture, and (6) healthcare and emergency response services.

The question considering characteristics that are believed to improve communities resulted in 19 respondents with a total of 88 characteristics. The greatest and clearest response regarded schools- 15 in total. Value-based responses such as "respect" and "moral values" numbered 10, with 5 responses succinct in either "better churches", "faith", or "stronger religious ties". Two responses held that there should be stronger pride in the community. Greater

infrastructure was cited twice in the responses, and new business or industry was presented 4 times. Along with better industry, there was also the clear response of better jobs or employment opportunities in 6 responses. Lower taxes response numbered 3, less regulation, 3, and less government, 3 was also stated as what would help strengthen communities. Business friendly government was also three responses. “Stronger code enforcement”, was one response, and another was “fairness in application of rules”. Others were more volunteer and community involvement, one of which was, “community effort to help clean up questionable neighborhoods”, and another focused on at-risk demographic. Some unique responses were that the county should be made a “wet county” and “higher media coverage.” One response was “fewer outside ‘saviors.’” The response, “agriculture” was also present.

Ninety-two percent (n=94) of respondents agreed or strongly agreed that economic development plays a role in strengthening a community. Eighty-nine percent (n=93) responses were that local county Farm Bureaus were at least somewhat important to partner with chambers of commerce, economic development councils, and other similar entities. Contributions to economic development were rated on a Likert-scale, where each frequency result was weighted with consecutive numbers from -2 to +2, with -2 representing the category “very unimportant,” through +2 representing the category of “very important.” Every response for the scale of “very unimportant” was 10 responses or less, validating the instrument’s categories. The greatest response score of 132 (n=91) in “very important” regarded school systems in economic development, followed by water supply availability at 112 (n=92). The next highest choices were agricultural operations, new local businesses, infrastructure, new market opportunities, IF/IFAS extension services, and Natural Resources. Lowest in importance was chosen to be Federal governance and state governance.

The third objective was to identify the perceived barriers of economic development in Florida communities. Specific barriers to economic development in communities were most frequently permitting, zoning and land-use regulations, taxes, impact fees, schools and education, and overlapping regulations from different agencies and groups.

## Discussion/Conclusion

The results presented in this study were ultimately used by the Florida Farm Bureau in order to set the agenda for a campaign to help strengthen communities. The Florida Farm Bureau developed the campaign using elements their members felt were important to include, but focused on building economic support for small and family farms. The study asked questions focusing on the members' perceptions of their community strengths, what barriers they thought stood in the way of a strong community, and what they thought was needed to build a stronger community. These results coincide with Chavis and McMillan's (1986) elements that provide a sense of community: membership, inference, integration and fulfillment of needs, and emotional connections. Civic engagement in particular is important when building strong communities through local support of family farms, and the survey helped set the agenda for opinion leaders of the Florida Farm Bureau Federation to aid support for the "Strengthening" program. Although many barriers to economic growth were based on government or other agency regulation, the "strengthening communities" effort may adequately address these problems by diffusing beliefs and ownership of the community and thereby impacting government through elections, referendums and initiatives. Again, setting this agenda can have widespread impacts on multiple elements of the community, and the fact that the Farm Bureau takes a grass-roots approach to its organization can help individuals enact change in their community, according to the theory of planned behavior.

An interesting result was that the survey described a polarization in participants' response to the importance of strengthening their community. Forty-five percent deemed strengthening to be very important, while 30% deemed it very unimportant. More research can be conducted for those questions that may be weighted to different communities, so particular plans for those areas can be made. Also more research can be done for self-efficacy of opinion leaders in the advisory committees in their barriers to act in the diffusion process or as to the community's abilities to mobilize resources through social capital development, especially partnership with other organizations to help support small farmers. Attention to water supply as important contribution to economic development also warrants future investigation as to its causes, from an agenda-setting perspective. From the study, the Florida Farm Bureau identified three goals for the new campaign: (1) to help the county Farm Bureaus strengthen partnerships within their communities to foster economic development, (2) to work with state and local agencies/organizations to create a climate for economic growth, (3) to increase awareness of agriculture's role in Florida's economy.

Some limitations of the study may be that representatives from some counties were weighted more heavily by number of respondents and may weight responses according to community. These survey results are not representative of counties or communities in Florida; representations from some of the surveyed commodity advisory groups were heavier than others, again weighting responses. Criticism for this study may be shared with the criticism of Diffusion Theory (Rogers, 2003) itself, which may rely too heavily on innovative opinion leaders for the diffusion process who are less likely to interact with laggards in the adoption of the process (Stephenson, 2003), as well as the efficacy as the studied group's role in information source and

opinion leader to diffuse the information. Also, intention or attitude of support does not guarantee behavioral support, and the main barriers must be addressed for any media agenda.

## References


Dillman, D. A., Smyth, J. D., Christian, L. M. (2009) Internet, Mail, and Mixed-Mode Surveys: The Taylored Design Method. Hoboken, New Jersey: John Wiley & Sons, Inc.

Durston, J. (September, 1998). Building social capital in rural communities (where it doesn't exist): Theoretical and policy implications of peasant empowerment in Chiquimula, Guatemala. *Latin American Studies Association (LASA),* The Palmer House Hilton, Chicago, IL.

Flora, C. B. (1995). Social capital and sustainability: Agriculture and communities in the Great Plains and Corn Belt. Research in Rural Sociology and Development, 6: 227-246

Florida Department of Agriculture and Consumer Sciences Annual Report. (2009). DACS-00050. Retrieved from http://www.florida-agriculture.com/pubs/pubform/pdf/FDACS_Annual_Report_2009.pdf

Florida Department of Agriculture and Consumer Sciences Annual Report. (2010). DACS-P-50. Retrieved from http://www.florida-agriculture.com/pubs/pubform/pdf/FDACS_Annual_Report_2010.pdf

Hamilton, Neil. D. (1996). Tending the seeds: the emergence of a new agriculture in the United States. *Drake Journal of Agricultural Law,* 1:7.

Hoblick, J., (2007). From the President, Florida Farm Bureau. Retrieved from http://www.floridafarmbureau.org/node/1737.

Lyson, T. A., Gillespie G. W., Hilchey, D. (1995). Farmers' markets and the local community: Bridging the formal and informal economy. *American Journal of Alternative Agriculture*, 10, pgs 108-113 doi:10.1017/S0889189300006251

Rogers, Everett M. (2003). *Diffusion of Innovations* (5th ed.). New York: Free Press.

Stephenson, G. (2003). The somewhat flawed theoretical foundation of the extension service. *Journal of Extension*, 41:4

United States Department of Agriculture. (2007). Small Farms. Retrieved from http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Fact_Sheets/small_farm.pdf

Windham, Christy Claire. (2009). The impact of organizational source credibility and the factors that contribute to opinion leaders' decisions to diffuse information. *Journal of Southern Agricultural Education Research*, 60, 104-117.

A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

# Media Dependency during a Food Safety Incident Related to the U.S. Beef Industry

Category: Research

**Ashley D. Charanza, PR and Event Coordinator (graduate student)**
King Ranch Institute for Ranch Management
700 University Blvd., MSC 137
Kingsville, TX 78363
979-229-2523
Fax: 361-593-5404
acharanza@gmail.com

**Traci L. Naile**
Department of Agricultural Education, Communications & Leadership
Oklahoma State University
437 Agricultural Hall
Stillwater, OK 74078
405-744-8135
Fax: 405-744-5176
traci.naile@okstate.edu

**Media Dependency during a Food Safety Incident Related to the U.S. Beef Industry**


## Abstract

Food safety issues are an important topic in the mainstream media. Media coverage of food safety, particularly the beef industry, has the potential to alter consumers' perceptions of and attitudes toward the beef industry. Much of the media coverage about food safety incidents related to beef is negative, causing concerns and frustrations among the industry. The media has an important and powerful influence on society; there is a benefit to understanding the role of the media and how people use media in their everyday lives. This study examined consumers' dependencies on media during normal times when a food safety incident has not occurred or is not expected to occur and during a potential food safety incident in the beef industry. The results showed that consumers use different mediums to receive information during a food safety incident than during normal times. Internet, television news channels, and radio were the top mediums that respondents considered helpful in receiving information related to food safety incidents. Respondents spent more time per week on mediums during normal times than during a food safety incident.

## Media Dependency during a Food Safety Incident Related to the U.S. Beef Industry

## Introduction

Food is a basic necessity for all consumers, and less than 30 years ago, consumers accepted that the food they purchased was safe (Anderson, 2000; Charlebois, 2008). A shift in consumer attention toward food safety issues has occurred in recent years as a result of various food scares, including *Salmonella, Escherichia coli* 0157:H7 (*E. coli),* and *bovine spongiform encephalopathy* (BSE) (O'Neill, 2005; Schroeder & Mark, 2000; Schupp, Gillespie, O'Neil, & Prinyawiwatkul, 2006). Although many consumers would consider the United States food supply the safest in the world, food safety incidents cause concerns for consumers (Crutchfield & Roberts, 2000; Verbeke, 2005). Consumers are becoming more interested in the processing and quality of their food, which has caused quality differentiation to be a deciding factor in food choices (Grunert, 2005; Piggott & Marsh, 2004; Schroeder & Mark, 2000).

Most consumers receive agricultural information from the media and misperceptions about the industry stem from a lack of basic agricultural knowledge (Frick, Birkenholz, & Machtmes, 1995; Sitton, 2000). The media plays an important role in today's society, making news, Internet, magazines and other media consumption an everyday routine (McCullagh, 2002). The media has changed significantly over time from a thing of curiosity to its present role as an information system vital to society (DeFleur & Ball-Rokeach, 1989). This vital information system is used to report and inform individuals of events occurring across the world (McCullagh, 2002). Food safety concerns are increased by negative media coverage of food safety incidents, particularly beef-related incidents, and negative message has the potential to affect consumers' perceptions toward the industry (Anderson, 2000; Buzby, 2001; Schupp et al., 2006). Although

consumers are supplied with a wealth of information from the media, Swinnen, McCluskey, & Francken (2005) suggested that some information regarding food safety issues is misinforming.

A beef-related food safety incident can damage the agricultural industry and economy, causing concern for the industry (Burton & Young, 1996; Economic Research Service, 2010; Johnson, 2008; O'Neill, 2005; Schroeder, Tonsor, Pennings, & Mintert, 2007, Schupp et al., 2006). *Salmonella* and *E. coli* cost more than $3 billion in 2009 (ERS, 2010). Foodborne illnesses contracted by these pathogens are also an area of concern. According to the Centers for Disease Control and Prevention (CDC, 2011), approximately 48 million Americans become ill and 3,000 die each year as a result of foodborne pathogens. *E. coli,* the pathogen highly associated with contaminate beef, was one of the top five pathogens contributing to hospitalization and death (CDC, 2011). The U.S. beef industry experienced a decline in beef exports after the 2003 BSE when 53 countries closed its borders to the U.S. beef market (Johnson, 2008; O'Neill, 2005; Schroeder et al., 2007). Additionally, a BSE outbreak in Europe caused a decrease in meat consumption as well (Charlebois, 2008).

Consumers also believe that foodborne illnesses pose a high risk to their health (Schroeder et al., 2007). A survey by Schroeder et al. (2007) found that 50% of consumers believed *E. coli* was the largest risk associated with food safety. It was found that risk perceptions among consumers were the main driver for reduced beef consumption (Schroeder et al., 2007).

**Media Dependency Theory**

Because of the influence of mass media and research describing it as an entity that is constantly consumed, the media dependency theory (MDT) was used to support this study. MDT describes the relationship among audiences and the media and how that relationship effects

society (Ball-Rokeach & DeFleur, 1976). Dependency is described as "a relationship in which the satisfaction of needs or the attainment of goals by one party is contingent upon the resources of another party" (Ball-Rokeach & DeFleur, 1976, p. 6). In the case of media and society, the media is dependent on society, and that dependence determines how individuals use media.

The information presented by the media is needed for individuals to attain their goals (Loges, 1994). Information is considered as a resource for individuals; they must rely on the media to supply those resources (DeFleur & Ball-Rokeach, 1989). The three types of resources—gathering and creating, information processing, and dissemination—allow individuals to achieve the personal and collective goals of understating, orientation, and play (DeFleur & Ball-Rokeach, 1989).

The goals of media dependency are further divided into self and social aspects (DeFleur & Ball-Rokeach, 1989). Understanding and orientation, more specifically social understanding, interaction orientation, and action orientation, are most related to this study. Social understanding is achieved when individuals use the media to understand and interpret the world around them (DeFleur & Ball-Rokeach, 1989). Lowrey (2004) found that most individuals used the media after the 9/11 terrorist attacks to meet their understanding goals. A state of chaos and uncertainty made individuals seek information from the media to understand what was happening (Lowrey, 2004). Closely related is action interaction orientation in which individuals use the media as a guide to forming behaviors of their own (DeFleur & Ball-Rokeach, 1989). Interaction orientation is achieved by the media supplying information on handling new or difficult situation (DeFleur & Ball-Rokeach, 1989)

The mass media is an outlet that offers "speed of transmission and structural connectedness to 'expert' source of information," which satisfies the needs of the public

(Lowrey, 2004, p. 339). This dissemination role of the media is especially needed when an issue of important international trade and health concerns arise (Buzby, 2001). When such an issue arises that heightens social conflict or ambiguity, dependency on media is increased (Ball-Rokeach & DeFleur, 1976). Examples of social conflict or change include environmental problems, energy crises, wars, political corruption (Ball-Rokeach & DeFleur, 1976), and could be extended to food safety incidents.

**Purpose and Objectives**

With changing consumer perceptions and concerns (Verbeke, 2005) agricultural communicators must provide effective food safety messages to the public. Also, communicators must be aware of the outlets consumers depend on to receive general information and food safety information. The purpose of this study was to describe consumers' self-reported dependencies on media channels during normal times when a food safety incident has not occurred or is not expected to occur and during a food safety incident related to the U.S. beef industry. The following objectives were used to guide this study:

1. Describe consumers' dependency on media for general information.
2. Describe consumers' dependency on media for information during a food safety incident related to the U.S. beef industry.
3. Determine whether differences exist in consumers' use of media for general information and information during a food safety incident.
4. Determine whether differences exist between rural, urban, and suburban consumers' use of media for general information.
5. Determine whether differences exist between rural, urban, and suburban consumers' use of media for information during a food safety incident.

## Methods

The accessible population for the study included [university] former students ($N$ = 160, 208) with a valid email address registered in a database. A sample of 4,500 individuals was determined. Content validity were established through a panel of four experts. Revisions to the questionnaire were made based on the feedback from the panel of experts. Face validity and reliability was established with a pilot study of [university] agriculture and life sciences graduate students. Using Cronbach's alpha, reliability was calculated on 83 scaled items and resulted in a Cronbach's alpha coefficient of .968.

This study used an online questionnaire modeled after a previous media dependency study and appropriate literature (Ball-Rokeach, 1985; Ball-Rokeach & DeFleur, 1976; CFI, 2010; DeFleur & Ball-Rokeach, 1989; Jackob, 2010; Robertson, 2009). The questionnaire consisted of five sections: knowledge of agriculture, normal media use, media use during a beef-related food safety incident, perceptions of the beef industry, and demographics. The responses to the knowledge of agriculture and beef industry sections will be used in future analyses. Scaled items used a 5 point rating scale ranging from strongly disagree (1) to strongly agree (5). Other questions included multiple choice and fill-in-the-blank items.

The questionnaire was implemented based on the principals of The Tailored Design Method outline by Dillman, Smyth, and Christian (2009). A total 579 responses were retrieved for a response rate of 12.9%. Nonresponse error was examined by comparing the means of early respondents to the mean of the late respondents (Linder & Wingenbach, 2002). No significant differences were found.

## Findings

Responses were received from 579 of the 4,500 former students emailed, resulting in a response rate of 12.9%. Of the respondents that indicated their gender, 52.5% were male and 28.2% were female. Thirty-nine percent of the respondents ($n$ = 475) described the area they lived in as suburban, 21.2% ($n$ = 123) as urban, and 20.9% ($n$ = 121) as rural. The respondents ranged in age from 23 to 84 years with a mean age of 50.16 years ($SD$ = 12.66). More than half of the respondents (54.6%) lived in Texas; thirty-two other states and 19 countries were represented. The longest time lived in the respondent's present community was 84 years.

Respondents indicated that 29.0% ($n$ = 168) were educated with a bachelor's degree, 28.5% ($n$ = 165) with a master's degree, and 14.9% ($n$ = 86) with a doctoral or law degree. Fifty-two respondents (9.0%) indicated they had completed some graduate school. About two-thirds of the respondents ($n$ = 391, 67.5%) have not served in the military and 13.8% indicated they have served. Respondents indicated they were conservative (29.0%, $n$ = 168), moderately conservative (19.9%, $n$ = 115), moderate (16.8%, $n$ = 97), moderately liberal (8.5%, $n$ = 49), and liberal (4.8%, $n$ = 28).

In regards to marital status, 60.1% of respondents were married, 3.3% divorced, and 12.8% single; 176 respondents have at least one child under 18 years of age living with them, ranging from zero to six children. In regards to employment status, 348 respondents (60.1%) are employed full-time, 50 respondents (8.6%) are employed part-time, and 69 respondents (11.9%) are not employed. Based on respondents' 2010 household income before taxes, 234 respondents ( 40.4%) earned more than $100,000;75 respondents (13.0%) earned $75,000 to $100,000; 72 (12.4%) respondents earned $50,000 to $75,000; 50 respondents (8.6%) earned $25,000 to $50,000; and 9 respondents (1.6%) earned less than $25,000. Almost three-quarters of the

respondents ($n$ = 426, 73.6%) said they are white, 5 respondents (0.9%) indicated they were African American, 21 respondents (3.6%) indicated they were Hispanic, Spanish, or Latino.

**Normal Times**

Respondents were asked to indicate how many hours per week they spent gathering information for personal use from a provided list of mediums (see Table 1). Internet was the medium people used most for gathering information. Respondents used the Internet an average of 10.58 ($SD$ = 11.03, $Mdn$ = 7.00) hours per week. Television shows and movies and television news channels were the next highest in hours of use per week, with means of 7.98 ($SD$ = 7.38, $Mdn$ = 6.00) and 5.79 ($SD$ = 6.99, $Mdn$ = 4.00), respectively. Respondents indicated that Twitter was used least often for gathering information, averaging 0.14 ($SD$ = 0.6, $Mdn$ = 0.00) hours per week.

**Food Safety Incident**

Respondents were asked to provide how many hours per week they spent on certain media channels to get information concerning a food safety incident related to the beef industry (see Table 2). An average of 2.15 ($SD$ = 6.96, $Mdn$ = 1.00) hours per week was spent on television news channels, making it the most used medium for information concerning a food safety incident. The least used medium was Twitter, with respondents indicating they use it .01 ($SD$ = 0.14, $Mdn$ = 0.00) hours per week.

Table 1

*Hours per Week Spent on Media for Personal, Business, and/or Entertainment use*

| Medium | *n* | *M* | *SD* | Range | *Mdn* |
|---|---|---|---|---|---|
| Internet | 502 | 10.58 | 11.03 | 80 | 7.00 |
| Television (shows, movies) | 489 | 7.98 | 7.38 | 50 | 6.00 |
| Television (news channels) | 502 | 5.79 | 6.99 | 90 | 4.00 |
| Radio | 489 | 5.07 | 6.42 | 50 | 3.00 |
| Newspapers | 475 | 2.20 | 3.72 | 50 | 1.00 |
| Facebook | 461 | 1.93 | 4.55 | 50 | 0.00 |
| Magazines | 456 | 1.50 | 2.05 | 20 | 1.00 |
| Email list subscriptions | 452 | 1.12 | 1.93 | 15 | 0.00 |
| Other | 328 | 0.79 | 3.22 | 40 | 0.00 |
| Blogs | 443 | 0.47 | 1.77 | 20 | 0.00 |
| YouTube | 445 | 0.37 | 0.88 | 10 | 0.00 |
| RSS Feeds | 439 | 0.23 | 1.23 | 20 | 0.00 |
| Twitter | 440 | 0.14 | 0.61 | 7 | 0.00 |

Table 2

*Hours per Week Spent on Media for Food Safety Information Related to the Beef Industry*

| Medium | *n* | *M* | *SD* | Range | *Mdn* |
|---|---|---|---|---|---|
| Television (news channels) | 456 | 2.15 | 6.96 | 90 | 1.00 |
| Internet | 446 | 1.94 | 4.24 | 32 | 1.00 |
| Radio | 438 | 1.20 | 3.19 | 40 | 0.00 |
| E-mail list subscriptions | 452 | 1.12 | 1.93 | 15 | 0.00 |
| Television (shows, movies) | 427 | 0.57 | 3.11 | 50 | 0.00 |
| Magazines | 418 | 0.45 | 1.38 | 20 | 0.00 |
| RSS Feeds | 413 | 0.11 | 1.49 | 30 | 0.00 |
| Facebook | 416 | 0.08 | 0.57 | 8 | 0.00 |
| Blogs | 412 | 0.05 | 0.31 | 4 | 0.00 |
| YouTube | 414 | 0.02 | 0.15 | 1 | 0.00 |
| Twitter | 415 | 0.01 | 0.14 | 2 | 0.00 |
| Newspapers | 436 | 0.91 | 2.87 | 50 | 0.00 |
| Other | 339 | 0.17 | 1.05 | 16 | 0.00 |

**Rural, Urban, and Suburban Consumers**

Medium use among community type also was examined during normal times and during a food safety incident. Because of the large decrease in the means after the fourth medium, only the top four mediums were reported. Out of the three community types, suburban respondents

spent the most time watching television shows and movies; rural respondents spent the most time on television news channels and radio; and urban respondents spent the most time on the Internet (see Table 3).

During a food safety incident, media use was reported with low means (see Table 4). Out of the three community types, suburban respondents spent the most time on television shows and movies and the Internet; urban respondents spent the most time on television news channels; and rural respondents spent the most time on radio for information related to a beef food safety incident.

**Comparison**

Based on the respondents' indications of how many hours per week they used specific mediums, the mediums were ranked with the ranking of "1" being most used and "13" being least used. The rankings for the mediums are compared between normal times and times during a food safety incident related to the beef industry (see Table 5). During normal times, respondents

Table 3

*Community Type and Normal Media Use*

| | Medium | | | |
|---|---|---|---|---|
| Community Type | TV (shows and movies) *M (SD)* | TV (news channels) *M (SD)* | Radio *M (SD)* | Internet *M (SD)* |
| Urban | 8.03 (7.12) | 6.04 (6.85) | 5.14 (7.54) | 12.20 (11.52) |
| Suburban | 8.15 (7.72) | 5.45 (5.46) | 4.85 (4.82) | 10.52 (10.79) |
| Rural | 7.83 (7.49) | 6.20 (9.01) | 5.86 (8.32) | 9.45 (11.38) |

Table 4

*Community Type and Media Use During a Food Safety Incident*

| | Medium | | | |
|---|---|---|---|---|
| Community Type | TV (shows and movies) | TV (news channels) | Radio | Internet |
| | *M (SD)* | *M (SD)* | *M (SD)* | *M (SD)* |
| Urban | 0.46 (2.12) | 3.08 (9.97) | 0.79 (2.06) | 1.83 (4.14) |
| Suburban | 0.66 (4.03) | 1.68 (3.44) | 1.14 (2.36) | 2.17 (4.78) |
| Rural | 0.61 (2.09) | 2.38 (8.63) | 1.78 (5.04) | 1.82 (3.53) |

indicated they use Internet more hours during the week than other mediums. The least used medium in a week was Twitter. During a food safety incident, television news channels were used the most per week and the category of other was least used.

Mediums used during normal times and during a food safety incident were also ranked according to community type (see Table 6). For the most part, rankings stayed consisted across the three types of community for both time periods.

Table 5

*Rank Comparisons for Media Use During Normal Times and During a Food Safety Incident Related to the Beef Industry*

| | Rank Order | |
|---|---|---|
| | Normal Times | Food Safety |
| Medium | | |
| Internet | 1 | 2 |
| Television (shows, movies) | 2 | 5 |
| Television (news channels) | 3 | 1 |
| Radio | 4 | 3 |
| Newspapers | 5 | 12 |
| Facebook | 6 | 8 |
| Magazines | 7 | 6 |
| Email list subscriptions | 8 | 4 |
| Other | 9 | 13 |
| Blogs | 10 | 9 |
| YouTube | 11 | 10 |
| RSS Feeds | 12 | 7 |
| Twitter | 13 | 11 |

Table 6

*Rank Comparisons for Media Use During Normal Times and During a Food Safety Incident Related to the Beef Industry Based on Community Type*

| Medium | Normal Times | | | Food Safety | | |
|---|---|---|---|---|---|---|
| | Urban | Suburban | Rural | Urban | Suburban | Rural |
| Internet | 1 | 1 | 1 | 2 | 1 | 2 |
| Television (shows, movies) | 2 | 2 | 2 | 6 | 5 | 5 |
| Television (news channels) | 3 | 3 | 3 | 1 | 2 | 1 |
| Radio | 4 | 4 | 4 | 4 | 3 | 3 |
| Newspapers | 5 | 5 | 6 | 3 | 4 | 4 |
| Magazines | 6 | 7 | 7 | 5 | 6 | 6 |
| Facebook | 7 | 6 | 5 | 11 | 10 | 11 |
| Email list subscriptions | 8 | 8 | 8 | 7 | 8 | 7 |
| Other | 9 | 9 | 9 | 10 | 7 | 8 |
| Blogs | 10 | 11 | 10 | 9 | 11 | 9 |
| YouTube | 11 | 10 | 11 | 13 | 11 | 10 |
| RSS Feeds | 12 | 11 | 12 | 8 | 9 | 9 |
| Twitter | 13 | 12 | 13 | 12 | 12 | 12 |

## Conclusions

The media plays a dominant role in society, saturating institutions and individuals (Berger, 2003; McCullagh, 2002). It is a central hub for information during a social change or conflict, invariably causing audiences to depend on the mass media for information (Ball-

Rokeach & DeFleur, 1976). Respondents indicated they spent more hours per week on Internet and watching television shows and movies to receive general information during normal times. News channels and radio also were among the most used mediums during normal times. Patwardhan and Yang (2003) found that Internet users displayed dependency relations and that Internet is an "integral part of individuals' media environments" (p. 65). A report from the Pew Internet and American Life Project (2010) found that Internet is the third most-popular news medium after national television news, which varies from the finding of this study. However, the findings might be supported by the fact that 92% of Americans use multiple platforms to get daily news. Respondents in this study indicated using multiple mediums such as the Internet, shows and movies, and news channels.

Respondents did not indicate strong media dependencies during a potential food safety incident. This finding could be because a major food safety incident was not occurring at the time of the study. Food recalls were reported by the USDA and the U.S. Food and Drug Administration (Food and Drug Administration, 2011); however, these recalls were not as large-scale as the BSE case in 2003. Additionally, perceived threat or ambiguous situations have been found to increase dependencies (DeFleur & Ball-Rokeach, 1989; Loges, 1994; Lowrey, 2004; Robertson, 2009); respondents in this study did not feel threatened by a food safety outbreak because no such incident was happening at the time of the survey. The finding that television news was the most used medium during a food safety incident could be supported by research concerning major crises. Television news was the medium of choice by people during two major hurricanes and after the 9/11 terrorist attacks (Gordon, 2009; Lowrey, 2004). It was stated that television lends itself to threatening situations because of the immediacy of information (Lowrey, 2004).

The differences among media use during normal times and during a food safety incident is supported by the media dependency theory. Individuals construct their media dependencies based on the situation and on which mediums will help them achieve their goals (DeFleur & Ball-Rokeach, 1976). If the situation is a crisis or conflict, individuals will return to their normal media use after the crisis is over (DeFleur & Ball-Rokeach, 1976). Additionally, the rankings of rural, urban, and suburban media use showed that during both time periods, the use of the specific mediums stayed consistent. With only slight variations, each community type spent time on the mediums in the same order. The specific mediums used most often changed between normal times and during a food safety incident; this indicates that consumers choose to use certain mediums during a food safety incident than during normal times. Therefore, based on the media dependency theory, individuals can depend on different mediums for different situations, altering their media choices based on the situation and their goals.

**Recommendations**

Media dependency research has covered major national disasters or conflicts that could easily be recalled by individuals, such as major hurricanes and the terrorist attacks of 9/11 (Gordon, 2009; Loges, 1994; Lowrey, 2004; Tai & Sun, 2007). Because the most recent and major food safety incident was more than seven years ago, and individuals did not indicate high media dependencies during a food safety outbreak, it is recommended that a similar study be conducted in close proximity to a national food safety outbreak. This would help determine if individuals could recall their media dependencies more accurately.

More research also could be done in the area of rural, urban, and suburban consumers and their use of media as news sources. Additionally, a study of a different population with a

different background could produce valuable results because the population of this study was mostly conservative and educated individuals with some sort of agricultural experience.

In regards to practice, it is recommended that agricultural communicators be aware of the mediums consumers use during normal times. By sending messages to the mediums consumers use daily, communicators will be able to educate and inform the public about agriculture and food safety issues. Additionally, it is noted that agricultural communicators should be aware of the amount of time consumers spend on certain media channels and the variety of media in obtaining information (Robertson, 2009).

The findings in this study have implications for both agricultural communicators and the beef industry. Individuals indicated that Internet, news, and radio were the most used mediums during both normal times and food safety incidents; however the order of the top three differs. Agricultural communicators should strive to target consumers through the mediums that appeal to them. Communicators must also stay abreast of the ever-changing technologies in the communications world. The Internet is becoming a more interactive and immediate forum for information with the web 3.0 technologies (Hendler, 2009), and communicators must take advantage of the technologies that are changing the world. This study also holds implications for educating the public about agriculture and the food industry. Educating a public that has little or no knowledge about the food sector could teach consumers to search for multiple sources of information rather than relying on a few negative media messages.

