Research

Agricultural Communication Students' Perceptions, Knowledge and Identified Sources of Information about Agritourism

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Abstract

Agritourism is a topic that has not been evaluated at the collegiate level. The purpose of this study was to determine the knowledge and sources of information of agricultural communications students at the collegiate level. This quantitative descriptive study assessed agricultural communications students (N=66) from 11 different universities across the nation to determine agricultural communications students' perceptions, knowledge, and identified sources of information regarding agritourism. The study maintained an 80.5% response rate. Respondents ranked agriculture (M=4.98) and agritourism (M=4.45) as important. Agriculture-related festival(s) or event(s) (M=4.46) were noted as the most important agritourism venue. Generally, respondents had previously attended an agritourism event (61.5%). Word-of-mouth (81.5%), Web site (95.4%) and print advertisement(s) (93.8%) were identified as the best sources of information in promoting agritourism. Most respondents were female (81.0%), and the majority of respondents were majoring in agricultural communications (65.6%). Almost all respondents had families involved in agriculture (95.2%). Over half of the respondents indicated not knowing whether or not their state had an agritourism department (52.3%). Future studies involving non-agricultural students' perceptions and knowledge of agritourism should be conducted.

Keywords: agritourism, perceptions, knowledge, sources of information, agricultural communications students

Literature Review

Twenty percent of the population in the United States lives in rural areas, but only 1% is directly employed in agriculture (Carpio, Wohgenant, & Boonsaeng, 2008). In 2004, farm-based recreation or agritourism, which includes hunting, fishing, horseback riding, and other on-farm activities, provided income to about 52,000 U.S. farms (2.5%) (Brown & Reeder, 2007). Agritourism is any activity, enterprise or business designed to increase farm and community income by attracting the public to visit agricultural operations and outlets that provide educational and/or recreational experiences to help sustain and build awareness of the rural quality of life (University of Arkansas Division of Agriculture, 2006). Agritourism can provide a way for improving the incomes and potential economic viability of small farms and rural communities. Agritourism can be a supplementary, complimentary or primary enterprise for a farm. “Travel and tourism are big businesses across the globe. In the United States alone, leisure travelers spend more than $341 billion and support more than 5.85 million jobs” (Blacka et al., 2001 p.5). Agritourism is increasing in popularity (Pittman, 2006) as a way for traditional agricultural producers to become financially stable and provide a profit.

Agritourism operations exist in every state, and in many states, organizations, state officials, citizens, and others have undertaken efforts to enhance agritourism. Several states have agritourism promotion efforts underway, including Alabama, Mississippi, Missouri, Utah, North Carolina, Kansas, Oklahoma and New Mexico (Pittman, 2006). The types of efforts and the degree to which they are undertaken in these and other states vary substantially. For example, efforts made in some states involve the state government, while others are conducted by non-governmental associations or through university systems. The Virginia Cooperative Extension

Services suggested promoting agritourism businesses by word-of-mouth, printed materials, media, direct mail, community network and a Web site (Blacka et al., 2001).

Agritourism can be defined in a variety of ways. In general terms, Pittman (2006) called agritourism the crossroads of tourism and agriculture. Pittman's study of agritourism which classified agritourism as any activity, enterprise or business designed to increase farm and community income by attracting the public to visit agricultural operations and outlets that provide direct sales, educational, and/or recreational experiences to help sustain and build awareness of the rural quality of life. The Tennessee Agritourism Initiative defines agritourism as "an activity, enterprise, or business which combines primary elements and characteristics of agriculture and tourism, and provides an experience for visitors which stimulates economic activity and impacts both farm and community income" (Bruch & Holland, 2004, p.1). The Tennessee group explained that attractions often meeting this definition include agriculture-related and on-farm events; including places, such as museums, festivals and fairs, century farms, corn-maze enterprises, farmers markets, tours, retail markets, festivals and fairs, petting zoos, fee-fishing, horseback riding, bed-and-breakfast establishments, pick-your-own produce farms, and wineries. In addition, in other states like Arkansas, on-farm hunting involving the farm's agricultural resources as a part of the hunting enterprise (i.e. rice fields for duck hunting) is also categorized as agritourism (Ramsey & Schaumleffel, 2006).

Many terms are employed in the literature describing tourism activity in rural areas: agritourism/agrotourism, farm tourism, rural tourism, soft tourism, alternative tourism, ecotourism, green tourism and several others. Though these terms are sometimes used interchangeably, most, technically, have specific meanings, and these meanings may differ, especially across regions and internationally (Roberts & Hall, 2001). Although various names

have been used to identify expanding agricultural enterprises to the general public, the common thread is rural areas expanding on current agricultural endeavors. These endeavors are used to capitalize on tapping additional resources with the traditional distinction that recreation includes activities carried out by day-visitors, whereas to qualify to be a tourist you have to stay overnight (Tribe, Font, Griffiths, Vickery, & Yale, 2000).

The continual growth of agritourism in America is a relatively recent phenomenon when compared to farm-stay programs and working farms that have existed for years in Europe. In the early 1990s almost 25 percent of vacations were spent in a rural setting in Europe (Tribe et al., 2000).With a large population living in rural areas and such a small population employed directly by agriculture it can be assumed that individuals will visit agritourism operations because there are limited options for entertainment. Because of the limited number of entertainment offerings individuals are more likely to participate in agritourisms activities (Bruch & Holland, 2004; Carpio, Wohlegenant, & Boonsaeng, 2008).

In the previous thirty years, agritourism has become a more relaxed setting. It can be an escape from urban life and activities such as picnicking and fishing which contribute to the feeling of harmony (Hall, Mitchell, & Roberts, 2003). It was indicated in a report by Carpio et al. (2008) that white individuals are 10% more likely to visit a farm and families with children six years of age and younger are 4% more likely to visit a farm as an entertainment venue. The study reported that the average number of trips to a farm was approximately 10 times, with an estimated expenditure of $174.82 per trip. The type of tourist that visits agritourism venues differs demographically; but it is important to understand who is visiting the family farm in order to better serve the tourist and to ensure that economic growth and diversity continues (Koh & Hatten, 2002).

Agricultural communications students have not been previously surveyed regarding their perceptions and knowledge of agritourism; yet, they may have an influence on advertising and marketing these venues in the future. These students are the future of promoting agriculture and it is important to determine knowledge level and where they gain information regarding an array of agritourism-related topics. This study will also assist agritourism enterprises with a perspective regarding where college-aged students are finding information regarding agricultural venues. These agricultural communications students should be targeted to determine their perceptions, knowledge, and sources regarding agritourism. An exhaustive literature review failed to identify previous research that measured agricultural communications students' perceptions, knowledge, and sources of information regarding agritourism Therefore, it is important to determine agricultural communications students' knowledge, perceptions, interests, experiences and sources of information regarding agritourism. This information would also assist faculty in designing university curriculum to assist agricultural communications students in promoting and supporting agriculture, specifically agritourism.

Conceptual framework

This study was grounded by topics relevant to this study: (1) agritourism; (2) educational program planning in agriculture; and (3) adult program planning. The theoretical framework was based on McQuail's' (2005) Media-Society Theory III: Functionalism theory. This theory influenced the design of the study.

A common model used in adult education is the Lifelong Education Program Planning (LEPP) model by Rothwell and Cookson as cited in Kilgore (2003). The model consists of four quadrants: exercising professional responsibility, engaging relevant contexts, designing the program, and managing administrative aspects. The steps are modeled to exercise professional

responsibility because it is important to ensure that the program meets the needs of the students (Rothwell & Cookson, 1997 as cited in Kilgore, 2003). Before teaching a sound agricultural communications program, an assessment could be utilized to determine learners' current knowledge and needs (Seevers, Graham, Gamon, & Conklin, 1997). An assessment would determine the educational needs of interested agritourism entrepreneurs or students who can/may incorporate agritourism into the family farm. Kilgore (2003) touts that a program planner's work is never done and just as the needs change for adults in education they will continually change for agritourism and one way to educate the special needs of adult students is by having a college level course to educate about agritourism.

Adults' deep need to be self directing is particularly important in program planning. Boone, Saffret and Jones (2002) wrote that target publics make their own decision about educational needs and what will fulfill those needs. Therefore, successful program planning for adults typically begins by determining adults' attitudes and perceptions.

McQuail's Media-Society Theory III: Functionalist theory (2005) explains how information is diffused through a social system and consists of five elements. These elements are information, correlation, continuity, entertainment and mobilization (McQuail, 2005). Information consists of providing facts about events and facilitating innovation (McQuail, 2005). A study conducted by the state of Pennsylvania asked operators to rate their top five resources to market agritourism as well as visitors to use of resources (Ryan, DeBoard, & McCellan, 2006). The operators ranked word-of-mouth, repeat business, newspaper ads, brochures and Internet/ Web sites as the top five while the visitors ranked Internet/ Web sites, information/ welcome centers, brochures, travel books/guides and word-of-mouth as their top sources for finding

information about agritourism (Ryan et al., 2006). This information depicts where agritourism visitors and operators get information about agritourism activities.

Purpose and Objectives

The purpose of this study, which was part of a larger study, was to determine the perceptions, knowledge and sources of information regarding agritourism of agricultural communications students. The specific objectives were to assess (1) perceptions, (2) knowledge, (3) sources of information about agritourism at the collegiate level, (4) and identify select participant demographics. A specific understanding of agricultural communications students' perceptions and knowledge about agritourism is not clear and can be used to identify specific educational strategies for collegiate students, agritourism proprietors and universities.

Methodology

This study utilized a descriptive survey methodology. The statistical analysis was descriptive in nature, and the instrumentation followed Dillman's Total Tailored Design method (2007). The target population for this study included all participants at the Agricultural Communicators of Tomorrow (ACT) Professional Development Conference held in Stillwater, Oklahoma February 26 - March 1, 2009. This audience was identified due to their background and knowledge of communication and media sources. Currently, thirteen universities have ACT (Agricultural Communicators of Tomorrow) chapters. There were 91 students registered for the 2009 conference and 82 attended the four-day event.

Prior to the conference an instrument was developed. Questions for the instrument were modeled after a previous study completed by Sussex County Office of Conservation and Farmland Preservation in New Jersey (New Jersey Agritourism Survey: Highlands Region, n.d.) and based on a survey conducted in Tennessee (Jensen, Dawson, Bruch, Menard, & English,

2005). The questionnaire booklet consisted of twenty-five questions and was designed by the principal researcher. The study was designed to collect perceptions, knowledge, sources of information, and select demographics of agricultural communications' students attending the 2009 ACT conference. A field test was administered to faculty in an Agricultural and Extension Education Department (AEED) at [University] and resulted in minor changes to the instrument to improve clarity, and establish face and content validity.

The instrument was administered to eighteen field test participants, and a follow-up instrument was provided two weeks later to determine instrument stability. Instrument stability was tested using agreement percentage and resulted in 71.3% agreement. There were sixty-six respondents from the 2009 ACT conference, resulting in an 80.5% response rate. Data were analyzed using the Statistical Software for Social Sciences (SPSS) 15.0.

Findings

Perceptions of Agritourism

Respondents ranked the importance of two terms, agriculture and agritourism, on a 5 point Likert-type scale (1 = very unimportant to 5 = very important). Agriculture had the highest mean with a score of 4.98, followed by agritourism (M=4.45).

Respondents rated the importance of 11 agritourism venues on a 5 point Likert-type scale (1 = very unimportant and 5 = very important). Responses in Table 1 indicate that eight of the 11 venues had means of 4.0 or greater. The most important perceived agritourism venue was agriculture-related festival(s) or event(s) (M=4.46). Pick-your-own produce or fruits and on-farm hunting tied as the second most important venues (M=4.28). The least important perceived agritourism venue was on-farm fishing (M=3.69)

Table 1

Respondents' Perceived Importance of Agritourism Venues (n=65)

Venues	***M***	***SD***
Agriculture related festival or events	4.46	0.75
Pick-your-own produce or fruits	4.28	0.86
On-farm hunting	4.28	0.86
Winery	4.26	0.91
Agriculture-related museum	4.26	0.91
Community farmers' market	4.23	0.84
Christmas tree farm	4.23	0.89
Pumpkin Patch	4.12	1.01
On-farm lodging	3.80	0.96
On-farm retail outlet	3.71	0.86
On-farm fishing	3.69	0.93

Knowledge of Agritourism

An open-ended question was used to determine how respondents defined agritourism. Eleven primary themes resulted from the open-ended question. Of the 55 responses, 26 (47.3%) included the word "tour." The following is an example response: "Touring agricultural related locations for education and information." Six respondents (10.9%) noted the word "visit." A typical response was, "Visiting or touring agricultural related businesses and industries." Four (7.3%) mentioned "show," with an example being, "Showing the world agriculture from every perspective." Entertainment was mentioned by one (1.8%) respondent who stated, "Using agriculture as a source of entertainment and information for the public."

Respondents were questioned about whether or not their home state had an agritourism department. Of the respondents (*n*=65) over half 52.3% did not know if their state had an agritourism department; 41.5% indicated their home state has an agritourism department, and 6.2% indicated their home state did not have an agritourism department.

Respondents were to identify whether or not they had heard certain terms related to agritourism. The most recognized term was “agritourism” (84.8%), followed by “rural tourism” (66.7%). Table 2 identifies additional responses to agritourism terminology.

Table 2

Respondents’ Knowledge of Agritourism Terminology (*N*=66)

	Yes		No		Don’t Know	
Terms	***f***	***P***	***f***	***P***	***f***	***P***
Agritourism	56	84.8	6	9.1	4	6.1
Rural tourism	44	66.7	19	28.8	3	4.5
Farm tourism	41	62.1	19	28.8	6	9.1
Community Supported Agriculture	36	54.5	24	36.4	6	9.1
Eco-tourism	29	43.9	30	45.5	7	10.6
Green tourism	17	25.8	43	65.2	6	9.1

Sources of Agritourism Information

Respondents (*n*=65) identified sources of information regarding agritourism information and promotion, and the results are reported in Table 3. Word-of-mouth (81.5%) and paid advertising in local paper, radio or television (70.7%) were the most common previously exposed/observed methods of agritourism promotion.

Table 3

Respondents’ Sources of Information about Agritourism (*n*=65)

	Yes		No		Don’t Know	
Sources of Information	***f***	***P***	***f***	***P***	***f***	***P***
Word-of-mouth	53	81.5	6	9.2	6	9.2
Paid advertising in local paper, radio or television	46	70.7	9	13.8	10	15.4
Web site	42	64.6	12	18.5	11	16.9
Free media relations with local paper, radio or television station	41	63.0	6	9.2	18	27.7
Free media relations within travel magazines (e.g. article in magazine)	36	55.4	11	16.9	18	27.7
Paid advertising with travel magazines	35	53.8	12	18.5	18	27.7

Table 3 (continued)

Sources of Information	Yes		No		Don't Know	
	f	*P*	*f*	*P*	*f*	*P*
Free advertising relations with local paper, radio or television station	33	50.8	10	15.4	22	33.8
Paid advertising with trade associations	29	44.6	13	20.0	23	35.4
Direct mailing	29	44.6	24	36.9	12	18.5

To determine sources of information respondents (*n*=65) identified if specific types of media would be helpful in promoting agritourism (Table 4). The type of media with the highest percentage was Web site (95.4%). Print advertisement was the second most effective type of media to promote agritourism (93.8%). The media types with the lowest percentage were Myspace (50.8%) and wikis (33.8%).

Table 4

Respondents' Source of Information to Look for Specific Information about Agritourism Events (*n=65*)

Types of Media	Yes		No		Don't Know	
	f	*P*	*f*	*P*	*f*	*P*
Web site	62	95.4	1	1.5	2	3.1
Print advertisement	61	93.8	1	1.5	3	4.6
Television advertisement	59	90.8	1	1.5	5	7.7
Radio advertisement	59	90.8	2	3.1	4	6.2
Facebook	57	87.7	5	7.7	3	4.6
Email	55	84.6	5	7.7	5	7.7
Blogs	42	64.6	11	16.9	12	18.5
Myspace	33	50.8	25	38.5	7	10.8
Wikis	22	33.8	18	27.7	25	38.5

Respondents identified how they (*n*=65) had learned about an agritourism event, if previously visiting one. As shown in Table 5 respondents identified that word-of-mouth (69.2%) and friends (63.1%) were the most frequent sources of information about agritourism events.

Tourism book and billboards (20.0%) were the two least frequent ways of learning about agritourism events.

Table 5

Respondents' Source of Information to Learn About Agritourism Site (*n=65*)

	Yes		No	
Source of Information	***f***	***P***	***f***	***P***
Word-of-mouth	45	69.2	20	30.8
Friends	41	63.1	24	36.9
Farm sign	31	47.7	34	52.3
Web site	30	46.2	35	53.8
Newspaper	26	40.0	39	60.0
Farm advertisement on radio	22	33.8	43	66.2
Internet search	22	33.8	43	66.2
Magazine	20	30.8	45	69.2
Billboard	13	20.0	52	80.0
Tourism book	13	20.0	52	80.0

To determine if respondents (*n*=65) were to consider visiting an agritourism site or farm, the question was asked where they would look for specific information. As shown in Table 6, Internet search (72.3%) had the highest percentage, followed by local newspaper (30.8%), magazine (24.6%), and yellow pages (9.2%).

Table 6

Respondents' Source of Information to Look for Specific Information about Agritourism Events (n=65)

	Yes		No	
Source of Information	***f***	***P***	***f***	***P***
Internet search	48	72.3	17	26.2
Local newspaper	20	30.8	45	69.2
Magazine	16	24.6	49	75.4
Yellow pages	6	9.2	59	90.8

Demographics

Respondents were from ten different universities throughout the nation. The highest number of respondents (*n*=18) and were from Oklahoma State University, which is where the conference was held (28.1%). The Ohio State University had the second highest amount of students in attendance (9, 14.1%). Tarleton State University had eight (12.5%), Kansas State University had seven (10.9%), Texas Tech University had six (9.4%), and California Polytechnic University--San Luis Obispo, had five (7.8%). The four schools with the lowest percentage of respondents were University of Arkansas with four (6.3%), Missouri State University with three (4.7%), Texas A&M University with two (3.1%), and University of Florida with two (3.1%).

The majority of the respondents (*n*=64) were seniors (39.1%), followed by juniors (25.0%), freshmen (18.8%), sophomores (10.9%), and graduate students (6.3%). The highest number of respondents (*n*=42) were agricultural communications majors (65.6%). Six (9.4%) were agricultural communications and animal science double majors. Two (3.0%) respondents were agricultural science and agricultural communications double majors, two (3.0%) were agricultural services and development double majors, and two (3.0%) were agricultural science. Single respondents (1.6%) reported double majors in agricultural communications and one of the following: agricultural education, English, poultry science, agricultural business, Spanish, leadership development, advertising, dairy science, agricultural science, and agriculture unknown. Overall, there were 59 respondents who indicated an educational focus in agricultural communication (92.2%).

Respondents identified their home state. The respondents (*n*=62) were from 14 different states including: Texas (19.4%), Oklahoma (19.4%), California (12.9%), Ohio (11.3%), Kansas (8.1%), Arkansas (6.5%), Missouri (4.8%), Indiana (3.2%), Florida (3.2%), New Mexico (3.2%), Arizona (1.6%), Maryland (1.6%), Louisiana (1.6%), and Illinois (1.6%). Respondents were also

asked to identify the type of community in which they grew-up. The largest percentage (44.8%) of students had grown-up on a farm, while the smallest percentage had grown-up in a rural non-farm (less than 10,000) area (12.7%) or a city (more than 10,000) (12.7%).

The mean respondent age was 20.5 years (*SD*=1.6). One half (50%) of the respondents were either 20 or 21 years of age. Of the 63 respondents reporting gender, 47 were female (81.0%) and 16 were male (19.0%). Of the 61 respondents reporting ethnicity, 56 were Caucasian (91.8%). Single respondents (1.6%) reported the following ethnicities: Caucasian and Native American, Native American, Caucasian and Hispanic, Hispanic, and Portuguese.

As shown in Table 7, the last series of demographic questions asked the respondent about their family's involvement in agriculture and agritourism, 95.2% of respondents indicated that their families were involved in agriculture. However, for the majority of respondents (74.6%), farming was not the family's primary source of income. Only three (4.8%) respondents indicated that their family operated an agritourism venue.

Table 7

Respondents' Family Involvement in Agritourism (*n=63*)

Item	**Yes**		**No**		**Don't Know**	
	f	***P***	***f***	***P***	***f***	***P***
Family involved in agriculture	60	95.2	3	4.8	0	0
Farming family's primary source of income	16	25.4	47	74.6	0	0
Family has an agritourism operation	3	4.8	57	90.5	3	4.8

Conclusions, Discussion, and Implications

Respondents ranked agriculture (*M*=4.98) and agritourism (*M*=4.45) as important. The most important perceived agritourism venue was agriculture-related festival(s) or event(s) (*M*=4.46), followed by pick-your-own produce or fruits and on-farm hunting (*M*=4.28).

Respondents indicated that “agritourism” was the most recognized term (84.8%) in a list of related terminology. Over half of the respondents (52.3%) were unsure if their home state had an agritourism department. Over three-fourths of the respondents (81.5%) indicated hearing about an agritourism event by word-of-mouth. While nearly three-fourths (70.7%) had gained agritourism information by paid advertisements in a local paper, or on the radio or television. Respondents identified types of media that would be effective sources of information and almost all (95.4%) respondents chose Web site and print advertisement (93.8%).

When identifying the source of information where respondents had previously seen/heard an agritourism event promoted, 69.2% noted word-of-mouth and 61.2% from friends. An Internet search was identified by most respondents (72.3%) as the best methods for finding information regarding agritourism. The term agritourism was recognized by most (84.8%) respondents. Research has shown that many terms are employed in the literature to describe tourism activities in rural areas (Roberts & Hall, 2001). With most of the respondents (81.5%) recognizing the term “agritourism,” it can be assumed that it is the most recognizable term in rural/farm related tourism.

Almost half of the respondents (47.3%) identified “touring” as a relevant theme in agritourism; therefore, it can be assumed that many view agritourism as a type of tour. McQuail’s (2005) Functionalist theory notes that entertainment relates to providing amusement, diversion and the means of relaxation as well as reducing social tension and entertainment was also a primary theme identified. Because agritourism can be entertaining it can be assumed that it is a form of entertainment.

Over half of the respondents (52.3%) reported not knowing if their state had an agritourism department. Research shows that agritourism operations exist in every state, and in

many states, organizations, state officials, citizens, and others have undertaken some type of effort to enhance agritourism (Pittman, 2006). It is clear that agritourism is not being promoted to the level of audience saturation. University level courses must focus on agritourism education.

Most respondents (81.5%) noted exposure to agritourism promotion via word-of-mouth; perhaps an indication that many individuals are learning about agritourism events from an acquaintance. The second highest percentage of agritourism exposure was through paid advertisements (70.7%); therefore, it may be possible that participants are reading about agritourism events in these venues and then passing that information along to a friend. Research in Tennessee indicated that of the respondents, 50% or more used word-of-mouth, business sign, a state Web site and newspaper advertisements to advertise their agritourism operations (Jensen et al., 2005). This study follows closely to the Tennessee study.

Respondents noted that direct mailing and paid advertising with trade associations (44.6%) were the least wanted sources of information regarding agritourism. A reason for this may be that many college students do not receive direct mailings or trade magazines. Web sites were identified as the best type of media (95.4%) followed by print advertisement (93.8%). A Tennessee study asked respondents (consisting of current agritourism business owners) to identify marketing and promotion assistance services needed (Bruch & Holland, 2004). The top five identified were; Internet site development, liability and insurance issues, assistance identifying and making tour bus and travel group contacts, market research, and visitor safety analysis. This indicates that agritourism business owners should use a Web site to promote their business.

Respondents indicated that they had learned about agritourism events, previously attended, by word-of-mouth (69.2%) and friends (63.1%). A Pennsylvania study indicated that

agritourism operators rated their top five resources for marketing agritourism as word-of-mouth, repeat business, newspaper ads, brochures and Internet/ Web sites; while visitors ranked Internet/ Web sites, information/ welcome centers, brochures, travel books/guides and word-of-mouth as their top sources for finding information about agritourism (Ryan et al., 2006). This study supports and validates these findings. McQuail's theory (2005) focusing on information, consists of providing information about events and facilitating innovation and agricultural communications students and agritourism operators have identified similar resources to promote, provide information, and advertise agritourism.

Respondents identified Internet searches (72.3%) as the most effective tool to use when searching for information regarding agritourism. Research has shown that "students of the millennial generation spend an average of nearly 6.5 hours in front of some type of media each day" (Phipps, Osborne, Dyer, & Ball, 2008, p. 291). Because of this, agritourism Web sites should have effective tags to assist with ease and efficiency of agritourism searches.

The conclusions from this study cannot be generalized back to a broader population, but many conclusions can be drawn. The majority of the respondents were female (81.0%), and most were Caucasian (91.8%). Research indicates that this is often the case with agricultural communications professionals as shown in the study of Agricultural Communicators in Excellence (ACE) members where 58.8% were female and 94.9% were Caucasian (McGovney, 2005). As shown in the literature review Caucasian individuals are 10% more likely to visit a farm than other ethnicities (Carpio et al., 2008). The largest percentage (44.8%) of respondents described the community they grew-up in as a farm. Research has indicated that rural farms are attractive tourist destinations (Brown & Reeder, 2007). If the majority of the respondents were

raised on a farm it may be possible for them to implement agritourism in their family's farming operation to expand, increase or stabilize profitability.

Recommendations for Further Study

McQuail's Functionalist theory shows continuity is about forging and maintaining commonality of values. Many agricultural communications students' were raised on a farm and it can be assumed that they share similar values especially since 95.2% of the respondents have family involved in agriculture (McQuail, 2005). With only 25.4% of the respondents having farming as their family's primary source of income, and 44.8% growing up on a farm it can be assumed that agritourism may be feasible alternative to expand/add to their current operations. Additional research should be focused in this area.

When given six terms related to agritourism, the term agritourism was the most recognized (84.8%). The other term: rural tourism, farm tourism, community supported agriculture, eco-tourism and green tourism all had varying degrees of recognition, but further research would need to be conducted to determine if the phrases should continue to be included in reference to agritourism.

It is recommended that agritourism business owners not promote their operation with direct mailings and paid advertising with trade magazines. Web sites are recommended to represent agritourism operations because 95.4% of respondents felt it would be the most helpful in promoting agritourism. Also, with 72.3% using an Internet search, it is important to create effective Web site keywords to help with searches. Myspace and wikis are not recommended as promotion tools for agritourism. It is also recommended that agritourism venues have an identifiable farm sign because almost half (47.7%) of the respondents had attended an agritourism venue because of advertisement on a farm sign.

Based on the small population of the study, it is recommended that further research be conducted with non-agriculture collegiate students since only 12.7% were from a city with 10,000 or more individuals and 95.2% had family involved in agriculture. The population was also predominately female (81.0%), so a sample group with more males would be another recommendation, as well as, including more than ten universities and a broader range of ethnicities.

Additionally, curriculum should be integrated into collegiate courses. Because Web sites and print media were noted as the most successful means for agritourism promotion, university students (particularly agricultural communications students) should be highly trained in these areas. Also, an agritourism conference would be useful since word-of-mouth had one of the highest means as an effective communications piece. A conference would also enable collegiate students interested in agritourism to gather and gain knowledge as well as share experiences.

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Pick Me! Aligning Students' Career Needs with Communication about Academic Programs and Available Careers

Research Paper Submission

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Abstract: Many academic programs in agriculture struggle with recruiting qualified students. Why are students choosing to enter other fields of study instead of agriculture? The purpose of this study was to determine students' perceptions and awareness about academic agricultural programs. A set of three focus groups were conducted, which consisted of 1) students inside a specific academic program, 2) students outside of the program but within the college of agriculture, and 3) students outside of the college of agriculture but enrolled in an introductory agriculture class for non majors. Questions were asked regarding students' career and major choices, and perceptions about a specific program of study. The results showed that students were initially unaware of careers available in this area and had a negative impression of careers in the agricultural field. However, after hearing about available careers, their perceptions were positive, and they expressed the need for more marketing and branding of the industry so that students would be aware of careers available in this field. A major implication of this study is the need to address students' lack of awareness with respect to the diverse range of careers and employer organizations within agriculture. Future research is recommended to determine how to develop effective strategic communication plans for academic programs in agriculture.

Keywords: student recruitment, college of agriculture, career choices, college students

Introduction

Colleges and universities can no longer rely on simply knowing *how* to communicate. It is essential that institutions also know how to communicate *effectively*. To thrive in today's marketplace, an institution must communicate strategically with its publics, including but not limited to donors, students, alumni, prospective students, and parents (Smith, 2002). While improving communication at all levels is important when working to build a strong reputation (Fill, 2002), for recruitment programs to entice the highest caliber of students, it is imperative to assess the current state of their communication from a student's perspective as to what is effective and meaningful.

The triad mission of the land grant institution and the value of an agriculturally related education have historically been supported by stakeholder groups without much attention to public relations or marketing (Kelsey & Mariger, 2003). The land grant institution offers a unique experience and is often the only place where a student can obtain a degree with an agricultural focus; however, there is an increased need for developing a diverse population of students and support within these institutions (Kellogg Commission, 2001). As times change and the population of the United States is further removed from production agriculture, these institutions have a greater need for a strategic approach to communication in order to recruit the next generation of leaders. Today, in addition to agriculture, a land grant education may include a myriad of areas of interest ranging from communication to science, technology, and pre-professional options like medicine (University of Florida, 2008).

While all colleges and universities are concerned with the recruitment of students in quantity and quality (Montmarquette, Cannings, & Mahseredjian, 2002), agricultural programs of study struggled with a significant decline in enrollment in the 1980s and 1990s (Donnermeyer

& Kreps, 1994). Numerous studies were conducted to determine the exact cause of this decline, primarily by researching students' choice (DesJardins & Hendel, 1999; Chapman, 1981). However, no one cause was established. In more recent years, enrollments in colleges of agriculture have actually increased, but the increase has been in the areas of business, social sciences, and pre-professional track programs, while other program areas have seen a decline in enrollment (personal communication, E. Turner, 2009).

Over the last decade, the competition to get admitted to a college or university has increased astronomically, as a direct result of more students wanting to pursue a college education. In 1990, 55% of high school sophomores said they intended to graduate from a four-year college, compared to 80% in 2002 (Twenge, 2006). Demands for perfect grades and above average SAT/ACT scores are a minimum requirement to get in to many top colleges and universities. Harvard notoriously rejects 50% of applicants with perfect SAT scores, ivy leagues schools only accept an average of 10% of applicants, and these high standards are trickling down to land grant institutions and state schools. For example, the majority of the University of Wisconsin's 2004 freshmen were in the top 10% of their class (Twenge, 2006).

The number of students entering pre-professional track programs as freshmen is growing, but only a small number of these students will eventually be accepted to professional programs like medical, law, or veterinary schools. National acceptance rates into these programs range from 4-10% (Twenge, 2006). There is certainly an opportunity for academic programs that have declining enrollment to recruit students internally who have decided that the pre-professional track will not work for them or that this decision has been made for them because they do not meet the extreme standards for acceptance (personal communication, E. Turner, 2009).

Students facing growing competitive entrance standards and increased pressure to, at a minimum, acquire a bachelor's degree, are a part of a new generation that has never known a time without the Internet nor a world where duty was more important than self (Twenge, 2006). This generation has many names: millennials, igeneration, generation Y, or generation ME (Twenge, 2006). Typically, this generation starts with those born after 1992 (Provitera-McGlynn, 2005) though some suggest it starts as early as those born after 1982 (Twenge, 2006). Marketing studies have found that the generation a person was born in is more likely to influence decision making than income, sex, or education (Twenge, 2006), thus it is imperative that researchers determine how this generation communicates and interacts (Provitera-McGlynn, 2005) in order to effectively recruit students.

Literature Review

Marketing in Higher Education

Marketing and public relations on college campuses have progressed considerably since a study in 1966 reported that the most important function of the college informational program was press relations (Steinberg). Today, the central purpose of marketing and public relations activities in general are broader in their definition. These activities now include mitigating damages, responding to the needs of key stakeholders, responding to organizational crises, and restoring and maintaining favorable reputation (Seeger, Sellnow, & Ulmer, 2001). Additionally, it is important to build relationships with stakeholders (Fill, 2002), including prospective students, in the place where they are the most comfortable interacting (Provitera-McGlynn, 2005).

Studies have determined that prospective students have a desire to find out if a program is a good match for their interests before they make a decision on a college or a major (DesJardins

& Hendel, 1999). Thus, an academic program should communicate its strengths accurately in order to engage the correct type of student for their goals (Stewart, 1991). In order to communicate these strengths, a program must know where it fits within industry requirements for graduates. The understanding of a program's position within the market should be the first step in any recruitment planning process (Hossler, 1999).

Academic Programs in Agriculture

The scope of academic programs in agriculture at land grant institutions continues to evolve. However, at the core of the wide span of programs are a myriad of plant and animal related majors (National Science Foundation, 2009). National employment opportunities for U.S. college graduates with expertise in food, agricultural, and natural resources remain high, with an estimated 52,000 annual job openings for new graduates during 2005-2010. Yet, there are not enough qualified college graduates in these areas, with only an estimated 32,300 food, agricultural, and natural resources college graduates expected annually during this same time frame (USDA CSREES, 2005-2010). While many agricultural program areas without pre-professional track options are suffering from a decline in enrollment (Personal Communication, Turner, 2009) one specific academic program area that is struggling with enrollment nationally is that of ornamental horticulture (FAEIS Reports, 2008). In this study, ornamental horticulture has been defined as a discipline of horticulture concerned with growing and using flowering and ornamental plants for gardens, landscapes, and floral display. Horticultural science nationally has dropped in enrollment from 3,484 in 2003 to 2,559 in 2007 and specifically ornamental horticulture dropped from 495 in 2003 to 301 in 2007 (FAEIS Reports, 2008). In the past, a plethora of students from traditional agricultural backgrounds with an interest in all facets of the

industry from production and managerial positions to sales and marketing were attracted to a major in ornamental horticulture (Fretz, 1991). However, with the shift from production agriculture that has been seen across the U.S., this major has likewise been affected and has seen a decline in enrollment (Rom, 2004). During this period of national decline, some ornamental horticulture programs have seen a slight increase in enrollment. From fall of 2002 to the fall of 2008, the University of Florida had an increase in students from 56 to 80 (UF College of Agriculture, 2008). However, this increase in a few programs has not been able to stop the trickled down effect to employment in the industry. The ornamental horticulture industry is struggling to find and retain qualified students to fill positions in the field (Rom, 2004). This is a $20.1billion industry in the United States (U.S. Bureau of Economic Analysis, 2008) and is of major importance to the state of Florida economy with total sales of nursery, landscape service firms, and horticulture retailers totaling $15.2 billion in 2005 (Florida Gardening, 2009). The ornamental horticulture industry has more than 500 positions available nationally each year and as little as 400 students graduating in this area annually, some of whom go into other industries (National Center for Educational Statistics, 2007).