## References


Anderson, W. A. (2000). The future relationship between the media, the food industry and the consumer. *British Medical Bulletin, 56*(1), 254-268. Retrieved from http://bmb.oxfordjournals.org/content/56/1/254.full.pdf+html

Ball-Rokeach, S. J. (1985). The origins of individual media-system dependency: A sociological framework. *Communication Research, 12*(4), 485-510.

Ball-Rokeach, S. J., & DeFleur, M. L. (1976). A dependency model of mass-media effects. *Communication Research, 3*(1), 3-21. doi 10.1177/009365027600300101

Berger, A. A. (2003). *Media and society.* Lanham, MD: Rowman & Littlefield Publishers, Inc.

Burton, M., & Young, T. (1996). The impact of BSE on the demand for beef and other meats in Great Britain. *Applied Economics, 28,* 687-693. doi: 10.1080/000368496328434

Buzby, J. C. (2001). Effects of food-safety perceptions on food demand and global trade. *Changing Structure of Global Food Consumption and Trade.* Economic Research Service/USDA. Retrived from http://www.ers.usda.gov /publications/wrs011/wrs011i.pdf

Center for Food Integrity (CFI). (2010 October). *Consumer trust in the food system*: *Summary slides.* Presented at Food System Summit. Retrieved from http://www.foodintegrity.org/

Centers for Disease Control and Prevention. (2011). *CDC estimatesof foodborne illness in the United States.* Retrieved from http://www.cdc.gov/foodborneburden/index.html

Charlebois, S. (2008). Marketing agricultural commodities on global markets: A conceptual model for political economies and food-safety standard asymmetries related to mad cow. *Journal of International Food & Agribusiness Marketing, 20*(1), 75-100. doi 10.1300/J047v20n01_05

Crutchfield, S. R., & Roberts, T. (2000). Food safety efforts accelerate in the 1990's. *FoodReview, 23*(3), 44-49. Retrieved from http://www.cabdirect.org/abstracts/20013039495.html;jsessionid=6D689344E70612FF5F9A0AF961BDC399

DeFleur, M. L., & Ball-Rokeach, S. J. (1989). *Theories of mass communication.* White Plains, NY: Longman.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method.* Hoboken, NJ: John Wiley & Sons, Inc.

Economic Research Service. (2010). *Foodborne illness cost calculator.* Retrieved from http://www.ers.usda.gov/Data/FoodborneIllness/

Frick, M. J., Birkenholz, R. J., & Machtmes, K. (1995). Rural and urban adult knowledge and perceptions of agriculture. *Journal of Agricultural Education, 36*(2), 44-52. Retrieved from http://202.198.141.77/upload/soft/001/36-02-44.pdf

Gordon, J. C. (2009, November). *Media dependency theory and a tale of two hurricanes: Crisis communication in Southeast Louisiana for Hurricanes Katrina and Gustav*. Paper presented at the meeting of the National Communication Association, Chicago.

Grunert, K. G., (2005). Food quality and safety: Consumer perception and demand. *European Review of Agricultural Economics, 32*(3), 369-391. doi: 10.1093/eurrag/jbi011

Hendler, J. (2009). Web 3.0 emerging. *Computer, 42*(1), 111-113. doi: 10.1109/MC.2009.30

Jackob, N. G. E. (2010). No alternatives? The relationship between perceived media dependency, use of alternative information sources, and general trust in mass media. *International Journal of Communication, 4*, 589-606. Retrieved from http://www.ijoc.org/ojs/index.php/ijoc/article/viewFile/615/435

Johnson, R. (2008). *Cattle: Trade.* Retrieved from http://www.ers.usda.gov/Briefing/ Cattle/ Trade.htm

Lindner, J. R., & Wingenbach, G. J. (2002). Communicating the handling of nonresponse error. *Journal of Extension, 40*(6). Retrieved from http://www.joe.org/joe/2002december/rb1.php

Loges, W. E. (1994). Canaries in the coal mine: Perceptions of threat and media system dependency relations. *Communication Research, 21*(5), 5-23. doi: 10.1177/009365094021001002

Lowrey, W. (2004). Media dependency during a large-scale social disruption: The case of September 11. *Mass Communication and Society, 7*(3), 339-357. Retrieved from http://polychrest.tamu.edu:8331/V/D6GKAFGQH3EP3CC3SQ8GK2MJNT385265KLKPQI6TRA5UXHH1MM-05463?func=quick-3&short-format=002&set_number=002448&set_entry=000001&format=999

McCullagh, C. (2002). *Media power: A sociological introduction.* New York, NY: Palgrave.

O'Neill, K. (2005). U.S. beef industry faces new policies and testing for mad cow disease. *California Agriculture, 59*(4), 203-211. Retrieved from http://californiaagriculture.ucanr.org/

Patwardhan, P., & Yang, J. (2003). Internet dependency relations and online consumer behavior: A media system dependency theory perspective on why people shop, chat, and read news online. *Journal of Interactive Advertising, 3*(2), 57-69. Retrieved from http://jiad.org

Piggott, N. E., & Marsh, T. L. (2004). Does food safety information impact U.S. meat demand? *American Journal of Agricultural Economics, 86*(1), 154-174. Retrieved from http://content.ebscohost.com/pdf10/pdf/2004/AJA/01Feb04/11 873893.pdf?T = P&P = AN&K = 11873893&EbscoContent = dGJyMMvl7ESeprQ4wtvhOLCmr0iep7RSsau4TbOWxWXS&ContentCustomer = dGJyMPGus0m0q7JQuePfgeyx44Dt6fIA&D = bth

Robertson, T. (2009). *Media dependency during a potential agricultural terrorist attack on the U.S. food and fiber system*. (Unpublished doctoral dissertation). Oklahoma State University, Stillwater, OK. (1877498671).

Schroeder, T. C., & Mark, D. R. (2000). How can the beef industry recapture lost consumer demand? *Journal of Animal Science, 77*, 1-13. Retrieved from http://jas.fass.org/content/77/E-Suppl/1.44.short

Schroeder, T. C., Tonsor, G. T., Pennings, J. M. E., Mintert, J. (2007). Consumer food safety risk perceptions and attitudes: Impacts on beef consumption across countries. *The B.E. Journal of Economic Analysis & Policy, 7*(1), 1-27. Retrieved from http://www.bepress.com/bejeap/vol7/iss1/art65/.

Schupp, A., Gillespie, J., O'Neil, C. E., & Prinyawiwatkul, W. (2006). Media news reporting and perceptions of beef safety. *Journal of Food Products Marketing, 12*(2), 89-98. doi: 10.1300/J038v12n02_06

Sitton, S. R. P. (2000). *1998 newspaper coverage of Oklahoma swine production issues: A content analysis*. (Unpublished doctoral dissertation). Oklahoma State University, Stillwater, Ok. (725890001).

Swinnen, J. F. M., McCluskey, J., & Francken, N. (2005). Food safety, the media, and the information market. *Agricultural Economics, 32,* 175-188. doi: 10.1111/j.0169-5150.2004.00022.x

Tai, Z., & Sun, T. (2007). Media dependencies in a changing media environment: The case of the 2003 SARS epidemic in China. *New Media and Society, 9*(6), 987-1009. doi: 10.1177/146144807082691

Verbeke, W. (2005). Agriculture and the food industry in the information age. *European Review of Agricultural economics, 32*(3), 347-368. doi: 10.1093/eurrag/jbi017

A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

# Information Preferences of Agronomic Crop Producers and Crop Consultants

Category: Research paper

***K. Craig Gautreaux, Communication Specialist***
LSU AgCenter Communications and Public Relations Department
Louisiana State University
129 Knapp Hall
Baton Rouge, LA 70803
225-578-5673
Fax: 225-578-4524
cgautreaux@agcenter.lsu.edu

***Michael J. Burnett, Professor and Director***
School of Human Resource Education and Workforce Development
Louisiana State University
142 Old Forestry Building
Baton Rouge, LA 70803
225-578-5748
Fax: 225-578-5755
vocbur.lsu.edu

**Information Preferences of Agronomic Crop Producers and Crop Consultants**

Abstract

The dissemination of information related to agronomic crop production is crucial to the success of the agriculture industry in southeastern United States. This information is distributed by various sources and through multiple methods. Understanding how crop producers and consultants prefer to receive information is vital in developing an effective communication plan for reaching these two audiences. It is also important to examine how information topics influence the information preferences of these two groups. Previous research indicated that personal traits such as age, education and the size of an operation influence information preferences regarding agricultural operations. Agronomic crop producers were surveyed at selected major commodity meetings across a southeastern state and crop consultants completed an electronic survey to determine the two groups' perceptions of various information sources on issues of usefulness, frequency of use and the preference of particular sources. The participants' perceptions of a selected land-grant university's information sources were also analyzed for awareness, frequency of use and accuracy. The findings indicated that both groups actively used many of the information sources featured in the study. Both groups had a similar preference toward interpersonal information sources. Mass media sources were scored lower by both groups. Because both groups had a preference toward interpersonal communication, organizations that plan to communicate with these two groups should include an interpersonal communication component in any information campaign.

**Keywords:** information preferences, information sources, agronomic crop production, crop consultants, interpersonal communication, mass media, agricultural communications

## Information Preferences of Agronomic Crop Producers and Crop Consultants

*Introduction*

In 2009, the agricultural industry provided approximately 238,000 people with full or part-time jobs in a certain southeastern state. According to economic figures provided by the state's land-grant university, individuals earned more than $5 billion which represented 5% of the total compensation earned by this state's workers.

One of the largest sectors of agriculture in the state involves the production of agronomic crops. These crops are the foundation for much of the state's agricultural enterprises. They not only produce food and fiber for people, but the livestock industry is also dependent upon agronomic crop production. The state's nearly $1 billion poultry industry relies on agronomic crop production to produce feed for its flocks. Other animal enterprises such as beef and dairy cattle are similarly dependent upon agronomic crops for feed production.

Because of its importance to the local economy, it is imperative that producers receive the latest information regarding production techniques. The challenge is to determine the preferences of how these producers prefer to receive their information and develop an effective information campaign using a variety of sources and channels.

When it comes to obtaining information, agronomic crop producers and agricultural crop consultants have many choices. They can acquire information through interpersonal or mass media outlets. These individuals can initiate information searches, or they can acquire information via chance through an unplanned meeting with a person involved in agricultural production. Individual preferences influence the manner in which information is gained. Those persons with savvy computer skills are much more likely to search the World Wide Web for information than those who prefer face-to-face consultations.

Information intended for use by an agricultural-based audience is not a recent phenomenon in the United States (Tucker, Whaley, & Cano, 2003). Much effort has been dedicated to make sure agricultural audiences receive the information they need to be successful. Disseminating this information has been a primary function of extension personnel across the country for nearly a century with much of this effort being conducted through land-grant institutions (Seevers, Graham, Gamon, & Conklin, 1997).

The methods for reaching an agricultural-based audience have changed as technological advances made reaching mass audiences more efficient. Print media was the first mass media method used for communication and still remains popular (Boone, Meisenbach, & Tucker, 2003; Tucker et al., 2003). Electronic media gained popularity through the advent of radio and television (Craig, 2001; Boone et al., 2003). The World Wide Web now gives audiences a choice of when they can view media and allows audience members to become active participants through blogging (Rhoades & Aue, 2010; Rhoades & Hall, 2007).

Communication research has focused on agricultural-based audiences and issues related to agriculture. The hybrid seed study of Ryan and Gross (1943) laid the foundation for Rogers' (1983) diffusion of innovation theory. Hall and Rhoades (2007) examined how the national media reported on stories related to corn-based ethanol. Research has focused on how farmers have integrated the Internet and e-commerce into their farming operations (Hopkins & Morehart, 2001). They found that Internet usage by farmers increased from 13% to 43% between 1997 and 2000. Audience characteristics such as education level, size of farming operation and the number of crops grown have been examined to determine whether these traits influenced the sources and methods that were used (Batte, Schnitkey, & Jones, 1990; NASS, 2007; Park & Mishra, 2003).

Land-grant colleges and universities have a long history of distributing agricultural information. Much of this history dates back to their establishment through the Morrill Act of 1862 (Association of Public and Land-Grant Institutions, 2010). These institutions focused research efforts in production agriculture techniques for their areas. In 1914, Congress passed the Smith-Lever Act that established the Cooperative Extension Service. One of the extension service's main charges was to disseminate scientific information generated by land-grant institutions (Seevers et al., 1997). Through local extension offices and agents, information has been distributed through mass media efforts, publications and interpersonal communication.

Because agricultural producers have many sources and channels to choose from regarding information, researchers have studied their preferences. Licht and Martin (2006) examined how Iowa corn and soybean farmers use different communication channels and found that radio and personal consultations were the most frequently used. The growers stated that mass media sources such as radio were a good source for general information, but they indicated a preference for interpersonal communication such as a meeting with a county agent for more complex issues.

Production techniques have been shown to influence the preferences of information sources. Farmers interested in genetically-modified (GM) seed were more likely to be early adopters of GM seed if they had more information from the source they viewed as most reliable on this subject—the seed dealer (Alexander, 2002). When examining information related to the adoption of precision agriculture techniques, early adopters identified personal sources such as input providers and crop consultants as primary sources while non-adopters identified major media outlets as a major source of information (Daberkow & McBride, 2003). In relation to organic farming, Padel (2001) found that organic farmers were less likely to use sources that

served the general agriculture industry and that interpersonal communication between other organic farmers was the primary source for information.

When seeking information related to the 2002 Farm Bill, agricultural board members from Texas stated that the Texas Cooperative Extension Service was the preferred source (Catchings, Wingenbach, & Rutherford, 2005). Farm publications and agricultural Internet sites ranked second and third. The board members were not reliant upon mass media sources with regional newspapers, radio and television being rated sixth, ninth, and 12$^{th}$ respectively.

Evidence has suggested that extension agents should use multiple methods for communicating with their clientele. Israel and Wilson (2006) found that multiple channels would be the most effective way to reach horse owners in Florida. Individual differences and needs along with the type of information being sought contributed to horse owners using multiple channels and sources for information. Another study that found support for extension personnel to incorporate multiple channels involved beef producers in northwest Florida. More than 80% of the producers surveyed reported using other producers as an information source. Sources reported being used at least 50% of the time included county agents, veterinarians, local farm suppliers and university specialists (Vergot III, Israel, & Mayo, 2005).

Mass media sources and interpersonal communication sources are relied upon by agricultural audiences for information. Much of this information is generated by land-grant institutions and disseminated by these institutions using mass media and interpersonal communication. In some instances mass media sources were preferred, especially when awareness was important (Greishop, 1999; Rogers, 1983). Other research (Vergot III et al., 2005; Licht & Martin, 2006; Catchings et al., 2005) found that interpersonal communication was

preferred. Because results differed, agricultural communicators could benefit from further communication research in this area.

Because there is a lack of knowledge regarding agronomic crop producers' information preferences in the southeast region of the United States, a study of producers in a southeastern state can provide pertinent information that can help land-grant institutions better serve the needs of their clientele. A concerted effort could be undertaken by these organizations, and producers would receive the information in a timely manner.

The primary purpose of this study was to determine the preferences of agronomic crop producers and crop consultants in a southeastern state in regard to acquiring information related to their agricultural operations. Respondents were also asked their perceptions of selected land-grant institution's information sources on the concepts of awareness, usage and accuracy.

The primary objectives for this study were the following:

1. To determine the preferences for use of selected information sources among agronomic crop producers with regard to information used in the production of agronomic crops related to specific components of agronomic crop production.
2. To determine the preferences for use of selected information sources among crop consultants with regard to information used in the production of agronomic crops.
3. To determine the frequency of use of crop production information distributed by a land-grant institution among agronomic crop producers and crop consultants as related to specific components of agronomic crop production.
4. To determine the accuracy of information sources provided by the area land-grant institution as perceived by agronomic crop producers and crop consultants.

5. To determine if a model exists explaining a significant portion of the variance in land-grant information usage among agronomic crop producers in Louisiana from the following measurements:

a. Perceived awareness
b. Perceived accuracy
c. Age
d. Size of farm
e. Number of agronomic crops produced

## Methods

This study was designed to gather information from two distinct populations that are important clientele of a land-grant institution. One target population was large agronomic crop producers (producers farming more than 200 acres) located in the state. The second population was agronomic crop consultants who serve clients in the state.

Data for this study were collected at seven producer meetings across the state and through the administering of an electronic survey. Based upon extensive discussions with specialists with statewide agronomic crop responsibilities, extension agents and commodity group leaders, the seven meetings were identified and data were collected at each one. These meetings were chosen because they were the largest in terms of attendance, and attendees would represent all the agronomic crops produced in the state. For the crop consultants, an electronic survey was administered using an email list provided by their professional organization.

The instrument for producers was a paper-based survey that was developed through the review of a similar instrument (Harms, 2009) and input from agronomic crop specialists and survey design faculty members. The electronic version for crop consultants was similar in content and reviewed by the same group that reviewed the producer instrument. This review was conducted to establish content validity.

The survey took producers approximately 15 minutes to complete at the meeting it was administered. A total of 214 surveys were collected at the seven producer meetings. Thirty-eight surveys were omitted because they failed to meet the parameters set before the data collection. Therefore, a total of 176 surveys were used in the producer data analysis. For the electronic survey, consultants had two weeks to complete the survey. A reminder to complete the survey was sent one week after the survey was sent, and a second reminder was sent two days before the survey closed. The survey was sent to 60 individual email addresses. Two individuals requested a hard-copy of the survey. Both of these individuals completed and returned the survey. A total of 32 individuals responded to the survey for a response rate of 53.33%.

Descriptive data included frequencies, means and standard deviations were used to interpret the responses of both populations. An interpretive scale was developed for scaled items to provide further analysis. The scaled items were based on an anchored scale with "1" being the lowest possible score and "5" being the highest possible score. A more descriptive scale will be provided based upon the variable being measured.

A stepwise multiple regression analysis was performed to determine if a model existed that explained the variance in land-grant information usage. Only those variables that explained 1% or more of the variance were included in the regression analysis.

## Findings

*Preferences of agronomic crop producers*

The respondents were asked their preferences for using 10 information sources related to four components of agriculture production. The components were cultural practices, crop variety, pest management issues and market issues. An anchored scale was used for this objective: "1=Not Preferred," "2=Slightly preferred," "3=Moderately preferred," "4=Highly preferred" and

"5=Extremely preferred." Means and standard deviations were computed for each of the 10 information sources for each component.

A cumulative mean score was calculated for each of the 10 information sources by computing their scores from each of the four components (cultural practices, crop variety, pest management and market issues) related to agronomic crop production. The interpretative scale was then applied to each source to determine their overall preference of use. The source with the highest overall mean score was the crop consultants group (*M*=3.78, *SD*=.92). The group with the lowest overall mean was the broadcast media (radio and television) category (*M*=2.21, *SD*=.97). Statistical data are presented in Table 1.

Table 1

*Statistical Data for the Overall Preferences for Use of Information Sources Among Agronomic Crop Producers with Regard to Information Used in the Production of Agronomic Crops as Related to All Specific Components*

| Information Source | *n* | Mean | *SD* | Interpretation |
|---|---|---|---|---|
| Crop Consultants | 172 | 3.78 | .92 | Highly preferred |
| Land-grant personnel | 171 | 3.73 | .85 | Highly preferred |
| Land-grant print material | 171 | 3.69 | .81 | Highly preferred |
| Agricultural salespersons/representatives | 172 | 3.42 | .86 | Moderately preferred |
| Other agronomic crop producers | 172 | 3.36 | .83 | Moderately preferred |
| World Wide Web/Internet | 170 | 2.93 | 1.13 | Moderately preferred |
| Print publications/periodicals | 170 | 2.80 | .93 | Moderately preferred |
| Financial Advisors | 171 | 2.45 | 1.08 | Slightly preferred |

| | | | | |
|---|---|---|---|---|
| Print mass media (newspapers) | 170 | 2.38 | 1.00 | Slightly preferred |
| Broadcast media (radio and television) | 171 | 2.21 | .97 | Slightly preferred |

*Preferences of crop consultants*

The respondents were asked the preferences for using 10 information sources for receiving information regarding agronomic crop production in three primary areas: cultural practices, crop variety selection and pest management issues. Consultants were not asked about market issues because it was considered to be a task that most consultants do not perform. An anchored scale was used for this objective: "1=Not Preferred," "2=Slightly preferred," "3=Moderately preferred," "4=Highly preferred" and "5=Extremely preferred." Means and standard deviations were computed for each of the 10 information sources for each of the three components. The same interpretive scale used for producers was applied to the consultants.

A cumulative mean score was calculated for each of the 10 information sources by computing their scores from each of the three components (cultural practices, crop variety and pest management issues) related to agronomic crop production. The interpretative scale was then applied to each source to determine their overall preference of use. The source with the highest overall mean score was land-grant personnel (*M*=4.04, *SD*=.85). The group with the lowest overall mean was financial advisors (*M*=1.23, *SD*=.48). Statistical data are presented in Table 2.

Table 2

*Statistical Data for the Overall Preferences for Use of Selected Delivery Methods among Crop Consultants with Regard to Information Used in the Production of Agronomic Crops as Related to All Three Specific Components*

| Information Source | *n* | Mean | *SD* | Interpretation |
|---|---|---|---|---|
| Land-grant personnel | 32 | 4.04 | .85 | Highly preferred |

| | | | | |
|---|---|---|---|---|
| Other crop consultants | 32 | 4.00 | .77 | Highly preferred |
| Land-grant print materials | 32 | 3.96 | .98 | Highly preferred |
| Other agronomic crop producers | 32 | 3.43 | .85 | Moderately preferred |
| World Wide Web/Internet | 32 | 3.06 | 1.17 | Moderately preferred |
| Print publications/periodicals | 32 | 2.58 | 1.14 | Moderately preferred |
| Agricultural salespersons/representatives | 32 | 2.50 | .79 | Moderately preferred |
| Print mass media (newspapers) | 32 | 1.61 | .82 | Slightly preferred |
| Broadcast media (radio and television) | 32 | 1.40 | .71 | Not preferred |
| Financial advisors | 32 | 1.23 | .48 | Not preferred |

*Frequency of use of land-grant institution material by producers and consultants*

An objective of the study was to determine the frequency of use of crop production information distributed by a land-grant institution among both agronomic crop producers and crop consultants with regard to four specific components of agronomic crop production: cultural practices, crop variety selection, pest management issues and market issues. A total of 176 surveys from agronomic crop producers were analyzed for this objective. The following anchored scale was used for this objective: "1=Never," "2=Rarely," "3=Sometimes," "4=Often" and "5=Always." A mean and standard deviation were computed for each of the four components. An interpretative analysis of the scale for further examination was carried out. A component with a mean score in the range of 4.50-5.00 was deemed that land-grant information was used "Always." If a component reported a mean score between 3.50-4.49, it was considered that the information was used "Often." A mean score of 2.51-3.49 meant that the information related to this component was used "Sometimes." A component receiving a mean score between

1.51-2.50 indicated that the information was used "Rarely." If a component had a mean of 1.0-1.5, the information was "Never" used.

The component with the highest mean in relation to the frequency of use of crop information distributed by a land-grant institution's information sources among agronomic crop producers was crop variety selection (*M*=4.20, *SD*=.86). The component with the lowest mean was the market issues component (*M*=3.10, *SD*=1.12). Statistical data are presented in Table 3.

Table 3

*Statistical Data of the Frequency of Use of Crop Production Information Distributed by a Land-Grant Institution among Agronomic Crop Producers with Regard to Specific Components of Agronomic Crop Production*

| Agronomic Crop Component | *n* | Mean | *SD* | Interpretation |
|---|---|---|---|---|
| Crop variety selection | 172 | 4.20 | .86 | Often |
| Pest management issues | 173 | 4.17 | .78 | Often |
| Cultural practices | 173 | 4.10 | .73 | Often |
| Market Issues | 170 | 3.10 | 1.12 | Sometimes |

In analyzing the crop consultants' data, a total of 32 surveys were analyzed. The same anchored and interpretive scales for agronomic crop producers were used for the crop consultants' data. The component with the highest mean in relation to the frequency of use of crop information among crop consultants regarding specific components of agronomic crop production was pest management issues (*M*=4.19, *SD*=.82). The source with the lowest mean was market issues (*M*=2.31, *SD*=1.12). Statistical data are presented in Table 4.

Table 4

*Statistical Data of the Frequency of Use of Crop Production Information Distributed by a Land-grant Institution among Crop Consultants with Regard to Specific Components of Agronomic Crop Production*

| Agronomic Crop Component | *n* | Mean | *SD* | Interpretation |
|---|---|---|---|---|
| Pest management issues | 32 | 4.19 | .82 | Often |
| Crop variety selection | 32 | 3.88 | .87 | Often |
| Cultural practices | 32 | 3.75 | .98 | Often |
| Market Issues | 32 | 2.31 | 1.12 | Rarely |

*Accuracy of land-grant institutions perceived by producers and consultants*

An objective of the study was to determine the accuracy of information sources provided by a land-grant institution as perceived by both agronomic crop producers and crop consultants. Agronomic crop producers and crop consultants' data were analyzed independently.

A total of 176 surveys from agronomic crop producers were analyzed for this objective. The following anchored scale was used for this objective: "1=Not at all accurate," "2=Somewhat accurate," "3=Moderately accurate," "4=Highly accurate" and "5=Extremely accurate." A mean and standard deviation were computed for the six information sources. An interpretative analysis of the scale for further examination was conducted. A source with a mean score in the range of 4.50-5.00 was given an "Extremely accurate" rating. If a source had a mean score between 3.50-4.49, it was considered to be "Highly accurate." A mean score of 2.51-3.49 was judged to be "Moderately accurate." A source receiving a mean score of 1.51-2.50 was deemed to be "Somewhat accurate." If a source had a mean of 1.0-1.5, it was deemed "Not at all accurate."

The source with the highest mean in relation to accuracy of a land-grant's information sources among agronomic crop producers was area research station personnel (*M*=4.10, *SD*=.73). The source with the lowest mean in terms of accuracy was the land-grant's radio and television segments (*M*=3.67, *SD*=.85). Data for the accuracy of information services among agronomic crop producers are presented in Table 5.

Table 5

*Statistical Data of the Accuracy among Agronomic Crop Producers with Regard to Information Sources of a Land-grant Institution*

| Information Source | *n* | Mean | *SD* | Interpretation |
|---|---|---|---|---|
| Area research station personnel | 170 | 4.10 | .72 | Highly accurate |
| Research publications (magazines, facts sheets) | 171 | 4.06 | .65 | Highly accurate |
| Land-grant newsletters/publications (elec. or print) | 171 | 4.03 | .72 | Highly accurate |
| Extension office/extension agents | 171 | 4.01 | .73 | Highly accurate |
| Land-grant website | 163 | 3.94 | .80 | Highly accurate |
| Land-grant radio and television segments | 162 | 3.67 | .85 | Highly accurate |

The overall accuracy score for the land-grant's information sources was determined by using the mean of all the items in the scale. The overall mean accuracy score among agronomic crop producers was 3.98 (*M*=3.98, *SD*=.60). Using the interpretative scale, the overall accuracy of the land grant's information sources was deemed to be "Highly accurate."

Thirty-two surveys from crop consultants were analyzed for this objective. The same anchored and interpretive scales were used for interpreting the data.

The source with the highest mean in relation to the accuracy of information sources among crop consultants was area research station personnel (*M*=4.22, *SD*=.79). The source with

the lowest mean was the land-grant's radio and television segments (*M*=2.88, *SD*=1.31). Data for the accuracy of information sources among crop consultants are presented in Table 6.

Table 6

*Statistical Data of the Accuracy among Crop Consultants with Regard to Information Sources of a Land-grant Institution*

| Information Source | *n* | Mean | *SD* | Interpretation |
|---|---|---|---|---|
| Area research station personnel | 32 | 4.22 | .79 | Highly accurate |
| Research publications (magazines, facts sheets) | 32 | 3.97 | .78 | Highly accurate |
| Land-grant website | 32 | 3.84 | .81 | Highly accurate |
| Land-grant newsletters/publications (elec. or print) | 32 | 3.78 | .91 | Highly accurate |
| Extension office/extension agents | 32 | 3.19 | .73 | Moderately accurate |
| Land-grant radio and television segments | 32 | 2.88 | 1.31 | Moderately accurate |

The overall accuracy score for the information sources was determined by using the mean of all the items in the scale. The overall accuracy mean score among crop consultants was 3.65 (*M*=3.65, *SD*=.80). Using the interpretative scale, the overall accuracy of the land-grant's information sources was deemed to be "Highly accurate."

*Determining the Variance in Information Usage among Crop Producers*

The final objective was to determine if a model existed that explains a significant portion of the variance in the usage of a particular land-grant's information provided to agronomic crop producers in a southeastern state from the following measurements:

a. perceived awareness
b. perceived accuracy
c. age
d. size of farm
e. number of agronomic crops produced.

This objective was accomplished by performing a multiple regression analysis. The dependent variable used was the overall land grant's information mean usage score among agronomic crop producers. The independent variables were perceived awareness, perceived accuracy, age, size of farm and the number of agronomic crops produced.

The independent variables were used in a stepwise entry, and the model would contain only those variables that explained at least 1% of the variance.

The dependent variable was computed by summarizing the perception of the usage of the land-grant institution's information sources regarding the four aspects of agronomic crop production: cultural practices, crop variety selection, pest management issues and market issues.

For the independent variable perceived awareness, an overall awareness score was computed by summarizing all of the land-grant's awareness items on the instrument. This consisted of six items concerning agronomic crop producers' awareness of six land-grant's institution's information sources: website, research publications, extension office/agents, area research station personnel, land-grant institution's newsletters and publications (electronic and print) and the land-grant's radio and television segments.

For the independent variable perceived accuracy, a similar procedure was performed. An overall perceived accuracy score was computed by summarizing the six information sources items on the instrument as they pertained to accuracy as perceived by the agronomic crop producers.

The independent variables were tested for multicollinearity. No evidence of collinearity were found based on VIF < 10 and tolerances > .10. According to Hair et al. (1998), these thresholds are commonly used as the parameters in multiple regression analysis.

The variable that entered the model first was the perceived accuracy of the information source. This variable alone explained 25.1% of the variance in the land-grant institution's information usage among agronomic crop producers.