Purpose & Objectives

In order to determine the position of academic programs of agriculture in the market place, as suggested by Hossler (1999), it is important to explore the perceptions and level of awareness of current and potential students. An assessment of where students stand in terms of attitudes and awareness will be valuable in improving recruitment communication and guidelines (Wildman & Torres, 2001). Thus, the purpose of this study was to determine students' perceptions and awareness about academic agricultural programs. For the purpose of this study,

one academic program, ornamental horticulture, was chosen as an example of an agriculture program area that is struggling to find enough qualified students. Though the ornamental horticulture industry struggles with issues specific to their industry, they are not unlike other academic agricultural programs in their decline of student enrollment (Wildman & Torres, 2001) and communication challenges (Kelsey & Mariger, 2003). In this study, ornamental horticulture has been defined as a discipline of horticulture concerned with growing and using flowering and ornamental plants for gardens, landscapes, and floral display. The following research objectives were developed to guide this study:

- RQ1: Determine students' key influences when choosing a major or career;
- RQ2: Investigate students' awareness and perceptions of a career in agriculture;
- RQ3: Identify students' barriers and constraints in choosing a specific academic program of agriculture as a career.

Methodology

This study used a set of three focus groups comprised of representative members of the target audience of current college students. A market research firm was hired and used Computer Assisted Telephone Interviewing (CATI) telephone random digit dialing (RDD) sampling to qualify potential participants. Probability samples were generated using a predetermined sampling frame based on demographic variables for groups one and two. The third group was a purposive sample recruited by researchers through the University of Florida's Environmental Horticulture Student Organization. The first two focus groups were conducted on November 17, 2008, and the last focus group was conducted on November 18, 2008. Focus group research has long been prominent in marketing studies in part because market researchers seek to tap emotional and unconscious motivations not amenable to the structured questions of conventional

survey research (Morgan, 1998). A protocol was developed to guide all three focus groups using the procedures set forth in Krueger's (1998) book, *Developing Questions for Focus Groups*. The protocol was used to guide the discussion and to keep the focus groups consistent between groups. The protocol was reviewed by a panel of experts for face and content validity. All focus groups were video and audio recorded for transcription. Transcripts from the focus groups were imported into Weft QDA software to be analyzed in accordance with Glaser's (1965) constant comparative method.

Demographics

The total number of participants in all three focus groups was 28; a breakdown of the demographics of all three groups can be seen in Table 1. The first group consisted of students who were enrolled in an introductory plant class for non-majors, all outside of a college of agriculture. The purpose of separating this group from the others was to determine if the perceptions and knowledge of students outside of a college of agriculture were different from those inside. Additionally, it was of interest to the researchers to determine what information about careers in agriculture was learned by students in an introductory plant class for non-majors. The second group consisted of students who were majors within a college of agriculture, but not in one related to the academic agricultural program of interest, ornamental horticulture. The purpose of selecting this group was to see how students within a college of agriculture perceived a career in the academic program of interest, and to compare their views to the other two groups. The third group consisted of students who were enrolled in the academic program of interest to determine the reasons why they chose this path, and to compare them with the other groups.

Table 1
Breakdown of Participants by Focus Group

	Group 1	Group 2	Group 3
No. of Participants	10	10	8
Males	3	3	3
Females	7	7	5
Major in the College of Agriculture	0	10	10
Enrolled in an Introductory Plant Class for Non-Majors	9	0	0
Ornamental Horticulture Major/Minor	0	0	8

Results

Objective 1: Determine students' key influences when choosing a major or career

In an effort to address this research question, participants in all focus groups were asked questions about how they approached decisions about their majors and careers. Some major themes about students' processes when seeking career information appeared. Key influences of students in this area were a passion for the industry, desire to be happy, money, stability, security, and ability to make a mark.

Passion for the industry or subject

The majority of participants sought information about a career because of a passion that they felt for that industry or subject. One participant explained, "I chose my career because I have a passion for it, and I saw this as my opportunity to make a difference in the lives of young people." After this initial passion, students moved to the adults within their social systems for

advice or guidance. In some cases, students looked at the adults around them to inspire passion for a certain career. One participant explained this by saying, "I look at people that I admire or that have jobs that I think would be a lot of fun for me to do and I see they have passion for it and I feel like I have similar passions or interests."

Although the majority of the participants chose their major because of a passion, there were a few exceptions to this. Some participants were not sure what they wanted to do and, thus chose a major by convenience. One participant summed this up by saying, "I think I kind of picked my major by default, because I had a lot of credit coming in that fulfilled it and I could pretty much graduate really soon or like take all the electives I wanted to."

Desire to be Happy vs. Money

Many of the participants expressed a desire to be happy in their intended career choice. This attitude was repeated in all three groups, although it was expressed more often in the two focus groups that included participants from the college of agriculture. In general, students had the perception that they would be happy in their future careers. One participant expressed this in the following statement, "What more could you ask for? Wake up every day and get paid to do something you want to do that you would take off to do if you were doing a different job."

However, participants recognized they might have to weigh their happiness against the salary they would make for a job. The general consensus of the two groups with students in the college of agriculture was that happiness should come before money. One participant expressed this by saying, "I definitely think you have to weigh your happiness versus the salary. Cause like even if the salary's like really big, eventually you might hate it enough that it's not worth the money. Like you have to do something that makes you happy." However, in the focus group

without any students from the college of agriculture money was perceived as being of major importance, and often more important than happiness. This group recognized they were planning to work in career fields with high stress and pressure to excel and compete, but were willing to it because of the salary. One participant went as far as to say, "…if the job will pay you enough I don't care how boring it is, I'll do it."

Stability, Security, and Making a Mark

Participants in all groups had similar responses to what characteristics of a career were important to them. All groups were concerned with the stability of the job and were extremely aware of the current down economy. One participant summed up what he/she was looking for in a career as "Job security. Something that will be there. That you know for sure will it will be there." Another participant explained this desire by saying, "…having a job that you can have especially with the way the economy is, knowing that you can graduate and have, yeah, job security is huge." Another major concern for students that was often lumped with other career concerns was their desire to leave a mark or make a difference with their career. One participant expressed this desire by saying, "I chose my career because I have a passion for it, and it was what I saw as my opportunity to make a difference in the lives of young people." Another typical participant response was, "Yeah, I think that's something, everyone wants to leave their mark, everyone wants to have that 'legacy' whatever it may be for them."

Objective 2: Investigate students' awareness and perceptions of a specific career in agriculture

In order to assess this objective, questions were asked of the two focus groups that were not already in a plant related major about their awareness of careers in ornamental horticultural.

Some noticeable differences existed between the group that included students who had taken and introductory class for plant majors and those who hadn't. Key findings in this area included a limited knowledge of careers in the field of ornamental horticulture, initial negative perceptions of these careers, but a shift to the positive once exposed to available careers.

Limited Knowledge of Careers in the Field & Negative Perceptions

Participants who did not take the introductory plant class had limited knowledge about ornamental horticulture prior to being given a description. The majority of participants only knew that ornamental horticulture had something to do with flowers. One participant said, "doesn't that like have something to do with flowers?" Some participants thought the only careers available would be working in a flower shop. More than that, participants were unaware of careers in this field at all. A typical response was "I had no idea about any of these opportunities." In fact, many participants were not only unaware about careers in ornamental horticulture and agriculture but actually expressed a negative impression about careers in agriculture by themselves and their peers. One participant said, "A lot of people have a negative connotation of agriculture". In contrast, participants who had taken the introductory plant class were knowledgeable about the types of careers available prior to being presented with the list of opportunities.

Once Exposed to Available Careers, Attitudes were Positive

Most, but not all, participants who took the introductory plant class for non-majors said they would have considered getting a minor or major in a plant related field if they had they taken the introductory course earlier in their college career. One participant expressed this by

saying, “I’m taking the class and I’m loving it, and I actually wished I had taken it early before my senior year, because I might have at least gotten a minor in horticulture.” Another participant expressed this with even more enthusiasm by saying, “I wish I had known that that minor existed because I probably would have done it. It might have even been my major if I had taken it early enough.” After being presented a definition of ornamental horticulture and a list of career choices, most participants, but not all, had positive reactions to the possibility of employment in this field. One participant expressed this by saying, “I think it sounds cool because it takes some creativity in like how you want to engineer [flowers] and use them, and then also it uses the sciences because you have to understand how the plants grow and things like that so it’s kind of a well rounded deal.” However, some participants were concerned for the security of a job in ornamental horticulture, because of the struggling economy, even after being told there were jobs available in this area.

Objective 3: Identify students’ barriers and constraints in choosing a specific academic program of agriculture as a career.

Participants perceived barriers to entering the field of ornamental horticulture were mixed, but included: Lack of knowledge of careers available, bad job market, not enough money, and not masculine enough. Participants in all focus groups were asked what barriers, if any, they would see for entering the ornamental horticulture industry. Additionally, participants believed these barriers could be overcome if the industry was more visible in their daily lives.

Lack of Knowledge about Available Opportunities

The majority of the participants felt that the largest barrier for them entering the field of ornamental horticulture was that they knew nothing about what it was or what it had to offer. A typical participant response was, "I have no idea what this job would generally entail." Other participants thought they had never seen a career available in this area. One participant expressed this by saying, "I don't think I've ever seen an [ornamental horticulture] career." Some participants expressed a need to be educated more on what career options were available in this area. One participant summed this up by saying, "educate us on what there is."

Bad Job Market and Not Enough Money

Participants were ask what barriers they saw for entering the field of ornamental horticulture after hearing a description and viewing a list of careers available in the field. One common theme among all groups was the idea that the job market was not good for this career and they wouldn't receive enough money. It is important to note that salary and job market for this career were not information provided to participants. Participants expressed their concern about money and the job market in ornamental horticulture in a multitude of ways. One participant articulated a concern for money in this career area by saying, "I don't see this field as being able to pay me enough money." Another participant said, "I mean I sort of have this preconceived notion that the job market isn't that good for ornamental horticulture." Other participants expressed an interest in the industry, but found money to be a major barrier. One participant expressed this by saying, "I'd consider it as a hobby, but it doesn't pay enough for a career."

Not Masculine Enough

The majority of participants, both male and female, from all three focus groups thought men would be unwilling to work in the field of ornamental horticulture. One participant expressed this perception by explaining, "I think guys would be deterred from it just because its flowers". Other participants confirmed this perception by expressing their views in similar comments. Another participant said, "Very few men can actually say I sell flowers." All groups expressed this perception emphatically. Another participant went as far as to call the field "girly", as expressed in the following quote, "Flowers are kind of girly, in a really girly, girly sense".

Need for Visibility of Companies in the Industry

Participants expressed that ornamental horticulture companies should market themselves directly to recruit students through a well developed brand. Participants felt that with other industries they know exactly what type of company and specific names of companies they might work for when they have completed a degree. They are aware of the names of the top engineering firms, or top accounting firms, but they don't know of any companies that would employee people in the ornamental horticulture industry. The students suggested partnerships to promote the companies at the same time as promoting their career options. One participant expressed this view by saying,

> Yeah, I mean I think the industry in general is just not that well known. I mean how many flower companies can you name? And how many engineering firms, how many financial firms, how many restaurants? There's just not that much visibility compared to other markets, and I think that the industry as a whole needs to promote that in general.

This was an area that all focus groups expressed a need for the ornamental horticulture industry to improve. Another participant said, "Well I think that just the general point is that they need to brand themselves in the industry". The concept of the industry needing to market or brand itself continued to arise. Another participant said,

> "By not marketing themselves and putting it out there, like there are jobs for you to get, it kind of makes it sound to people like us that there really isn't much of a job industry, since you never hear about them asking for people to work for them."

Conclusions and Discussion

Overall, this study indicates an increased need for aligning students' career needs with communication about academic programs and available careers, as seen by students' desire to major or minor in a specific academic agricultural program once they were made aware of programs of study in this area and available careers. Additionally, this research provides support for the importance of marketing and branding the agricultural industry, as specifically requested by students. Although this study was limited to the one institution under study, key findings suggest that increased communication at all levels is necessary to recruit qualified students, which aligns with the corporate literature on building relationships and trustworthiness with stakeholder and customer groups (Fill, 2002).

Students' lack of awareness and knowledge about careers in an agricultural field parallels previous conclusions (Kellogg Commission, 2001); however, this study found that not only were students not aware of career opportunities in this area, they actually had an initial negative perception about being in a college of agriculture. Additionally, participants were under the impression that careers were not available in this academic program area and those that were available were low paying positions. Another key finding of interest was that students already in

the college of agriculture were more likely to choose happiness in their future career over a large paycheck.

It is not surprising that students were not willing to enter into a major or program of study prior to learning about it, as previous studies have determined that prospective students have a desire to find out if a program is a good match for their interests before they make a decision on a college or a major (DesJardins & Hendel, 1999). It is noteworthy that once learning about this specific program of study, participants found it a favorable career option. This indicates that the barriers to recruitment are not related to problems with studying an agriculturally related field, but rather with their lack of knowledge about careers in these areas.

Many of the participants' concerns were about the image of jobs in the area of ornamental horticulture and/or agriculture. Some of these were specific to ornamental horticulture, like working with flowers not being a masculine occupation. However, some of these concerns were about agriculture overall, with participants indicating that it seemed antiquated or unable to pay them enough money. Thus, this indicates an opportunity for an academic program in agriculture to communicate its strengths accurately in an effort to engage a student that is interested in their program and can identify mutual goals as suggested by Stewart (1991).

Recommendations

Although this study is limited in that it represents a case study of one land grant institution, these findings may be transferrable and have implications for all academic programs of agriculture. In addition to the traditional influence of family, speakers in the classroom, teachers, and classroom experiences the results of this study indicate an increased need for marketing of not only academic programs, but agricultural businesses as well. Students were

unlikely to chose a career if they did not recognize a company or organization in that field that they would work for once they completed their degree. Thus, it is recommended that institutions of higher education work with the agricultural industry to market and brand themselves so that students will be aware of careers available in the industry.

As evidenced by the results of these focus groups, what is important in a career to this generation of students is the idea of "leaving a mark" or a legacy through their work. This generation of current and incoming college students has been influenced by movements toward globalism and social outreach in the 1990s and 2000s. They are more likely to be civic-minded, open to volunteerism, and serve communities nationally and abroad (Jonas-Dwyer & Pospisil, 2004). This may explain their desire to seek careers that offer the opportunity to leave a legacy; therefore, communicating that aspect of agricultural careers would likely aid in recruiting students to lesser known majors in colleges of agriculture.

Interestingly, the results of this study indicate that students within the college of agriculture are more concerned with personal happiness than making money. Thus, it is recommended that academic programs in agriculture, which may not pay be able to competitive salaries with engineering firms or big business, try recruiting students within the college of agriculture who have decided that the pre-professional track, or other program of study, will not work for them for any number of reasons.

Finally, the results of this study indicate an increased need to improve communication through a strategic communication process, which is regularly recommended in corporate communication (Smith, 2002). The students in this group recognized and saw other businesses as prominent in their daily lives, causing them to think about these as potential careers for their future. Future research is recommended to determine how to move forward with an appropriate

strategic communication plan for academic programs of agriculture.

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Framing the U.S. Sugar Buyout to Restore the Florida Everglades: A Comparison of National versus State Newspaper Coverage

Research Paper

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Abstract

On June 24, 2008, Florida Governor Charlie Crist announced that the state of Florida would buy U.S. Sugar for $1.75 billion and work over the next several years to restore, preserve and protect the Florida Everglades. This buyout, if carried through, would be the largest buyout for environmental purposes in U.S. history. Upon announcement of the buyout, local and national media reported the specifics of the buyout. This framing study researched coverage of the U.S. Sugar buyout in Florida and national newspapers. The purpose of this study was to determine if there was a difference in how the story was covered in state versus national newspapers. In addition, sources that were referenced and/or quoted in the articles were studied to determine their impact on the frames of the state and national articles. Lastly, frames were analyzed to determine if they changed over the course of time

Keywords: Florida Everglades, U.S. Sugar, Media Frames, Framing, Spiral of Opportunity Theory, Framing Cycle, Newspapers, Media Sources

Framing the U.S. Sugar Buyout to Restore the Florida Everglades: A Comparison of National versus State Newspaper Coverage

Introduction

> *Well you've heard about the alligators sleepin' in the shade. You've heard about the sugar barons screwin' up the glades. It's a melting pot existence that is hard to contemplate and a never-ending battle in the Sunshine State*. (Buffett & Lee, 1996, track 6).

The "never-ending battle" (Buffett & Lee, 1996, track 6) between the Florida Everglades and U.S. Sugar is a tug-of-war with man versus the environment. U.S. Sugar, the country's number one producer of sugar in the United States, is based in the heart of the Everglades. Since the 1960s, many have argued that U.S. Sugar's day-to-day production is killing the Florida Everglades. This has been a key issue among many Florida citizens for many years. "For much of the 20th century, the Everglades epitomized the American conflict between unbridled economic development and environmental conservation" (Adaptive Monitoring Assessment for the Comprehensive Everglades Restoration Plan, 2003, p. 13). In the 21st century, the conflict continues and the complexity of the issue has intrigued not only those in Florida but all over the country.

Although there has been continuous coverage of the conflict over several decades, the Everglades and U.S. Sugar made headlines in June 2008. In an effort to finally find a balance among agricultural and commercial development and conserving the Everglades, Governor Crist proposed buying out U.S. Sugar in an effort to clean up the Everglades once and for all. On June 24, 2008, Florida Governor Charlie Crist announced that the state of Florida would buy U.S. Sugar for $1.75 billion and work over the next several years to restore, preserve and protect the Florida Everglades.

This announcement not only sparked the interest of the national media, but also brought several special interest and environmental groups, communities, government officials and industry leaders out to speak on the buyout. Those speaking on the buyout received considerable media coverage, as the unprecedented buyout marked the largest buyout for environmental purposes in U.S. history.

The purpose of this paper is to study the difference in coverage of the buyout between national and state newspapers. In addition, this study will determine which groups and organizations were quoted and referenced and if the references and/or quotes affected the frame of the articles.

Media Framing

Reese (2001) defined framing as "organizing principles that are socially shared and persistent over time that work symbolically to meaningful structure the social world" (p. 11). Frames are used by the media to give the audience a "point of reference" in order to understand a news story more clearly. "Framing is concerned with the way interests, communicators, sources and culture combine to yield coherent ways of understanding the world, which are developed using all of the available verbal and visual symbolic references" (p.11). The media uses frames to help readers to identify parts of the news story and relate them to their own culture. Thereby, developing a better understanding of the story. "Framing provides a fruitful way to conceptualizing how media shape news and people's perceptions of it" (Miller & Riechert, 2001, p. 109).

Spiral of Opportunity Theory

Miller and Riechert (2001) define the Spiral of Opportunity Theory as:

> An ongoing cycle as stakeholders, relevant to an issue, attempt to articulate their positions and then monitor public responses to those articulations. If a stakeholder's articulation resonates positively with the public, then that group will intensify its efforts. On the other hand, when an articulation resonates negatively, the stakeholder group will change its articulation or withdraw from the debate. (p. 109)

The authors define stakeholders based upon the works of Lyons, Scheb and Richardson (1995) as individuals and groups in the policymaking process that "stand to win or lose as a result of the policy decision" (p.497). Journalists receive information from sources that voice their positions in order to have public support. The Spiral of Opportunity Theory "conceptualizes frames in terms of key verbal components measurable in news releases and news stories" (Miller & Rierchert, 2001, p. 111). An advantage to studying frames in this way is that it will "allow us to examine how the dominance of competing frames can shift over time in public discourse and in the news media. As we study these shifts, we observe a pattern of phases in the effects of issue framing" (p. 111).

Based on the above, the following research questions were developed to serve as the focus of this study.

> RQ1: What frames were identified and which organizations were cited within the frames?

RQ2: How did the organizations cited in the stories construct the different framing patterns in the national media and state media newspaper coverage of the U.S. Sugar buyout story?

RQ3: How did the overall frames of the stories change over time?

Methodology

A framing analysis is the process of identifying the frames used in a news story, and was used for this study in order to identify the dominant frames in the state papers versus those in the national papers. More specifically, the study looked at how the sources cited in the story contributed to its overall frame. Once the frames were determined, a comparison between state frames and national frames could take place.

Gathering Articles

Newspapers were chosen for their in-depth coverage of the buyout and for quotes from sources for the article. "One indicator of the central conflict is the core of actors presenting information, ideas and positions within text. In news text, the sources chosen will structure the discussion" (Hertog and McLeod, p. 148). Florida newspapers were chosen in order to analyze how local media reported and reacted to the news of the buyout. National newspapers were chosen to analyze how the buyout was reported on a national scale.

The state newspapers that were chosen were the *South Florida Sun Sentinel*, the *Miami Herald*, the *St. Petersburg Times*, and the *Tampa Tribune*. The national papers that were chosen were the *New York Times, USA Today, Washington Post* and the *Wall*

Street Journal. All of the state and national papers are included among the top 50 newspapers by circulation and readership according to the Newspaper Association of America, 2006.

A search was conducted using Lexis Nexis Academic with keywords Florida Everglades and U.S. Sugar and a date range of June 24, 2008, (the date of the buyout announcement) to November 12, 2008. The Lexis Nexis search revealed 238 articles including news, feature and editorial/op-ed pieces. The search was narrowed to include the specific predetermined newspapers, which narrowed the articles to a count of 129.

The key search words were chosen in an effort to obtain only those stories that dealt strictly with the U.S. Sugar buyout. In addition, the date range was chosen to include articles that announced the buyout and any follow-up articles, including articles on the buyout revision, which was discussed in November 2008.

The articles were then narrowed down through four different categories. Categories included eliminating those articles that were 300 words or less as they did not allow for comprehensive coverage of the buyout. Duplicate articles were deleted and articles that were not specific to the U.S. Sugar buyout were removed. Letters to the editor, as they were not written by reporters and did not include sources, were also eliminated. The final sample size was 94 articles, 14 from national newspapers and 80 from state papers.

Coding the Articles

A quantitative analysis and a qualitative analysis were conducted with the sample. First, quantitatively, a coding sheet was used to (1) identify the different sources that

were cited by the articles, and (2) determine how many times each source was cited. In addition, the coding sheet was used to record key words and phrases. “The researcher should develop a list of symbols, language, usage, narratives, categories and concepts in the content to be evaluated” (Hertog and McLeod, 2001, p. 151).

Second, a qualitative analysis was conducted to determine the overall frames within the articles. Frames were determined by key phrases and key words that were used in the articles. Miller and Riechert (2001) stated, “Key words are not of themselves the frames. Rather, the words are indicative of perspectives, or points of view, by which issues and events can be discussed and interpreted” (p.114). Sources cited were studied to determine their contribution to these frames. “We focus on the choice of words used in news releases and news content to determine how different groups selectively define an issue, and to what degree they succeed in placing their definition in the media” (Miller and Riechert, 2001, p. 114). The frames were then compared and contrasted based upon whether it was a state or national newspaper.

Last, each article was coded by the date of the article in relation to the frame that was identified. The articles were then analyzed to determine if the frames changed over time. The researcher used Miller and Rierchert’s (2001) Spiral of Opportunity and Framing Cycle to analyze any patterns.

Results

Within the sample, 80 were from Florida (state) papers and 14 articles were from national papers. The breakout of state articles is indicated in Table 1 below.

Table 1 – State Article Count

Newspapers	Number of Articles	
Miami Herald	20 articles	25%
South Florida Sun-Sentinel	31 articles	39%
St. Petersburg Times	18 articles	23%
Tampa Tribune	11 articles	14%
Total	80 articles	100%

Note. Percentages were rounded up

Within the 80 state articles, 28% (n=22) were published in June 2008, when the announcement of the buyout was made. In addition, 26% (n=21) articles were published in July 2008, 16% (n=13) in August 2008, 15% (n=12) in September 2008, 4% (n=3) in October 2008 and 10% (n=8) were published in November 2008, at the time of the revision.

The majority of the state articles, 84%, (n=67) were news articles and appeared in the main news or regional news sections of the newspapers. Only 11% (n=9) were editorials and 6% (n=4) were feature stories and/or columns.

The national articles made up a small percentage (15%) (n=14) of the sample size. The breakout of national articles is indicated in Table 2 below.

Table 2 – National Article Count

Newspapers	Number of Articles	
USA Today	2 articles	14%
Wall Street Journal	3 articles	21%
New York Times	8 articles	57%
Washington Post	1 article	7%
Total	14 articles	100%

Note. Percentages were rounded up

Within the 14 national articles, 36% (n=5) were published in June 2008, when the announcement of the buyout was made. In addition, 14% (n=2) were published in July 2008, 7% in August 2008, 21% (n=3) in September 2008, none in October 2008 and 21% (n=3) were published in November 2008, when the announcement of the revision was made.

The majority of the national articles, 93% (n=13), were news articles and appeared in the main news or state news sections of the newspapers. Only 7% (n=1) of the national articles were editorials.

RQ1: What frames were identified and which organizations were cited within the frames?

Major Frames in State Articles

The four major frames identified in the state articles were buyout positive, unanswered questions, doubt and sympathy. Within the 80 state articles, the buyout positive frame, defined by articles that praised the U.S. Sugar buyout and reported that this is the first step in restoring the Everglades, appeared in 15 of the state articles. The

unanswered questions and doubt frame, defined by articles that reported additional questions regarding logistics of the buyout, appeared in 34 of the state articles. Lastly, the sympathy frame, defined by articles reporting the impact the buyout would have on the town of Clewiston, FL, the location of U.S. Sugar, appeared in 11 of the state articles. Table 3 gives an overview of frames identified and sources for each of the frames.

Table 3 – State Article Frames

Frame	Appearances	Sources
Buyout Positive	15	Environmental groups, Florida Department of Environmental Protection, U.S. Army Corps of Engineers, Governor Charlie Crist, U.S. Sugar, South Florida Water Management District
Unanswered questions	34	Miccosukke Tribe, environmental groups, South Florida Water Management District Governor Charlie Crist, Florida Department of Environmental Protection, U.S. Army Corps of Engineers, U.S. Sugar, State Representatives
Sympathy	11	Former U.S. Sugar employees, Clewiston residents and business owners, farmers, South Florida Water Management District, Clewiston Mayor

Major Frames in National Articles

The major frames identified in the 14 national articles were blame, buyout positive and compromise. The blame frame, defined by articles that identified organizations that contributed to the cause of the problems in the Everglades, was identified in four of the articles. The buyout positive frame, defined by articles that reported the benefits of the buyout, was evident in four articles. The compromise frame, defined by articles that reported the work by interested parties to reach a mutually beneficial solution, was identified in four articles as well. Table 4 gives an overall look at frames identified and sources for each of the frames.

Table 4 – National Article Frames

Frame	Appearances	Sources
Blame	4	Environmental groups, Miccosukee Tribe, National Research Council, Governor Charlie Crist, U.S. Sugar, South Florida Water Management District
Buyout Positive	4	Environmental groups, South Florida Water Management District, Governor Charlie Crist, former U.S. Sugar employees, U.S. Sugar
Compromise	4	Environmental groups, Florida Crystals, Outside consultants, U.S. Sugar, Governor Charlie Crist, South Florida Water Management District, Clewiston Mayor

RQ2: How did the organizations cited in the stories construct the different framing patterns in the national media and state media newspaper coverage of the U.S. Sugar buyout story?

State Articles - Buyout Positive Frame

Articles with the buyout positive frame had positive and inspiring quotes. On June 25, 2008, the *South Florida Sun-Sentinel* quoted Governor Crist, "I can envision no better gift to the Everglades or the people of Florida, or to our country, than to place in public ownership this missing link that represents the key to true restoration" (Reid, 2008).

In addition, several of the buyout positive frame articles highlighted the opportunity for opposing groups to work together after years of conflict. Michael Sole, secretary of the state Department of Environmental Protection said, "The incentive for the federal government to work with us is for the successful restoration of the Everglades" (Reid, 2008). Another example was in the June 25, 2008, editorial in the *St. Petersburg Times* which stated:

> Everglades crusader Mary Barley was left breathless: A restored and sustained Everglades is no longer a dream. U.S. Sugar president Robert Buker, long her archenemy, called the deal a paradigm shift for the Everglades and the environment in Florida, one that would have been inconceivable in the past. ("Crist's Bold Step," 2008)

The state articles with the buyout positive frame effectively showed that the buyout was a win-win for everyone involved. In the *Tampa Tribune* on June 25, 2008,

U.S. Sugar President and CEO Robert Buker said, “I am excited by what we are doing today and what it means for the future of Florida and its environment” (White, 2008).

State Articles - Doubt and Unanswered Questions

The doubt and unanswered questions frame was evident by quotes and/or questions in the state articles. One article raised the question that with all of the money going to the U.S. Sugar buyout, what will happen to restoration projects that are already in progress? The June 28, 2008 article in *St. Petersburg Times* stated:

> Crist and U.S. Sugar officials hailed the potential buyout as a way to jump-start the stalled Everglades restoration project. But the Miccosukkees and others are wondering whether it will siphon off all the money for construction of the other elements of the restoration plan - some of which might have provided more immediate results than anything to be built on U.S. Sugar’s land. (Pittman, 2008)

When planning for the Everglades project the St. Petersburg Times quoted Terry Rice, a retired Army colonel in charge of the corps in Florida. He said, “I think we keep doing the expensive, easy thing and losing sight of what’s important. If the purchase occurs, most all attention will be focused on this area at the expense of other vital restoration projects” (Pittman, 2008).

An article in the June 26, 2008, *South Florida Sun-Sentinel* reported on the increased costs of the deal due to interest fees and financing:

> One question is whether the land deal will leave enough money to make the long-delayed improvements the Everglades needs, said Joette Lorion, spokeswoman

> for the Miccosukee Tribe. The governor's proposal relies on paying for the U.S. Sugar land with bonds once intended to finance a host of water treatment and storage areas. The tribe contends that using that money leaves the improvements in doubt. (Reid, 2008)

A *Miami Herald* article on July 11, 2008, focused on the South Florida Water Management District's statement that the buyout would not raise the tax rate. South Florida Water Management District executive director, Carol Ann Wehle stated, " 'We're not raising the tax rate she said. I think that is a very important consideration in the tough times everyone is experiencing.' But, she acknowledged, there are 'consequences to living within our means,'" (Morgan, 2008).

Lastly, three articles with the doubt and unanswered questions frame included state representatives and others questioning the secrecy of the deal and asked why elected officials were not brought into the negotiations earlier. Dexter Lehtinen, an open government and Everglades advocate, said, "I'm not necessarily against the deal, just the way it was brokered. It's a true example of why the Sunshine Law was needed. We don't know where they're going to get the money or how the deal was made. Everything the public wants to know they did in the shade" (Diaz, 2008).

The September 8, 2008 *Tampa Tribune* article quoted representative Adam Putnam:

> We're asking the questions, but what's so frustrating is state officials negotiating the deal don't have any answers, said U.S. Representative Adam Putnam, R-Bartow. There is no master plan…to assist in the transition of this community,

> Putnam said last week. No questions are being answered about the impact of the overall restoration plan. (Peterson, 2008)

State Articles - Sympathy Frame

Articles with the sympathy frame were stories on the impact losing U.S. Sugar would have on this small town of Clewiston, FL. Quotes, especially from those living in Clewiston, were the best indicators of this frame.

From the July 13, 2008, *Tampa Tribune* article, "Residents are trying to be hopeful, but discouragement is everywhere. Early one morning after the announcement, Sonny's Bar-B-Q, which several residents deemed Clewiston's best restaurant, burned down. Authorities have determined the fire was not intentional. Residents took it as a bad sign" (Helgeson, 2008).

On June 26, 2008, the *St. Petersburg Times* printed an article in which several business owners in Clewiston were interviewed. A former U.S. Sugar employee, Matt Beatty, was quoted, "We take everything hard in a small town. Everything is done on a personal basis" (Klinkenberg, 2008).

The July 9, 2008, *Miami Herald* article quoted and referenced several Clewiston residents, government officials and business owners regarding their reaction to the announcement of the buyout:

> Miller Couse, chairman and chief executive of First Bank in Clewiston, isn't optimistic. He pointed to the fate of Detroit and other Michigan cities as the steel

and automobile industries declined. “It’s nice to say we can go out and reinvent ourselves, but the practicality of it is, I think, zero” Couse said. (Bussey, 2008).

National Articles - Blame Frame

Three of the four of the national articles with the blame frame focused on the National Research Council’s Everglades progress report on the Comprehensive Everglades Restoration Plan. The blame frame emerged in articles that blamed Congress for the failing Everglades.

In the *New York Times* September 30, 2008, article, the lead sentence stated, “The eight-year-old, multibillion-dollar effort to rescue the Everglades has failed to halt the wetlands’ decline because of bureaucratic delays, a lack of financing from Congress and overdevelopment, according to a new report” (Cave, 2008). Later in the same article, William L. Graf, chairman of the committee, was referenced, “The restoration plan, finalized in 2000, made the federal government and Florida equal partners, but Congress has failed to match the state’s commitment of more than $2 billion” (Cave, 2008).

Continuing the blame frame, the September 29, 2008, *USA Today* article, which also focused on the progress report from the National Research Council, referenced the South Florida Water Management District regarding the report. “The South Florida Water Management District, which oversees restoration for the state, said in a statement that it agrees with the report’s findings ‘that restoration progress is hampered by limited federal funding and a complex and lengthy federal planning process’” (“Report: Everglades,” 2008).