Only one other variable entered the model with the variable being the perceived awareness of land-grant information sources. This variable explained an additional 4.0% of the variance in information usage among agronomic crop producers.

In combination, these two variables explained 29.1% of the variance in information usage among agronomic crop producers in Louisiana. The variables age, size of farm and number of crops produced did not enter the regression model. Data for the multiple regression analysis are presented in Table 7.

Table 7

*Multiple Regression Analysis of the Overall Information Usage as Perceived by Agronomic Crop Producers on Selected Variables*

| Source of variation | *df* | *MS* | *F* | *p* |
|---|---|---|---|---|
| Regression | 2 | 10.370 | 32.023 | <.001 |
| Residual | 156 | .340 | | |
| Total | 158 | | | |

Model Summary

| Variables | $R^2$ Cumulative | $R^2$ Change | *F* Change | *p* Change | *B* Beta |
|---|---|---|---|---|---|
| Overall accuracy | .251 | .251 | 52.518 | .000 | .501 |
| Overall awareness | .291 | .040 | 8.889 | .003 | .241 |

Variable Not in the Equation

| Variables | *t* | Sig. *t* | . |
|---|---|---|---|
| Age | 1.032 | .303 | |
| Number of crops produced | -.801 | .424 | |
| Size of farm | 1.183 | .239 | |

## Discussion

Both agronomic crop producers and consultants showed preferences for using interpersonal communication sources and channels for obtaining information related to agronomic crop production. This finding is consistent with previous studies that have focused on agricultural-based audiences (Alexander, 2002; Vergot III et al., 2005; Israel & Wilson, 2006).

Interpersonal communication sources ranked first, second, fourth and fifth respectively when examining the overall preferences for use among agronomic crop producers among 10 information sources. For crop consultants, interpersonal communication sources ranked first, second and fourth respectively.

These two audiences also showed that multiple channels and sources were utilized supporting previous research that found that extension clientele used multiple sources and channels (Boone & Zenger, 2001; Licht & Martin, 2006; Israel & Wilson, 2006). Both groups reported that multiple sources and channels had a rating of "Highly preferred" and "Moderately preferred." For those seeking to communicate with producers and consultants such as seed company representatives or agri-chemical salespersons, incorporating multiple channels and sources should be part of any information dissemination plan.

Mass media sources were not a prominent source for crop producers and crop consultants. Generally, mass media sources were in the bottom third as information sources. This finding echoed similar findings of previous research (Risenberg & Obel Gor, 1989; Boone &

Zenger, 2001; Suvedi et al., 1999). Mass media sources do still have a purpose as bringing about an awareness of issues but is not preferred for specific or complex issues related to agriculture. However, certain variables such as farm size, education and age influenced the effectiveness of mass media efforts.

A difference that emerged between agronomic crop producers and consultants was that consultants were more likely to use the World Wide Web than producers. Previous research (Batte, 2005) has indicated that increased education does contribute to increased computer usage. In this study, consultants were a very educated group with 93.75% ($n$=30) possessing a college degree or higher.

With both producers and consultants able to possess smartphones, access to the World Wide Web is pervasive. Therefore, it is imperative that information be made available on the land-grant's website. This site should be easy to navigate, and a comprehensive list of keywords or meta-data should be utilized in order to make information searches by producers and consultants more successful. As agricultural communicators, it is essential to work with information technologists and web designers to ensure that clientele can acquire the information they are seeking.

An important finding in this study is that perceived accuracy and perceived awareness are important characteristics related to the usage of land-grant institution information concerning production agriculture. Perceived accuracy was the most important variable in determining the amount of information usage. Producers have a large investment in both equipment and inputs. In order to be successful, they rely on the latest information concerning crop production. Therefore, it is important that information sources such as land-grant institutions place an emphasis on disseminating accurate information. A vigorous content review by crop specialists

should occur, and communications experts should ensure that the material is worded correctly and presented in a comprehendible manner.

It is also important to include multiple methods. As smartphone usage increases, land-grant institutions should consider developing “apps” that producers could use to download or view the latest information. By creating an app, producers would be alerted anytime new information is available and would help increase awareness which is also a factor in increasing information usage. The creation of social media pages is also an excellent avenue to increase dialogue and transfer information.

Crop consultants are an important information resource for agronomic crop producers. Agricultural communicators can work closely with this group in order to distribute information related to producers. This task can be accomplished by working through professional organizations comprised of consultants. New information can be electronically sent to these organizations, and the consultants can broadcast the information via email, newsletter or word of mouth.

While this study addressed issues concerning the preferred sources and the perceptions of both producers and consultants regarding information sources of a southeastern land-grant institution, other areas of interest related to information sources were noted. One area of research that would be beneficial would be to determine how much time is devoted toward information searches. Also, a cost analysis formula could be proposed to determine how producers and consultants benefit from information searches and how successful theses searches are perceived. Also, other areas of agricultural could be examined such as animal enterprises, horticulture and forestry to determine if their information preferences are similar to agronomic crop producers.

Mass media sources were not a highly preferred source, but this finding does not indicate that mass media efforts should be eliminated. Mass media sources from previous studies (Grieshop, 1999; Licht & Martin, 2006) indicated that mass media sources provide awareness on issues related to agriculture. Agricultural communicators can use mass media to inform producers and consultants if there is a predicament that requires both groups to be alerted quickly such as the discovery of a new plant disease or invasive insect.

While interpersonal communication was a preferred method for receiving information in this study, the results may have been influenced by the fact that these meetings involved interpersonal communication. Growers needed to be present to be included in the study. A study of growers who did not attend the meetings could show dissimilar results. Also, the type of crops grown could also be a factor. Growers of niche crops could have different preferences over those who grew several agronomic crops. It is also possible that regional bias may be a factor. Analyzing the data based on the type of crops grown and what part of the state the grower farmed could lead to different findings.

REFERENCES


Alexander, C. (2002). *Role of information in the decision to adopt genetically modified seed.* Paper presented at the meeting of AAEA Annual Meetings, July 26, Long Beach, CA.

Association of Public and Land-Grant Institutions. (2010). Land grant heritage. Retrieved October 19, 2010 from http://www.aplu.org/page.aspx?pid=1565.

Batte, M. T., Schnitdey, G. D., & Jones, E. (1990). Sources, uses, and adequacy of marketing information for commercial midwestern cash grain farmers, *North Central Journal of Agricultural Economics, 12*(2), 187-196.

Batte, M.T. (2005). Changing computer use in agriculture. *Computers and Electronics in Agriculture, 47*, 1-13.

Boone, K. M., Meisenbach, T., & Tucker, M. (2000). *Agricultural communications: Changes and challenges.* Ames, IA: Iowa State University Press.

Boone, K. M., & Zenger, S. (2001). Preferred communication channels of homemakers. *Journal of Applied Communications, 85*(4), 19-35.

Catchings, C. L., Wingenbach, G. J., & Rutherford, T. A. (2005). Texas agricultural organization board members' knowledge of and information sources for the 2002 Farm Bill. *Journal of Applied Communications, 89*(4), 69-81.

Craig, S. (2001). The farmer's friend: Radio comes to rule America, 1920-1927. *Journal of Radio Studies, 8* (2), 330-346.

Daberkow, S. G,. & McBride, W. D. (2003). Farm and operator characteristics affecting awareness and adoption of precision agriculture technologies in the U.S. *Precision Agriculture, 4*, 163-177.

Grieshop, J. I. (1999). Health and safety communication in the workplace: A case study of California farmers, *Journal of Applied Communications, 83*(4), 7-21.

Hair, Joseph (1998). *Multivariate data analysis*. Upper Saddle River, NJ: Prentice Hall.

Harms, K. R. (2009). *Media usage by Nebraska farmers and ranchers when making agricultural business decisions.* Unpublished master's thesis. University of Nebraska, Lincoln.

Hall, K., & Rhoades, E. (September 28, 2007) *Coverage of corn-based ethanol: A comparison of objectivity in U.S. national newspapers.* Paper presented at the proceedings of the North Central Region Conference, Columbia, Missouri.

Hopkins, J., & Morehart, M. (2001). Farms, the internet & e-commerce: Adoption & implications. *Agricultural Outlook* (November) 17-20.

Israel, G. D., & Wilson, K. M. (2006). Sources and channels of information used by educational program clients. *Journal of Applied Communications, 90*(4), 55-78.

Licht, M. A.R., & Martin, R. A. (2006). Iowa corn and soybean producers' use of communication channels. *Journal of Applied Communications, 90*(4), 19-38.

Padel, S. (2001). Conversion to organic farming: A typical example of the diffusion on an innovation. *Socilogia Ruralis, 41*(1), 40-61.

Park, T., & Mishra, A. (2003). Internet usage by farmers: Evidence from a national survey. Paper presented as the 2003 AAEA annual meeting, July 27-30, Montreal, Canada.

Riesenberg, L. E., & Obel Gor, C. (1989). Farmers preferences for methods of receiving information on new or innovative farming practices. *Journal of Agricultural Education, 30*, 7-13.

Rhoades, E. B., & Aue, K. (February 2010). *Social agriculture: Adoption of social media by agricultural editors and broadcasters.* Paper presented at the Southern Association of Agricultural Scientists, Orlando, Florida.

Rhoades, E. B., & Hall, K. (2007). The agricultural blogosphere: A snapshot of new agricultural communicators online. *Journal of Applied Communications, 91* (3 & 4), 37-56.

Rogers, E.M. (1983) *Diffusion of innovations.* (3rd edition). New York: Free Press.

Ryan, B., & Gross, N. C. (1943). The diffusion of hybrid seed corn in two Iowa communities. *Rural Sociology, 8*, 15-24.

Seevers, B., Graham, D., Gamon, J., & Conklin, N. (1997). *Education through Cooperative Extension*. Albany, New York: Delmar Publishers.

Suvedi, M., Lapinski, M.K., & Campo, S. (1999). Trends in Michigan farmers' information-seeking behaviors and perspectives on the delivery of information, *Journal of Applied Communications, 83*(4), 33-50.

Tucker, M., Whaley, S. R., & Cano, J. (2003). Agricultural education and agricultural communications: Striking a proper balance. *Journal of Agricultural Education, 44*(1), 22-30.

United States Department of Agriculture, National Agricultural Statistics Service (2007). Farm computer ownership and internet usage in the united states. Available at: http://internetworldstats.com/usage/use015.htm.

Vergot III, P., Israel, G., & Mayo, D. E. (2005). Sources and channels of information used by beef cattle producers in 12 counties of northwest Florida. *Journal of Extension, 43*(2), Available online at http://www.joe.org/joe/2005april/rb6.php.

A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

# Communication Audits: Adding Value and Social Impact to Agricultural Communications

**Professional Paper**

**Joy N. Goodwin**
Graduate Student, Agricultural Communications
The University of Florida
310 Rolfs Hall
P.O. Box 110540
Gainesville, FL 32611
352-273-2614
Fax (352) 392-9585
goodwin.4@ufl.edu

**Andrea Davis**
Graduate Student, Agricultural Communications
The University of Florida
406 Rolfs Hall
P.O. Box 110540
Gainesville, FL 32611
352-273-2093
Fax (352) 392-9585
adavis87@ufl.edu

**Ricky W. Telg**
Professor, Agricultural Communications
The University of Florida
Bryant Hall 113D
P.O. Box 110540
Gainesville, FL 32611
352-273-2904
Fax (352) 392-0589
rwtelg@ufl.edu

## Abstract

*Communication audits can enhance the communication efforts of agricultural organizations. Communication audits identify what is being done well, what is not being done well, and how communication efforts can be improved. In addition to communication audits, usability testing adds value to understanding the use of communication materials by a target audience. Taking steps to improve communications, based on the findings of communication audits and usability testing, can help organizations improve their brand consistency, social impact, and overall communication. This paper provides a rationale for communication audits, and provides procedures, tips, and experiences for the communication practitioner.*



***Keywords:*** *communication audit, usability testing, branding, identity guide*

# Communication Audits: Adding Value and Social Impact to Agricultural Communications

## Introduction

Agricultural communication programs throughout the nation are well positioned to help agricultural organizations to communicate more effectively. Traditionally the agricultural industry is known for not communicating effectively, especially when compared to those opposing agricultural practices and issues (Goodwin & Rhoades, 2011). One step toward improving communication efforts and reaching a desired social impact among agricultural organizations is to conduct communication audits (Root Cause, 2011). Traditionally communication audits have been very costly and the cost is not seen as justifiable by organization leaders (Holland & Gill, 2006). However, at the university level, agricultural communicators have the opportunity to provide communication audit services to agricultural organizations at a fraction of the cost they would pay elsewhere. A reduced cost is possible in university settings that provide freelanced academic research, or those which include communication audits as student assignments. Offering this service at the academic level would allow agricultural communicators to contribute to Priority Area Three of the American Association for Agricultural Education National Research Agenda. The priority area includes contributing to a "sufficient scientific and professional workforce that addresses the challenges of the 21st century" (Doerfert, 2011, p. 9). By conducting communication audits for agricultural organizations, agricultural communicators have the ability to help these professionals develop skills and knowledge that will enable them to communicate more effectively with their stakeholders and the public while also developing a consistent brand. This paper provides rationale for the need of communication audits. The paper also provides communication audit procedures, tips, and experiences.

**Communication Audits**

At all levels - interpersonal, organizational, and international - effective communication is of vital importance. People rely on good communication to solve problems; however, oftentimes communication is taken for granted until these problems arise (Downs & Adrian, 2004). Many organizations often utilize too many vehicles to communicate with their stakeholders, making it difficult for an organization to understand which vehicle of communication is the most effective (Special Libraries Association, 2004). To ensure effectiveness, it is important that organizations utilize periodic monitoring to gauge what communication vehicles are being used effectively and where potential problems may lie. Because organizations have a life cycle and are constantly evolving, these systems must renew themselves in order to survive and, ultimately, prosper (Downs & Adrian, 2004). Therefore, communication audits are crucial to the existence of an organization.

Communication audits are formally defined as “a systematic assessment, either formal or informal, of an organization’s capacity for, or performance of, essential communications practices. It determines what is working well, what is not, and what might work better if adjustments are made” (Communications Consortium Media Center, 2004, p. 1). A communication audit should be viewed as an ongoing, dynamic process. This means that many components should interact together. Additionally, the outcomes of these interactions are determined by unspecified contingencies and have no finite beginning or end (Downs & Adrian, 2004). In essence, all communication should be understood as being rooted in both a historical and current situational context.

The basic process of a communication audit involves evaluating, examining, and monitoring an organization's communication system. Ideally, a communication audit is used to assess what "is" versus what "ought to be" in an organization (Downs & Adrian, 2004). This can be done by providing internal comparisons over time, benchmarking with other similar organizations, and also analyzing the performance levels of competing organizations. Holland and Gill (2006) suggested that communication audits should be done by people outside of an organization in order to increase credibility and objectivity.

**Usability Testing**

Similar to communication audits, usability testing is also used as a vital source of evaluation in any organization. However, unlike communication audits, usability testing focuses specifically on the users of a particular product or organization. Usability explicitly means that when someone uses a product, it allows them do so "quickly and easily to accomplish their own tasks" (Dumas & Reddish, 1999, p. 4). Therefore, to ensure "usable" communication materials, one would want to focus on and understand the users of the communication material.

In order to accurately understand the users of communication materials, usability testing is employed. This is a process that uses participants representing the target audience of an organization to evaluate the degree to which that organization meets specific usability criteria (Rubin & Chisnell, 2008). Usability testing is a research tool that can involve both qualitative and quantitative studies, from focus groups to classic survey methodologies. The ultimate goal of usability testing is to gather data on current usability deficiencies within an organization in an effort to maintain communication materials that are seen as useful and valuable by the target audience, as well as satisfying to use (Rubin & Chisnell, 2008).

## The Contributions of Communication Audits and Usability Testing to Branding

Branding involves all aspects of an organization, including the organization's employees, stakeholders, and the organization's products, communications, values, mission, and culture (Kolter & Armstrong, 2006). The successful development of a brand for an organization is imperative. Both communication audits and usability testing can be used in an organization's branding efforts.

Communication audits help organizations to better understand the state of their organization - what is being done correctly, what is being done incorrectly, and what, if anything, needs to be changed (Communications Consortium Media Center, 2004). These audits allow an organization to understand how effectively information is being communicated to stakeholders. Communication audits can help organizations to develop a brand that is more appealing, consistent, and attractive to their specific target audience (Kolter & Armstrong, 2006).

Usability testing in this context allows organizations to determine how "usable" their communication materials are to their stakeholders. Usability testing can help an organization to brand themselves in a positive manner, ensuring that their audience views the organization as providing quality services and communication (Kolter & Armstrong, 2006).

## Methods/Procedures

The Center for Public Issues Education in Agriculture and Natural Resources (PIE Center) has been collaborating with agricultural commodity organizations to help them improve their communication through communication audits. The PIE Center is a non-profit center with a mission "to enhance public understanding of issues in agriculture and natural resources through practical research in education, communication and leadership development" (UF/IFAS Center for Public Issues Education in Agriculture and Natural Resources, 2011, para. 4). The PIE Center

has conducted four communication audits to date and has others scheduled in the near future. Since conducting the first communication audit, the PIE Center's procedures have evolved to create a sound and beneficial communication audit process.

The general process of conducting a communication audit should begin by gaining an understanding of the target audience that the organization is trying to reach, and of the organization's communication goals (Root Cause, 2011). The next step in the audit process involves collecting a representative sample of communication materials from the organization being audited. Once communication materials have been gathered, the examination and evaluation of the communication materials can begin (Downs & Adrian, 2004). Evaluation and examination will vary slightly according to the organization being audited, the communication materials provided, and the purposes or goals of the organization. However, these processes should always include an assessment of consistency in look, feel, and design across all materials. Additionally, the information provided in the materials should have a consistent message that is in line with the organization's mission and purpose (Root Cause, 2011). Assessing consistency will help the organization solidify its brand and image, ultimately increasing its social impact. In addition to looking at the communication materials provided, it is important to look for missing pieces in a communication audit. Auditors should think about communication pieces or messages that are not currently being used by the organization. Identifying holes in an organization's communication processes can help benefit the overall effectiveness of a communication audit.

The basic processes mentioned above are the audit steps that the PIE Center initially took when conducting communication audits. However, it was recognized that in addition to auditing hard copy communication documents, websites and social media were also important communication tools that needed to be audited in today's culture. This prompted the PIE Center

to build basic website usability testing and social media assessment into the communication audits that it completes for agricultural organizations. Now when conducting a communication audit, the PIE Center will evaluate and examine a website according to the standard communication audit process and then will take a second step to test the basic usability of the website. Basic website usability is assessed by the PIE Center staff. This process involves evaluating the accessibility of the website, the inclusion of worthwhile content, sensible arrangement, and a clean page design (Lannon & Gurak, 2011). When assessing the usability of the website, the skimming pattern of websites, amount of scrolling, and interactive options are considered. Most commonly interactive elements will include links to click on and materials to download. Regardless of the type of interaction, ensuring that these components work properly is essential. To assess the worthwhile content of the website an auditor must assess what information the target audience wants and needs and if this information is present on the Web page (Lannon & Gurak, 2011).

Another important component of content is ensuring that a search tool is easy to locate and functioning appropriately. A large majority of website usability has to do with sensible arrangement. Sensible arrangement includes easy-to-use website navigation. This includes clearly and consistently labeled navigation features, as well as the ability to get to a desired page in as few clicks as possible. Lastly, the page design is evaluated. Page design can impact the usability of a website if it is too crowded, distracting, or imbalanced (Lannon & Gurak, 2011). By testing the basic usability of an organization's website the PIE Center has been able to add value to the communication audit process; however, it is important to note that this is basic usability testing that could be enhanced by designing and administering a test of the website with the organization's target audience (Nielsen, 1993). The PIE Center does not currently carry out

complete and expansive usability testing as part of a communication audit, but does recommend complete usability testing to organizations as further steps to enhance their communication process.

The last component of the communication audit process that the PIE Center has incorporated over time is the analysis of the organization's social media outlets. If the social media links are provided by the organization the PIE Center evaluates those pages and searches for other pages with the same name. If social media links are not provided by the organization, the PIE Center will search for the organization on common social media sites such as Facebook and Twitter. This practice has been adopted because past audits have shown multiple pages for an audited organization on one social media site, as well as pages made with an organization's name without any known organization affiliation or connection. This step allows the PIE Center to ensure that communications are remaining consistent and effective in the social media world, and ensures that organizations are not being represented without their knowledge.

The final step of the communication audit process involves compiling a report of findings and recommendations for the audited organization. In this report, inconsistencies, design problems, problematic language, and other findings are clearly identified in a language that is understandable to the organization. The PIE Center has found it helpful to report findings for each document individually in the communication audit, as well as the website and social media. In addition to these specific findings, it is common for the PIE Center to have a few general and overarching findings. When making recommendations, the PIE Center makes recommendations specific to each document and develops overarching recommendations. It is common for the PIE Center to provide benchmarks and examples as part of the recommendations in order to add understanding to the report (Downs & Adrian, 2004). For example, when improving logo

consistency is a recommendation, the PIE Center uses Susan G. Komen for the Cure as an example and a benchmark. In the past Susan G. Komen for the Cure had many different logos representing different branches of the same organization. (See figure 1.) However, after a re-branding effort it developed a consistent-looking logo that still provides flexibility according to the specific branch (Susan G. Komen for the Cure, 2006). (See figure 2.)


*Figure* 1. Susan G. Komen for the Cure Logo Variations before Re-branding


*Figure* 2. Susan G. Komen for the Cure Logo after Re-branding

The Susan G. Komen for the Cure logo examples help organizations understand the need for logo consistency and helps them brainstorm ways in which they can make their logo consistent. In addition, a common recommendation has been for the organization to create an identity guide. The purpose of an identity guide is "to establish a consistent application of the brand identity across all marketing efforts" (Hearden, 2010, para. 3). Common components of an identity guide include the mission statement, key messages, taglines, logo, color palette, typography, paper stock, imagery, and examples of what to do and not do (Hearden, 2010). The PIE Center has provided to client organizations both theirs and the University of Florida's identity guides as examples. Clarity of results and examples provide audited organizations with a complete guide to help them improve their future communications.

**Additional Communication Audit Tips**

In addition to the steps mentioned above, these additional tips will help enhance communication audits:

- Consider in-depth interviews, focus groups, or surveys with an organization's management and employees to gain their perspectives on communication within the organization. This will ensure that any internal communication problems are resolved before implementing new communication processes based on the audit findings (Holland & Gill, 2006).
- Encourage commitment from the audited organization to use the results to improve their communication efforts (Holland & Gill, 2006).
- Encourage the organization to share the communication audit results with employees and, in some cases, membership to not only gain buy-in from the constituents, but also make them aware that their feedback is valued (Holland & Gill, 2006).

- Recommend a communication audit every two to three years. This will allow any changes from the previous audit time to be implemented, but also ensure that communication efforts are still relevant (Holland & Gill, 2006).
- Recommend the creation of an identity guide, if one is not already in place, to ensure that past communication materials are revised to be consistent, but also that future communication materials will be created in the same way leading to a consistent and recognizable brand (Root Cause, 2011).
- Encourage further usability testing on the organization's website with an external group of individuals from the organization's target audience. The individuals should not be previously familiar with the website and are given certain tasks to complete on the organization's website. Individuals' ability to complete the task and the time it takes them to complete it can provide great insight to the usability of a website (Lannon & Gurak, 2011).

**Impact of PIE Center Communication Audits**

The results of the communication audits that the PIE Center has conducted have allowed agricultural organizations to improve their communication materials and create a more consistent brand. The agricultural organizations value the communication audit because they understand that it is based on facts and existing communication materials (Holland & Gill, 2006). Audits completed at the PIE Center have helped these organizations improve their communication processes. The communication audit completed for one organization was an integral part of increasing their membership by more than 800 people following a communication audit and membership survey. Additionally, the PIE Center has received favorable feedback from all organizations regarding the communication audit results. The impact of these communication

audits will be able to be measured and assessed in full once the organizations have had time to implement suggested improvements.

## Results/Outcomes

As demonstrated by the increased membership following one communication audit, communication audits can help increase the social impact of an organization (Root Cause, 2011). Additionally, identifying communication weaknesses and areas for improvement can help an organization satisfy the needs of their audience and improve their brand recognition (Kolter & Armstrong, 2006). If agricultural organizations are able to work toward improving their communication process through practices such as communication audits, it is possible for the industry to become more effective in communicating not only to their stakeholders, but also to the public as well. However, the process of conducting a communication audit does not automatically lead to communication improvement. The process must be followed up with action to improve the problematic areas identified in the audit (Holland & Gill, 2006). If no action is taken following a communication audit, then the audit is nothing more than an exercise that wastes time and money. To influence the potential impact of the communication audit process, the PIE Center stays in contact with client organizations to encourage action and follow-up and offers further assistance if needed.

Conducting communication audits for agricultural organizations has opened the door for additional research and communication improvement among agricultural organizations. The organizations that have used the PIE Center for communication audits have expressed satisfaction and gratitude. Several of the organizations have expressed that they knew their communication materials needed improved, but they were too close to the materials and did not have the time to identify the problems themselves. Additionally, many organizations are

returning to the PIE Center for employee or membership surveys, focus groups, and communications training. Organizations that have been audited by the PIE Center are sharing their experiences with other organizations, who have, in return, sought out the services of the PIE Center. Organizations are committed to improving their communication and are willing to enlist the help of affordable, trusted, and proven resources, which in this case is academically based. Offering communication audit services to agricultural organizations not only allows agricultural communicators in academia to impact the communication process, but also allows them to extend their expertise to practical application. This ability gives industry communicators the tools and skills necessary to improve the communications surrounding agricultural topics, thus addressing the challenges of the 21st century and contributing to Priority Area Three of the National Research Agenda (Doerfert, 2011).

## Discussions/Conclusions

Improving the communication of agricultural organizations and the industry as a whole is an evolving process that will take time. However, communication audits and basic usability testing are simple steps toward improving communication. By identifying what is being done correctly, what is being done incorrectly, and what needs to be changed, agricultural organizations can better understand the quality of their current communication and how to improve upon it for the future (Communication Consortium Media Center, 2004). Adding value and usability to an organization's communication materials, will, in return, help them create a consistent brand and increase their social impact (Kolter & Armstrong, 2006; Root Cause, 2011). Agricultural communicators in academia have the knowledge and ability to help agricultural organizations improve their communication processes and can extend their knowledge to industry professionals. Additionally, building relationships with industry professionals can offer further research opportunities for academic agricultural communicators.

University-level agricultural communicators interested in conducting a communications audit should build a strong relationship with the client organization. This relationship will be essential throughout the process, but is especially important when providing results, which may be difficult for an organization to accept. However, a foundation of a strong relationship allows organizations to view the results as credible and trustworthy. When conducting a communication audit, it is also helpful to be clear and straightforward with clients from the beginning. Explain to them the process, expectations, the timeline, and the cost to ensure that the organization's expectations are closely aligned with yours. Additionally, maintaining contact with the client throughout the process is crucial. Communication throughout the process allows the client to know that theirs is a valued project, and allows them to stay connected and up to date on the project's progress. Strong relationships and continuous communication with clients have led to the PIE Center's continued success with communication audits, resulting in organizations returning to the PIE Center for further research and recommending communication audits to others.

For additional resources on some of the topics discussed in this paper, please see the resources below.

**Additional Sources**

In addition to the resources referenced in this paper, the following resources provide further information in regards to communication audits, usability testing, branding, and identity guides.

*Communication Audits*

Belasen, A. T. (2008). *The theory and practice of corporate communication: A competing values perspective.* Thousand Oaks, CA: Sage Publications Inc.

Hargie, O. & Tourish, D. (Eds.) (2000). *Handbook of communication audits for organizations.* New York, NY: Taylor & Francis Inc.

Hargie, O., Tourish, D., & Wilson, N. (2002). Communication audits and the effects of increased information: A follow-up study. *Journal of Business Communication, 39*(4), 414-436. doi: 10.1177/002194360203900402

HumaNext Communication Ideas. (2010). Audit-Communication Audit. Retrieved from http://www.communicationideas.com/communication-audit.html

Schade, J. (2007). Maximizing the value of communications: Conducting a communication audit/assessment [Web log post]. Retrieved from http://www.jrsconsulting.net/freearticles_1.html

*Usability Testing*

Barnum, C. M. (2011). *Usability testing essentials: Ready, set…test!* Burlington: MA: Elsevier Inc.

Rubin, J. & Chisnell, D. (2008). *Handbook of usability testing: How to plan, design, and conduct effective tests* (2nd ed.). Indianapolis, IN: Wiley Publishing Inc.

*Branding*

Clifton, R., Ahmad, S., Allen, T., Anholt, S., Barwise, P., Blackett, T. … Smith, S. (2009). *Brands and branding* (2nd ed.). New York, NY: The Economist Newspaper Ltd.

Dunn, D. (2004). *Branding: The 6 easy steps.* Oakland, CA: Cameron Street Press

*Identity Guides*

Boy Scouts of America. (2011). Brand identity guide. Retrieved from http://www.scouting.org/filestore/pdf/310-0231.pdf

Cargill (2007). Identity guidelines. Retrieved from http://www.cargillbrandidentity.com/identitysite/identity/logo.shtml

University of Alabama (2010). Visual identity guide. Retrieved from http://visualid.ua.edu/

Wheeler, A. (2009). *Designing brand identity: An essential guide for the whole branding team* (3rd ed.).Hoboken, NJ: John Wiley & Sons Inc.

## References


Communications Consortium Media Center. (2004). *Strategic communication audits.* Washington, DC: Coffman, J.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015.* Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Downs, C.W., & Adrian, A. D. (2004). *Assessing organizational communication: Strategic communication audits.* New York: The Guilford Press.

Dumas, S. C., & Redish, J. C. (1999). *A practical guide to usability testing*. Portland: Intellect Books.