The June 25, 2008, *Washington Post* article, reported that the blame belonged to industry. “But the industry [U.S. Sugar] has been blamed for many of South Florida’s environmental problems. Agriculture has dramatically changed the ancient landscape, and fertilizers have polluted the water” (Achenbach, 2008).

National Articles - Buyout Positive Frame

All four of the articles with the buyout positive frame focused on the recent announcement of the actual buyout, much like those reported in the state publications.

The June 24, 2008 *USA Today* article announcing the buyout quoted Governor Charlie Crist, “Florida is on the leading edge of preservation, and it is committed to restoring the Everglades” (Hiraki, 2008).

In the June 25, 2008 *Wall Street Journal* article, “The agreement with U.S. Sugar ‘is an enormous step, ‘ said Sara Fain, co-chair of the Everglades Coalition, a group of environmental organization that works to protect the wetlands. ‘One of the key pieces for restoration is land for water storage and this land could be a lynchpin” (Prada, 2008).

National Articles - Compromise Frame

Two of the four articles with the compromise frame focused on the revision of the U.S. Sugar buyout. The revision stated that only the land, no assets, would be included for $1.34 billion. This revision allows U.S. Sugar to stay in business, saving jobs in Clewiston.

Evidence of the compromise frame can be found in quotes and references in each of the articles. The *New York Times* November 11, 2008, article quoted Kirk Fordham,

chief executive of the Everglades Foundation. “This simplifies the deal. It makes it easier to swallow from a financial standpoint, and it’s less complicated” (Cave, 2008).

The next day, November 12, 2008, *The New York Times*, published an additional article regarding the buyout revision:

> The agreement would grant the South Florida Water Management District, the state’s overseer of the purchase, the right to take 10,000 acres in that time [7 years] for hydrology projects and an additional 30,000 in the seventh year. But most of the company’s land could continue to be farmed until the state needed it to reconnect Lake Okeechobee to Everglades National Park and Florida Bay. (Cave, 2008)

The final example of the compromise frame was in an article that focused on a future without U.S. Sugar and what would it mean for Florida Crystals, the remaining sugar producer in south Florida. The *New York Times* article on July 31, 2008, quoted and referenced Florida Crystals throughout the article and discussed finding a balance between economics and the environment. J. Pepe Fanjul with Florida Crystals said, ‘You have to have a balance between the environment and economic development. Something has to be done for the humans, too’” (Cave, 2008).

RQ3: How did the overall frames of the stories change over time?

The Spiral of Opportunity Theory indicates that frames can change over time. With positive reporting, stakeholders may increase their time in the media while decreasing their time with negative reports. Within both the state and national articles, the frames did shift as additional sources were quoted.

From the announcement date of June 24, 2008, through June 26, 2008, there were 21 articles studied. Of those 21 articles, 13 of them had the buyout positive frame. The prominent sources in each of the articles were environmental groups, Governor Charlie Crist and South Florida Water Management District.

Beginning June 26, 2008, new frames began to emerge as new sources were quoted. After this date, stories began quoting Clewiston residents and business owners, and the sympathy frame became prominent. In addition, the use of state representatives and the Miccosukee Tribe as sources elicited the doubt and unanswered questions frame.

In September 2008, while talks of revision were top news, the original sources, environmental groups, Governor Charlie Crist and South Florida Water Management District, once again became the top sources in the articles. Although the frames did not shift back to buyout positive, they did shift to the compromise frame, which reported the buyout and the negotiations in a positive light. As sources shifted and new frames evolved, the Spiral of Opportunity Theory became more evident.

The frequency in which the sources were cited also had an impact on the frame. In the state articles, three of the top organizations cited were all against, or had serious concerns, about the U.S. Sugar buyout. Therefore, two of the prominent frames identified among the state articles were negative, including the doubt and unanswered questions frame and the sympathy frame. This finding is also in line with Miller and Riechert's (2001) Spiral of Opportunity and Framing Cycle, " The more a particular stakeholder group is quoted in news articles, the more prominently their particular issue definition is represented in news coverage" (p. 112).

Discussion

The sources had a direct impact with the framing. In fact, one mid-article quote could change the frame. Many of the national articles had two frames because of the quotes and/or references from sources.

The state articles tended to report on one particular aspect of the buyout per article. This may have accounted for why there were five times more state articles than national articles. In addition, most of the state articles only had one frame per article.

The national articles, although less in number than the state articles, tended to be balanced and objective. Balancing the story required more sources, which in turn revealed more than one frame per article. In addition, the national articles were often more thorough and provided more information regarding the history that led to the buyout.

Lastly, the frames changed as certain events were reported. When the buyout announcement was made, the frames were positive. However, as time progressed, new sources emerged in spin-off stories. Many of these had negative frames. Once talks of revisions were reported in September 2008, the frames began to shift back to positive frames such as compromise.

Further Research and Practical Application

Overall, this study indicated that state and national media did cover the U.S. Sugar buyout differently. State media tended to focus on specific aspects of the buyout, whereas national media covered the bigger picture. Both state and national media shared

many of the same sources, with a few variations on either side. In addition, these sources influenced the frame and overall tone of both the national and state articles.

State and national articles shared one common frame, the buyout positive frame, but differed in others. Interestingly, the national articles had predominately positive frames (buyout positive) and state articles had predominately negative frames (unanswered questions and doubt, sympathy).

Results from this study can educate practitioners on how to focus their efforts when communicating with the national and state media on a complex issue. It is important for practitioners to monitor closely what both state and national newspapers are reporting and adjust correspondence with them accordingly. In addition, considering national and state newspapers used many of the same sources, it is imperative that practitioners identify all perspectives of an issue and craft key messages based on these positions. Lastly, it is important for practitioners to have an established relationship with local media. State articles were more prevalent and tended to have more negative frames. Therefore, more attention will need to be given to state newspapers since their stories are often picked up by the Associated Press and run nationally.

Further research is needed to study more closely the sources cited. More specifically, conducting an in-depth analysis to determine if the spokespersons' role in their organization and their relationship with the media had an impact on the framing of the article.

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Running Head: Arkansas Agritourism

Arkansas Agritourism Business Operators: Who They Are, How They Communicate, What They Want to Learn, and How They Want To Learn It

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Arkansas Agritourism Business Operators: Who They Are, How They Communicate, What They Want to Learn, and How They Want To Learn It

Introduction

Renowned agritourism consultant Jane Eckert has predicted that agritourism in the U.S. will grow by 30% each year over the next decade (Eckert, 2008). Her prediction is supported by a recent case study that demonstrated how adding agritourism enterprises to small and mid-sized farms in Arkansas could be a legitimate step toward economic sustainability of those farms (Das & Rainey, 2008). This evidence is even more important in light of the fact that many of the farms that are likely to benefit from agritourism are in impoverished areas. While farmers may not get rich by starting new agritourism enterprises, they may well be able to preserve their family farms and the heritage and culture attached to them in the rural landscape (Comen & Foster, n.d). This has been the case in several western European countries, including Scotland and England, which seem to have set the pace for the industry's world-wide growth in popularity (Ibery, Bowler, Clark, Crockett, & Shaw, 1998).

As a result of agritourism's projected growth in the U.S., new ventures are generally viewed positively by economists and state governments (Hall, Roberts & Mitchell, 2003). In fact, Pittman (2006) identified several state governments that have invested in marketing and administrative support for the agritourism industry. As state governments and other public and private entities attempt to foster this growth, many have commissioned and conducted research to better understand the industry in their states and to identify issues that could cause barriers for agritourism entrepreneurs. As cases in point, researchers in Pennsylvania (Ryan, DeBord & McCleellan, 2006), Vermont (Comen & Foster, n.d), and Tennessee (Bruch, 2004) have published reports describing their respective states' agritourism industries.

Pittman (2006) asserted in his anecdotal description of Arkansas' agritourism industry

that examining the industry and its potential economic impact is paramount to the industry's future. Unfortunately, as Das and Rainey (2008) allude, little research exists on either the current state of the industry in Arkansas or the current or potential economic impact of the industry on the state's economy. To address this evident need, researchers in Arkansas joined the national trend and examined their state's industry, seeking particularly to identify the current and potential economic impacts of the industry on the state's economy and to identify barriers to progress as well as educational needs of those involved in the industry. This broad-ranging survey project described the industry for the first time ever in the state and generated data that is proving to be useful for those who are working to support the growth of agritourism in the state. Among those who are supporting the growth of the state's tourism industry, is the Arkansas Cooperative Extension Service, which, in many cases, has a previously established connection with farmers who have begun agritourism businesses. Those conducting the Arkansas study intended for the findings to be immediately helpful in directing the agritourism-related efforts of the Arkansas Cooperative Extension Service

Focus on Marketing Communications

This article will focus on the findings of the survey that related specifically to the educational needs of Arkansas agritourism business owners, and there is a specific emphasis on their need for skills in marketing communications and promotion. Eckert (2009) asserted that no aspect of running an agritourism business is more important than the marketing and promotions aspect. Therefore, there appears to be a clear need for non-formal education in the specific arts of marketing communications, public relations, media relations, and customer service. It also seems apparent that state Cooperative Extension Services are in a good position, with their already established audiences and channels of communication, to be the frontrunners in educating

agritourism business owners about these important communications-related skills. The conclusions and recommendations of this study should help guide Extension personnel as they develop nonformal educational materials to help agritourism entrepreneurs learn to strengthen their marketing communications skills.

Objectives

This article describes the findings and conclusions related to several objectives associated with the Arkansas agritourism survey:

- Describe demographic characteristics and current practices of Arkansas agritourism business operators
- Identify agritourism business operators' perceived barriers and educational needs, with a special emphasis on needs related to marketing communications
- Identify respondents' preferred educational delivery methods with regard to their reported educational needs

Methods

In order to describe the characteristics of Arkansas agritourism businesses, the University of Arkansas Survey Research Center (SRC) was commissioned to conduct a telephone survey of owners and/or operators of agritourism businesses in Arkansas.

Subject Selection

A contact list of 318 previously identified agritourism operators compiled by the state's lone agritourism industry group, called the Arkansas Agritourism Initiative, was used as the population for this survey. This list represented the most comprehensive database of agritourism enterprises in Arkansas; however, it is known that the list of 318 was not comprehensive. In fact, the list was most likely representative of the more publicly engaged and well-connected

agritourism business owners, who may not have been totally representative of their counterparts statewide. Still, this group provided an accessible population of the more active and engaged agritourism business operators. Eight records were removed from the list because no telephone number could be found. Therefore, a total of 310 telephone numbers were included or this survey. From the list of 310 Arkansas agritourism enterprises, the SRC was successfully able to interview 102 owner/operators in February and March of 2009.

Survey Procedure

Following standard telephone survey procedures outlined by Dillman (2008), prior to the start of interviewing, the SRC sent a letter, signed by the researchers to all agritourism enterprises for which an address was available. The SRC conducted telephone interviews between February 19 and March 5, 2009. Interviewers, trained in both general interviewing and with respect to this project, all with previous interviewing experience, conducted the interviews guided by a well-defined survey protocol. Interviewers made every effort to obtain updated contact information for agritourism owner/operators on the list if telephone numbers had changed. They conducted a 140-item survey, which lasted approximately 15 minutes per subject.

Results

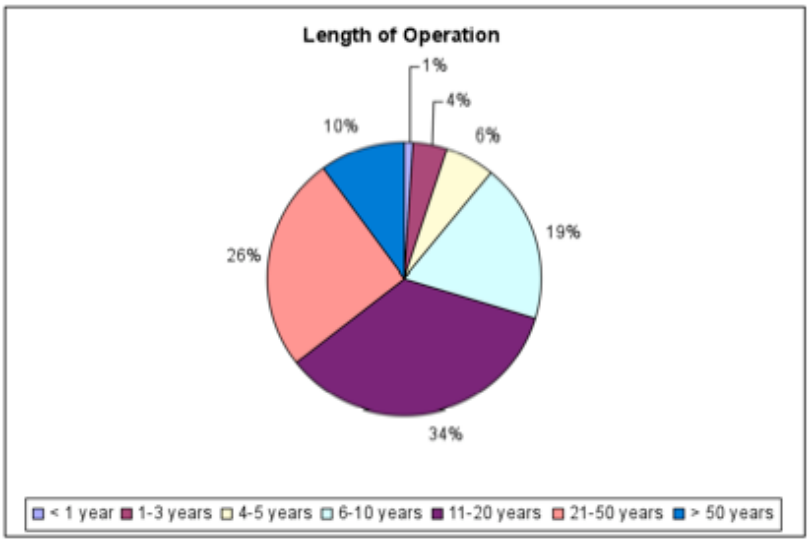
Description of Agritourism Operators

One key objective of this research was to describe some key characteristics of agritourism business owners and operators in Arkansas. Included among the important descriptors were Length of Operation, Type of Operation, Reasons for Engaging in Agritourism, Age, Gender, Level of Education, and Types of Marketing and Promotion Efforts.

Length of Operation

Most respondents' agritourism enterprises had been in operation for 10 years or longer. Thirty percent of the agritourism operators had been in business for ten years or less (Figure 1). However, this was not the largest group of entrepreneurs; 34% of respondents had been in business for 11 to 20 years. Additionally, 36% had been operating their agritourism enterprises for more than 20 years.

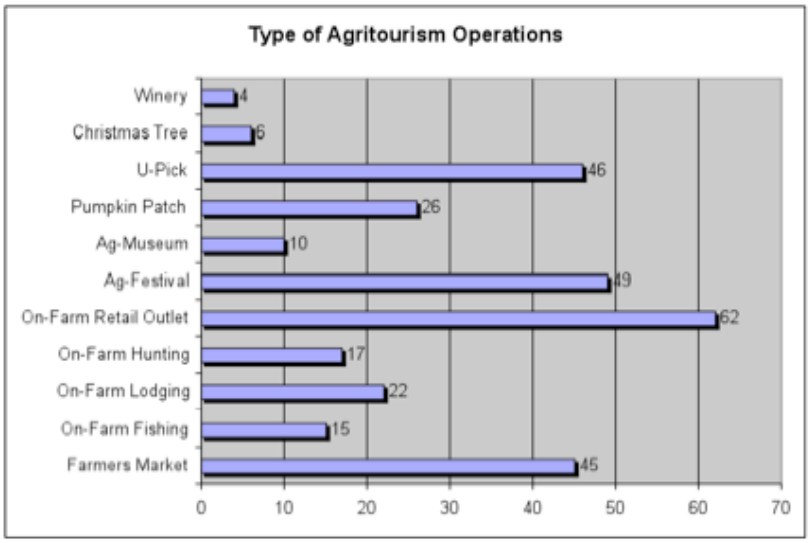
Figure 1. Length of operation.



Type of Operation

A good variety of types of agricultural operations existed among respondents. On-farm retail outlets were the most common agritourism activity provided to customers, with 62 of the respondents offering this service (Figure 2). Other highly cited activities include agriculture-related festivals, pick-your-own (U-pick), and farmer's markets, with 49, 46, and 45 respondents reporting these activities respectively. Pumpkin patches and on-farm lodging (e.g., bed and breakfasts) were also popular enterprises.

Figure 2. Type of agritourism operation[1]

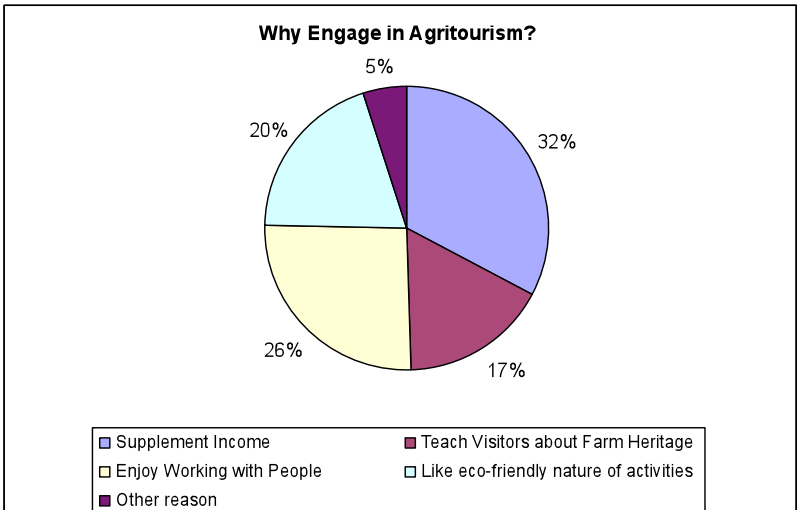


[1]Most operators reported more than one type of agritourism operation at their farm

Reasons for Engaging in Agritourism

Though increasing income appears to have been the top motivator for this group of entrepreneurs, many respondents had other motives for starting their businesses. The most cited reason (32%) for engaging in agritourism was to supplement the agritourism operator's income (Figure 3). Reponses regarding other reasons for working in agritourism were: the operator enjoyed working with people (26%), the operator liked the eco-friendly nature of activities (20%), and the operator enjoyed the opportunity to teach visitors about the farm heritage (17%).