Goodwin, J. & Rhoades, E. (2011). Agricultural legislation: The presence of California proposition 2 on YouTube. *Journal of Applied Communication, 95*(1), 22-35. Retrieved from http://journalofappliedcommunications.org/

Hearden, D. B. (2010, May 11). 13 rules your brand ID guide should be enforcing [Web log post]. Retrieved from http://chiefmarketer.com/disciplines/branding/0511-brand-guide/

Holland, R. J. & Gill, K. (2006, September/October). How to conduct a communication audit – And why. *The Journal.* Retrieved from http://www.hollandcomm.com/index.php?option=articles&task=viewarticle&artid=4&Itemid=3

Kolter, P. & Armstrong, G. (2006). *Principles of marketing* (11th ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Lannon, J. M. & Gurak, L. J. (2011). *Technical communication* (12th ed.). Boston, MA: Pearson

Nielsen, J. (1993). *Usability engineering.* San Diego, CA: Academic Press

Root Cause. (2011). Getting strategic about communications: How to conduct a communications audit [Web log post]. Retrieved from http://www.rootcause.org/knowledge_sharing/solutions/getting-strategic-about-communications

Rubin, J., & Chisnell, D. (2008). *Handbook of usability testing: How to plan, design, and conduct effective tests* (2nd ed.). Indianapolis, IN: Wiley Publishing, Inc.

Special Libraries Association (2004.). *Conducting a comprehensive communication audit.* Alexandria, VA: Keiser, B. E. & Stein, P. H.

Susan G. Komen for the Cure. (2006, July). *Komen flight plan.* Presentation conducted at the Brand Ambassador Workshop, Dallas, TX.

UF/IFAS Center for Public Issues Education in Agriculture and Natural Resources. (2011). *About.* Retrieved from http://www.centerpie.com/about-2/

A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

# CONSUMER PERCEPTIONS OF THE U.S. AGRICULTURAL INDUSTRY: A STUDY OF PERCEPTIONS, BEFORE AND AFTER WATCHING THE FILM *FOOD, INC.*

Research Paper

Jessica Holt
Graduate Student
University of Florida
310 Rolfs Hall
Gainesville, FL 32618
352-273-2614
Fax: 352-392-9585
Jessica.holt@ufl.edu

Dr. Dwayne Cartmell
Oklahoma State University
436 Agricultural Hall
Stillwater, OK 74078
405-744-0461
Fax: 405-744-5176
dwayne.cartmell@okstate.edu

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

**Consumer Perceptions of the U.S. Agricultural Industry: A Study of Perceptions, Before and After Watching the Film *Food, Inc.***

## 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 form their perceptions and opinions about issues within society, including agricultural issues (Verbeke, 2005).

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 paramount (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).

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 released to select theaters in 2008, and "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*.

**Media Dependency Theory**

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 connectedness 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.

**Public Perceptions**

Personal perceptions and opinions about a concept or idea can be formed in several different ways (Hoffman, Glynn, Huge, 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 Oklahoma State University (OSU). 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

### Instrument Design

The film *Food, Inc.* was offered as a free show through the OSU 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 at OSU's Stillwater campus who volunteered to participate in the study. 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.

At 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 OSU Cineculture organization and the OSU 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).

Table 1

*Statements respondents of the showing Food, Inc. agreed with, prior to the film*

| Statement | *M* | *SD* |
|---|---|---|
| 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 |

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

In the pretest, the participants expressed the most uncertainty (see Table 2) 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.

Table 2

*Statements respondents of the showing Food, Inc. were unsure about, prior to the film*

| Statement | *M* | *SD* |
|---|---|---|
| *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 |

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.

In the pretest, the participants most disagreed (see Table 3) with the statement, "Agricultural processing plants maintain a safe and clean working environment" (*M* = 2.54).

Table 3

*Statements attendees of the showing Food, Inc. disagreed with, prior to the film*

| Statement | *M* | *SD* |
|---|---|---|
| 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 |

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.

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 4) with the statement, "Country of origin labeling should be mandatory in the U.S." (*M* = 4.20).

Table 4

*Statements attendees of the showing Food, Inc. strongly/agreed with after watching the film*

| Statement | *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 |

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.
Note. ** Indicates a question that participates strongly agreed with.

When completing the posttest survey, the participants expressed the most uncertainty (see Table 5) about the statement, "I think super centers (Wal-mart, etc.) provide a necessary outlet for purchases" (*M* = 3.29) after watching *Food, Inc*.

Table 5

*Statements attendees of the showing Food, Inc. were unsure about after watching the film*

| Statement | *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 |
| New technology has helped ensure the safety of agricultural processing. | 2.77 | 1.149 |
| *Food processing increases the cost of food products. | 2.65 | 1.104 |
| I think super centers (Wal-mart, etc.) provide a necessary outlet for food purchases. | 3.29 | 1.151 |

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.

After watching *Food, Inc.* and completing the posttest survey, the participants most disagreed (see Table 6) 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' response. The question did not follow a similar pattern in wording as other questions on the survey.

Table 6

*Statements attendees of the showing Food, Inc. disagreed with after watching the film*

| Statement | *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.

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 7). 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 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.

Table 7

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

| Statement | Pretest | Posttest | 99 % CL |
|---|---|---|---|
| | *M* | *M* | *p* |
| *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

## 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 Leiserowtiz'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.

## References


Ball-Rokeach, S. J. (1985). The origins of individual media-system dependency a sociological framework. *Communication Research, 12*(4), 485-510. doi: 10.1177/009365085012004003

Ball-Rokeach, S. J., & DeFleur, M. L. (1976). A dependency model of mass-media effects. *Communication Research, 3*(1), 3-21. doi: 10.1177/009365027600300101

Brandtzaeg, P. B., Heim, J., & Karahasanovic, A. (2011). Understanding the new digital divide-A typology of internet users in Europe. *International Journal of Human-Computer Studies, 69*, 123-138. doi: 10.1016/j.ijhcs.2010.11.004

Brewer, M. S., & Rojas, M. (2007). Consumer attitudes toward issues in food safety. *Journal of Food Safety. 28*, 1-22. doi: 10.1111/j.1745-4565.2007.00091.x

Burnstein, P. (2003). The impact of public opinion on public policy: A review and an agenda. *Political Research Quarterly, 56*(1), 29-40.

Dillman, D. A., Smyth, J. D., Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method.* Hoboken, New Jersey: John Wiley & Sons, Inc.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association of Agricultural Education's research priority areas for 2011-2015.* Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Festinger, L. (1950). Informal social communication. *Psychological Review, 57*(5), 271-282. doi: 10.1037/h0056932

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7,* 117-140. doi: 10.1177/001872675400700202

Frick, M. J., Birkenholz, R. J., & Machtmes, K. (1995). Rural and urban knowledge and perceptions of agriculture. *Journal of Agricultural Education, 36*(2), 44-53. doi: 10.5032/jae.1995.04001

Hoffman, L. H., Glynn, C. J., Huge, M. E., Sietman, R. B, & Thomson, T. (2007). The role of communication in the public opinion processes: Understanding the impacts of intrapersonal, media, and social filters. *International Journal of Public Opinion Research*, *19*(3), 289-312. doi:10.1093/ijpor/edm014

Kenner, R. (Producer & Director), & Pearlstein, E. (Producer). (2008). *Food, Inc.* [Motion picture]. United States: Magnolia Pictures, Participant Media, & River Road Entertainment.

Leiserowitz, A. A. (2004). Before and after tomorrow: A U.S. study of climate change risk perception. *Environment 46*(9), 22-37.

Lundy, L. K., Ruth, A. M., & Park, T. D. (2007). Entertainment and agriculture: An examination of the impact of entertainment media on perceptions of agriculture. *Journal of Applied Communications, 91*(1 & 2), 65-73.

Meyers, C. & Abrams, K. (2010). Feeding the debate: A qualitative framing analysis of organic food news media coverage. *Journal of Applied Communications, 94*(3 &4), 22-36.

Meyers, C. A., Irlbeck, E., & Fletcher, K. (2011, June*). Postsecondary students' reaction to agricultural documentaries: A qualitative analysis.* Paper presented at Association for Communication Excellence in Agriculture, Natural Resources, and Life and Human Sciences Conference, Denver, CO.

Pense, S. L., & Leising, J. G. (2004). An assessment of food and fiber systems knowledge in

selected Oklahoma high schools. *Journal of Agricultural Education, 45*(3), 86-96.

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology, 19,* 123-205.

Robertson, J. T. (2009). *Media dependency during a potential agricultural terrorist attack on the U.S. food and fiber system.* (Doctoral dissertation, Oklahoma State University). Retrieved from http://gradworks.umi.com/33/72/3372191.html

Ruth, A. M., Lundy, L. K., & Park, T. D. (2005). Glitz, glamour, and the farm: Portrayal of agriculture as the simple life. *Journal of Applied Communications, 89*(4), 21-37.

Shank, F. R. (1991). Evolving food safety. *American Chemical Society,* 297-307. doi: 10.1021/bk-1991-0446.ch033

Shank, F. R., & Carson, K. L. (1992). What is safe food?. *American Chemical Society,* 2-34. doi: 10.1021/bk-1992-0484.ch003

Ten Eyck, T. A. (2000). The marginalization of food safety issues: An interpretative approach to mass media coverage. *Journal of Applied Communications, (84)*2, 29-47.

Thomson, J. S., & Kelvin, R. E. (1996). Surburbanites' perceptions about agriculture: The challenge for media. *Journal of Applied Communications, 80*(3), 11-20.

Verbeke, W. (2005). Agriculture and the food industry in the information age. *European Review of Agricultural Economics, 32*(3), 347-368. doi:10.1093/eurrag/jbi017

Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer "attitude-behavioral intention" gap. *Journal of Agricultural and Environmental Ethics, 19,* 169-194. doi: 10.1007/s10806-005-5485-3

Whaley, S. R., & Tucker, M. (2004). The influence of perceived food risk and source trust on media system dependency. *Journal of Applied Communications, 88*(1), 9-27.

A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

# Clients' Perceptions of the Quality of Services Provided by Agricultural Communications Students In a Service Learning Project

(Research Paper)

Chase T. Hundley
Graduate Student
University of Arkansas
cthundle@uark.edu

Traci N. Rhodes
Graduate Student
University of Arkansas
tnrhodes@uark.edu

Jefferson D. Miller (contact)
Associate Professor
jdmiller@uark.edu

Kathleen Jogan
Program Technician
University of Arkansas
kjogan@uark.edu

## Abstract

Faculty at the University of Arkansas brought their animal science and agricultural communications students together to participate in a multidisciplinary service learning project—a horse sale called the Razorback Roundup. Animal science students in a livestock merchandising course coordinated and managed the sale, while agricultural communications students in a publications course provided communications services in support of the sale, including the production of a high-quality sale catalog. The Faculty took a unique approach to evaluating the course, surveying the horse sale clientele to determine their satisfaction with the services provided by the students—in particular, the student-produced sale catalog. Sixty-nine sale attendees were surveyed. Most had attended Roundup sale before, and half had bid on horses before. Clients' perceptions of the student-produced catalog were compared with perceptions of the previous year's catalog, which was produced by a professional designer. Seventy-four percent thought the student-produced catalog had a better cover than the previous year's catalog, while 88 percent thought the interior layout was better and 88 percent also thought the overall general layout and design was superior to the previous year's catalog. More than 92% of the clients at the horse sale responding to the survey thought purchasing an advertisement in the sale catalog would be a good investment. Additionally, more than 93% of the respondents thought the students' publication design skills displayed in the development of the catalog were "very valuable" or "extremely valuable." The results imply that more multidisciplinary service-learning projects should be investigated between animal science and agricultural communications faculty as well as between agricultural communications faculty and faculty in many other disciplines, most of which have an important link with marketing communications and public relations.

**Clients' Perceptions of the Quality of Services Provided by Agricultural Communications Students in a Service Learning Project**

## Introduction

Each year students enrolled in an upper-level horse and livestock merchandising course in the Dale Bumpers College of Agricultural, Food and Life Sciences' D.E. King Equine Program at the University of Arkansas produce a horse sale known as the *Razorback Roundup*. The horse and livestock merchandising course is designed to be a service learning course. In the course, students learn "to identify and to evaluate the various types of merchandising programs for specific livestock enterprises; how to plan merchandising and promotional programs for various livestock enterprises; the philosophy of recognized leaders in the field of livestock merchandising; and how to advertise, manage, and conduct an auction of registered and unregistered livestock" (University of Arkansas, n.d.). The 2010 Razorback Roundup sale marked the first time the students in the horse and livestock merchandising course worked in partnership with agricultural communication students to promote the event. Allowing students in diverse academic departments to work together is a benefit of a service learning project that allows students to experience the "interrelated aspects of all learning and life experiences" (Prentice & Garcia, 2000, p. 22). Agricultural communications is a concentration of the agricultural education, communications and technology program at the University of Arkansas (University of Arkansas, 2011). The services provided by the agricultural communication students included the production of a sale catalog and website for the Roundup, as well as marketing and promoting the event. The students were also responsible for selling and designing sponsorship advertisements for the catalog, the proceeds of which covered all printing costs. The agricultural communications students earned independent study credit for their participation.

This collaboration added a new and stronger element to the service learning aspect of the Razorback Roundup effort by "using real-world projects to attain authentic experience" (Kelemen et al. 2009, p. 7). Students in a service learning project are offered real-world work experience, which has been shown to be highly valued by potential future employers (Bekkum, 1993).

Jack and Eversole (1997) studied a similar case at Virginia Tech, which showed that students gained valuable skills in both merchandising and practical communications. The 45 students enrolled in a livestock merchandising course were each assigned different jobs in the promotion of an auction similar to the Razorback Roundup. Students "were responsible for developing sale catalogs, assisting the photographer, advertising, designing and preparing the facilities, managing the auction, clerking, budgeting and public relations" (Jack & Eversole, 1997, p. 37). Along with learning exceptional skills in planning and producing a sale, the students at Virginia Tech raised a gross $76,000, and profits were used to benefit the school's beef cattle and equine programs (Jack & Eversole, 1997).

Bringle & Hatcher (1995) described service learning as …

> a course-based, credit bearing educational experience in which students (a) participate in an organized service activity that meets identified community needs, and (b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of personal values and civic responsibility (p. 112).

Part of the National and Community Service Act of 1990 specifies that students involved in a service learning course should "learn and develop through active participation in thoughtfully organized service experiences that meet actual community needs and that are

coordinated in collaboration with school and community" (Brubaker and Ostoff, 2000. p. 2). A course is considered to be successful if it "provides a real, needed service" (Raflo, 2000, p. 53).

The horse and livestock merchandising course at the University of Arkansas is designed so that students can provide actual clients with a quality of service that is equal or better than what professionals would provide. Previous research notes that "if a course is well designed and meets the designated criteria of a service learning course, the course is more likely to produce desired outcomes for students and community partners on implementation" (Bringle & Hatcher, 2009, p. 42). Kelemen et al. (2009) stated, "through service learning, students have input in the end result of their work as well as a direct impact on the lives of others" (p. 13). Therefore, a successful service learning course should be as beneficial to the parties receiving the service, or clients, as it is to the students enrolled in the course (Steinberg, Bringle, & Williams, 2010). A common goal should be ensuring that students, as well as the clients, in service learning activities receive the "maximum benefits of real-world experience" (Kelemen et al., 2009, p. 13).

Little research has been conducted on the quality and/or value of benefits clients receive from service learning projects, although it has been assumed that parties receiving service from a service learning course generally receive positive benefits (Miron & Moely, 2006). One study in 2006 at the University of Minnesota-Crookston on an animal systems management and a dairy linear evaluation course showed that in each class "students provided a needed service to farmers" (Maiga & Westrom, 2006, p. 63). Miron and Moely's study (2006) also showed that students' services should benefit the agencies they serve. In an evaluation of a communications campaign-planning course, Keleman et al. (2009) found that students, as well as clients, received positive benefits from a service learning project where students produced real communication campaigns for the clients' business. The idea that clients should have positive perceptions of the

quality of the benefits they have received through service learning activities is alluded to throughout the literature, but the concept of evaluating the quality of a service learning project through the lens of the client has not been specifically examined nor employed.

## Purpose / Objectives

Faculty involved in the Razorback Roundup service learning effort recognized that one way to evaluate a service learning effort was to examine clients' perceptions of the quality of service they received. Therefore, the purpose of this study was to evaluate the outcomes of the service learning course by determining if the customers involved in the sale were satisfied with the quality of student-produced products and services related to the Razorback Roundup horse sale.

The following objectives guided the study:

1. Describe the clients via audience demographics for use in future promotional materials.
2. Describe the perceptions of the service learning clients regarding the quality of student-produced products and services.

## Methods

This study sought to examine the clients' perceptions of the quality of student-produced products and services related to the Razorback Roundup horse sale. It is important to look at the clients' perceptions to gain an understanding of the quality of the service provided by the students to determine that a "real, needed service" (Roflo 2000, p. 53) was provided and that the students' services actually benefitted the agency served (Miron & Moely, 2006). The agency

served by the agricultural communications students in this case was the horse and livestock merchandising class horse sale. Therefore, the findings in this study were intended to benefit the future partnership between the animal science and agricultural communications academic programs at the University of Arkansas. The findings are also intended to benefit similar departments at other universities that offer similar service learning experiences to their students.

Eighty bidders registered for the 2010 Razorback Roundup horse sale; these registered bidders constituted the population to be studied. At the end of the Roundup, each of the 80 registered bidders was provided with a survey. Of the 80 registered bidders, 69 participated in the survey, constituting a response rate of 86%.

Surveys were created and reviewed by a panel of experts composed of University of Arkansas animal science and agricultural communications faculty with the research objectives in mind. The instrument included questions asking participants to compare the current sale catalog with a catalog from a previous Roundup sale and rate which of the two catalogs was best in the following categories: cover artwork, interior layout, and best overall production. Also included in the instrument were questions regarding the client's perceived value of the publication. To determine client demographics, questions were included regarding age, gender, how many Razorback Roundup Sales the participant had attended before, and if they had ever bought or bid on a horse in the sale.

Survey administration involved distributing the two catalogs to prospective bidders requesting bidder numbers. The catalogs were numbered 1 and 2. After examining the catalogs, the prospective bidders were asked to take the survey. The respondents were unaware of which catalog was student-produced, and which catalog was professionally produced.

To achieve the objectives in the study, descriptive statistics were employed in evaluating the data. Frequency and mean procedures were run on the data using SAS 9.2 statistical software.

## Results

The objectives of this study were to describe the clients via audience demographics and to describe the perceptions of the service learning clients regarding the quality of student-produced products and services.

### Demographics

The participants were asked four questions to obtain a better understanding of the audience demographics: gender, age group, number of sales attended, if they had bid on a horse in a Razorback Roundup sale, and if they had purchased a horse before in a Razorback Roundup Sale. Of the 60 participants responding to the question, 35 (58.33%) were female and 25 (41.67%) were male (Table 1). The question regarding age was on a 4-point scale ("1" for 20-29, "2" for 30-39, "3" for 40-49, and "4" for 50+). The mean score for age was 3.03 (1.16). Over half (51.67%) of the participants that answered this question were age 50 or above and 48.34% were below the age of 50 (Table 1). Participants were asked how many sales they had previously attended on a 3-point scale ("1" for first sale, "2" for one to three previous sales, "3" for more than three sales). The mean score for number of sales attended was 2.11 (*SD = .85)* and almost half of the participants (26 or 41.94%) had attended three or more sales, demonstrating that the majority of participants had attended more than one sale (Table 1). The survey also asked the participants if they had either bid on a horse in a Razorback Roundup sale or if they had ever purchased a horse in a Razorback Roundup sale ("1" for yes, "2" for no). The mean

score for the question if the participants that had ever bid on a horse in a Razorback Roundup sale was 1.50 (*SD = .50*) meaning that half of the participants had previously bid and half had never bid on a horse in the sale. The average answer for whether or not the participants had ever purchased a horse in the sale was 1.75 (*SD = .43*), showing that most of the participants had never previously purchased a horse from the sale (Table 1).

Table 1
*Audience Demographics*

| **Gender (N=60)*** | *f* | % |
|---|---|---|
| Male | 25 | 41.67 |
| Female | 35 | 58.33 |
| **Age group (N=60)** | *f* | % |
| 20-29 | 10 | 16.67 |
| 30-39 | 9 | 15.00 |
| 40-49 | 10 | 16.67 |
| 50+ | 31 | 51.67 |
| **Number of Razorback Roundup sales attended (N=62)** | *f* | % |
| First sale | 19 | 30.65 |
| 1-3 previous sales | 17 | 27.42 |
| More than 3 sales | 26 | 41.94 |
| **Bidding activity (N=62)** | f | % |
| Have bid on a horse in a Roundup sale | 31 | 50.00 |
| Have NOT bid on a horse in a Roundup sale | 31 | 50.00 |
| **Purchasing activity (N=61)** | | |
| Have purchased horse in a Roundup sale | 15 | 24.59 |
| Have NOT purchased horse in a Roundup sale | 46 | 75.41 |

***** Total responses differed among questions because of non-responses to some questions.

## Quality of Catalog

The survey asked participants to rate the quality of two catalogs, one produced by professionals from the previous year's sale (#1) and one produced by students from this year's sale (#2), in 3 categories. The categories rated by the participants were cover artwork, interior layout, and best overall production. The majority of participants felt that the quality of the catalog produced by students (catalog #2) was better in each category.

Table 2
*Catalog Quality*

| **Cover artwork** | *f* | % |
|---|---|---|
| Catalog #1 | 18 | 26.47 |
| Catalog #2 | 50 | 73.53 |
| **Interior layout** | *f* | % |
| Catalog #1 | 8 | 11.59 |
| Catalog #2 | 61 | 88.41 |
| **Best overall production** | *f* | % |
| Catalog #1 | 8 | 11.94 |
| Catalog #2 | 59 | 88.06 |

Only 18 participants (26.47%) chose catalog #1, while 50 participants chose catalog #2 73.53%), showing that the majority of participants felt that the quality of the cover art for the catalog produced by students was better than the catalog produced in a previous year by a professional (Table 2).

The majority of participants felt that the interior layout of catalog #2 was better than catalog #1. Only 8 participants (11.59%) felt that catalog #1 was better, while 61 participants (88.41%) felt that catalog #2 was better (Table 2).

For best overall production, most participants felt that catalog #2 was better than catalog #1. Only 8 participants (11.94%) chose catalog #1, while 59 participants (88.06%) chose catalog #2 (Table 2).

**Perceived value of sponsorships**

The bidders who participated in the survey were asked if they thought purchasing a sponsorship (advertisement) within the sale catalog at a reasonable price would be a good investment for organizations and individuals who serve the local equine industry.

Table 3
*Sponsorship investment*

| **Sponsorship** | *f* | % |
|---|---|---|
| Good investment | 63 | 92.65 |
| NOT a good investment | 5 | 7.35 |

The majority of participants (*f* =63, 92.65%) felt that it would be a good investment for organizations and individuals who serve the local equine industry to purchase a sponsorship within the sale catalog (Table 3).

The perceptions of participants who had either bid on horses or actually purchased horses during the sale were considered to be of greater importance since they are the clients who would more likely be spending money in the sale and who could be potential program sponsors. Of the participants who answered that they had bid on a horse in a Razorback Roundup sale, 29 (93.55%) felt that purchasing a sponsorship in the sale catalog was a good investment and only 2 (6.45%) previous bidders felt that it was a bad investment. Of the participants who had never bid on a horse in the sale, only 3 (10%) felt that purchasing a sponsorship was a bad investment and 27 (90%) felt that purchasing a sponsorship was a good investment. Of the participants who answered that they had purchased a horse before in a Razorback Roundup sale, 14 (93.33%) felt that purchasing a sponsorship in the sale catalog, and only 1 (6.67%) previous bidder felt that it was a bad investment. Of the participants who had never bid on a horse in the sale, only 4 (8.89%) felt that purchasing a sponsorship was a bad investment, and 41 (91.11%) felt that purchasing a sponsorship was a good investment.

To determine the perceived value of sponsorships within the sale catalog, participants were asked to rate how much they thought the front and back page ads were worth on a 7-point scale ("1" for $500 dollars or less; "2" for $501 to $750; "3" for $751 to $1,000; "4" for $1,250 to $1,500; "5" for $1,500 to $1,750; "6" for $1,751 to $2,000; and "7" for $2,001 or more).

Table 4
*Perceived cost of advertisement*

| | *f* | % |
|---|---|---|
| $500 or less | 22 | 34.38 |
| $501 to $750 | 17 | 26.56 |
| $751 to $1,000 | 16 | 25.00 |
| $1,250 to $1,500 | 5 | 7.81 |
| $1,500 to $1,750 | 2 | 3.81 |
| $1,751 to $2,000 | 1 | 1.56 |
| $2,001 or more | 1 | 1.56 |

The mean score of this question was 2.30 (*SD = 1.33*). With the mean of 2.30 and observing the frequency distribution (Table 5), the average perceived cost of front and back page ads would be somewhere closer to $750.

**Value of student skills**

Participants were asked how valuable they felt the publication production skills of the students were for the students that would soon be entering the job market. The survey asked the participants to rate the value of the students' skills on a 4-point scale (1 for not valuable at all, 2 for somewhat valuable, 3 for very valuable, 4 for extremely valuable)

Table 5
*Value of student's publication production skills*

| | *f* | % |
|---|---|---|
| Not valuable at all | 2 | 3.23 |
| Somewhat valuable | 2 | 3.23 |
| Very valuable | 21 | 33.87 |
| Extremely valuable | 37 | 59.68 |

The average choice was 3.50 (*SD = .72*) meaning that the majority of participants ranked the value of the students' skills somewhere between "very valuable" and "extremely valuable" (Table 5).

## Conclusions, Implications, and Recommendations

Overall, according to client responses, this course—a collaborative service learning course for animal science and agricultural communications students—provided a valuable service for the clients, which Raflo (2000) described as important, as well as providing a valuable experience for the students participating in the project, which Bringle and Hatcher (1995) described as important. With regard to the student-produced sale catalog specifically, Razorback Roundup clients—mostly local horse owners and supporters of the equine—believed they were receiving a service that was equal to or better than service that was previously provided by professionals. Meanwhile, the clients believed that students gained a real-life learning experience, which the clients viewed as highly relevant. This result met Kelemen et al.'s (2009) standards for a quality service learning activity, which included students, as well as the clients, in service learning activities receiving the maximum benefits of real world experience.

The fact that these positive perceptions were especially common among clients who had bid on horses at the sale (i.e., clients who were more likely to support the program financially) was especially noteworthy for the faculty who offered the course. Providing a meaningful service to program supporters was a key priority of the program and should lead to a stronger relationship with supporting clientele in the future.

The foundations of this course followed the beliefs of Steinberg et al. (2010) that successful service learning courses should be as beneficial to the clients receiving the service as they are to the students. This study revealed that Razorback Roundup clients were very satisfied with the work of the students and placed high value on students' publication production skills, which could be very important to future employers (Bekkum, 1993). Therefore, based on these

findings, it follows that other animal science and agricultural communications programs seeking ways to collaborate across disciplines through service learning projects should consider a similar project in their curriculum. The collaboration between the livestock merchandising students who conducted the horse sale and the agricultural communications students who provided communications services for the sale built a beneficial bridge between the departments as Prentice and Garcia (2000) suggested and appeared to be a worthwhile effort from the clients' perspective. It follows that collaborations such as this one should continue and that this particular collaboration could serve as an example for faculty at other institutions seeking service learning opportunities.

Since multidisciplinary service learning projects such as this appear to be a productive mode of experiential learning for animal science and agricultural communications students, more research should be conducted to construct a model for collaborative service learning projects between two disciplines. Agricultural communications is an important aspect of most agricultural academic disciplines (especially in terms of marketing communications and public relations); therefore, more research is also needed to determine the value of agricultural communications students partnering with courses in other disciplines through service learning projects.

From a more local perspective, the initial purpose of this study was to further define and better understand the clientele (or audience) for future sales. This evaluation method allowed for clarification of the audience and provided information for future students to use in adapting materials to the likings of the clients. This finding resulted in minor adjustments of marketing materials and media outlets for the Razorback Roundup sale in 2011. Further, though evaluating the 2010 course via client surveys proved worthy and resulted in changes the following year,

further evaluation of the course employing other evaluation methods will be necessary in order for faculty to more fully understand how to improve future courses. In addition, this program evaluation at the University of Arkansas could help those seeking to implement service learning experiences in their curriculum at other universities. It is the researchers' hope that these findings offer ideas for improvements in other programs and that the findings of this program evaluation might help those looking to build collaborations among multiple agricultural academic departments on projects such as the Razorback Roundup horse sale.

## References


Bekkum ,V.A. (1993). Experience needs of college of agriculture graduates as perceived by business and industry. *NACTA Journal*, *37* (2): 48-51.

Bringle, R. G. & Hatcher, J. A. (1995). A service-learning curriculum for faculty. *Michigan Journal of Community Service-learning, 2*, 112–122.

Bringle, R. G. & Hatcher, J. A. (2009). Innovative practices in service-learning and curricular engagement. *New Directions for Higher Education*, *147*, 37-46.

Brubaker, D. C. & J. H. Ostroff. (2000). Introduction. In: David C. Brubaker and Joel H. Ostroff (eds.). *Life, Learning, and Community: Concepts and Models for Service-Learning in Biology.* Washington, D.C.: American Association for Higher Education

Jack, N. E. & Eversole, D. E. (1997). Student-managed livestock sale provides valuable job skills. *NACTA Journal, 41*(4), 37-40.

Kelemen, D. B., Cartmell II, D. D., & Sitton, S. P. (2009). Service learning: A case study in an agricultural communications course. *Journal of Applied Communications*, 93(3&4), 6-14.

Maiga, H. A. & Westrom, L.E. (2006). Integration of service-learning in animal science curriculum. *NACTA Journal*, *50*(3), 57-64.

Miron, D. & Moely, D. E. (2006). Community agency voice and benefit in service-learning. *Michigan Journal of Community Service Learning*, *12*(2), 27-37.

Prentice, M., & Garcia, R. M. (2000). Service learning: the next generation in education. *Community College Journal of Research and Practice*, *24*(1), 19-26.