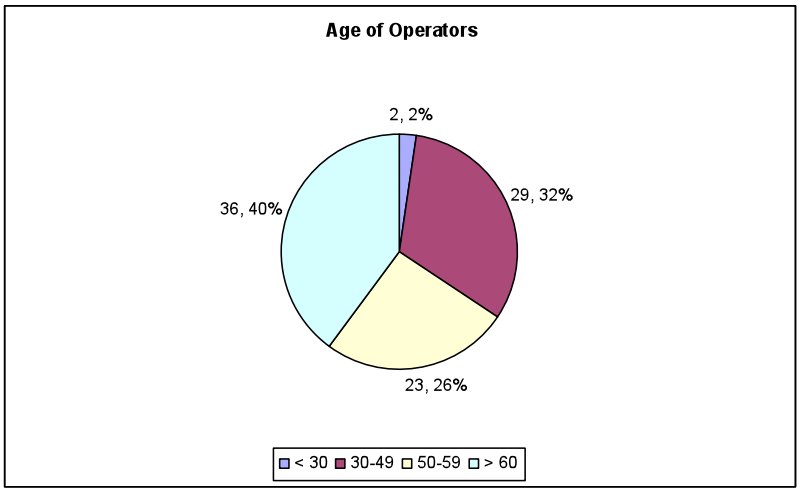
Figure 3. Reasons for engaging in agritourism



Age of Operators

The respondents were an aging group, a fact that mimics the demographics of traditional farmers, whose average age is about 55. Only two percent of the respondents were under the age of 30 (Figure 4), while nearly two-thirds of the respondents (66%) were over the age of 50. This is consistent with the finding that many of the operators had been running their agritourism venture for more than 10 years.

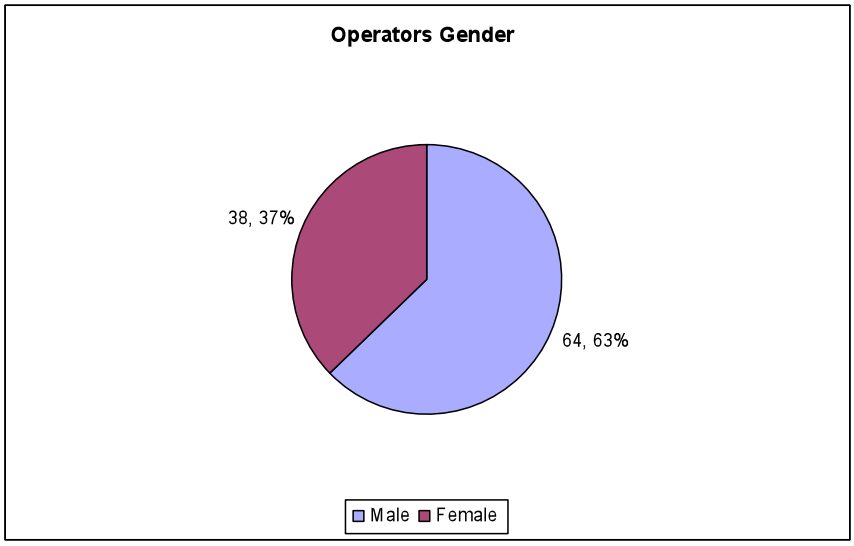
Figure 4. Operators' Age



Gender of Operators

Thought the respondents were mostly male, a significant number of female respondents were identified as agritourism business operators. Sixty-three percent of the respondents were male and 37% were female (Figure 5).

Figure 5. Operators' Gender



Education Level

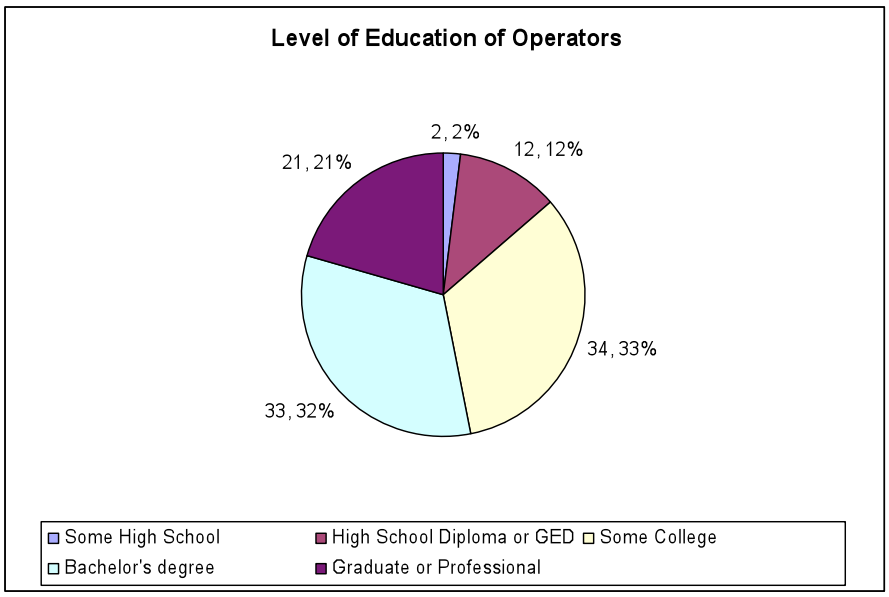
The agritourism providers in this study tended to be better educated than the general population in Arkansas. Fifty-three percent of the operation's owners had a bachelor's degree or higher (Figure 6). This compares to 17% for the overall Arkansas population (U.S. Census Bureau, 2000). Another 33% had graduated high school and attended college for some amount of time.

Operators' Concerns and Educational Needs

Another objective of this study was to identify perceived barriers or concerns regarding the operation of the subjects' agritourism businesses. These concerns, along with the respondents' perceived educational needs may provide some indication of the issues that educational materials should concentrate on. The most important concern among respondents, with an average of 3.46 on a 4-point scale, was promotion and marketing (Figure 7). Two other concerns with average responses above 3 on a 4-point scale were liability issues (3.08) and

affordable health insurance (3.06). Signage (2.92), finding and hiring quality employees (2.84), and financing (2.79) were of lesser, yet above-average importance to the respondents.

Figure 6. Level of education among operators



In all, nine educational topics among a list of 16 were rated 3.0 or higher on a 4-point scale measuring average level of importance to operators. The most important self reported educational needs included legislation and government support (3.74), grant resources (3.47), advertising (3.44), niche marketing opportunities (3.44), liability insurance and risk (3.37), and media relations (3.31) (Figure 8).

Figure 7. Operators' concerns

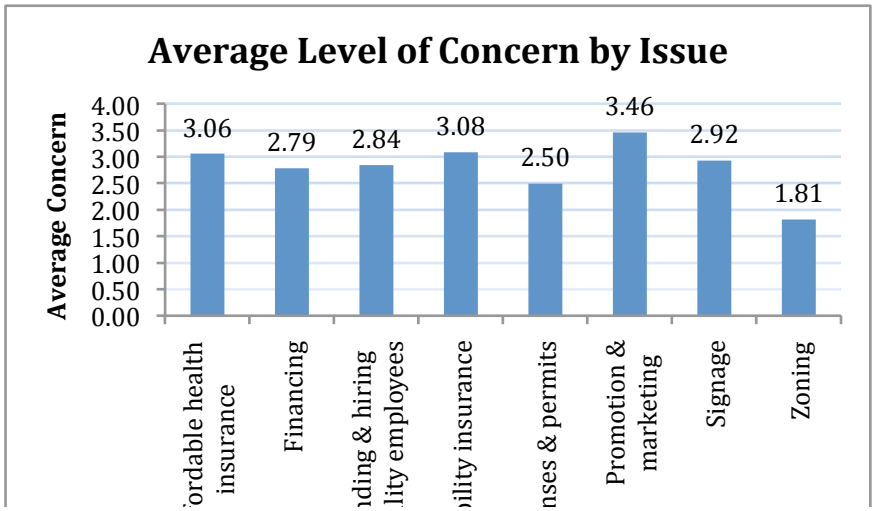
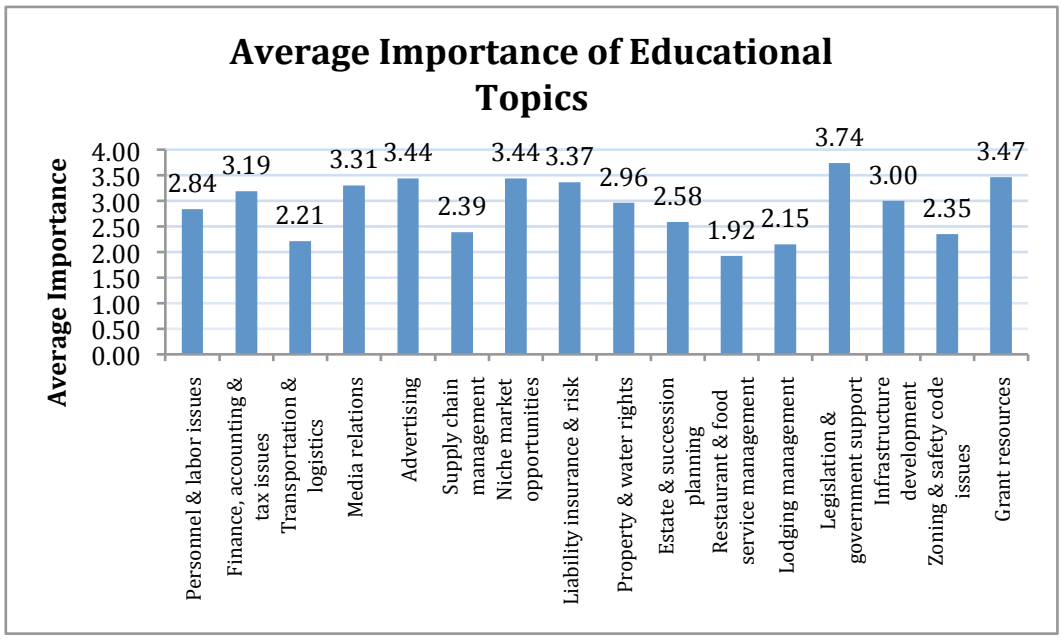


Figure 8. Importance of educational topics



As expected, promotion and marketing emerged as an important issue for agritourism operators, so further data regarding common marketing and promotions tactics was collected, and these finding may help guide the development of educational materials focused on this important issue. Agritourism operators reported that the marketing communications skills they used the most in promoting their businesses included word of mouth (97%), web sites (70%), print and broadcast advertising (63%) and local media relations (56%). The least-used tactics included media relations with travel magazines (18%) and ads in travel magazines (23%) (Figure 9).

Preferred Delivery Methods

A final objective of this study was to identify the subjects' preferred educational delivery methods. Survey respondents were also asked to indicate of the usefulness of different forms of educational materials to learn about practices that could improve their agritourism business. Possible responses to these questions were: "not at all useful," "slightly useful," "somewhat

useful," "useful," and "very useful." Periodic newsletters, Figure 10 illustrates the percentage of responses associated with each type of resource.

Figure 9. Common marketing communications tactics

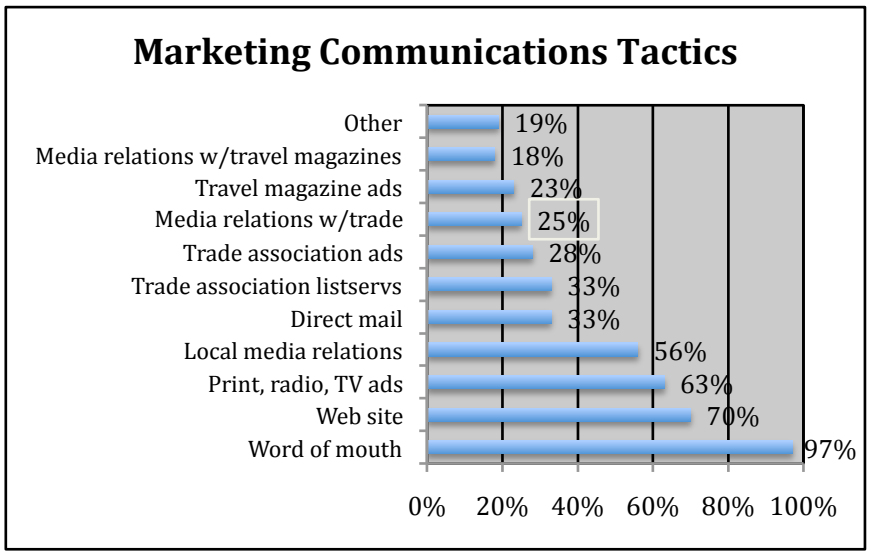
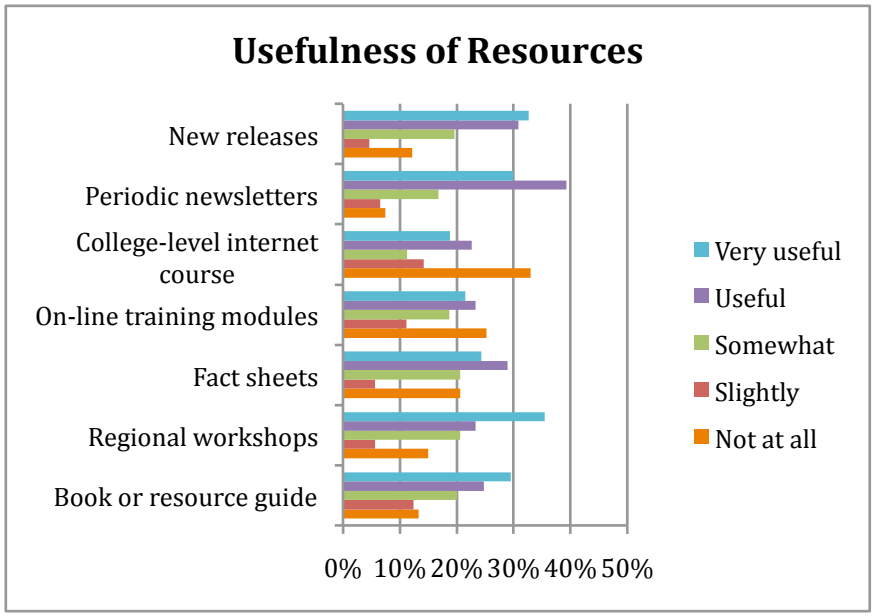


Figure 10. Usefulness of educational delivery methods



Conclusions, Discussion, and Recommendations

This survey of agritourism operators in Arkansas shed new light on both their demographics and educational needs. Extension professionals and educators in the disciplines of agricultural economics and agricultural communications now have some empirically based information on which to base decisions about educational programming for this set of clientele. Several findings appeared to be key indicators that could guide the development of educational content.

The Demographics of Arkansas Agritourism Operators

Based on the demographic data, the study participants were mostly males and mostly well-educated. Though many of them were motivated to start their agritourism business by to increase their income, nearly as many were motivated by other factors, including a desire to work with the public and a desire to share their passions for being good environmental stewards. Their businesses typically included retail sales, festivals, or pick-your-own systems. Additionally, there were fewer new business owners than may have been expected. Most of those surveyed had been in business longer than 10 years.

It follows then that educational programs targeted toward these clientele should be developed with these empirically based demographic data in mind. Extension educators should be mindful of inaccurate stereotyping of agritourism in Arkansas. Though the more stereotypical enterprises such as pumpkin patches, Christmas tree farms, and Wineries exist, they are not necessarily the most prevalent types of enterprises. The data also may also counter stereotypes related to age and gender. And certainly, with 84% of the operators surveyed having completed at least some college, certain stereotypes regarding the education levels of agritourism operators will be reconsidered.

Educational Topics in Agricultural Business and Communications

A new understanding of the important concerns reported by respondents can guide educators who desire to serve this sector. In particular, the agritourism operators in this study were concerned about their ability to market and promote their enterprises. They also had concerns about liability issues, securing affordable health insurance, developing signage, hiring quality employees, and securing financing. Obviously, if these are important issues for the respondents, they could benefit from educational efforts to strengthen their knowledge of these subjects, which are mostly related to the agricultural economics and agricultural communications disciplines.

In addition to examining respondents' concerns, this survey also required participants to rate the value of specific educational topics related to the agritourism industry. The responses clearly indicate that the operators wanted to learn more about how to obtain government help in the form of legislative support and grant funding for their industry. The responses also indicate a desire among respondents to learn more about topics related to marketing communications, including advertising, niche marketing opportunities, and media relations. Each of these topics appears to be a legitimate topic for inclusion in future educational materials for these prospective clientele.

The findings related to the question about common marketing communications provide further direction for specific educational programming for this group of entrepreneurs. An astonishing 97% of respondents listed word of mouth as an important marketing communications tactic. Yet, only 18% used any media relations efforts with travel magazines to reach their target audience, and 30% do not have an internet presence (web site). There are two possible implications for the word-of-mouth finding: (1) Operators are simply relying on an old-fashioned

method of marketing and need to learn more about better, more efficient marketing communications techniques; or (2) Word of mouth is a successful marketing technique in its own right, and since operators use it so prolifically, educational materials should be developed to help facilitate the word-of-mouth technique in the agritourism industry. Further, the findings show that respondents' knowledge of how to conduct media relations with specific types of print, broadcast, and internet-based media, as well as their knowledge of web-based marketing could be strengthened. These seem to be legitimate topics of future educational programming for this set of clientele.

Educational Programming

Based on the findings of this study, agritourism operators will be most likely to use traditional nonformal educational methods, such as newsletters, news releases, regional workshops, and books or resource guides in their efforts to educate themselves about how to operate their businesses. The demand for more technologically advanced delivery methods, such as on-line training modules and internet-based college-level courses is not as large with this group, though some interest does exist. This is key information for Extension educators and college faculty who have the potential to develop and deliver both formal and nonformal educational opportunities on this topic.

Overall Recommendations for Research and Practice

Further research on this topic will focus on two points of interest. It is possible that there is a statistical significance between sales and marketing communications tactics of those involved in this study. Analysis of this relationship is underway. Also, on a more broad scale, compiling and comparing the results of similar state-level studies would be beneficial. An understanding of the regional differences among agritourism operators and their educational

needs would surely help guide regional and national efforts that could be shared via eXtension and other regional and national educational programming efforts. Finally, there are numerous opportunities for case study and qualitative-type research that might lead to the discovery of not only "best management practices," but also the subtle nuances of among the marketing communications and business management practices of the more successful agritourism businesses.

The practical recommendations for practice related to this research are mostly covered in the discussion above. However, the importance of basing decisions about educational programming for agritourism businesses upon sound empirical research cannot be understated. The conclusions of this study, when considered by Cooperative Extension Service educators or by college faculty, are likely to change opinions and spark new ideas regarding the topics and delivery methods of educational programming targeted toward this group of clientele.

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Students of tomorrow: Agricultural students' use of selected social media

Category: Research paper

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Students of tomorrow: Agricultural students' use of selected social media

Abstract

The Internet has evolved from a medium through which others' content was received into a medium for creating content and participating in social exchanges, resulting in a growth of social capital available for personal and business uses. Understanding students' use and preferences for social media is an important step in developing agricultural communications curricula that will better prepare students to face social and workplace demands, as personal and professional use of social media continues to grow. Students enrolled in an upper-level agricultural communications service course were surveyed to determine their participation in selected social media, including Facebook, LinkedIn, Twitter, and blogs, and their preferences for using those media in the classroom. Students' reported use of social media was consistent with previous studies and with the categories described by the social technographics profile concept, with a majority of students reporting use of Facebook but no or few students reporting use of LinkedIn, Twitter, and blogs. Students' low levels of preference for use of the selected media in the classroom also were consistent with previous studies. This study supports previous research showing that social media should be incorporated into course curricula in moderation, with the preferences of students in mind. However, instructors should be prepared to help students effectively equip themselves for their careers.

Keywords: agricultural communications, social media, Facebook, LinkedIn, Twitter, blogs, social capital

Students of tomorrow: Agricultural students' use of selected social media

Introduction

The use of social media has grown significantly over the last decade, and interaction within electronic environments has become a mainstream mode of interpersonal and mass communication (Kerawalla, Minocha, Kirkup, & Conole, 2008; Lipsman, 2007; Pfeil, Arjan, & Zaphiris, 2009; Smith, Salaway & Caruso, 2009). This shift in communication has been aided by handheld devices that allow for fast and reliable access to social media sites such as Facebook, LinkedIn, and Twitter (Smith, 2009; Smith et al.). Businesses across multiple industries have taken notice of this rise in the use of electronic communication and have responded by focusing on social media as a valuable marketing and public relations tool (Li & Bernoff, 2008). In addition, instructors at higher education institutions have begun incorporating social media and other technologies into the classroom at an ever-increasing pace, both to prepare students for the workplace and to meet their needs and expectations as digital natives (Baird & Fisher, 2005-2006; Kerawalla et al.; Pfeil et al.; Smith et al.).

Social media awareness and use has grown from the initial movement toward user-generated content through blogs and wikis (Instone, 2005; Kerawalla et al., 2008; Pfeil et al., 2009) into the development of extensive virtual networks that include social networking sites, blogs, customer forum, and podcasts, among other Web 2.0 technologies (Kerawalla et al.; Pfeil et al.). Through these technologies, user-generated content is not only shared but also allows multiple users to influence the development of community knowledge (Pfeil et al.). Users, including students, now rely on the Internet as a medium for receiving other users' content, creating their own content, and participating in social exchanges (Djajadiningrat & Kyffin, 2007;

Smith et al., 2009), ultimately extending "the length of the shadows they cast" (Smith et al., p. 7).

Obtaining reliable and accurate estimates of Web 2.0 technology users, particularly those generating content, is a complex task, resulting in many studies of specific Web 2.0 technology use within finite groups (Pfeil et al., 2008). For example, estimating the size of the global blogosphere, or the number of bloggers and people participating in blog interactions, is nearly impossible due to a likely absence of data from specified and unknown platforms (Hurst, Siegler, & Glance, 2007). While statistics from social networking sites and about blogs may be available, describing the habits of users requires examining groups one demographic at a time, with most research to date conducted with younger users (Pfeil et al.) or those reachable by telephone (Fox, Zickuhr, & Smith, 2009).

When examining the use of status-update services for the Pew Internet and American Life Project, Fox et al. (2009) found that about 19% of Internet users report using services such as Facebook or Twitter to exchange updates about themselves and others. In a larger survey focused on 30,616 students from 115 colleges and universities, 90.3% of students who responded reported accessing social networking Web sites, while 37.3% reported contributing content to blogs (Smith et al., 2009). Students also reported contributing to video Web sites such as YouTube (44.8%), contributing content to wikis (41.9%), listening to podcasts (35.1%), participating in online multiuser computer games (29.0%), and participating in online virtual worlds such as SecondLife (8.1%) (Smith et al.). Students' average time spent on online activities, including school, work, and recreation, was 21.3 hours per week (Smith et al.).

Facebook has led the revolution of social media sites, even surpassing its place as a noun to become a verb (Foregger, 2008). Since the launch of Facebook in 2004, "Facebooking

someone" or being "facebooked" has become an everyday part of the common vernacular (Foregger). Prior to the opening of Facebook to the public in 2005, 94% of students on higher education campuses with Facebook networks reported having Facebook accounts (Ellison, Steinfeld, & Lampe, 2006; Stutzman, 2006). Now, according to the Facebook Web site, more than 300 million active users collectively log more than 8 billion minutes on the site per day (Facebook.com, 2009).

LinkedIn, a social networking site for professional and career development, also has surged in popularity (Adamic & Adar, 2005). Founded in 2003, LinkedIn started as a localized networking site with 4,500 members (LinkedIn.com, 2009). As of 2009, LinkedIn's membership includes more than 50 million professionals in 200 countries. Among these members are executives of all Fortune 500 companies (LinkedIn.com). Searching for a proper fit for career and professional goals through acquaintances is natural and advantageous, and LinkedIn assists people in such networking (Adamic & Adar).

Rising in popularity since its creation in 2006 has been Twitter, a social networking site focused on status updating. Currently, Twitter is ranked behind Facebook and Myspace as the third most-visited social networking site (Fox et al., 2009). The number of active Twitter users increased from 2 million users per month in December 2008 to more than 17 million users per month in May 2009 (Fox et al.). The same study also reported that college-age students, defined as people 18 to 24 years old, accounted for 37% of all Twitter use (Fox et al.). Internet users who also use social networking sites such as Facebook and LinkedIn make up 35% of Twitter users, compared to only 6% of Twitter users who do not participate in other social networking sites (Fox et al.).

In addition to social networking sites, blogging is an integral part of Web 2.0 technology and social media (Kerawalla et al., 2008). A 2007 study found that 25 percent of Americans surveyed read blogs on a regular basis, and 11 percent of respondents published, maintained, or updated a blog (Bernhoff & Li, 2008). About 9% of Americans surveyed about Internet use during the current economic recession indicated they contributed to blog content (Smith, 2009). Student use of blogs has increased steadily, with blogging site LiveJournal now ranked sixth among college students' top 10 Web sites (Smith et al., 2009). In addition, Smith et al. found that students are four times as likely as other adults to blog, despite 38.8% of college students reporting they do not add user-generated content to the Internet through blogs, wikis, or video sites.

The increase in usage and popularity of social media can be described using concepts from Li and Bernoff's (2008) book *Groundswell: Winning in a world transformed by social technologies*. In *Groundswell*, the authors attribute the growth of social media to the social technographics profile (STP). Grouping people based on their activities is the central point of the STP concept (Li & Bernoff), which uses a similar structure to Roger's (2003) theory of adoption to explain participation in technology. In Rogers, adopters are categorized as innovators, early adopters, early majority, late majority, and laggards. In STP, all participants are placed into one of six groups: creators, critics, collectors, joiners, spectators, and inactives (Li & Bernoff).

Creators produce electronic media, such as stories, articles, blogs, videos, or music, while critics comment on creators' content or contribute to forums. Collectors tag or save media created by others. Joiners visit social networking sites and maintain a profile on at least one social media site. Spectators watch, read, or listen to electronic media without producing their own content or providing feedback for others (Li & Bernoff, 2008).

Among college-age adults, classified by Li and Bernoff (2008) as 18 to 27 years old and referred to as Generation Y, the highest percentage of participants fall into the spectator category, with 67% of men and 60% of women using electronic media without producing content or contributing to existing content. Spectators are followed closely by joiners, with 59% of men and 58% of women maintaining social media profiles. Critics include 45% of men and 37% of women, while creators account for 41% of men and 37% of women (Li & Bernoff). Collectors and inactives account for 29% and 16% of men, respectively, and 22% and 28% of women, respectively.

The data supporting the Groundswell concept (Li & Bernoff, 2008) suggests people are adopting social media faster and in greater numbers, in agreement with other studies of social media use (Foregger, 2008; Fox et al., 2009; Pfeil et al., 2009; Smith, 2009; Smith et al., 2009). These trends can be attributed to several reasons for using social media, including maintaining friendships; making new friends; yielding to social pressures; paying it forward; and following creative, altruistic, prurient, inquisitive, and social impulses (Li & Bernoff; Kerawalla et al., 2008; Pfeil et al.; Smith et al.). The use of social media for these and other reasons reflects fundamental human needs to connect (Li & Bernoff) and desires for social capital, or the resources created in social networks that benefit members of the networks (Ellison et al., 2006).

The purpose of this study was to describe agricultural students' use of selected social media as a basis for examining agricultural communications course curricula to move toward better preparing students for evolving social and workplace demands. The study was guided by five objectives:

1. To describe students' use of Facebook, including levels of activity, network members, and use for college courses.

2. To describe students' use of LinkedIn, including levels of activity and network members.
3. To describe students' use of Twitter, including levels of activity and network members.
4. To describe students' use of blogs, including amount of time spent blogging and reading other blogs.
5. To describe students' preferences for use of selected social media in an agricultural communications course.

Methods

Students enrolled in an upper-level agricultural communications service course at a southwestern land-grant university were selected for this study. The population included 60 students, 55 of whom volunteered to participate in the study.

Descriptive survey methodology was used to determine students' use of selected social media, including Facebook, LinkedIn, Twitter, and blogs. Survey responses were gathered through a paper-based questionnaire developed from a review of the course curricula and literature describing social media concepts. The course curricula included career development activities, concepts of effective writing, grammar and punctuation, and crisis communication. The survey was reviewed by a panel of experts to establish face and content validity. A post-hoc reliability analysis performed on the scaled items in the instrument produced a Cronbach's alpha of 0.90.

The survey was conducted during a 15-minute period of one course lecture, and all 55 students who volunteered to participate in the study completed the survey.

Quantitative data were analyzed using the Statistical Package for Social Science 17.0. Descriptive data, including frequencies, percentages, means, and standard deviations, were used to interpret the data and to describe students' responses. Scaled items were interpreted as follows: 1.0-1.4, very low; 1.5-2.4, low; 2.5-3.4, neutral; 3.5-4.4, high; and 4.5-5,0, very high.

Findings

Demographics of agricultural students

Demographic information reported by the respondents included primary major, undergraduate credit hours earned, and gender. The respondents were 40.0% female and 60.0% male. Based on undergraduate credit hours earned, the majority of respondents (86.7%) were classified as juniors or seniors, with majors in animal science (34.5%), agricultural education (29.1%), agribusiness (20%), agricultural economics (5.5%), natural resource ecology and management (5.5%), agricultural leadership (3.6%), and food science (1.8%).

Students' use of selected social media

Respondents were asked to report their use of social media, including Facebook, LinkedIn, Twitter, and blogs, and their previous experiences with Facebook and LinkedIn in coursework. The majority (85.0%) of respondents indicated they have an account with Facebook. However, all respondents indicated they did not have accounts for LinkedIn (100.0%), and nearly all respondents reported they did not have Twitter accounts (92.7%) or blogs (96.4%).

About 31% percent of the respondents reported taking courses in which the instructor used Facebook to communicate with students, and 12.7% of respondents indicated instructors had used Facebook to post course materials. No respondents reported instructors in other courses encouraging the use of LinkedIn for professional networking.

Students' use of Facebook

Respondents were asked a variety of questions regarding their use of Facebook, including the length of time they had an account, levels of activity for a variety of functions, and whether selected types of organizations were members of their networks.

Eighty percent of respondents who reported having a Facebook account indicated having an account for more than one year, with the length of time ranging from 2 years to 5 years. Specifically, 10.9% of respondents indicated maintaining a Facebook account for two years, 32.7% for three years, 23.6% for four years, and 12.7% for five years.

Respondents reported their levels of activity for a variety of Facebook functions (see Table 1), including accessing Facebook from a mobile device, updating profile information, uploading photos, posting notes, viewing friends' profile updates, viewing friends' photos, reading friends' notes, sending messages and/or writing on friends' walls, viewing updates to fan pages, viewing updates to group pages, taking quizzes, playing games, and using other applications. Respondents reported a high level of activity for viewing friends' photos (M = 3.49, SD = 1.14), with the levels of activity for all other functions either neutral or low. Following viewing friends' photos, next four most-used functions were viewing friends' profile updates (M = 3.36, SD = 1.33), sending messages and/or writing on friends' walls (M = 3.34, SD = 1.34), uploading photos (M = 2.62, SD = 1.28), updating profile information (M = 2.46, SD = 1.19), and reading friends' notes (M = 2.46, SD = 1.28).

A majority of respondents indicated broadcast media outlets (97.9%), print media outlets (91.5%), other news services (89.4%), university news services (74.5%), professional contacts (66.0%), and professional development organizations (55.3%) were not part of their Facebook networks.

Table 1

Students' Levels of Activity for Facebook Functions

Activity	*M*	*SD*
Viewing friends' photos	3.49	1.14
Viewing friends' profile updates	3.36	1.33
Sending messages and/or writing on friends' walls	3.34	1.34
Uploading photos	2.62	1.28
Updating profile information	2.46	1.19
Reading friends' notes	2.46	1.28
Accessing Facebook from a mobile device	2.04	1.49
Playing games	1.91	1.15
Using other applications	1.91	1.05
Taking quizzes	1.85	1.14
Viewing updates to group pages	1.74	0.88
Posting notes	1.70	1.09
Viewing updates to fan pages	1.67	0.82

Responses to multiple questions about respondents' Facebook use were compared to determine if patterns existed. Respondents who had Facebook for more than one year had higher levels of activities for Facebook applications or functions. Students who had Facebook accounts for less than six months rated activity levels as low or very low and did not network with print media, broadcast media, university news service, professional development organizations, or professional contacts.

Students' preferences for use of media in the classroom

Respondents reported their preferences for the use of Facebook in previous courses and for the use of blogs and Twitter in future agricultural communications curricula. Respondents rated Facebook low (M = 2.41, SD = 1.24) as a communication tool and placed low value (M = 1.97, SD = 1.09) on course materials posted on Facebook. In addition, indicated low levels of preference for the use of blogs (M = 2.24, SD = 1.18) and Twitter (M = 1.88, SD = 1.20) in place of written assignments in the agricultural communications curricula.

Discussion

The respondents' use of selected social media, particularly Facebook, is consistent with previous studies of college-age social media users (Li & Bernoff, 2008; Fox et al., 2009; Pfeil et al., 2008; Smith et al., 2009), although respondents' use of Twitter and blogs was lower than use reported in two of those studies (Fox et al.; Smith et al.). A majority of respondents in this study reported having Facebook accounts, in agreement with the majority of students across numerous college campuses reporting participation in social networking sites (Smith et al.). However, about one-third of students surveyed by Smith et al. reported contributing to blogs, while only 2 of 55 respondents in this study reported producing blog content.

Respondents' reported levels of activity with Facebook functions mostly agree with Li and Bernoff's (2008) classifications of college-age students as creators, critics, collectors, joiners, spectators, and inactives. Li and Bernoff described most college-age social media participants as spectators, and the highest mean levels of activity on Facebook reported by respondents were for viewing friends' photos and viewing friends' profile updates. Respondents' average level of activity for sending messages and/or writing on friends' walls was nearly equal to their average level of activity for viewing friends' profile updates, moving them into the

category of critics and possibly creators. The neutral mean levels of activity reported by respondents' for adding content to Facebook via uploading photos and updating their profiles reinforces that more spectators and critics and fewer creators were present in this population of college-age students, as do the low and very low mean levels of activity reported for functions requiring user actions. In addition, the patterns in Facebook use based on length of time accounts were held indicated that Facebook users progress through stages of use, beginning with no use as inactives to high levels of use as creators (Li & Bernoff).