Raflo, A. (2000). Virginia STEP: Evidence that service-learning can enhance a college biology program. In: David C. Brubaker and Joel H. Ostroff (eds.). *Life, Learning, and Community: Concepts and Models for Service-Learning in Biology.* Washington, D.C.: American Association for Higher Education.

Steinberg, K. S., Bringle, R. G., & Williams, M. J. (2010). Service-learning research primer. *Scotts Valley, CA: National Service-Learning Clearinghouse.* Retrieved from http://servicelearning.gov/filemanager/download/Service-Learning_Research_Primer.pdf

University of Arkansas. (n.d.). Dale Bumpers College of Agricultural, Food and Life Sciences - Equine Program Classes. Retrieved from http://bumperscollege.uark.edu/equine/5035.htm

University of Arkansas. (2011). Dale Bumpers College of Agricultural, Food and Life Sciences – Agricultural and Extension Education, Agricultural Communications. Retrieved from http://aeed.uark.edu/4443.htm

A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

# Perceptions on the Value of Membership in the Florida Cattlemen's Association

Research Paper

**Laura Kubitz**
Graduate Student
University of Florida
Department of Agricultural Education and Communication
P.O. Box 110540
Gainesville, FL 32611-0540
352-273-2093
lkkubitz@ufl.edu

**Avery Culbertson**
Graduate Student
University of Florida
Department of Agricultural Education and Communication
P.O. Box 110540
Gainesville, FL 32611-0540
575-649-8300
averylculbertson@ufl.edu

**Dr. Tracy Irani**
Professor
University of Florida
Department of Agricultural Education and Communication
P.O. Box 110540
Gainesville, FL 32611-0540
352- 392-0502

**Perceptions on the Value of Membership in the Florida Cattlemen's Association**

**Abstract**

*Membership surveys can be used to evaluate the member's satisfaction with all aspects of their affiliation with the organization, as well as serve as a way for members to provide the organization's leaders with feedback. This study used the uses and gratifications approach and focused on identifying the perceived barriers and benefits to membership within the Florida Cattlemen's Association (FCA), as well as demographic characteristics of current and past members. The population of the study was comprised of current and past members of the FCA. The researcher created instrument achieved a 32% response rate (n = 566) and was distributed using Dillman's Tailored Design Method. The study noted that the majority of respondents were male (65%), ages 46-55 (27%) and had a bachelor's degree (36%). The most important benefit of being a member in the FCA was public relations/issue management to protect the beef cattle industry. The top reason current members joined and remained members of the FCA was to support of the beef industry. Former members left the FCA because they forgot to renew their membership. The top reason potential members did not join the FCA was because they had never been asked to join. It was recommended that the FCA consider developing ways for members to support the beef industry, create channels of communication that focus on recruiting new members, and communicate the dues structure more efficiently to current members.*

**Keywords: Advocacy Organizations, Membership, Cattlemen, Uses and Gratifications Theory**

## Introduction

To promote and protect the world's oldest industry, agricultural organizations provide a unified voice to represent those who stand behind them (Mathews, 2010). Agricultural commodity organizations have been a part of the industry since 1867 (National Grange History, 2002). Through volatility in the industry, economic declines, policy fluctuations and changing consumer demands, agriculture and commodity organizations have provided a voice for the livelihoods they represent. According to Mathews (2010), "the future of agriculture, particularly animal agriculture and the beef cattle industry, is dependent upon the people who boldly step forward and use the voice they have to share the message they have in the places they can reach" (pg. 148). The commodity association provides a place for concerned producers to congregate, and provides a platform, context, and training for those who want to be heard.

According to the Agricultural Institute of Florida (2011), Florida's agriculturalists produce 280 different commodities, employ over half a million people, and generate more than $103 billion in annual economic impact. As a part of the industry, cattle and calves contribute over $436 million to Florida's economy (National Agriculture Statistics Service, 2010) and is continually ranked as one of the top 15 cattle industries within the United States (Florida Department of Agriculture and Consumer Services, 2007). Florida is home to four of the United States' ten largest cow-calf operations and nearly one-half of all Florida agricultural land is involved in cattle production. The National Agriculture Statistics Services (2011) reports that in January 2011, there were over 1.7 million head of cattle in the state of Florida. In 2008, Florida contributed $6.2 billion worth of agriculture output to the U.S. economy. This ranked Florida number six in the nation contributing 3.9 percent of the U.S. production of agricultural goods (National Agriculture Statistics Service, 2010).

"Today's ranchers are businessmen, computer operators, bio-engineers, and environmentalists. They combine old traditions with modern technology, consistently searching for new ways to improve this dynamic and progressive business, while preserving the land for future generations" (Florida Department of Agriculture and Consumer Services, 2003, para. 1). The Florida Cattlemen's Association (FCA) is a commodity organization comprised of farmers and ranchers involved in the Florida beef industry. The organization was formed in 1934 to promote and protect the ability of members to produce and market their products, to address current issues affecting cattle production in Florida, provide a voice for the producer in Tallahassee, and give opportunity for the grassroots to become involved in affecting policy (Florida Cattlemen's Association, n. d.). Like many member organizations, FCA faces challenges and questions, such as what are the potential barriers and benefits to membership within the FCA, and to what extent are current and former members are satisfied with the FCA's ability to 'voice' the concerns and issues of those involved within the Florida beef industry.

## Literature Review

### United States and Florida Cattle Industries

During the 1880's, beef cattle production expanded at such a high rate that industry leaders realized the importance of a national association to promote and protect their industry. Through representation and input of producers from around the United States, the National Cattlemen's Beef Association (NCBA) was founded (National Cattlemen's Beef Association, 2011). As an advocacy organization on the national scale, NCBA has the core mission to "provide the safest, highest quality, most consumer friendly beef and beef products in an environmentally and economically sustainable manner" (NCBA Beef Industry Long Range Plan, 2011, para. 2). The organization represents producers, operators and affiliates from around the

United States and addresses issues such as consumer preferences, growth opportunities, marketing, industry protection, relationship building and growth issues (National Cattlemen's Beef Association, 2011). NCBA also serves as an umbrella organization and national advocate for many state organizations such as the Florida Cattlemen's Association.

The FCA represents an industry of cow-calf operators that was valued at $133 million in total revenue for the state (Florida Cattlemen's Association, 2011). The commodity organization is made up of cattle producers with the affiliates of the Florida Cattlewomen, Florida Beef Council, Junior Association, Foundation, and Allied Industries all serving as affiliates (Florida Cattlemen's Association, 2011). These affiliations also explain the levels of membership within the FCA. Through its members, the association is devoted to "promoting and protecting the ability of cattlemen members to produce and market their products" (Florida Cattlemen's Association Facebook, 2011, para. 1).

**Characteristics of Membership Organizations**

Membership within advocacy groups was wide-reaching in the United States (Verba, Schlozman, & Brady, 1995). Advocacy organizations "make public interest claims by either promoting or resisting social change that, if implemented, would conflict with social, cultural, political, or economic, interests or values of other constituencies or groups" (Andrews and Edwards, 2004, p. 481). Andrews and Edwards (2004) stated that advocacy organizations have the greatest influence by agenda setting. They employ techniques, such as demonstrations, lobbying, and campaigns to bring awareness and attentions to issues. The mass media plays an important role in the agenda-setting process and shaping public opinion. Therefore, to gauge how much influence an advocacy organization has, mass media and public opinion are important areas to analyze.

Though the reasons for joining advocacy organizations are broad (Andrews & Edwards, 2004) these organizations depend on individuals who want to support a cause that is part of their identity (Bosso, 2003). For example, environmental organizations have membership consisting of a wide array of people who want to support the environment, and this need is a part of their identity. Therefore, these organizations recruit from a large pool of interested persons. Bosso (2003) shared that in order for membership programs to survive; the leaders of the organization must be willing to adapt to changes in their external environment. When people join a membership program associated with a non-profit, they often have a sense of "joining, affiliation, and helping characteristics" (Bhattacharya, 1998, p. 33).

Paid membership programs within non-profit organizations allow for more "affiliation" (Bhattachaya, 1998, p. 33) within the organization. Lack of affiliation within an organization can lead members to lapse, or leave the organization. Paid membership programs provide opportunities for members to help the organization. They can help by volunteering or giving money toward the goals of the organization. They also allow members to join and engage in special interest groups (Bhattacharya, 1998).

Bosso (2003) stated that the majority of the revenue that membership organizations work with comes from the members who have been members for a long time and "go higher on the pyramid of support" (pg. 409). He states further research should be done to see how organizations can not only expand their membership, but retain old members and get those people to contribute more to the organization. This is one way organization can adapt to those external changes affecting membership.

There are two types of paid membership programs (Bhattacharya, 1998). The first type was one in which membership is required to obtain access to the organization's goods. The

second type was one in which the goods or services are available whether or not the customer is a member or non-member (Gruen and Ferguson, 1994). FCA's dues structure was determined by potential member's county of residence (FCA, 2011). For example, in Levy County members pay a $75 annual fee while members in Lee Country pay $80. In some counties, potential members must join through their country association, while in other counties they send their dues and membership application directly to the FCA.

Membership programs often have different levels that members can choose to join (Bhattacharya, 1998). These different levels allow members to express their views to the organization and develop social networks. Once a member joins, depending on their level of satisfaction with the organization's benefits, they may decide to change their level of membership, join an interest group, and give money and/or time to the organization. The amount of time a person is a member of the organization is correlated to level of satisfaction they have with the membership (Bhattacharya, 1998).

One of the biggest challenges managers of membership programs faced was membership retention (Bhattacharya, 1998). The changing lifestyle of the members and the amount they use the organization's services can have an effect on how long they remain a member (Bhattacharya, 1998). Bhattacharya (1998) hypothesizes several factors that affect membership retention: a) received membership as a gift; b) whether or not the member shares a professional connection with the organization; c) members who belong to a higher tier of membership are less likely to lapse; d) members who upgrade their membership status are less likely to lapse; e) those who downgrade their membership levels are more likely to lapse; f) members who are involved with interest groups are less likely to lapse; g) if members participate in interest groups that don't relate to the organization, it won't have an effect on membership retention h) the longer a person

is a member of the organization, the less likely they are to lapse; i) how often a member renews their membership helps to indicate their chances of lapsing.

Bhattacharya (1998) offered suggestions for managers who want to improve membership retention. These included attempting to prevent members from downgrading their membership and paying special attention to members who have downgraded their membership level to make sure they don't lapse. Managers should also identify interest groups related to the organization and encourage members to join. Managers should also encourage gift-giving because members that do give are less likely to lapse. Finally, managers should identify members who renew their memberships late because they are more likely to lapse.

## Theoretical Framework

The theoretical framework for this study is the five elements to the uses and gratifications theory, which helps to explain why people join the FCA. According to Rubin (2002), uses and gratifications theory contends that and individual's communication choices are goal directed and motivated. Therefore, an advocacy group's (such as FCA) media choice and communication behavior is strategic in order to achieve organizational goals (Min & Kim, 2008).

The Uses and Gratifications theory is a five-part model. The first part of the model states that the audience is active and goal-oriented. People who decide to join the FCA are involved in the industry and who actively seek to improve and support the industry. The second part of the model states that, "in the mass communication process much initiative in linking need gratification and media choice lies with the audience member" (Katz, Blumler, and Gurevitch, 1973, pg. 511). The members who seek to improve and gain support for the Florida cattle industry choose to join the FCA. By joining the Florida Cattlemen's Association, the members

get up-to-date information on the industry through the magazine, *The Florida Cattlemen and Livestock Journal*.

The third assumption states that, "the media compete with other sources of need satisfaction" (Katz, Blumler, and Gurevitch, 1973, pg.511). The members of the FCA expect benefits of joining the organization, and if those benefits are not met, they will seek membership and representation elsewhere. The potential members of the FCA could join other organizations to help support the Florida cattle association, but they choose the FCA because the magazine and other benefits that come with being an FCA member meet their needs.

The fourth part of the model states that, "methodologically speaking, many of the goals of mass media use can be derived from data supplied by individual audience members themselves" (Katz, Blumler, and Gurevitch, 1973, pg. 511). The actions of the FCA are connected to the needs of their members. The FCA strives to provide "a public, united voice to "tell our story" during times of controversy and "to promote beef consumption nationally and internationally" (Florida Cattlemen's Association, 2011).

The theory also states that the members should decide the cultural significance of media (West and Turner, 2007). A benefit of joining a membership organization is a feeling of identify and being a part of something. If the current or potential members of the FCA do not feel like FCA represents the beef cattle industry in a way that is consistent with their beliefs, this can be a barrier to membership within the FCA. Potential and current members of the FCA feel the cultural significance in being a part of the group. They feel that being a member of the FCA is a part of their values and identity.

This framework provides a base for the FCA membership study. By determining demographic characteristics of members and the perceived barriers and benefits to membership,

it has provided the FCA with a snapshot of their status with their members. This study can help the FCA identify and meet the needs of its members, help determine ways to keep members engaged with the FCA, and prevent the FCA from losing potential and current members to other outlets that might better meet the member's needs satisfaction.

## Purpose/Objectives

The purpose of this paper was to describe current FCA membership in terms of demographics, attitudes toward membership in the organization, and to evaluate the benefits and hindrances of becoming an FCA member. The objectives of this study are:

1) Describe the demographic characteristics of Florida Cattlemen's Association members;
2) Describe the perceived benefits of membership in the Florida Cattlemen's Association;
3) Describe the perceived barriers of membership in the Florida Cattlemen's Association.

## Methodology

In fall 2010, the Center for Public Issues Education in Agriculture and Natural Resources at the University of Florida (Center for Public Issues Education, 2010) conducted an online survey of FCA members on behalf of the organization's leadership. The purpose of the survey was to identify the barriers and benefits to membership in the FCA. To conduct the survey, a research developed questionnaire was created and reviewed by a panel of experts for face and content validity. The FCA then compiled a list of 3,047 e-mail addresses of current and former members for those administering the survey. Incomplete, duplicate, and expired e-mail addresses were deleted and then the survey was distributed to an accessible population comprised of 1,771 respondents who could be contacted on the basis of their valid e-mail addresses. The survey was administered by using Dillman's Tailored Design Method (Dillman, 2009). The process was comprised of an initial mailing of an email cover letter with an

embedded link to the survey questionnaire and follow up reminders for non-respondents. There was a 32% response rate with 566 total responses. 484 respondents completed the entire survey, while the 82 respondents partially responded to the survey answering some, but not all the questions. The results of the survey were based on the 566 responses. The types of questions that were asked in the survey were demographic questions, what were the reasons members joined the FCA, what were the reasons members remained members of the organization, what were the reasons former members left the FCA and what were the reasons potential members had not joined. Respondents were asked to rank listed potential reasons on a Likert-type scale, with 1= "Not important" 2= "Somewhat important" and 3= "Very important".

## Results

### Objective 1: Describe the demographic characteristics of the FCA membership

The survey indicated (Table 1) that age of members ranged from 18 to over 65, with the age group of 46-55 being the highest (*n* = 128). More males (n = 309) responded to the survey than females (n = 164). Education levels varied among the respondents varying from some high school to doctoral degrees (Table 3). Most members had a bachelor's degree/four-year degree (n = 168).

Table 1

*Age of respondents of survey*

| Age | n | % |
|---|---|---|
| 18-25 | 23 | 5 |
| 26-35 | 69 | 15 |
| 36-45 | 92 | 20 |
| 46-55 | 128 | 27 |
| 56-65 | 120 | 25 |
| Over 65 | 39 | 8 |
| Total | 471 | 100 |

Table 2

*Gender of respondents to survey*

| Gender | n | % |
|---|---|---|
| Male | 309 | 65 |
| Female | 164 | 35 |
| Total | 473 | 100 |

Table 3

*Level of education of respondents to survey*

| Level of education | n | % |
|---|---|---|
| Some High School | 8 | 2 |
| High School Graduate /GED | 44 | 9 |
| Some College | 101 | 21 |
| Associate's Degree/2 year degree | 58 | 12 |
| Bachelor's Degree/ 4-year degree | 168 | 36 |
| Master's Degree | 64 | 14 |
| Doctoral Degree | 29 | 6 |
| Total | 472 | 100 |

Of current members of the FCA, only 9% (*n* = 39) were allied members, the highest level of membership possible in the FCA. 47% (*n* = 203) were associate or regular members. 16% (n = 68) were Florida Cattlewomen members. Of the former members, the results were similar. 45% (*n* = 40) were associate members, 13% (*n* = 11) were Allied members and 23% (*n* = 17) were Florida Cattlewomen members.

The survey indicated that 66% (*n* = 53) of former members left before their first five years within the organization. Also, 55% (*n* = 246) of the current members who responded to the survey have been members of the FCA for less than six years.

**Objective 2: Identify benefits of membership**

The second objective of the study was to describe the benefits of membership in the FCA. The top benefits of being an FCA member, as identified by the respondents, was “public relations/issue management to protect beef cattle industry”, “represent interest of beef cattle

producers in working with other segments of Florida agriculture" and "preservation of the history of the Florida ranching industry" (Table 4).

Table 4

*Most important benefits of being a member of the Florida Cattlemen's Association*

| Perceived benefit | n | M | SD |
|---|---|---|---|
| Public Relations/Issue Management to Protect Beef Cattle Industry | 395 | 2.83 | 0.42 |
| Represent interest of beef cattle producers in working with other segments of Florida agriculture | 393 | 2.73 | 0.49 |
| Preservation of the History of the Florida Ranching Industry | 395 | 2.7 | 0.54 |
| Representation in Florida Ag Coalition | 393 | 2.69 | 0.57 |
| Allied Industry Interface with providers of goods and services to beef cattle industry | 395 | 2.61 | 0.57 |
| Pasture to Plate Program | 389 | 2.56 | 0.84 |
| Work to generate more available acres for grazing on public lands in Florida | 390 | 2.55 | 0.74 |
| Leadership Development through Young Cattlemen's Tours | 392 | 2.47 | 0.67 |
| Annual Convention and Trade Show | 393 | 2.44 | 0.68 |
| Other | 12 | 2.42 | 1 |
| Seedstock Council | 391 | 2.4 | 0.88 |
| Sponsors of Industry Seminars | 386 | 2.37 | 0.69 |
| Florida Cattlewomen, Inc. | 385 | 2.36 | 0.75 |
| Premier Awards Program | 389 | 2.32 | 0.98 |
| Quarterly State and Committee Meetings | 391 | 2.28 | 0.75 |
| FCA Quality Replacement Heifer Sale | 388 | 2.22 | 0.82 |

The top reasons that current members joined the FCA were to "support the beef industry", "representation in Tallahassee and Washington DC" and "educational opportunities"

(Table 5). They were least concerned with "youth activities" and "family traditions" as reasons they joined the FCA.

Table 5

*Top reasons current members joined the Florida Cattlemen's Association*

| Perceived benefit | n | M | SD |
|---|---|---|---|
| Support the Beef Industry | 482 | 2.84 | 0.42 |
| Representation in Tallahassee and Washington DC | 465 | 2.51 | 0.66 |
| Educational Opportunities | 471 | 2.51 | 0.66 |
| Access to Research | 469 | 2.44 | 0.69 |
| Monthly Magazine Subscription | 478 | 2.40 | 0.66 |
| Networking/Professional Opportunities | 472 | 2.39 | 0.70 |
| Other | 31 | 2.16 | 1.22 |
| Family Tradition | 449 | 2.09 | 0.83 |
| Youth Activities | 454 | 2.01 | 0.79 |
| Social Activities | 466 | 1.96 | 0.72 |

As indicated in Table 6, members were asked to select their top three reasons for remaining part of the FCA. The most important reasons that members remained members of the FCA were to "support the beef industry", "networking and professional opportunities" and "representation in Tallahassee and Washington D.C." Members were most satisfied with the benefit of supporting the beef industry. In this question, respondents were asked to select all answers that apply to them.

When comparing reasons that the FCA members joined and have stayed members, there are several similarities. The top reason in both categories is to "support the beef industry". Representation in Tallahassee was the second most important reasons members joined the FCA,

and was the third most important reasons members remained members. Networking and professional opportunities was not even a top four reason that members joined the FCA, but is the second most important reasons that respondents have remained the FCA.

Table 6

*Top reasons current members remained members of the Florida Cattlemen's Association.*

| Reason | n | % |
|---|---|---|
| Support the Beef Industry | 308 | 73 |
| Networking/Professional Opportunities | 194 | 46 |
| Representation in Tallahassee/Washington D.C. | 192 | 46 |
| Educational Opportunities | 150 | 36 |
| Monthly Magazine Subscription | 136 | 32 |
| Family Tradition | 108 | 26 |
| Access to Research | 80 | 19 |
| Social Activities | 53 | 13 |
| Other | 18 | 4 |

**Objective 3: Identify barriers to membership**

As indicated in Table 7, there were several reasons why former members left the FCA. 39% ($n$ = 29) of the respondents indicated that the most important reason they left the FCA was they forgot to renew their membership. As table 3 shows, 32% ($n$ = 24) listed "other" as the reason the left the FCA. Respondents who selected "other" were asked to fill in the top reason for leaving the FCA. Some of the reasons listed by respondents were as "graduating and left industry", "no money" and "closer markets to me in Alabama". Former members were least concerned with "loss of interest in the cattle industry" and "educational opportunities not

adequate" as reasons they left the FCA. In this question, respondents were asked to select all the reasons that applied to them.

Table 7

*Reasons former members left the Florida Cattlemen's Association*

| Reason | n | % |
|---|---|---|
| Forgot to renew membership | 29 | 39 |
| Other | 24 | 32 |
| Dues were too high | 13 | 18 |
| Un-Friendly Environment | 7 | 9 |
| Got out of the cattle business | 7 | 9 |
| Unhappy with the organization | 6 | 8 |
| Moved away from Florida | 4 | 5 |
| Educational Opportunities Not Adequate | 3 | 4 |
| Loss of interest in the cattle industry | 2 | 3 |

As shown in Table 8, the top three barriers to membership in the FCA were "that they have never been asked to join", "the FCA membership is not valuable to them" and "they don't have enough time" to be active members. In this question, respondents were asked to select all the reasons that applied to them.

Table 8

*Top perceived barriers for potential members of the Florida Cattlemen's Association*

| Reason | n | % |
|---|---|---|
| They have never been asked to join | 243 | 54 |
| FCA membership is not valuable to them | 207 | 46 |
| They don't have enough time | 131 | 29 |
| The FCA dues are too high | 87 | 19 |
| Other | 86 | 19 |

## Key Findings

Through this survey, several key findings were found in regards to recruitment, membership, retention, and barriers of membership. Results showed that only 9% of members were allied members, the highest level of membership possible in the FCA. Members indicated the top reason they joined FCA and remained a member was to support the beef industry. This shows that members of the FCA are active and more concerned with the welfare of the industry rather than of maintaining membership in the FCA to withhold family traditions.

Networking and professional opportunities were not in the top four reasons that members joined the FCA, but was the second most important reason that respondents have remained the FCA. This shows that FCA members have found benefit in networking and meeting other people in the beef industry through the organization. However, potential members of the FCA might not be aware of this benefit. Other reasons people initially joined were different from why they remained members. This could indicate that the real benefits of joining the association are not clearly understood, and the wrong benefits are being emphasized.

According to the survey, members that left the organization did so after being a member for less than five years. Additionally, the majority of former members left due to forgetting to renew membership dues and/or lack of involvement in the organization. Some of the reasons listed by respondents were as "graduating and left industry", "no money" and "closer markets to me in Alabama". These were reasons that the FCA could not control. However, the FCA does have control over implementing a more effective way of making sure members can easily renew their memberships. It was shown in the survey that members expressed confusion with the current dues structure.

It was found that the top three barriers to membership in the FCA were that they were never asked to join, that FCA membership was not valuable to them or they did not have enough time to be active members. This could indicate that potential members are not being recruited at a high enough level and that they did not understand the benefits of membership. They also do not have an accurate understanding of the level of commitment that was required to be an FCA member.

## Recommendations

Through the application of the uses and gratifications theory, FCA has the opportunity to understand why members choose to join or not join the organization. This can help them recruit and retain members more effectively. FCA should consider developing various ways for members to become involved in supporting both Florida and American beef interests. To keep current members engaged and to recruit potential members, the FCA should implement more ways to support the beef industry and highlight those possibilities to potential new members. Organization staff can provide ways for members to support the organization by allowing them to participate in educational opportunities, farm tours, news dissemination, and assistance in

policy analysis and lobbying. This allows members to remain active in the organization, advocate for what they perceive as valuable, and experience gratification in being a part of the organization.

To aid in the recruitment of new members and the retention of current members, it is recommended the FCA implement new communication and programming strategies. The survey results indicated differences in perceived benefits and actual benefits of being in the FCA. It is important for the FCA to make sure the perceived benefits of being a member match the actual benefits members' experience. This can be done through constant evaluation of perceived and actual benefits of being in the FCA. As shown through uses and gratifications theory, if members do not find value in being a member of the organization, the members will choose other outlets that will meet their needs. It is recommended that the FCA highlight public relations and issues management in their recruitment techniques and disseminate the benefits provided to members in their recruiting materials.

The survey results showed that some individuals left the organization because they forgot to renew their dues. For the FCA to retain members, it is recommended that they communicate a new dues structure through multiple outlets and adjust payment plans to meet the needs of their members. Additionally, it would be helpful if different levels of membership/dues were defined, implemented and communicated within the organization. Creating new levels of membership outside of associate, allied and Cattlewoman membership may also be of benefit to the organization. Other levels of membership could include affiliations related to the cattle industry such as; commodity groups, food companies, public service, wholesalers and retailers, and representatives from feed and supply companies. This would bring a larger audience to the FCA

and educate many affiliated with the beef industry on the value of production and the issues cattlemen face.

In addition to the above-mentioned recommendations, the researchers recommend FCA update and provide more detail in their communication materials. When searching the website, very little information was given on current events, membership levels, organizational structure and history, and the cattle industry. FCA members, affiliates and potential recruits would be able to learn more about the organization and persuaded to support the organization if communication materials provided more relevant information. In addition, the organization would benefit from a consistent branding across all communication materials as well as information on the website about different issues affecting the Florida beef industry.

## Conclusion

Organizations can increase and retain membership by making the benefits of membership clear to potential and current members. It is especially important to make sure the perceived benefits of the organization match the benefits members actually receive once they join the organization. If the perceived benefits do not match the actual benefits, organizations may experience membership retention because member's expectations are not met. Conducting surveys and research to make sure the perceived benefits and actual benefits match are crucial to maintain strong membership.

It is also important for membership organizations to make sure the dues structure for their organization is easy to understand and communicated effectively to their members. Members who wish to remain active in the organization could lapse because they do not understand when to pay their dues.

By highlighting benefits, making sure perceived benefits match actual benefits, and effectively communicating the dues structure and expectations to remain a member, membership and advocacy organizations can expect steady membership numbers. An organization in tune with the clientele's needs and a strong membership will sustain itself and provide a voice for those it serves.

## References

Agriculture Institute of Florida. (2011). *Agriculture Institute of Florida* [Organization Website]. Retrieved from www.aiflorida.org

*Agriculture sector top 10 states by GDP*. (2010). Retrieved from EconPost website: http://econpost.com/industry/agriculture-sector-top-10-states-gdp.

Andrews, K. T., & Edwards, B. (2004). Advocacy organizations in the U.S. political process. *Annual Reviews, 30*, 479-505. doi:10.1146/annurev.soc.30.012703.11054

Bhattacharya, C. B. (1998). When customers are members: customer retention in paid membership contexts. *Journal of the Academy of Marketing Science, 26*(1), 31-44. doi:10.1177/ 0092070398261004

Bhattacharya, C. B., Hayagreeva, R., & Glynn, M. A. (1995). Understanding the bond of identification: an investigation of its correlates among art museum members. *Journal of Marketing, 59*(4), 46-57. Retrieved from http://www.jstor.org/stable/1252327

Bosso, C. J. (2003). Rethinking the concept of membership in nature advocacy organizations. *The Policy Studies Journal, 31*(3), 397-411. doi:10.1111/1541-0072.00030

Center for Public Issues Education. (2010). [Florida Cattlemen's Association: Benefits and Barriers of Membership Survey Report]. Unpublished raw data.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method* (3rd ed.). Hoboken, NJ: John Wiley & Sons, Inc.

Florida Cattlemen's Association. (2011*). Florida Cattlemen's Association* [Organization Website]. Retrieved from http://www.floridacattlemen.org

Florida Cattlemen's Association. (2011a). Florida Cattlemen's Association dues structure. In *FCA Recruitment Packet* [Brochure]. Retrieved from http://www.floridacattlemen.org/d/justask.pdf

Florida Cattlemen's Association (n.d.) *In Facebook* [Fan Page] Retrieved from http://www.facebook.com/#!/floridabeef

Florida Department of Agriculture and Consumer Services (2011). *Florida Department of Agriculture and Consumer Services* [Organization Website]. Retrieved from http://www.freshfromflorida.com/

Florida Department of Agriculture and Consumer Services. (2007). *Florida's Cattle Industry* [Brochure]. Retrieved from http://www.doacs.state.fl.us

Florida Department of Agriculture and Consumer Services. (2003). Florida cattlemen: setting the pace [video script]. Retrieved from http://www.florida-agriculture.com/videos/scripts/script_cattlemen.htm

Gruen, T. W., & Ferguson, J.M. (1994). *Using membership as a marketing tool: issues and applications.* Paper presented at the Relationship Marketing Conference , American Marketing Association, June, Atlanta, Ga.

Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Uses and gratifications research. *The Public Opinion Quarterly, 37*(4), 509-23.

Mathews, C. D. (2010). *Volunteer Leadership In the U.S. Beef Industry* (Doctoral Dissertation), Retrieved from http://purl.fcla.edu/fcla/etd/UFE0041590

Min, S. J & Kim, Y. M. (2008). *Choosing the right media for mobilization: Understanding issue advocacy groups' media choice strategies.* Paper presented at the meeting of Association for Education in Journalism and Mass Communication Conference, Chicago, Illinois.

National Agricultural Statistics Service. (2011). *Cattle annual statistical bulletin* (H. Hamer, Ed.). Retrieved from National Agricultural Statistics Service website: http://www.nass.usda.gov/stat_by_state/florida/publications/annualstatisticalbulletin/faf05/faf05p.pdf

National Agricultural Statistics Service (2010). *2010 State Agriculture Overview Florida* retrieved from http://www.nass.usda.gov/Statistics_by_State/Ag_Overview/AgOverview_FL.pdf

National Cattlemen's Beef Association. (2011). *2011 Priority Issues*. Retrieved from http://www.beefusa.org/uDocs/2011NCBAPriorityIssues.pdf

National Cattlemen's Beef Association. (n.d.). *Cattle Industry History*. Retrieved from http://www.beefusa.org/theindustry.aspx

National Cattlemen's Beef Association. (n.d.). Beef industry long range plan, 2011-2013. Retrieved from http://www.beefusa.org/cmdocs/beefusa/media/approved-2011-2013-long-range-plan-one-page.pdf

National Grange History. (2002). *National grange of the patrons of husbandry*. Retrieved from http://www.nationalgrange.org/about/history.html

Page, B. I. (1994). Democratic responsiveness? Untangling the links between public opinion and policy . *PS: Political Science and Politics, 27*(1), 25-29. Retrieved from http://www.jstor.org/stable/420453.

Rubin, A.M. 2002. The Uses and Gratifications Perspective of Media Effects. In J. Bryant and D. Zillman (Eds.), *Media Effects: Advances in Theory and Research, 2nd Edition*. p. 525-548. New Jersey: Lawrence Erlbaum.

Verba, S., Schlozman, K. L., & Brady, H. E. (1995). *Voice and equality: Civic voluntarism in American politics*. Cambridge, MA: Harvard University Press.

West, R., & Turner, L. H. (2007). *Introducing communication theory: analysis and application* (3rd ed.). New York, NY: McGraw Hill Higher Education.

A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

# The **Influence of Selected Demographic Characteristics on the Reading Ability of Fourth Grade Students in Louisiana**

Research Paper

Johnny W. Morgan, Ph.D.

137 Knapp Hall, LSU

Baton Rouge, LA 70803

Cell--225-610-7535

Fax--225-578-4524

jmorgan@agcenter.lsu.edu

# The **Influence of Selected Demographic Characteristics on the Reading Ability of Fourth Grade Students in Louisiana**


## ABSTRACT

The primary purpose of this study was to determine the influence of selected demographic characteristics on the reading ability of fourth-grade students in Louisiana. The dependent variable for this study was reading ability of fourth-grade students. Independent variables were demographic characteristics as measured by reading achievement (overall reading score and subscale reading score) on the statewide assessment. The high-stakes Louisiana Educational Assessment Program exam is administered to fourth grade students. The students must pass specific areas of the test to be promoted to fifth-grade.

Academic achievement data on the test were obtained from the Louisiana Department of Education.

Data acquired from the Louisiana Department of Education was recorded in a computerized recording document. Academic achievement, as measured by Reading, Math and English Language Arts scores on the exam, was described and correlated with selected demographic characteristics. Findings of the study indicated that African-American students scored lower than all other students on all Reading, Math and English Language Arts measures examined. Additionally, Asian students were found to have achieved at higher exam classifications than other students in Reading, English Language Arts and Math areas.



**Keywords:** Literacy, Louisiana Educational Assessment Program, English and Language Arts, Socioeconomic Status, reading, students, achievement

# The **Influence of Selected Demographic Characteristics on the Reading Ability of Fourth Grade Students in Louisiana**

## Introduction/Purpose

The primary purpose of this study was to determine the influence of selected demographic characteristics on the reading ability of fourth-grade students in Louisiana. In many areas of the United States of America, the absence of a good education means a lifetime of struggles. This is because in modern American society, “education is central to development and a key to attaining one’s goals. It is one of the most powerful instruments for reducing poverty and inequality and lays a foundation for sustained economic growth” (Yes We Can, n.d., para.1).

The importance of education can be best understood when viewed from an economic standpoint. College graduates make 100% higher salaries than high school graduates (Parenting healthy children, 2007). Without an appropriate education, it is becoming harder to provide the level of income needed to function in modern society because the economic world is growing smaller through internationalism. Education is often considered to be synonymous with reading. Without the ability to read, education becomes a dream that is out of reach. The importance of reading is better viewed when one gains an understanding of the meaning of literacy. As stated by the Workforce Investment Act of 1998, literacy goes beyond merely one’s ability to read a book. The definition provided in the act states that literacy is "an individual's ability to read, write, speak in English, compute and solve problems at levels of proficiency necessary to function on the job, in the family of the individual and in society" (The power of literacy, para. 1).

Until low socioeconomic members of society are put in a position to receive better educational opportunities, the cost to the American economy will be the extremely high cost of

warehousing prisoners. When African-American men represent 6% of the United States population, it seems impossible that they represent over 40% of the prison population. “Every day in the United States, 200 new jail cells are constructed” (Fortunato, 2004, para. 3).

Researchers have recommended a number of ways to improve the reading ability of young children. One theme that seems to recur is the importance of education being promoted in the home (Saint-Laurent & Giasson, 2005). It has been said that parents are a child’s first teacher. This is a great thought, but it is practical only if the parents are prepared to strengthen the child’s skills. Too often, in low socio-economic households, parents appear to be severely lacking in basic educational skills themselves and are not able to provide much help to their children.

Numerous factors can influence reading achievement. Three of the most notable include socioeconomic status, race, teacher quality and geographic location. Reading achievement is one of the most important aspects of education. The high incidence of illiteracy in the low socioeconomic population has several distinct causes that tend to exist more in the minority population. The most profound is the lack of family structure in many minority households (Willhelm, 1986). This report indicated that over 50% of African American births in 1979 were to single parents, up from the 38% in 1970 (Willhelm, 1986). Recent figures suggest that now almost 70% of Black children are born out of wedlock” (Page, 2005, para. 2).

Coleman (1966) asserted that a student’s background was greater than anything that goes on within schools (p. 1). Coleman further stated that “the factor of race or ethnicity is closely associated with that of poverty as a predictor of achievement” (p. 4). In ethnic minorities, such as African Americans, according to Ladson and Billings (1995), a history of discrimination is shown to be a reason for the opposition these students have toward school activities (p. 324).

Biancarosa and Snow (2006) found that stakeholders must look at the complete picture if there is to be improvement in literacy of young children. They also found that self-direction is effective in improving literacy skills. Giving students the opportunity to decide what they are interested in reading is an important first step toward improved reading skills (p. 16).

Parental involvement is often lacking in the education of low-socioeconomic children. Dodici, Draper, and Peterson (2003) stated, "It appears that the quality of parent-child interactions, even at very early child ages, is related to early literacy skills" (p. 132). Flowers (2007) found that there is a vital link between the involvement of the parents in the child's education and the success of that child. President George W. Bush believed that American schools could do better and showed his deep belief by signing the No Child Left Behind Act into law. He stated that "too many of our neediest children are being left behind, despite the nearly $200 billion in Federal spending after the passage of the Elementary and Secondary Education Act of 1965 (ESEA)" (p. 1). A study by Costello, Keeler, and Angold (2001) showed that three times as many African- American children grow up in low socioeconomic status households.

Thomas and Stockton (2003) observed that once you move beyond race and ethnicity, socioeconomic status is shown to be one of the major reasons for a lack of achievement in young children. "Since Coleman's…landmark study on *Equality of Educational Opportunity*, socioeconomic status has been seen as a strong predictor of student achievement.

Biancarosa and Snow (2006) stated that with only 70% of high school students graduating on time with a regular diploma, African-American and Latino students have rates that are a full 10% lower. Kamil et al. (2008) showed that many of the teachers don't have the skills needed to improve student comprehension. Harvey-Woodall and Richards (2010) in their Bridging the Gap study advised that the teachers should take an early look at where students'

reading abilities were and based on those observations develop teaching strategies that would address any issues.

### Definitions

For the purpose of this study, the researcher has operationally defined or cited a definition for each of the following terms:

a. 504 – a student with one or more disabilities

b. ELA **–** acronym for English Language Arts

c. Gender – female or male

e. NCLB **–** acronym for No Child Left Behind (Act)

f. NAEP **–** acronym for National Assessment of Educational Progress

g. Race – racial classification (American Indian, Asian, Black, Hispanic, and White)

h. SES **–** acronym for Socioeconomic Status, which was determined by lunch prices (free, reduced or paid)

## Methods/Procedures

The target population for this study was all public school fourth-grade students in Louisiana. The accessible population was all fourth-grade students enrolled in public elementary schools in Louisiana during the 2008-2009 school year who took the test and were not classified as "special education" or "504." The sample was 100% of the defined accessible population.

A computerized recording document was used as the instrument for the research. The data received from the Louisiana Department of Education, Division of Student Standards and Assessments were in the form of an Excel spreadsheet.

The database provided by the Louisiana Department of Education included all of the necessary measurements for addressing the study objectives, but no personal identifiers for

individual students were included in the database. Data from the 2009 test were analyzed using the Statistical Package for the Social Sciences (SPSS version 17.0 for Windows).

Specific objectives formulated to guide the researcher of this study included five research objectives:

- Research Objective 1

  To describe fourth-grade students in Louisiana enrolled in regular education programs completing the assessments on the following characteristics:

  a. Age;

  b. Gender;

  c. Ethnicity;

  d. Socioeconomic status as measured by lunch prices (free, reduced, or paid);

  e. Geographic region of the state.

- Research Objective 2

To describe fourth-grade students enrolled in regular education programs on their reading, ELA, and math achievement as measured by scores and sub-scale scores on the assessments. The data for Objective 2 were analyzed using basic descriptive statistics including means and standard deviations for each scale and sub-scale measured.

- Research Objective 3

To determine if a relationship exists between reading achievement as measured by the overall reading score and reading sub-scale scores on the assessment and the following selected demographic characteristic among fourth-grade students enrolled in regular education programs. Appropriate correlations were applied based on the level of measurement of the various demographic characteristics. For the variable Age (measured as continuous data) the

Pearson Product Moment Correlation Coefficient was utilized; for the variable Gender, the t-test was used, and for the variable ethnicity, the Analysis of Variance was used.

- Research Objective 4

To determine if a relationship exists between Reading Achievement (as measured by Reading Scaled Scores on the LEAP test) and ELA and Math Achievement (as measured by scores on the ELA and Math Scaled Scores on the LEAP test) among fourth grade students. When examining the relationship between the Reading Scaled Scores and the ELA and Math Scores on the test, the Pearson Product Moment Correlation Coefficient was utilized.

- Research Objective 5

To determine if a model exists explaining a significant portion of the variance in the reading scores and sub-scale scores of fourth-grade students enrolled in regular education programs from the following characteristics:

a. Age;

b. Gender;

c. Ethnicity;

d. Socioeconomic status as measured by lunch prices (free, reduced, or paid);

e. Geographic region of the state.

When examining the relationship between the Reading Scaled Scores and the ELA and Math Scores on the test, the Pearson Product Moment Correlation Coefficient was utilized. Multiple regression analysis was used with stepwise entry of independent variables due to the exploratory nature of the study. To conduct the regression analysis, independent variables that were measured on a categorical scale of measurement (nominal or ordinal) that were not natural dichotomies had to be recoded into a series of binary variables. These variables included race, socioeconomic status, and geographic regions.

## Results/Findings

Findings indicated that the mean age of students taking the Reading portion of the exam was 10.30 years with 100% of the students being in the fourth grade. During the 2009 school year, the race that was reported by the largest group of students was White, representing 48.3% (*n* = 19,359) of the students, followed very closely by Black at 48.1% (n=19,275). The group with the lowest number identified was American Indian at .8% (*n* = 336) (see Table 1).

**Table 1**
Race of Fourth-Grade Students Completing the Louisiana Educational Assessment Program Exam during the 2009 school year

| **Race** | ***n*** | **%** |
|---|---|---|
| White | 19,359 | 48.3 |
| Black | 19,275 | 48.1 |
| Hispanic | 759 | 1.9 |
| Asian | 345 | .9 |
| American Indian | 336 | .8 |
| **Total** | **40,074** | **100** |

In regard to socioeconomic status, more students (60.2%) received free lunch than any other group. Socioeconomic status for this study was measured by the students' school lunch status as determined by the school and/or the Louisiana Department of Education (See Table 2).

**Table 2**
Mean Reading Scaled Scores by Socioeconomic Status of Fourth Grade Students.

| **Lunch** | **N** | ***m*** | ***SD*** |
|---|---|---|---|
| Paid | 12,529 | 354.03 | 39.80 |
| Reduced | 3,409 | 342.09 | 38.82 |
| Free | 24,120 | 326.64 | 41.34 |
| **Total** | **40,058** | **336.52** | **42.54** |

African-American students in the fourth grade in the state had lower performance than any of the other races on the Louisiana Educational Assessment Program exam. This is based on

the following finding: The mean reading scale scores for Black students was 323.55. African-American students not only had the lowest reading scores but were also shown to be significantly different from the other four races. African-American students' reading scores were nearly 17 points lower than American Indians, whose scores were next to lowest. (See Table 3).

**Table 3**
Tukey's Post Hoc Multiple Comparison of Reading Scaled Scores by Categories of Race

| Race | N | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Black | 19,275 | 323.55 | | | |
| American Indian | 336 | | 340.18 | | |
| Hispanic | 759 | | 343.09 | 343.09 | |
| White | 19,359 | | | 348.70 | |
| Asian | 345 | | | | 356.68 |

Note. Groups that are listed in a column together are not significantly different.

While 41% of the students enrolled in public schools have low SES based on the eligibility for free lunch, it would be reasonable to expect that this percentage would be very low for those in private schools.

Findings of the study indicate that the lowest score for both math and English was 100 (also the lowest possible score) while the highest score was 500 (also the highest possible score) (See Table 4).

**Table 4**
Categories of Achievement Levels and their Respective Scaled Score Ranges for Reading portion of the Louisiana Educational Assessment Program Exam during the 2009 school year

| Achievement level | Reading |
|---|---|
| Above | 354-500 |
| Basic | 301-353 |
| Below | 100-300 |

Note. Taken from the state Department of Education Interpretive Guide, 2009

With regard to Reading scores, the mean scaled score was 323.89, with the highest number of students achieving at the Basic level (n=19,545; 48.7%) (See table 5).

**Table 5**
Achievement Levels of Fourth Grade Students for the Reading portion of the 2009 Louisiana Educational Assessment Program Exam

| **English Language Arts Achievement Level** | ***n*** | **%** |
|---|---|---|
| Above | 13,952 | 34.8 |
| Basic | 19,545 | 48.7 |
| Below | 6,603 | 16.5 |
| **Total** | **40,100** | **100** |

Note. Scaled scores ranged from 100 to 500, mean 336.48 (SD=42.61)

Math results also revealed that the largest number of students was classified as having achieved at the Basic level (*n* = 20,559; 51.3%) (See Table 6).

**Table 6**
Achievement Levels for Fourth-Grade Students for the Math portion of the 2009 Louisiana Educational Assessment Program Exam

| **Math Achievement Level** | ***n*** | **%** |
|---|---|---|
| Advanced | 1,426 | 3.6 |
| Mastery | 6,125 | 15.3 |
| Basic | 20,573 | 51.3 |
| Approaching Basic | 7,847 | 19.6 |
| Unsatisfactory | 4,127 | 10.3 |
| **Total** | **40,100** | **100** |

Note. Scaled scores ranged from 100 to 500, mean 334.96 (SD=46.41).

The Reading Scaled Score model included the variables race and socioeconomic status. The three variables that entered the regression model explained 13% of the variance. The first variable, which was the interaction factor between SES and African American, explained 9.8% of the variance. Two of the variables that were included in the significant regression model (SES x race interaction and age) were found to have a negative influence on students' performance on the Reading test of the 2009 Louisiana exam, and one of the variables (paid lunch status) was found to have a positive influence.

A major finding of the study was from Objective 4, which was to determine if a relationship exists between Reading Achievement (as measured by Reading Scaled Scores on the

LEAP test) and ELA and Math Achievement (as measured by scores on the ELA and Math Scaled Scores on the LEAP test) among fourth-grade students in Louisiana. Reading and ELA scores were available for 40,100 students, and math scores were available for 40,098 students. When examining the relationship between the Reading Scaled Scores and the ELA and Math Scores on the test, the Pearson Product Moment Correlation Coefficient was utilized. A significant correlation was found between students' reading scores  students and their ELA scores ($r = .934$, $p < .01$). In addition, a significant correlation was found between students' reading scores and their math scores ($r = .651$, $p < .01$).

## Discussion/Conclusions

Based on the findings of the study, the researcher presents the following conclusions and recommendations:

Fourth-grade students in Louisiana have a "moderate" level of achievement in the area of reading. The mean raw score on the exam reading assessment was 22.5, which is a percentage score of 62.5. Additionally, when the scores on the assessment were classified based on criteria established by the state department of education, 48.7% of the students were classified in the "Basic" category while only 16.5% were classified in the "Below Basic" category. Therefore, based on the criteria established for reading achievement in Louisiana, more than twice as many of the students were classified as "Above Basic" (34.8%) as those who were classified as "Below Basic."

Based on this conclusion and findings, the researcher recommends that further research be conducted, which includes a sample of students from multiple states in various geographic regions of the nation and utilizes the same assessment tool and the same interpretive criteria so that a valid comparison can be made of Louisiana students with students from other parts of the

nation. This would enable the researcher to determine the extent to which Louisiana fourth graders actually exceed students nationally on reading achievement.

The poverty level in Louisiana is high. This conclusion is based on the finding that over 41.34% of the fourth-grade students in Louisiana public schools received free lunch. Additionally, only 39.80% of the fourth graders paid full price for lunch.

The socioeconomic status of students in public schools is not representative of all students in Louisiana. The 2005-2009 Dataset of the U.S. Census showed that over 1.1 million children in the state were under the age of 18. Of these, 32.4% were between six and 11 years of age. Of the children from three to 17 years of age, 840,497 were enrolled in school. Of these, 80.3% were enrolled in public school, while 19.7% were enrolled in private schools. White children represented 56.7% of the population under age 18, and African Americans accounted for 38%. Twenty-six percent of these children lived in households listed as below the poverty level (U.S. Census Bureau, American Factfinder, 2005-2009).

The family income of students often plays a major role in how well the students do in school. It is often suggested that the inability to purchase extra study materials has an effect on the achievement level of the student. Children from low SES status households are being left behind because they don't have resources in the home to allow them to compete when they get to school. In the past, the National Assessment of Educational Progress has not provided household income information, but has provided information on a child's participation in the school's free and reduced price lunch program, which are the data used to determine socioeconomic status. This information leads the researcher to believe that the large, low SES community in Louisiana is a contributing factor in low achievement. This is based on the finding that students in this study receiving free lunch had significantly lower scores on the reading exam. Part of this

problem could stem from the students having low motivation. Many of these students don't see a future because they don't have appropriate role models to follow because a number of the parents have low educational skills. This could cause the students to feel that there is no use in expending the extra effort to achieve because they haven't been shown what they believe is a realistic payoff.

The researcher recommends that there should be a move to reduce class sizes for the lower grades where there are high numbers of lower SES students. Programs can be developed to close this gap in achievement. One such program is the Reading to the Heart Program funded by the U.S. Department of Agriculture through the LSU AgCenter's 4-H Youth Development Department. The objective of the program is to improve literacy and learning skills among fourth-grade youth by promoting a variety of curriculum development, learning, and participatory activities among participants. Reading development is a major goal of the program with opportunities provided to engage youth in reading grade-level books, preparing book summaries, and developing reading portfolios. There is also assistance from parents, guardians, volunteers, and teachers, and involvement in community and school literacy programs. Throughout the program year, students are given books to read as a way of enhancing their literacy skills.

Based on this conclusion, the researcher recommends that programs be designed specifically to meet the educational needs of minority children at the lower grade levels. Some ideas include smaller class size, putting more efforts in identifying what their educational needs are, developing tutoring programing in the schools to provide additional reading help, making books available to give to students instead of just allowing them to read and turn them back in to the teacher. Additionally, school districts could develop school-based programs to put more

reading materials into the hands of minority children that will capture their interest. Millions of dollars are spent each year in the state for standardized testing. That money might be better spent on salaries for more and better teachers. Therefore, the researcher also recommends that at the lower grade levels, less emphasis should be placed on standardized tests and more emphasis placed on the students learning the material. It is documented that culture and environment play a role in a student's success or failure on standardized tests. More should be done to understand the home life of these minority students. One thing that could be done is require homeroom teachers to make home visits in order to get a better understanding of where these students come from and how they live. Another thing that could be done is have education majors participate in pre-service diversity internships, where these college students would spend time in schools with diverse populations to help them become comfortable with different cultures and races. There could also be in-service programs where teachers could spend a semester in another school where they would teach students of other races as a way to build experience in diversity.

African-American status and SES interact in their influence on Reading Achievement. When interaction between African American status and SES was included, African-American status ceased to be a meaningful explanatory factor in Reading Achievement. This is supported by the finding that three variables explained 13% of the variance in the regression model. These variables were the interaction between African American racial status and SES, age, and paid-lunch status. The minority status of students has been shown to have a damaging effect on their academic achievement. Results of this study indicate that the influence of African-American status differs at the different levels of SES. Willhelm's research has shown that children from single-parent homes have a greater chance of growing up in poverty, with less chance of success. "Family disintegration transforms…the very structure of family life; it initiates the collapse of

the patriarchal kinship system and the emergence of the matriarchal family—which, in turn, brings in its wake such social pathologies as higher crime rates, increased rates of school dropouts, lower achievement aspirations, greater drug dependency, higher unemployment, and, subsequently, lower incomes that, thereafter, relegate more and more Blacks into the ranks of poverty" (Willhelm,1986, p. 205).

Based on this conclusion and these results, the researcher recommends that further research be conducted where SES is held constant and then measure for effects of race. This would be done by only looking at those students who received free lunch. Geographic location could also be looked at separately to see if there is a difference in the achievement levels between rural and urban students.

Students performed at a moderate level on ELA and Math in relation to the rest of the United States and especially the South. This conclusion is based on the following findings of the study. There were a total of 40,100 students taking the ELA and math portions of the test. The mean score for the ELA portion was 336.48 ($SD$ = 42.61).

The researcher concludes that a possible reason for minority students scoring more poorly is that standardized tests may tend to be culturally biased. The designers of the instruments could take this into account when constructing these instruments for public school students.

Reading ability influences ELA and Math Achievement. This is based on the findings that there is a significant relationship between Reading Achievement and ELA and Math scores. There were significant correlations found between the reading scores of students and their ELA scores ($r=.934$, $p<.01$). In addition, significant correlations were found between the reading scores of students and their Math scores ($r=.651$, $p<.01$). The implication of these correlation values is that students who read well have a better chance of doing well in other schoolwork.

Students who did better on Reading also did better on Math, and students who did better on Reading also did better on ELA.

Allowing the teacher more time to read to the class could also provide a change in the school day that would be helpful. This would give the students more variety of topics to become interested in. The teacher could have guests come into the class to read to the class as well. One way to make this more interesting to the students is to have people come with whom they are familiar, such as local athletes, politicians, and others the students may know from media or other venues. Providing tutors for students who appear to be struggling in reading will provide more one-on-one attention, which could be helpful to the students. In addition to these opportunities to help the students, the high schools and/or colleges in the area can allow their students to earn service-learning hours by volunteering to read in elementary school classrooms.

The minority population in public schools is high in Louisiana. This conclusion is based on the data that show that 48% of the state's public school students in fourth grade were African-American, 47% were White, and 3% were of other minority races (http://nces.ed.gov/nationsreportcard, p. 1). Therefore, the traditionally recognized minority race in the state actually makes up the plurality of students in regular education programs in public schools.

The researcher concludes that this is why the majority race in the state makes up less than 50% of the students in public school fourth-grade classes. The researcher therefore recommends that there should be a policy change within the state. The state should implement requirements that all students be tested using the assessment, including those students enrolled in public schools, private schools, parochial schools, and home school.

Reading ability differs by geographic region of the state. This finding is supported by the ANOVA data which showed that region four, which consists of the southwest part of the state, had higher reading ability than any other region of the state. The findings also showed that region eight, which included the southeast part of the state, had significantly lower reading scores than any other region of the state.

The researcher recommends that further research be conducted to determine specific differences between more successful and less successful schools. If these differences are found to be school-based, there should be attempts to make appropriate changes. This could include providing a standardized curriculum across the regions. If the changes are found to be a condition of SES status, it will take efforts from the state level, maybe even from the governor, to enhance the economic development efforts in the region to improve the schools.

## References


Biancarosa, C., & Snow, C. E. (2006). Reading next-A vision for action and research in middle and high school literacy: A report of Carnegie Corporation of New York (2nd ed.). *Alliance for Excellent Education* , 1-59.

Costello, E. J., Keeler, G. P., & Angold, A. (2001). Poverty, race/ethnicity, and psychiatric disorder: A study of rural children. *American Journal of Public Health, 91,* 1494-1498.

Dodici, B. J., Draper, D., & Peterson, C. A. (2003). Early Parent-Child Interactions and Early Literacy Development. *Topics in Early Childhood Special Education* , 125-26.

Flowers, L. (2007). Recommendations for research to improve reading achievement for African American students. *Reading Research Quarterly,* July/August/September, 2007, 42/3, 425. Retrieved February 4, 2011from http://www.clemson.edu/centers-institutes/houston/documents/recommendationsforresearch.pdf.

Fortunato, M. (2004). *Hearts and Minds: Information for Change-Prison Facts.* (2004). Retrieved October 12, 2009, from Hearts and Minds: http://www.heartsandminds.org/prisons/facts.htm

Harvey-Woodall, A., & Richards, M. K. (2010). Bridging the gap between accountability and reading comprehension, November 10, 2010, Jackson State University. Retrieved Feb. 3, 2011 from http://www.eric.ed.gov/PDFS/ED513590.pdf

Kamil, M., Borman, G., Dole, J., Kral, C., Salinger, T., & Torgesen, J. (2008). Improving Adolescent Literacy; Effective classroom and intervention practices. *A Practice Guide* .

Ladson-Billings, G. (1995). But That's Just Good Teaching! The Case of Culturally Relevant Pedagogy. *Theory into Pratice* , 159-165.

*No Child Left Behind.* (n.d.). Retrieved February 24, 2010, from http://www2.ed.gov/nclb/overview/intro/execsumm.pdf

Page, C. (2005, September 27). *Out-of Wedlock Births in Black America*. Retrieved November 6, 2010, from National Public Radio: http://www.npr.org/templates/story/story.php?storyId=4865449

Parenting Healthy Children, (2007). Why Is Education Important. (n.d.). Retrieved January 3, 2010, from: www.parenting-healthy-children.com/whyiseducationimportant.html

Saint-Laurent, L., & Giasson, J. (2005). Effects of a family literacy program adapting parental intervention to first graders' evolution of reading and writing abilities. *Journal of Early Chilhood Literacy* , 5, 253.

The Power of Literacy, (2004, November). Retrieved January 5, 2010, from http://www.lincs.ed.gov/publications/pdf/mentorguide.pdf

Thomas, J., & Stockton, C., Socioeconomic status, race, gender, and retention: impact on student achievement., Retrieved January 22, 2011 from http://www.usca.edu/essays/vol72003/stockton.pdf.

U.S. Census Bureau, American Factfinder. Retrieved May 25, 2011, from http://factfinder.census.gov/servlet/STTable?_bm=y&-context=st&-qr_name=ACS_2009_5YR_G00_S0901&-ds_name=ACS_2009_5YR_G00_&-CONTEXT=st&-tree_id=5309&-redoLog=false&-geo_id=04000US22&-format=&-_lang=en

Willhelm, S. M. (1986, December) The Economic Demise of Blacks in America: A Prelude to Genocide? Journal of Black Studies, 201-254.

Yes We Can, (n.d.). Retrieved June 2, 2009, from Yes We Can African American website: http://yeswecanafricanamerican.com/gpage6.html

A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

Research Manuscript

# Experiential Learning through Visual Communications Curriculum in Secondary Schools

Kristin M. Pennington
Graduate Student
University of Arkansas/ AEED Department

Leslie D. Edgar
Assistant Professor of Agricultural Communications
University of Arkansas / AEED Department
205 Agriculture Building
Fayetteville, AR 72701
(479) 575-6770 Phone / (479) 575-2610 Fax
ledgar@uark.edu

Don W. Edgar
Assistant Professor of Agricultural Education
University of Arkansas/ AEED Department
205 Agriculture Building
Fayetteville, AR 72701
(479) 575-2037 Phone / (479) 575-2610 Fax
dedgar@uark.edu

Casandra Cox
Instructor
University of Arkansas/ AEED Department
205 Agriculture Building
Fayetteville, AR 72701
(479) 575-2040 Phone / (479) 575-2610 Fax
ccrumle@uark.edu

Beth Ann Bills-Hunt
Graduate Assistant
University of Arkansas/ AEED Department

**Experiential Learning through Visual Communications Curriculum in Secondary Schools**


## Abstract

*Visual communications curriculum was developed for an agricultural communications unit incorporated into Arkansas secondary agricultural science courses. Perceptions of the curriculum and experiential learning activity were assessed. Teachers were given electronic access to all lessons, instructional PowerPoint's, worksheets, and handouts. Lessons in the curriculum unit covered basic photography, writing, and videography skills. Upon completion of instruction, the University of Arkansas visited the school with their mobile classroom which was equipped with computers, digital SLR cameras, and video cameras. Students spent a full day collaboratively taking photos and capturing video that supported their agricultural news or feature storyboards. Once all the images and video had been captured, students worked in Adobe Photoshop and Premiere Pro to edit and complete short promotional videos about agriculture. Student perceptions were assessed using a seven-point Likert scale-20 question instrument. Teachers who participated in the program were also surveyed. Seven Arkansas high school agriculture programs have completed the program to date, with one school repeating participation with a different group of students. Students perceived this curriculum to be enjoyable, interesting, and practical for their future. Overall, teachers agreed that students gained knowledge about visual communications through the program. Additionally, teachers perceived that the participating students were engaged and interested in the topic and 87.5% of the teachers would include the curriculum without the program. The curriculum can be used in high school agricultural programs outside the state to expand student learning opportunities in visual communications and the agricultural communications FFA CDE.*



**Keywords:** visual communications, experiential learning, mobile classroom, photography, writing, videography, secondary students and teachers, perceptions

## Introduction

With the growing availability of technology and as the general public becomes further removed from the farm, communication becomes ever critical to the promotion of agriculture (Bailey-Evans, 1994). By the 1900s, agricultural communications had evolved into a highly competitive industry requiring knowledge of business practices and editorial skills as well as farming (Burnett & Tucker, 2001). Agricultural communicators now use digital technologies to disseminate messages throughout media outlets and courses have shifted to reflect this change.

In 2006, the National Research Agenda [NRA]: Agricultural Education and Communication 2007-2010 (Osborne, n.d.) was developed in an effort to outline critical components of agricultural education and communications. In 2011, the NRA was updated as research priority areas continued to shift and expand (Doerfert, 2011). Although traditionally agricultural education and communications faculty have collaborated on courses and research projects, the NRA revitalized these efforts through the identification of specific areas of discovery needs and focus in the agricultural industry.

Agricultural education courses are built on a foundation of constructivism and experiential learning which opens the doors for students to gain understanding and knowledge about agriculture and use new technologies before entering degree programs or the workforce (Newcomb, McCracken, Warmbrod, & Whittington, 2004). Agriculture continues to diversify and change, aiming to meet the needs of producer and commodity groups. This change and diversification brings about the need to more effectively communicate and promote agriculture to an audience who is uneducated, or perhaps ignorant, about agriculture and its practices. "As agricultural education enters the twenty first century, it [education and agriculture] must change

with emerging trends in society and the agricultural industry" (Talbert, Vaughn, & Croom, 2005, p. 61).

Today, agricultural education provides training for all students, including those who will not be farming or entering the agricultural industry (Talbert et al., 2005). With change and agricultural diversification ever-present, agricultural education teachers, specifically those in secondary education, struggle to keep abreast of the change with emerging trends in society and the agricultural industry. However, agricultural education teachers are critical links between secondary students and agriculture. Also, the teacher is the single most important variable in school effectiveness (Goodland, 1983).

In 1999 the National FFA Organization, a student organization associated with agricultural education in secondary and post-secondary schools, organized the first career development event (CDE) for agricultural communications. Since that time the FFA organization has gathered resources for agricultural science teachers to use when teaching students about agricultural communications. The national organization's website contains links to numerous resources including *The Guidebook for Agricultural Communications in the Classroom*. The guidebook, which outlines basic materials for teaching a course or unit as well as training a team, begins with:

> Agricultural communicators play a vital role in the world of agriculture. Representing agriculturalists across the world, these individuals possess the skills to effectively communicate agricultural messages to publics involved and not involved in agriculture. Because a large percentage of the population lacks agricultural understanding, it's important for agricultural communicators to provide timely, accurate information on current issues and events (Hartenstein, 2002, p. 1).

Since the invention of television and the computer, as well as the World Wide Web, the roles of visual messages in communication have changed dramatically (Lester, 2006). Many of the competencies outlined in the agricultural communications CDE focus on visual communications. "Visual images are very powerful in their occupation of the publics' time and the shaping of how we process our surrounding environments" (Sadler-Trainor, 2005, p. 9). Visual images play an important role in society due to the messages these images can portray, both positive and negative, regarding social class, cultures, etc. (Rhoades & Irani, n.d.). Secondary students have an inclination to learn digitally; therefore visual communications is an important area to study (Van Scoter, 2004). In 2010 the USDA funded a proposal made by University of Arkansas to develop curriculum for visual communications.

A national Delphi study by Akers, Vaughn, and Lockaby (2001), focused on competencies needed by high school students with specific focus in agricultural communications, revealed that 100% of the respondents surveyed agreed that students should be able to identify careers available in agricultural communications. Respondents agreed that students should be competent in conducting an interview, writing a news story and/or feature story, properly using a digital camera, properly using a video camera, and be able to develop a multimedia presentation (Akers et al., 2001). The study supports curriculum areas that could be incorporated into visual communications instruction that focuses on agricultural communication knowledge, skills, and competencies.

The University of Arkansas developed *The Visual Communication on the Road in Arkansas: Video and Photo Creative Projects to Promote Agriculture* (Visual Communications) program, which was based on a constructivist foundation and integrated the national FFA organizations model of classroom learning, laboratory activities, and FFA involvement. The

educational units of instruction also included areas of importance for agricultural communicators as outlined by Akers et al. (2001). The curriculum was taught by agricultural science teachers prior to an experiential learning activity that takes place in a mobile classroom. The Visual Communications program curriculum was designed with ten lessons of classroom instruction that included teacher lesson plans, instructional PowerPoint's, worksheets, handouts and assessments. After teachers finished teaching the curriculum units, students completed either a news- or feature-style storyboard focused on an agricultural related topic. Then faculty and staff from the University of Arkansas utilized a mobile classroom equipped with digital and video cameras and laptops with photo and video editing software to assist secondary students with video creation. During the full-day hands-on, experiential learning activity student groups of two to four individuals completed three to five minute video projects to promote agriculture. During this day students also learned about agricultural communication careers available.

## Theoretical Framework

The Vocational Education Act of 1963 defines vocational education as courses used for the preparation of students for paid or unpaid employment (Hayward, 1993). Additionally, the act recognizes agricultural education courses as preparing individuals for college studies. This preparation for the workforce can be achieved through modified teaching methods that include reflective learning and hands-on engagement. Constructivism is a relatively recent term used to represent a collection of theories, including generative learning (Wittrock, 1990), discovery learning (Bruner, 1961), and situated learning (Brown, Collins, & Duguid, 1989).

Learning is an active process where the learner uses sensory input and constructs meaning with the content based on previous learning and experiences (Hein, 1991). Kolb (1984) proposed a theory of experiential learning that involved four principal stages: concrete

experiences (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE). These teaching methods allow students to reach application, analysis, synthesis, and evaluation, the higher tiers in Bloom's Taxonomy of learning (Bloom & Krathwohl, 1956). "Learners are expected to understand the applications they are learning" (Edgar, 2007, p. 13) and should be able to do more than simply act on memorization.

"Communications in agriculture is designed to introduce students to topics related to promoting agriculture through a variety of media sources" (Oklahoma Instructional Media Center, 2010, ¶5). However, since the incorporation of the agricultural communications CDE and the development of *The Guidebook for Agricultural Communications in the Classroom*, Arkansas has yet to develop an educational framework in agricultural communications to teach students about technologies and careers associated with the field. Yet, the most recent National Research Agenda notes priority areas important to visual communications curriculum and training in secondary education programs: (a) sufficient scientific and professional workforce that addresses the challenges of the 21st century (priority area three); (b) meaningful, engaged learning in all environments (priority area four); and (c) efficient and effective agricultural education programs (Doerfert, 2011). Arkansas agricultural science curriculum does not outline visual communications based frameworks for agricultural communications curriculum making it difficult to provide career relevant experiences for students. Therefore, a need exists for secondary agricultural education students to be exposed to visual communication knowledge and technologies, specifically those used in agricultural communications.

## Purpose of the Study

Upon completion of the Visual Communications program, teachers across the state along with state education staff will be able to decide if the curriculum will be implemented into the

frameworks for agricultural education. Teachers across the state were provided electronic access to Visual Communications curriculum materials, and to date eight schools have been considered early adopters and participated in the program. In the fifth edition of *Diffusion of Innovations*, Rogers (2003) defines attitude as "a relatively enduring organization of an individual's beliefs about an object that predisposes his or her actions" (p.175). Rogers (2003) outlined the five stage model of the innovation decision process: (a) Knowledge, (b) Persuasion, (c) Decision, (d) Implementation, and (e) Confirmation as the steps to finalizing an innovation. In order for the Visual Communications program to move up in the innovation decision process, perceptions of the students and teachers must be assessed. The purpose of this study was to assess student and teacher perceptions of the Visual Communications program. The following research questions guided the study:

1) How do students perceive the curriculum associated with the Visual Communications program?
2) How do students perceive the hands-on, experiential video production activity (mobile classroom) associated with the program?
3) How do teachers perceive the Visual Communications program (curriculum and mobile classroom experience)?

## Methodology

The Visual Communications program was launched in the summer of 2010. Curriculum covering photography, news and feature writing, and videography were compiled and made available to Arkansas agricultural science programs. This curriculum included lesson plans, PowerPoint presentations, worksheets, activities and assessments. The curriculum was designed to be taught in as little as 10 days and no more than 20 days (a two to four week period) and

included lessons in photography, writing, and videography in agriculture. The population of this study consisted of a snowball sample of teachers and students enrolled in agricultural sciences courses in Arkansas. The fall 2010 semester was used as a pilot (testing) period for the curriculum and a daylong experiential experience to apply knowledge gained. Teachers were able to meet with faculty and staff from the University of Arkansas to learn more about the study before agreeing to participate. Teachers were given access to the curriculum via the Agricultural and Extension Education departmental website. Upon completion of the curriculum, faculty and staff from the University of Arkansas visited the schools with the mobile classroom (a 7x14' cargo trailer converted to a small classroom) and helped student groups (three to five participants) shoot photos and video and then create a three to five minute video promoting an agricultural topic or story. The mobile classroom is equipped with video cameras, digital cameras, and computers and software to complete the task. Each participating school created two to five student videos and completed videos were rendered and posted to YouTube.

During the pilot, four schools participated in the program. The pilot group was strategically targeted based on school location throughout Arkansas ($n$ = 3 schools; $n$ = 27 students) in the fall of 2010. In the spring of 2011, participating schools were selected based on teacher willingness to incorporate the curriculum into one of their agricultural science courses ($n$ = 5 schools; $n$ = 45 students). There were only minor wording changes made to curriculum and assessments after the pilot group and no significant difference was found between student data from the different semesters. Therefore, all data were compressed and reported together ($N$ = 72 students).

Throughout the program students were asked to complete questionnaires after each specific curriculum unit was taught by the collaborating agricultural science teacher. Each

curriculum questionnaire referenced the topic and assessed the students' knowledge of the specific visual communications area, how/if they enjoyed learning about it, its value to their education, and if they found it to be practical. Perception questions were adapted from an instrument by Silance and Remmers (1934) to fit the content of this study. The instrument contained 20 items on a 1 to 7 Likert-type scale (1 = "strongly disagree" and 7 = "strongly agree") designed to determine respondent perceptions about the Visual Communications curriculum. To prevent response set, seven of these 20 items were negatively worded. Negatively worded questions were reverse coded for analysis. Students also asked to complete an instrument regarding the mobile classroom experience (the experiential learning aspect that allowed them to produce the short videos promoting agriculture). The researchers followed Dillman's Total Tailored Design method (2007) to reduce instrumentation bias in question wording.

Teachers who taught the curriculum were surveyed after completion of the program. Agricultural science teachers assessed the curriculum units and the hands-on (mobile classroom) portion of the program via Survey Monkey; an electronic survey instrument. Arkansas agricultural science teachers ($n$ = 7) participating in the Visual Communications program were assessed to determine their perceptions of the program. Upon completion of the program, project administrators sent an email to the teachers with the link to the instrument. Teacher perceptions of the usefulness of the provided instructional materials for the curriculum as well as student understanding of visual communications post curriculum were assessed using a 1 to 5 point Likert type scale (1 = "strongly disagree" to 5= "strongly agree"). Teachers were also asked if they perceived the students to be interested in the curriculum, if the curriculum was useful for the students' future, and if they believed their students were engaged throughout the project based on

a 1 to 4 point Likert type scale (1 = “not at all” to 4= “very”). Instrumentation development followed Dillman’s Total Tailored Design method (2007) to increase participation and reduce instrumentation bias in question wording

Data were analyzed using descriptive (means, standard deviations, and percentages) and non-parametric (*Fisher’s* exact test) and parametric (one-way analysis of variance and bivariate correlation) inferential statistics. The level of significance for all inferential statistical tests was established at .05 *a priori*.

## Results and Findings

Student perceptions were assessed, through a series of twenty questions based on a 1 to 7 Likert-type scale (1 = “strongly disagree” to 7 = “strongly agree”), regarding their enjoyment, interest, and the practicality of the lessons taught. Negatively worded questions were reverse coded for analysis. Students from the pilot and the spring 2011 semester are presented together. Participating schools represented four regions of Arkansas.

Twenty-six female students and 46 male students ($N = 72$) participating in the Visual Communications program had useable/completed responses for the perceptions instrument. All instruments were filled out via paper and pen. Student perceptions data were input by the researchers and all questions that were negatively worded were reverse coded. Because there are no frameworks outlining agricultural communications curriculum in Arkansas, teachers choose a class at their own discretion to participate. The students in the sample were mixed classes of freshman to seniors in high school and classes varied in subject area.

*How do students perceive the curriculum associated with the Visual Communications curriculum developed for this program?*

For the curriculum unit, students were agreeable in each category (interest, enjoyment, and practicality) but not highly agreeable in any specific area (photography, writing, and videography). The enjoyment category overall indicated a mean of 5.56 (*SD* = 0.80), while practicality held a mean of 5.52 (*SD* = 1.03), and interest had a mean of 5.51 (*SD* = 0.93). Table 1 notes students' perceptions in each area for each school. School G rated all three areas of assessment regarding the agricultural communications curriculum indifferent (neither agreed or disagreed) to moderately agree, while all other schools agreed to strongly agreed with the enjoyment, practicality, and interest statements.

Table 1

Student Perceptions of the Agricultural Communications Curriculum (*N* = 72)

| Assessment Area | Secondary School | *n* | *M* | *SD* |
|---|---|---|---|---|
| Enjoyment | | | | |
| | A | 10 | 5.83 | 0.81 |
| | B | 6 | 5.47 | 0.53 |
| | C | 11 | 5.56 | 0.89 |
| | D | 12 | 5.88 | .42 |
| | E | 9 | 5.76 | .85 |
| | F | 8 | 5.31 | .84 |
| | G | 11 | 4.82 | .68 |
| | H | 5 | 6.00 | .91 |
| | Overall | 72 | 5.56 | .80 |
| Practicality | | | | |
| | A | 10 | 5.63 | 1.13 |
| | B | 6 | 5.52 | 0.87 |
| | C | 11 | 5.54 | 1.23 |
| | D | 12 | 6.12 | 0.41 |
| | E | 9 | 5.46 | 1.31 |
| | F | 8 | 5.41 | 0.57 |
| | G | 11 | 4.58 | 1.01 |
| | H | 5 | 6.14 | 0.52 |
| | Overall | 72 | 5.52 | 1.03 |

Table 1 (continued)

| Assessment Area | Secondary School | *n* | *M* | *SD* |
|---|---|---|---|---|
| Interest | | | | |
| | A | 10 | 5.61 | 1.09 |
| | B | 6 | 5.21 | .56 |
| | C | 11 | 5.39 | 0.98 |
| | D | 12 | 6.17 | .44 |
| | E | 9 | 5.41 | 1.31 |
| | F | 8 | 5.46 | .59 |
| | G | 11 | 4.95 | 1.00 |
| | H | 5 | 5.86 | .83 |
| | Overall | 72 | 5.51 | .95 |

**Note*. Scale of items = 1-Strongly Disagree, 2-Moderately Disagree, 3-Disagree, 4-Neither Disagree not Agree, 5-Moderately Agree, 6-Agree, 7-Strongly Agree.

*How do students perceive the video production activity (mobile classroom) associated with this program?*

Overall students were agreeable with statements regarding the mobile classroom project in all assessment categories (enjoyment, practicality, and interest). On a seven point scale (7 being strongly agree), students rated their enjoyment of the video production project with a mean equaling 5.69 (*SD* = 0.85), and their interest in the projects at 5.83 (*SD* = 0.96). Students agreed that the projects were practical rating practicality with a mean of 5.70 (*SD* = 1.02). Table 2 displays students' perceptions of the experiential learning activity with the mobile classroom in each area for each school. School D (located in the north central part of Arkansas) rated the mobile classroom highest with a mean greater than 6 in each category.

Table 2

Student Perceptions for the Mobile Classroom Visit (*N* = 72)

| | School | *n* | *M* | *SD* |
|---|---|---|---|---|
| Enjoyment | | | | |
| | A | 10 | 5.83 | 0.81 |
| | B | 6 | 5.47 | 0.53 |
| | C | 11 | 5.56 | 0.89 |
| | D | 12 | 6.04 | .54 |
| | E | 9 | 5.80 | 1.11 |
| | F | 8 | 6.15 | .51 |
| | G | 11 | 5.41 | .65 |
| | H | 5 | 5.80 | 1.21 |
| | Overall | 72 | 5.69 | 0.85 |
| Practicality | | | | |
| | A | 10 | 5.62 | 1.13 |
| | B | 6 | 5.52 | 0.88 |
| | C | 11 | 5.54 | 1.23 |
| | D | 12 | 6.02 | .43 |
| | E | 9 | 5.95 | 1.43 |
| | F | 8 | 5.96 | .64 |
| | G | 11 | 5.29 | 1.32 |
| | H | 5 | 5.23 | 1.50 |
| | Overall | 72 | 5.70 | 1.02 |
| Interest | | | | |
| | A | 10 | 5.61 | 1.08 |
| | B | 6 | 5.21 | 0.56 |
| | C | 11 | 5.39 | 0.98 |
| | D | 12 | 6.24 | .45 |
| | E | 9 | 5.65 | 1.43 |
| | F | 8 | 5.84 | .68 |
| | G | 11 | 6.64 | 1.29 |
| | H | 5 | 5.31 | 1.55 |
| | Overall | 72 | 5.83 | .96 |

**Note*. Scale of items = 1-Strongly Disagree, 2-Moderately Disagree, 3-Disagree, 4-Neither Disagree not Agree, 5-Moderately Agree, 6-Agree, 7-Strongly Agree.

*How do teachers perceive the Visual Communications program (curriculum and mobile classroom experience)?*

Agricultural science teachers were given an instrument using Likert-type scales (4 and 5 point) to determine their perceptions of the Visual Communications program and the mobile classroom experience. Arkansas agricultural science teachers in this sample population ($n$ = 7) participated in the visual communications program assessment. Total years of teaching experience was analyzed and resulted in 28.6% less than one year, 14.3% one to three years, 14.3% six to ten years, and 42.9% more than ten years teaching experience. Gender of the participating teachers was 71.4% male and 28.6% female. Teachers identified ethnic backgrounds into two ethnicities being 85.7% white and 14.3% other. Level of respondents' education was identified into two levels being 42.9% bachelor's degree and 57.1% master's degree. Grade level presently teaching was 71.4% 9th through 12th grade and 28.6% 7th through 12th grade.

On average, curriculum instruction took teachers 13.57 days and the curriculum was taught in a variety of secondary agricultural science classes (agriculture business, agriculture marketing, biological animal science, leadership and communications, and agriculture science and technology). Participating teachers spent between six and 10 hours preparing to teach the outlined curriculum. The majority (57.1%) of teachers noted they were involved during the mobile classroom visit. All teachers indicated that the curriculum could be taught in the same class again, and that they would teach the curriculum again. The majority (85.7%) of the teachers noted that they would continue teaching curriculum without the Visual Communications program. Teachers noted that the majority of their students had access to equipment but few had access to software

Teachers were asked to assess the curriculum (lesson plans, PowerPoint's, handouts, etc.) based on how the provided materials met their needs for instruction (1 to 5 point Likert type scale with 1 = "strongly disagree" to 5 = "strongly agree"). The mean rating of the provided instructional material was neutral ($M$ = 3.80; $SD$ = 1.10). Teachers agreed ($M$ = 4.29; $SD$ = 0.76) that students had a better understanding and general knowledge of visual communications after being taught the curriculum.

When asked to rate their level of agreement on a 4 point Likert type scale (1 = "not at all agree"; 2 = "somewhat agree"; 3 = "mostly agree"; 4 = "fully agree") teachers somewhat agreed ($M$ = 2.00; $SD$ = 0.58) students were interested in the topics covered in the curriculum. Teachers felt the students would most likely ($M$ = 3.00; $SD$ = 0.82) be able to apply this information in their future (based on a 4 point Likert type scale with 1 = "not applicable", 2 = "somewhat likely", 3 = "most likely", 4 = "very likely"). Agriculture teachers noted that students were mostly engaged and on task during the mobile classroom visit ($M$ = 3.57; $SD$ = 0.79) based on a 1 to 4 point Likert type scale with 1 = "not at all" to 4 = "very".

## Conclusions

Students consistently agreed with their overall level of enjoyment, interest in the curriculum, and identified the practicality of incorporating agricultural communications curriculum into their coursework. Enjoyment of the curriculum as described by participants resulted in a mean score of 5.56 ($SD$ = .80). Therefore, respondents perceive the curriculum to have value toward use in this program and their learning. Participants held similar beliefs toward practicality ($M$ = 5.52; $SD$ = 1.03) and interest ($M$ = 5.51; $SD$ = .95). Students' indicated the curriculum had practical application to their lives, and they were interested in the topics. Therefore, students' collaboration (which is a method used through the curriculum's design) may

have led them to have more positive perceptions; resulting in further understanding which agrees with Edgar (2007) and constructivist approaches to learning. It can be further postulated that the positive perceptions may have resulted in the basis for curriculum development where students could actively apply new concepts and ideas (USC-CET, 2006).

Further it was found that participants perceived the experiential activity to be positive regarding their enjoyment, its practicality and interest. Combined with the curriculum presented, this experiential activity may have elevated student perceptions through experiential (Kolb, 1984). The Visual Communications program allowed students to make reflective observations and abstract conceptualizations (Kolb, 1984) taught in curriculum and applied during the mobile classroom experience. Students then applied concrete experiences along with active experimentation (Kolb, 1984) during the video production process, which positively impacted student perceptions.

Teachers were neutral on the usefulness of the prepared curriculum, which could be due to the pre-developed instructional material limiting their use of preferred teaching style or due to a lack of available technology at their school. Regardless of their neutral perception of the prepared curriculum, the majority of teachers noted they would continue using it even without visits from the mobile classroom.

Overall, teachers noted that curriculum improved students' understanding of visual communications and that students were interested in the topics covered. It can be concluded that the development and implementation of the program was perceived as most likely valuable to students' future by the instructors and that students were engaged throughout the experiential learning activity. Therefore, the research supports experiential learning activities can positively impact students at the secondary level (Kolb, 1984). It should also be acknowledged that

combined with the perceptions of the participants, the impact of the program, at least through the lens of participants, was successful.

## Implications and Recommendations

The mobile classroom program has a number of schools left to visit in the fall of 2011 and assessments of student perceptions are being conducted through this longitudinal study. Eight new schools have elected to participate. However, there are over 100 agricultural education programs in the state, but due to end of course testing it has been difficult for teachers to agree to participate in the program. Thus, courses are tied to curriculum frameworks which will be tested through end of course examinations. Therefore, many instructors cannot afford to use valuable teaching time in order to offer a program which is not directly linked to the frameworks. Participating schools and instructors that have agreed to participate were able to find avenues tying the information into tested curriculum or used a class that was not being tested. Agricultural education programs outside of Arkansas could take the prescribed curriculum and also implement it into courses. The curriculum could also be used as training material for students participating in the agricultural communications career development event.

Through discussion of topics and competencies covered in this program, agricultural communications curriculum could be added to the agricultural education frameworks in Arkansas. It is unknown at this time if an entire course will be added or if curriculum will be added to an already existing course. By assessing the early adopters for their opinions, the program team will be able to identify opinion leaders who will assist the adoption process across the state. Opinion leaders are those individuals across the state which will have the most impact in getting support for statewide curriculum.

Additional research should be conducted regarding skill-sets and industry knowledge before expanding this curriculum for incorporation into state frameworks. Teachers should also have access to workshops and resources that will allow them to expand their knowledge of agricultural communications content.

## References


Akers, C., Vaughn, P. R., & Lockaby, J. D. (2001). High school agricultural communications competencies: A national Delphi study. *Journal of Southern Agricultural Education, 51*(1), 124-137.

Bailey-Evans, F. (1994). *Enhancing the agricultural communications curriculum: A national Delphi study.* Unpublished master's thesis, Texas Tech University, Lubbock.

Bloom, B. S., & Krathwohl, D. R. (1956). Taxonomy of educational objectives: The classification of educational goals, by a committee of college and university examiners. Handbook 1: Cognitive domain. New York, Longmans.

Burnett, C., & Tucker, M. (2001). *Writing for* a*griculture: A new approach using tested ideas*. Dubuque, IA: Kendall/Hunt Publishing Co.

Brown, J., Collins, A., & Duguid, P. (1991). Situated cognition and the culture of learning. In M. Yazdani, R. Lawler, M. Yazdani, & R. Lawler (Eds.), *Artificial intelligence and education, 2*, pp. 245-268. Westport, CT US: Ablex Publishing. Retrieved from EBSCO*host* (1991-98966-006).

Bruner, J. S. (1961). The act of discovery. *Harvard Educational Review*, 31, 21-32. Retrieved from EBSCO*host* (1962-00777-001)

Center for Excellence in Teaching. (n.d.) University of Southern California. Retrieved February 16, 2011, from http://cet.usc.edu/resources/teaching_learning/index.html

Dillman, D. (2007). *Mail and Internet Surveys: The Tailored Design Method* (2nd ed.). Hoboken, NJ: John Wiley and Sons.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Duffy, T. M., Lowyck, J., & Jonasses, D. H. (1993). *Designing environments for constructive learning.* Berlin: Springer-Verlag.

Edgar, D. W. (2007). *Learning theories and historical events that have changed instructional design and education: Recitation literacy towards extraction literacy.* Unpublished manuscript.

Goodland, J. (1983). *A place called school.* New York, NY: McGraw-Hill.

Hayward, G. C. (1993).Vocational Education Act. U.S Department of Education. Office of Vocational and Adult Education. Washington, DC.

Hein, G. E. (1991). The museum and the needs of people. CECA. *Proceedings from the International Committee of Museum Educators Conference*, Jerusalem Israel, 15-22. Retrieved February 16, 2011 from http://www.exploratorium.edu/IFI/resources/constructivistlearning.html

Hartenstein, S. (2002) Preparing for a career in the agricultural communications industry. Available at https://www.ffa.org/Documents/cde_agcomm_resources.pdf

Kolb, D. A. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice-Hall.

Lester, P. (2006). *Visual communication: Images with messages*. Belmont, CA: Thomas Higher Education.

Newcomb, L. H., McCracken, J. D., Warmbrod, J. B. R., & Whittington, M. S. ( 2004). *Methods of teaching agriculture* (3rd ed.). Upper Saddle River, New Jersey: Pearson Prentice Hall.

Oklahoma Instructional Media Center. (2010). Agriculture Food and Natural Resource Cluster. Retrieved http://www.okcareertech.org/cimc/ag/index.htm

Osborne, E. W. (Ed.) (n.d.). *National research agenda: Agricultural education and communication, 2007-2010.* Gainesville: University of Florida, Department of Agricultural Education and Communication.

Rhoades, E. B., & Irani, T. (n.d.). *The stuff you need out here: A semiotic case study analysis of an agricultural company's advertisements.* Manuscript submitted for publication.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.) New York, NY. The Free Press.

Sadler-Trainor, G. (2005). A visual overdose? Visual communications in public relations. *Public Relations Quarterly*, *50*(4), 7-9.

Silance, E. B., & Remmers, H. H. (1934). An experimental generalized master scale: A scale to measure attitudes toward any school subject. *Purdue University Student Higher Education*, *26*(35), 84-88.

Talbert, B. A., Vaughn, R., & Croom, D. B. (2005). *Foundations of agricultural education* (1st ed.). Catlin, IL: Professional Educators Publications

University of Southern California Center for Excellence in Teaching [USC-CTE]. (2006). Case-based & problem-based teaching and learning. Retrieved from http://cet.usc.edu/resources/teaching_learning/case_based.html

Van Scoter, J. (2004). Using digital images to engage young learners. *Learning & Leading with Technology*, *31*(8), 24-37.

Wittrock, M. C. (1990). Generative process of comprehension. *Educational Psychologist*, *24*, 345-376.

A peer-reviewed paper presented at the Agricultural Communication section of the Southern Association of Agricultural Scientists annual meeting in Birmingham, AL, February 5-6, 2012

# An exploration of consumer perceptions of plants and plant characteristics

## A qualitative study of Florida plant and garden consumers

12/10/2011

Kathryn L. Wilson, Carly Barnes, and Dr. Tracy Irani

Final Research Paper (Submitted to the Southern Association of Agricultural Scientists AG COMM Section)

Kathryn L. Wilson
1102 NW 4th Street
Gainesville, FL 32601
(509) 675-1810
kathrynlwilson@ufl.edu

Carly Barnes
P.O. Box 110540
Gainesville, FL 32611-0540
(850) 209-0123
carly.barnes@warrington.ufl.edu

Dr. Tracy Irani
P.O. Box110540
Gainesville, FL 32611
(352) 392-0502
irani@ufl.edu

**Abstract:** When planning and developing a state-specific agricultural product brand and marketing campaign, it is important to consider potential consumers' perceptions of terminology, messages, and attitudes toward the product. This qualitative study explores Florida consumer perceptions of green industry terminology, such as "plant," "garden," "landscape," and "home landscape" as well as plant characteristics important to consumer purchase. Participants in all six of the Florida-based focus groups utilized in this study did not feel that a brand was important to plant purchase. Given the findings in of the study, recommendations for marketing an agricultural product of this nature include using the word "plant" over "garden;" achieving the plant characteristics deemed to be the most important to plant purchases (healthy-looking, quality, and "makes me feel good') with the product; and emphasizing these characteristics in a well-targeted marketing campaign.

**Key words: Florida plants, Florida gardening, landscape, home landscape, plant/garden consumers, marketing brands, plant characteristics**

## Introduction

Agriculture can be a difficult market for American growers and producers. Given appreciating land values, high input costs, the need to harvest at the peak of ripeness, and strict industry regulations, farmers can easily incur financial losses (Adelaja, 1996). Policymakers and industry representatives are constantly looking for a way to help growers and producers to remain economically viable businesses in the agriculture sector (Govindasamy & Nayga, 1996). In response, many states have turned to state-specific marketing campaigns for their agricultural products. For example, many state's Department of Agriculture agencies have sponsored or supported the development of state-specific brands to boost sales and consumer recognition. State-specific agricultural products promoted throughout the United States commonly include meat, dairy, produce, and aquaculture, as well as non-consumable goods such as horticultural products.

When considering marketing an agricultural product, there are many important considerations. Agricultural products are primarily marketed as commodities. Commodities, defined as economic goods, have a demand but a general lack of qualitative differentiation, such as a brand. In horticulture, the branding of products is rather rare. However, the branding of agricultural and horticultural products enables consumers to identify a specific product, especially if it offers the buyer added value in the form of a quality guarantee; consumer loyalty and price premiums could be expanded with the implementation of successfully marketed brands (Koelemeijer, Luetscher, and Stoeken, 1993). Once a brand is well established it has the ability to provide a differentiated product that increases the added value for the producer (Bagnara, 1996).

Given that there is such a low proportion of the American public directly engaged in agriculture as well as the tendency of agricultural products not easily lending to branding,

consumers are crucial to a successful marketing campaign. Testing potential consumers' perceptions of words, phrases, designs, and communication materials before engaging in a marketing campaign helps ensure that consumers will respond favorably and have a clear understanding of the product.

The Florida Nursery, Growers and Landscape Association (FNGLA), a large state commodity member organization, began developing plants to market a state-specific plant brand in 2009. The *Florida Garden Select* brand is a program designed to encourage the use of "superior and proven" Florida plants (FNGLA, 2011). *Florida Garden Select* plants are promoted as being ideal plants for most Florida gardens. Many of the selected plants are marketed outside Florida and into most Southern States. A hardiness zone feature is emphasized to locate plants specific to each growing zone (FNGLA, 2011).

Several Southern states, including Georgia, Kentucky, Louisiana, Mississippi, Oklahoma, and Texas, have implemented state-specific plant promotion programs with the goals of identifying specific plants and generating awareness of these plants through a state-wide promotional marketing campaign to increase sales through price premiums (Steglin, Turner, and Knight, 2001). Though there are many similarities between the programs in regard to creation, funding, governance, and marketing strategies, there are also many differences, and there has been very little formal monitoring and/or oversight to evaluate if the programs actually achieve their goals (Stegelin et al, 2001).

While some state plant branding programs have conducted consumer recognition and satisfaction surveys after the fact, most have not utilized message or communication material testing *prior* to launching the brand (Dr. Charlie Hall, Ellison Chair in International Floriculture

at Texas A&M University, personal communication, 11/15/2010). This study, conducted prior to launching a campaign, could have great implications for organizations interested in state branding and marketing campaigns.

Understanding potential consumers' perceptions of plants and gardening, as well as plant purchase patterns, can assist green industry companies in more effectively marketing their products. Based on the above, the purpose of this study is to explore the significance of a plant brand by utilizing focus groups comprised of Florida consumers of home and garden products. Objectives included exploring consumer perceptions of words, terms, and phrases associated with plants and gardening and determining the plant characteristics most important to consumers' decisions to purchase.

## State Plant Promotional Programs

New Jersey implemented the first state-funded marketing program for agricultural products in 1984 with its Jersey Fresh campaign. This program was designed to generate consumer awareness of agricultural products in New Jersey, as well as to promote Jersey Fresh products among food retailers (Govindasamy, 2003). In a 2003 study, 77.5 percent of randomly-selected consumers in New Jersey recognized the Jersey Fresh logo, as well as 50 percent of randomly-selected consumers in New York and 30 percent in Pennsylvania (2003). Over its 26-year campaign period, Jersey Fresh has utilized several taglines and a variety of advertising mediums (2003). Research indicates that for every dollar contributed to the Jersey Fresh program through 2000, agricultural fruit and vegetable revenues increased by $31.54. The Jersey Fresh program is estimated to contribute $63.2 million to the state economy (2003).

Florida also implements a state-wide agricultural marketing campaign, *Fresh from Florida*, through its Florida Agricultural Promotional Campaign (FAPC). The FAPC is described as "an identification and promotional program designed to boost the image of Florida agriculture and increase sales by helping consumers easily identify Florida agricultural products" (Florida Department of Agriculture and Consumer Services, 2004). Members of Florida's agriculture industry can join the FAPC campaign and have access to the *Fresh from Florida* logos, be listed on the state's Agricultural Product Search website, receive graphic assistance, and other benefits of membership (2004). The *Fresh from Florida* logo and campaign is used across the department's divisions, and is included on communications materials and websites (2004). The logo and campaign has also been extended to commodity groups, such as the *Fresh from Florida* Seafood campaign (Florida Department of Agriculture and Consumer Services Division of Marketing, 2004).

In addition to state-wide agricultural marketing campaigns, some states have implemented state-wide marketing campaigns specific to the plant and horticulture industry. Florida is not the only state to implement a plant promotion program. Many states have introduced horticulture product brands programs that feature varieties either native or beneficial to the area, or at least known to thrive in the specific climate. State and regional branding has also allowed consumers to associate ornamental products to a particular geographical region (Lillywhite et al., 2005).

Steglin, Turner, and Knight (2001) conducted an evaluation of state plant promotion programs in Southern states that indicates that most states employ a brand for a plant promotion program, such as Georgia's *Georgia Gold Medal Winner*™ and Mississippi's *Mississippi*

*Medallion*™. The development of these state programs included university program sponsorship, plant selection committees and criteria, goals for promotion, and coordination with the industry.

Texas's *Texas Superstar*™ plant branding program is an example of a long-term plant brand that is meeting its objectives of increasing producer profits, but has only recently been evaluated for customer awareness and willingness to pay. This brand was initially locally and regionally promoted by a popular Extension horticulturist known in the San Antonio area before Texas A&M University encouraged participants to develop a state-wide promotional program (Dr. Charlie Hall, Ellison Chair in International Floriculture at Texas A&M University, personal communication, 11/15/2010).

Despite the significant investments in research and marketing, no message testing or consumer awareness research was conducted prior to launching the Texas program (Collart, Palma, and Hall, 2010). A recently published evaluation of the *Texas Superstar* program in relation to consumer behavior demonstrated that though the consumer awareness of the brand is low, the level of satisfaction among consumers is high (Collart et al, 2010). Consumers who frequently shopped for plants or previously knew of the brand were more likely to purchase a *Texas Superstar* plant; the products were successful at creating a price premium and the willingness to pay for a *Texas Superstar* was found to be 10 percent higher than an unbranded plant (Collart et al, 2010).

## Schema Theory

Schema theory explains the linkages between symbols and meaning by taking in the totality of an individual's life experiences (Reichel, 2009). "Because schemata are anticipations, they are the medium by which the past affects the future; information already acquired determines what will be picked up next" (Neisser, 1976, p. 74). Rumelhart refers to schemata as

the “building blocks of cognition” (1980, p. 33) and argues that schemata are used in interpreting both linguistic and nonlinguistic sensory data. Neisser’s (1976) concept of pattern recognition involves assigning categories to objects or other stimuli and the higher levels of comprehension and processing can be explained by schema theory (Reichel, 2009). Rumelhart (1980) describes schemata as “the fundamental elements upon which all information processing depends” (p. 33). Therefore, schema theory can be utilized to understand the importance of a purchaser’s past life experiences to the purchaser’s attitude toward buying a product and their decision to purchase. The cognitive information ascribed to objects or stimuli based on an individual’s past experiences could influence purchasing decisions in terms of the individual’s schemata associated with a product, brand, or message. For example, in this study, participants were asked to rate what was most important when making plant purchases, and utilized various schemas, or cognitive shortcuts, to identify what plant characteristics were most essential to purchase decisions.

## Model of Causality in Social Learning

The Model of Causality in social learning explores the relationships between human behavior, cognitive and internal activities, and the external environment (Bandura, 1985). The favored concept of interaction in social learning theory is triadic reciprocality, in which behavior, cognitive and internal activities or personal factors, and external environmental influences are viewed as interdependent determinants that influence each other bidirectionally (Bandura, 1985). In terms of marketing and branding horticultural products, the Model of Causality in Social Learning can be utilized to understand the influence of the purchaser’s previous knowledge and perceptions of the product on the purchaser’s decision to buy a product, as well as the influence

of the external environment on the purchaser's cognitive and internal activities, or the purchaser's thoughts or attitude toward buying a particular product.

## Theory of Planned Behavior

Regarding desired consumer changes in attitude or behavior, the Theory of Planned Behavior addresses behavior intent, normative influences, perceived behavioral control, and sense of efficacy as the primary influences upon behavior (Ajzen, 1991). In this theory, human behavior is guided by behavioral, normative, and subjective beliefs (Ajzen, 2002). If the objective is to encourage consumers to purchase a state plant brand, consumers should have the intention to support the brand, know other people that think it's important and/or a good product, know that the product is available, and think that the purchase will benefit them personally, or help their community or state's economy in a significant way.

## Elaboration Likelihood Model

The Elaboration Likelihood Model (ELM) is a general theory of attitude that posits that there are basically two routes to persuading your target audience: the central route, through carefully and thoughtfully assessing the merits of contrived arguments and information, or the peripheral route, which entails some kind of cognitive or behavioral cue that infers the argument without the complex processing of information, which is more of an "attractive source" (Petty & Cacioppo, 1986). The more complex central route is known to be the least preferred information processing activity as it requires more exertion and attention, but this is dependent on individual and situational factors (Frewer, Howard, Hedderley, & Shepherd, 1997). Also, the degree to which the information is salient or relevant to the individual determines whether they will use the central or peripheral routes. If it is highly personal, the individual will be more likely to spend

the time and energy required to determine the merits of the information; if the information is relatively salient and the source is thought to be credible, the peripheral route may be deemed adequate (Frewer et al, 1997). In the case of marketing a state specific plant brand, messages will be more likely to be retained and trusted if they are made to seem relevant to potential consumers and they come from a trusted source.

## Purpose and objectives

The purpose of this study was to conduct research to better understand Florida consumers' perceptions of plant purchases, brands, and preferred communication channels. In order to test messages and communication materials developed for "Florida Garden Select," a Florida-specific plant brand, FNGLA partnered with the University of Florida/Institute of Food and Agricultural Sciences' (UF/IFAS) Center for Public Issues Education in Agriculture and Natural resources (PIE Center) to conduct focus groups with potential consumers around the state.

The objectives that were used to guide the research were to: 1) explore consumers' perceptions of plants, gardening, and landscaping, as well as 2) determine what types of messages and plant characteristics consumers' best respond to in relation to purchasing plants.

## Methods

Focus group research has been used extensively in marketing studies, as this kind of qualitative group interviewing enables researchers to gain valuable insight into public opinion and perceptions (Morgan, 1997). It is possible to obtain in-depth information about perceptions and attitudes. Focus groups encourage group interaction and discussion; moderators are able to

ask clarifying questions to seek a deeper understanding—a feature not possible in traditional surveys (Merriam, 1998).

Focus group research is based on facilitating a guided discussion on a particular topic with a group of individuals in an effort to listen and learn from their perceptions and opinions. The researcher develops the protocol and questions to guide discussion, organizes the logistics of the focus groups, and later analyzes the data for themes and patterns (Morgan 1998).

This kind of study is concerned more with process and "probing the phenomena for a deeper understanding" than qualitative research methods (McMillan & Schumacher, 2010). Because FNGLA had already invested in an outreach campaign with the creation of a brand name, logo, website, and select print materials, and because there were specific existing messages to test, it was deemed most appropriate to utilize a research methodology that allowed more in-depth explorations of individual response, attitudes, and knowledge. In order to test outreach messages, interviews are often found to be more effective because participants are able to explore concepts and messages more thoroughly (Kruger, 1994).

This study used a set of three focus groups comprised of representative members of the target audience of plant product consumers (six in total). A set of two focus groups were held in three geographically and demographically different regions of Florida in March of 2010. These focus groups were held in Jacksonville, Orlando, and Miami; all sessions were conducted by graduate students and staff at the University of Florida PIE Center in Gainesville, Florida.

A market research firm in Gainesville was hired and used Computer Assisted Telephone Interviewing (CATI) telephone random digit dialing (RDD) sampling to qualify potential participants. Criteria used to select potential participants were a general interest in gardening,

plants, or home improvement projects. Probability samples were generated using a predetermined sampling frame based on demographic variables for all participant groups.

In qualitative studies, addressing reliability and validity is much different than in quantitative studies, and requires a kind of redefinition (Golafshani, 2003). To ensure consistency (reliability) and validity (accuracy) of a qualitative study, the highest care must be taken when interacting with participants. When utilizing focus groups, it is necessary to be clear, open, and consistent during all of the sessions—the same moderator should be used, the same moderator's guide and prompts, the same technological tools, the same recording devices, and even the same note takers if possible. For this study, all of these steps were taken to ensure consistency.

The moderator's guide was drafted and vetted through multiple parties to ensure clarity and relevance of questions. The researcher who authored the moderator's guide served as an assistant moderator and note-taker during the sessions. An unaided/aided technique was utilized during sessions, with directive questions that followed in order to prompt participants and encourage them to interact with each other to explore each specific topic.

In order to explore consumer awareness and usage of plants, participants were asked for what purpose they usually purchased plants (e.g. garden, gifts, beauty, as a replacement plant). To determine participants' opinions of plant characteristics most important to plant purchases, an interactive "Turning Point" exercise with visuals and scales was utilized. On a scale of 1-5 (1 being low and 5 being high), participants were asked to rate a series of plant characteristics. Responding to the question "*how* do you select what plants you will purchase?" participants were given the following prompts: Quality, Healthy looking, Attractive/pretty, Native to the area, Affordable, Hearty, Fertilizer use, Pesticides use, Low maintenance, Recognizable or familiar, Not known to be invasive, Makes me feel good, Fits the landscape, Seasonal planting selection,

Environmentally friendly, Colorful (*leaves or flowers*), and Brand. Participants were also asked about garden and landscape terms commonly used in the green industry in order to explore perceptions and cognitive shortcuts associated with the terms.

The data used in this study was derived from part of the larger study, which was sponsored by FNGLA and funded by the Florida Department of Agriculture and Consumer Services (FDACS). The focus of the larger study was message testing of a Florida-specific plant brand name, logo, website and communication materials.

## Results

Participants of six Florida focus groups were asked to articulate what they thought of when they heard certain words or terms. Demographically, the participants were very diverse. Occupations ranged from retired teachers, PR/sales managers, stay-at-home-parents, students, builders, and even marketing professionals. All participants had an interest in gardening or home improvement, and were asked what came to mind when they heard the word "plant" and "garden;" where they most often hear these words; what they thought the actual meaning of these words were, and how the words made them feel. Because there were six groups total in the FNGLA sessions, results were reported on the basis of themes and patterns that emerged in at least four or more groups.

When asked about the word "plant," all groups perceived of something living or growing. Four of six groups mentioned being outside, soil, or the earth. Four of six groups stated that they hear the word "plant" most often at retail outlets (such as Lowes or Home Depot). Most groups responded that the meaning of the word "plant" depends on the context and use (verb, noun, place, thing, etc). One said:

> *It could be taken a couple of different ways. I mean she said you've got to plant the field of vegetables or the plants on the table. Or there's harvest you know. It could be interpreted a couple of different ways.*

When presented with the word "garden," participants of all groups thought of food, vegetables, and flowers. One said:

> *And I would think that plants, most of the plants I see; they always grow something on them, it's cool, a lot of fruits and vegetables. Most of the ones I have in my yard are edible. It's solid.*

Members of all groups mentioned work, resources or hobbies of the word "garden," such as, "something that's taken care of and paid a lot of attention to." Members of all groups also brought up beauty, tranquility, or pride. One said:

> *It's almost like looking at a page, you can look at someone's garden and you can see the planning involved in it. That somebody's put flowers in a certain way, you know, the yard is perfect, the lawn is perfect, great level and you look at it, and say, hey, gee, this is a perfect garden. Rather than looking at my yard, I call it a yard but there's spots here and spots here and I wouldn't even call it a garden. It's just a work in progress.*

Five of six groups mentioned personal space or home. One participant articulated this by saying:

> *I think of garden as my personal space. You come to my house and you say, Oh come look at my garden. And so it's an extension of me, it's a place where I like to be. So the garden is very important to me.*

Five of six groups hear "garden" most often while shopping or in advertisements. Four of six groups hear "garden" most on television.

Of the word "landscape," all groups felt the word depicted something that was large scale. One participant said:

> *It's a lot of planning for landscape. It's not just cutting grass anymore. It's mulch and all the pretty stuff that they put in the yards.*

All groups thought of something manicured, designed, or very organized such as "expensive and constant maintenance." Participants of four of six mentioned the work or resources involved, and four of six groups thought of food or vegetables.

When presented with the term "home landscape," members of all groups brought up aesthetic appeal or beauty and said that planning, design, and/or organization was needed; home landscape is the "curb appeal of the home." One summed this up by saying:

> *Home landscaping seems a little bit larger scale. It seems like you're going to see something that's…in my garden, it's everything. You'll see orchids next to air plants; you'll see everything. But when you see home landscaping, you think that someone has actually made more structure.*

Members of five of six groups thought of cost, resources or the work involved and mentioned residence or personal space, like "personal care of your property." Four of six groups heard "home landscape" most often on advertisements, while shopping, or on the Internet.

Members in all groups indicated that they most often purchase plants for beauty or decoration. Members of five of six groups had a specific function or purpose in mind when purchasing plants, such as vegetable plants for food or hedges for privacy. Participants of four of six groups brought up that they purchase plants for gifts or sentimental purposes.

In an interactive "Turning Point" exercise, participants are given an electronic "clicker" and asked to make individual decisions about how important certain plant attributes were to deciding whether or not they would purchase a particular plant. In this session, participants were asked to rate 17 different plant characteristics in regard to how import these characteristics are to plant purchases (see *Table 1* below). Participants rated each characteristic on a Likert-type scale with the following choices: very important; important; neither important nor unimportant; somewhat unimportant; and not important.

**Table 1**

***Plant Characteristics important to plant purchases***

| Characteristic | Very Important | Important | Neither important nor unimportant | Somewhat unimportant | Not important |
|---|---|---|---|---|---|
| Healthy looking | 72% | 22% | 2% | 2% | 0% |
| Quality | 65% | 30% | 2% | 0% | 0% |
| Makes me feel good | 57% | 20% | 12% | 2% | 7% |
| Durable | 52% | 27% | 15% | 5% | 0% |
| Attractive/pretty | 50% | 40% | 5% | 5% | 0% |
| Seasonal | 47% | 12% | 25% | 2% | 5% |
| Non-invasive | 45% | 22% | 25% | 5% | 0% |
| Fits landscape | 45% | 25% | 12% | 0% | 5% |
| Low maintenance | 42% | 22% | 22% | 2% | 10% |
| Environmentally Friendly | 42% | 17% | 12% | 5% | 5% |
| Affordable | 42% | 27% | 17% | 5% | 7% |
| Native to area | 37% | 22% | 22% | 10% | 7% |
| Pesticide use | 35% | 22% | 20% | 10% | 12% |
| Fertilizer use | 32% | 12% | 25% | 12% | 15% |
| Colorful | 25% | 27% | 22% | 10% | 15% |
| Familiar/recognizable | 5% | 7% | 30% | 12% | 45% |
| Brand | 2% | 7% | 25% | 5% | 65% |

*Note:* Percentages based on total participants in all six focus groups.

Of the total participants, 72 percent selected a plant being “healthy looking” as a very important characteristic; 65 percent of participants thought a “quality” plant was very important. A plant “making me feel good” was very important to 57 percent of the participants, 52 percent

of participants indicated that the plant being "durable" was very important, and 50 percent selected an "attractive or pretty" characteristics as very important to plant purchases.

When asked what plant characteristics are most important when selecting plants for purchase, plants being non-invasive came up often, and many groups discussed the importance of plants being "environmentally friendly." This was also reflected In the Turning Point exercise. One participant said:

> *They're not native to South Florida and they're everywhere. Certain plants just take over and kill the native plants.*

Many of the participants indicated that the brand of a plant was not important (65 percent of the participants responded that it was "not important." 25 percent of participants responded that it was neither "important nor unimportant"). One participant summed up this pattern by saying:

> *When I think of brands, it's more with clothing, and plants, it's more God's brand.*

Many others were confused by the idea of a plant having a brand. Of those that identified with a plant brand, it was common for them to name a retail outlet (such as Lowe's or Home Depot) instead of the actual plant brand.

## Conclusion, Discussion, and Recommendations

Regarding objective one, "exploring consumers' perceptions of plants, gardening, and landscaping," focus group participants for this study tended to have a more diverse perception of "plant" than "garden," so long as the context was clear. The terms "landscape" and "home landscape," was understood by participants to denote a "larger scale" than a garden or inclusive property care.

For the purposes of marketing a plant brand that includes many varieties of plants, the use of the word "plant" may be more effective than the word "garden" as participants tended to think of "garden" as vegetables and/or flowers only and the word was perceived as non-indicative of other kinds of plants sold. Because the *Florida Garden Select* brand would market a wide variety of plants, it may be more effective to utilize the word "plant" in the brand. It is not recommended that the terms "landscape" or "home landscape" for marketing use in this case as participants in every group were reminded of the work or resources involved or required. These terms did not elicit the same cheerful qualities as "plant" or "garden" did.

For those marketing state-specific brands, it is important that schema theory and the Model of Causality be understood and utilized in regard to language selection and focus group participants' perceptions of "plant," "garden," "landscape," and "home landscape" as the potential purchaser's previous knowledge, perceptions of the language and associated product, and influence of the external environment has a large impact on the decision to buy the product. If consumers do not understand that by "garden" *Florida Garden Select* means a wide variety of plants, the brand may not be successful unless the perception or cognitive shortcut can be altered.

Regarding objective two, "determining what types of messages consumers' best respond to in relation to purchasing plants," the majority of participants did not think that the brand of a plant was important at all. The target audience of potential consumers chose healthy-looking, quality, and "makes me feel good" as the most important characteristics for purchasing plants. Potential consumers also felt that a plant being durable, attractive, non-invasive, and "environmentally friendly" was important.

Yue, Hurley, and Anderson (2009) found that consumers' willingness to pay for plants decreases when the plants are labeled as invasive and increases when plants are labeled as native.

Since a plant's being "non-invasive" was a significant finding, it is recommended that this issue be addressed up front by demonstrating that the selected plants have been selected using specific criteria that include their thoroughly studied lack of invasive qualities.

Because so many of the participants alluded to the brand of a plant being "not important" when selecting plants for purchase, it will be essential to successful marketing to showcase the brand in more unconventional ways than merely putting a sticker or tag on the pot of the plant. Participants rarely remembered the name of a brand of a plant, and many thought only of the store where they were purchased.

The Theory of Planned Behavior has great applicability for the marketing of a state-specific plant brand. If potential consumers are knowledgeable about the *Florida Garden Select* branded plant being tested specifically for their home state and are motivated to support it, know that it is a desired social norm (to support local/state products), know where the products are available, and think that their purchase will benefit them or their community, they will be more likely to purchase a *Florida Garden Select* branded plant

The Elaboration Likelihood Model can also prove to be a relevant addition to a state-specific plant brand marketing campaign. If the FNGLA (or any other agricultural commodity organization aiming to market a state specific brand) can ensure that marketing messages and communications make clear the relevance of the brand upon the product, perhaps by emphasizing the importance of supporting locally grown products, it may be more salient, and thus become more important to potential consumers. Also, consumers will be more likely to utilize the "shortcut" peripheral route of processing the information if it came from a trusted source, so the credibility of the organization and its members should also be accentuated. Credibility is most often built over time, though participants in this study regarded the University

of Florida, landscape professionals, horticulturalists, and commodity groups as “very credible” so that may be indicative of an existing high level of trust in the industry.

In conclusion, in order for plant brand marketing campaign to be successful, the organization should consider the plant characteristics mentioned above (healthy-looking, quality, and “makes me feel good’”) and 1) strive to achieve these characteristics with the products they are marketing, and 2) emphasize these plant characteristics in a marketing campaign.

From the results of this study, it seems that the product (plants) may not easily lend itself to a marketable brand in the eyes of potential consumers. For this reason, it is recommended that the marketing campaign focus on the special attributes of the plants that ensure consumer satisfaction and potential brand loyalty due to a quality product.

## References


Adelaja, A.O., Nayga, R.M. Jr., & Schilling, B. (1994). New Brunswick, NJ. *Returns to the Jersey Fresh Promotional Program- An Econometric Analysis of the Effects of Promotion Expenditures on Agricultural Cash Receipts in New Jersey*. Report submitted to the Division of Markets New Jersey Department of Agriculture, Trenton, New Jersey.

Ajzen, I. (2002). Behavioral Interventions based on theory of planned behavior. Retrieved 6/12/2011 from http://www.unix.oit.umass.edu/~ajzen.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Process* 50, 179-211.

Bagnara, G. (1996). *Brand Name and Added Value in Horticultural Products: Analysis of Consumer Perception*. Working paper, Center for International Food and Agricultural Policy, Department of Agronomy Economics., University of Minnesota.

Bandura, A. (2004). Model of Causality in Social Learning Theory. In A. Freeman, M. Mahoney, P. Devito, and D. Martin (Eds.), *Cognition and psychotherapy* (25-44). New York, NY: Springer Publishing Company.

Collart, A, J., Palma, M.A. & Hall, C.R. (2010). Branding Awareness and Willingness to Pay Associated with the Texas Superstar™ and EarthKind™ brands in Texas. *Horticultural Science* 45 (8): 126-1231.

Florida Department of Agriculture and Consumer Services. (2004). *Fresh From Florida Florida Agricultural Promotional Campaign (FAPC).* Retrieved on June 12, 2011 from http://www.florida-agriculture.com/marketing/fapc_membership.htm

Florida Department of Agriculture and Consumer Services Division of Marketing. (2004). *Florida Seafood and Aquaculture*. Retrieved on June 6, 2011 from http://www.fl-seafood.com

Florida Nursery, Landscape, and Growers Association. (2011). *Florida Garden Select*. Retrieved June 2, 2011, from http://www.fngla.org/community-programs/florida-garden-select/

Frewer, L.J, Howard, C., Hedderley, D., & Shepherd, R. (1997). The Elaboration Likelihood Model and Communication about Food Risks. *Risk Analysis*, 17 (6), 759-770.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597-606.

Glaser, B. (1965). The constant comparative method of qualitative analysis. *Social Problems*, 12 (4), 436-445.

Govindasamy, R. (2003). *The Economic Impact of the Jersey Fresh State Marketing*

*Program*. Paper provided by Rutgers University, Department of Agricultural, Food and Resource Economics. Retrieved June 15, 2011 from: http://ideas.repec.org/p/ags/rutdps/36728.html#provider

Govindasamy, R., Italia, J. & Thatch, D. (1998). Consumer Awareness of State-sponsored Marketing Programs: An Evaluation of the Jersey Fresh Program. *Journal of Food Distribution Research* 29 (3), 7-15.

Govindasamy, R., and Nayga, R. (1996). *Characteristics of Roadside Stand Operations in New Jersey and a Profile of the Customers who Frequent Them*. Paper presented at the 1996 North American Farmers' Direct New Marketing Conference, February 22-24, Saratoga Springs, New York.

Hall, C. Ellison Chair in International Floriculture at Texas A&M University, personal communication 11/15/10.

Kruger, R.A. (1994). *Focus Groups: A Practical Guide for Applied Research*. Sage Publications: Thousand Oaks, California.

Koelemeijer, K., Leutscher, K.J. & Stroeken, J.J.G. (1993). Branding of Horticultural Products: An Application to Pot Plants. *Acta Horticulturae* 340, 325-332.

Lillywhite, J. Allison, M.C. and Rodriguez, A.G. (2005). *Regional Branding in a Global Marketplace*. New Mexico Chile Task Force. College of Agriculture and Home Economics, Cooperative Extension Service, Agricultural Experiment Station Report No. 21.

McMillan, J.H. and Schumacher, S. (2010). *Research in Education: Evidence-Based Inquiry* (7th end). Upper Saddle River, New Jersey: Pearson.

Merriam, S.B. (1998). *Qualitative Research and Case Study Applications in Education*. Jossey Bass: San Francisco, California.

Morgan, D.L. (1997). *Focus Groups as qualitative research*. Thousand Oaks, CA: Sage Publications.

New Jersey Department of Agriculture. (2006). *Jersey Fresh*. Retrieved February 10, 2011 from http://www.state.nj.us/agriculture/divisions/md/prog/jerseyfresh.html

Neisser, U. (1976). *Cognition and reality: principles and implications of cognitive psychology*. San Francisco: W.H. Freeman.

Petty, R.E. and Cacioppo, J.T. (1986). The Elaboration Likelihood Model of Persuasion. *Advances in Experimental Social Psychology* 19, 123-162.

Reichel, S. (2009). *Cognitive principles, critical practice: Reading literature at university*.

Vienna University Press.

Rumelhart, D. E. (1980). Schemata: The building blocks of cognition. In R. J. Spiro, B. C. Bruce, & W. E Brewer (Eds.). *Theoretical issues in reading comprehension: Perspectives from cognitive psychology, linguistics, artificial intelligence, and education* (pp. 33-58). Hillsdale, NJ: Erlbaum.

Stegelin, F., Turner, S., & Knight, P. (2001). *State Plant Promotion Programs: Histories and Perspectives*. Southern Nursery Association Research Conference Proceedings 2001 (46), 540-541.

Yue, C., Hurley, T. & Andersen, N. (2009). *Do native and invasive labels affect consumer willingness to pay for plants?* Paper presented at the Agricultural and Appl. Economics Assn. AAEA & ACCI Joint Annu. Mtg., Milwaukee, WI, 26–28 July.