The majority of students reporting participation in at least one type of social media does conflict with Li and Bernoff's (2008) report that about one-quarter of college-age students are inactives. In this study, 85% of respondents indicated using at least one type of social media, with three respondents indicating use of more than one medium.

The low value placed on the use of Facebook in other courses was in agreement with other college students who reported preferences for face-to-face contact and a moderate amount of technology incorporation into college coursework (Smith et al., 2009). In addition, students reported low value for the use of blogs and Twitter in lieu of written assignments in the agricultural communications course focused on in this study.

Reports about the use of Twitter in college coursework were not found, although multiple studies have examined the use of blogs in the classroom. These studies found that student reactions to and experiences with blogging can vary, as students often find it difficult to understand the educational value of participating in or producing a blog (Boyd, 2006; Kerawalla et al., 2008). Some students do embrace blogging as a medium for improving writing skills, particularly when instructors are effective in explaining the purpose of blogs (Smith et al., 2009).

The results of this study demonstrate that while college students enrolled in the selected agricultural communications course may be avid users of certain types of social media, such as Facebook, they may not yet be familiar with or comfortable with participation in other types of social media. In addition, use of social media, particularly blogs and Twitter, in the classroom should be in moderation and well-guided. To effectively use these media and to meet students' needs, instructors should be familiar with the details of using each medium included in course curricula and with students' preferences for using those media. However, instructors also must be mindful of the growing use of social media in various professions, as students must be prepared to contribute to the evolution of social capital as they progress in their careers.

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Research

Readership Habits and Needs of a Major Beef Cattle Breed Association Publication

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Readership Habits and Needs of a Major Beef Cattle Breed Association Publication

Abstract

Readership surveys provide important information about readership habits, demographics, and future direction of readership. This study was guided by the uses and gratification approach and focused on readership habits of a major beef cattle breed association publication. The population of study was a census of current subscribers and pass-along readers of the publication. The researcher-created instrument followed Dillman's Tailored Design Method. There were 1,284 respondents who completed the survey (7.5%). The study noted that the majority of respondents were males between the ages of 21 and 60 (71.9%) and had an education level of at least a bachelor's degree (64.7%). Respondents typically read every issue (79.8%) and read the beef cattle breed association publication from front to back (48.8%). It was determined that the majority of respondents' time (44.54%) and interest (61.9%) was focused on editorials/articles. Almost half of subscribers had been subscribing for 10 or more years (48.5%) with the intention of renewing their subscription (87.3%). It was noted that the majority of issues had less than two pass-along readers (87.1%). Recommendations include adding additional descriptions of issue content on the cover and binding of the publication. Also, removing junior member information from the journal will save the publication money and will have minimal impact on readers.

Keywords: readership, subscriber needs and habits, beef cattle publication, uses and gratifications theory

Introduction

In today's economy, organizations must be able to keep an advanced pace and meet the needs of their clientele while disseminating accurate and timely information (Sweeney & Hollifield, 2000). Research indicates that understanding readership levels and the expectations of a group can shape a publication's future and development (Brownlow, 2008). Readership studies are used to determine the needs, habits and demographics of a specific group of readers. The purpose for readership studies is "to discern who the journal's readership is and what that readership wants" (Curlette, Kern, & Belangee, 2000, p. 132). Details found from readership surveys are used to determine what readers want from a publication and if the information provided in the publication is useful to the reader (Merriman, 2005). Readership studies have changed from merely reader head counts to trying to understand how readers use the media and/or determining reader habits (Somerville, 2001).

Previous research indicated a need to group audiences by their media use habits. Clustering can help in understanding basic demographics of groups of readers that gave similar answers. This understanding will help to improve the planning process for future uses of media sources to successfully utilize the most efficient media to reach the target audience (Erdogan, Deshpande, & Tagg, 2007). Once groups are subdivided by demographics, patterns arise that help to explain the responses between the use of online newspaper editions and print editions. Major splits can be made by age, gender, and educational levels (Waal, 2005).

In its 2005 annual study, the staff of *The Journal of Adult Education* found certain demographics separated group of readers who responded to a readership survey. Employment information showed the majority of the readers were managers, employed by the local education authority. They focused their reading on policy and theory. When ranking what they liked about

adult education, the top five areas included: accessibility of articles, quality of writing, frequency of publication, reputation of publisher, relevance, and quality of articles (Curtis, 2005). Information gleamed from this study, can assist with understanding adults' needs and requirements in other readership studies. Also, it was found that aging audience's can have one of the most profound impacts on readership (Somerville, 2001).

Previously research noted that an agricultural related audience preferred articles focused on personal, local, or state interests. The writing quality, photographs, and paper quality were of the highest rated aspects of layout and design. Headlines, story length, graphics, font size, page arrangement, and advertisements were rated slightly lower (Connors, Elliot, & Heinze, 1994). Many cattle breed associations produce publications to inform, educate, and/or entertain. According to *Cattle Today* (2004), there are 62 purebred cattle breed associations in the United States. As with any organization, there is a need for information to be passed through an organization to better equip its constituents for success (Sweeney& Hollifield, 2000). Breed publications are typically used as a method of disseminating information to a diverse group of individuals who are registered members of that breed association.

This study focused on a major beef cattle breed association publication which has been in circulation for nearly 100 years. The publication currently has a monthly, paid circulation of more than 17,000 subscribers. It serves as this specific beef cattle breed's official publication and is considered the "voice" of the cattle industry. The publication offers editorial content ranging from basic how-to articles to in-depth reports on cutting-edge technologies. It also contains breed specific profiles, information on production and management techniques to improve profitability, news and events from major beef cattle breed association departments, and producer-related information from a nationally branded beef program.

Theoretical Framework

This study followed the uses and gratifications approach which is an influential tradition in media research. The original conception of the approach was based on research for explaining the great appeal of certain media contents. The core question of such research is: Why do people use media and what do they use them for (McQuail, 1983)? There exists a basic idea in this approach which outlines that audience members know media content and which media they can use to meet their needs.

In the mass communication process, the uses and gratifications approach puts the function of linking need gratifications and media choice clearly on audience members. It suggests peoples' needs influence what media they choose, how they use certain media and what gratifications the media elicits. This approach differs from other theoretical perspectives in that it regards audiences as active media users as opposed to passive receivers of information. In contrast to traditional media effects theories focusing on "what media do to people" with the assumption that audiences are homogeneous, this approach is more concerned with "what people do with media" (Katz, 1959, p. 87). It allows for the assumption that audiences personal needs for using media and responding to it is determined by their social and psychological background.

The uses and gratifications approach also postulates that media compete with other information sources for audience's need of satisfaction (Katz, Blumler, & Gurevitch, 1974). As traditional mass media and new media continues to provide a wide range of media platforms and content, it is considered one of the most appropriate perspectives for investigating why audiences choose to be exposed to different media channels (LaRose, Mastro, & Eastin, 2001).

The approach emphasizes audiences' choice by assessing their reasons for using a certain media while disregarding others, as well as various gratifications obtained from the media, based

on individual social and psychological requirements (Severin & Tankard, 1997). As a broader perspective among communication researches, it provides a framework for understanding processes by which media participants seek information or content selectively, commensurate with their needs and interests (Katz et al., 1974). Audience members then incorporate the content to fulfill their needs or to satisfy their interests (Lowery & DeFleur, 1983).

McQuail (1983) indicated that audiences maintain four common reasons for media use (four broad constructs): (a) information, (b) personal identity, (c) integration and social interaction, and (d) entertainment. These dimensions of uses and gratifications assume an active audience making motivated choices. By understanding these levels, one can more fully realize audience needs and make changes and adjustments in media content and delivery.

Purpose and Objectives

The purpose of this study was to determine readers' habits and needs of a major beef breed publication. Findings from this study were used to make adjustments in the publication to better meet the needs of the audience. This study was a part of a larger study and should be used to provide additional information on measurement in editorial research and assist with building a more comprehensive body of comparative research literature as specified by Tucker, Wood-Turley, and Truong (1997). Two objectives guided the study: (1) Assess readership habits and needs of the major beef cattle breed association publication, and (2) determine select demographic characteristics of readers.

Methods/Procedures

This study was designed using descriptive survey methodologies. The population consisted of all subscribers and pass-along readers to the major beef cattle breed association publication. There were 17,051 possible respondents. The instrument was developed, by the

researcher, using Dillman's (2007) Total Design Method. The instrument was pilot tested twice. The first pilot test was with the editorial staff of the major beef cattle breed. The second pilot test utilized a group of experts (Regional Directors [breed association]) to maintain content validity. An online version of the instrument was created to provide an alternative opportunity for instrument completion. The instrument included four sections: readership, future direction, past purchasing of advertisements, and reader demographics. However, only readership and select demographics are represented in this paper. The instrument consisted of 47 questions. Instrument questions consisted of multiple choices, ranking, open-ended, and 7-point Likert-type scale.

The mailing list was retained by the beef cattle breed association. An instrument notification pre-letter was included in a publication issue one month prior to the initial survey mailing. The pre-letter notified the audience of their rights and that the following month the instrument would be enclosed in the issue. The cover letter and instrument were included in the following issue. The cover letter alternatively contained the URL information for the online version of this instrument. The hard copy instrument was a tear-out within the major beef cattle breed association publication. The instrument could be easily removed from the journal and folded in half and taped or stapled becoming a self addressed, postage paid package for return. Both mail and online instruments were used to collect data. Reminders to complete the instrument were placed in two subsequent monthly breed association publications.

There were 1,117 initial respondents. Because of the low response rate a random stratified sample of 2% (580 individuals) of the population were contacted by follow-up phone calls to complete the instrument. This resulted in 167 additional responses for a total *N* of 1284 (approximately 7.5%). Non-response error was controlled by comparing early and late respondents (Lindner, Murphy, & Briers, 2003). Data were analyzed using SPSS 15.0.

Results and Findings

Demographics

The largest group of respondents (26.4%) were between 51 and 60 years old (*f* = 194). This was closely followed by respondents (25.7%) indicating their age was between 61 and 70 years (*f* = 143). The majority of respondents (80.2%) were male (*f* = 602) and the remaining 19.8% indicated they were female (*f* = 149). Respondents represented forty-six states and six locations outside the United States. The individual state with the highest number of respondents (8.23%) was Texas (*f* = 62), followed by Missouri (7.17%, *f* = 54). A greater number (42.2%) of respondents had completed their bachelor's degree (*f* = 317). A prevailing number of respondents (44.1%) indicated they earned between $50,000 and $99,999 annually (*f* = 316), followed by respondents earning between $100,000 and $149,999 (22.8%, *f* = 163).

Readership Habits

Respondents were questioned regarding how many issues of the breed publication they had read in the past twelve months. A majority (79.7%) of respondents (*f* = 678) indicated that they had read all 12 issues. The second most occurring response (5.9%) was evenly dispersed between those whom read one to three issues and 10 to 12 issues (*f* = 50). The lowest response (0.4%) came from those respondents who indicated that they read none of the issues of the journal in the past twelve months. Additional responses can be seen in Table 1.

Table 1

Number of Issues Read in Twelve Month Period (*n* = 850)

Issues Read	*f*	*P*
1-3	50	5.9
4-6	35	4.1
7-9	34	4.0
10-11	50	5.9
All 12	678	79.7

Table 1 (continued)

Issues Read	*f*	*P*
None	3	0.4
Total	850	100.0

To determine reader habits, respondents were questioned how thoroughly they read a typical issue (Table 2). The majority (37.2%) of respondents (*f* = 316) read all or almost all of an issue. The second most occurring response (20.1%) came from those respondents (*f* = 171) who read about half of an issue. The lowest response rate (0.7%) came from those respondents (*f* = 6) who do not read/look through a typical issue.

Table 2

Reading Thoroughness of a Typical Issue (*n* = 849)

Amount Read	*f*	*P*
Do not read/look through	6	0.7
Skim only	49	5.8
Read about ¼	142	16.7
Read about ½	171	20.1
Read about ¾	165	19.4
Read all or almost all	316	37.2
Total	849	100.0

Additional information gained to determine reader habits was gained though determining how long readers saved a typical issue for reference (Table 3). The largest percentage of respondents (26.5%) indicated they saved their issues (of the major beef breed publication) for six months to a year (*f* = 223). The second highest response rate (25.0%) came from those respondents (*f* = 211) who saved their issues for more than three years. The lowest response rate (6.0%) came from those respondents (*f* = 51) who did not typically save their issues.

Table 3

Length of Time Typical Issues are Saved (*n* = 841)

Length of Time Saved	*f*	*P*
I don't save my copies	51	6.0
Less than 6 months	172	20.4
6 months – 1 year	223	26.5
1 – 3 years	184	21.8
More than 3 years	211	25.0
Total	841	100.0

In order to further determine reader habits, respondents were questioned about their primary purpose for reading the magazine. The majority of respondents (61.9%) indicated that they were primarily motivated to read because of the articles or editorials (*f* = 525). This was followed by respondents (23.2%) who read the magazine primarily for herd or animal advertising (*f* = 197). The minority of respondents (1.5%) were primarily motivated (*f* = 13) to read the magazine by the sale books provided with the magazine. Additional responses are identified in Table 4.

Table 4

Primary Purpose for Reading (*n* = 847)

Reason	*f*	*P*
Product Advertising (products such as mineral, vaccine, equipment, etc.)	58	6.8
Sale Advertising (advertisement for upcoming sale)	54	6.4
Herd/Animal Advertising (advertisement for herd or specific animal)	197	23.2
Sale Books	13	1.5
Articles/Editorials	525	61.9
Total	847	100.0

Respondents were asked what percentage of time they spent reading each section of the magazine (Table 5). Mean scores were calculated to determine the how much attention each section received. The section that received the most attention were the articles/editorials (*M* =

44.54, *SD* = 25.90). Followed by herd or animal advertising (*M* = 21.03, *SD* = 17.31). Consequently, product advertising held the lowest percentage of time (*M* = 13.02, *SD* = 13.05).

Table 5

Percentage of Time Spent Reading Each Section

Percentage of Time	*M*	*SD*
Product Advertising (*n* = 807)	13.02	13.05
Sale Advertising (*n* = 807)	14.36	14.08
Herd/Animal Advertising (*n* = 811)	21.03	17.31
Sale Books (*n* = 798)	13.91	13.40
Articles/Editorials (*n* = 825)	44.54	25.90

To further determine reader habits respondents were asked how many pass-along readers read their issue. Responses are outlined in Table 6. The majority of respondents (38.1%) indicated (*f = 321)* that only one other person read their issues of the major beef breed publication. The second highest response (24.6%) was from respondents who reported that no one else read their issues. The lowest response rate (1.3%) was those respondents (*f* = 11) who had five or more pass-along readers reading their publication.

Table 6

Number of Pass-along Readers (*n* = 841)

Number of People	*f*	*P*
1	321	38.1
2	206	24.4
3	77	9.1
4	19	2.3
5 or more	11	1.3
None	207	24.6
Total	841	100.0

The respondents were asked to describe specific aspects of their reading habits. The majority (48.8%) indicated they read the journal from front to back (*f* = 411). The second most

common (37.5%) reading habit was to randomly browse through the journal for articles or ads that interest the respondents (*f* = 316). The least common reading habit (4.4%) was reading the journal from back to front (*f* = 37). Additional reading habits are outlined in Table 7.

Table 7

Reading Habits (*n* = 843)

Habit	*f*	*P*
I read the journal front to back	411	48.8
I read the journal back to front	37	4.4
I randomly browse through the journal for articles/ads that interest me	316	37.5
I use the Table of Contents or Advertisers Index to find articles and ads that most appeal to me	78	9.3
Total	843	100.0

The respondents were questioned to indicate which specific actions they had taken as a result of reading the advertising in the publication (Table 8). The majority of the respondents (21.1%) indicated that they visited an advertiser's Web site (*f* = 528). The second highest ranked action (18.5%) was that the respondent made plans to attend a sale (*f* = 463), followed by discussing an ad with others/ passed ad to others (17.1%, *f* = 427). The lowest ranked action (besides other) was recommending a product or service (6.6%, *f* = 165).

Table 8

Selected Actions as a Result of Advertising (*n* = 1,109)

Number of People	*f*	*P*
Contacted breeder or sales representative	359	14.3
Discussed ad with others/Passed ad to others	427	17.1
Filed ad for future reference	249	9.9
Purchased/ordered a product or service	271	10.8
Recommended a product or service	165	6.6
Made plans to attend a sale	463	18.5
Visited an advertiser's Web site	528	21.1
Other	43	1.7
Total	1,106	100.0

Respondents were questioned about the determinants of reading the sale books delivered with the major beef breed publication under study. Mean scores were calculated to discover the reading determinants of respondents. Respondents agreed that genetics (pedigrees) of featured lots (M = 5.77, SD = 1.27) was a determinant for reading sale books. This was closely followed by reputation of the seller (M = 5.76, SD = 1.37). Respondents moderately disagreed that the size of the sale book (M = 3.20, SD = 1.59), the cover design of the sale book (M = 3.43, SD = 1.56), and they eye appeal of the sale book (M = 3.68, SD = 1.63) were determinants for reading them. Additionally, respondents disagreed that sale books should be bound into the publication (M = 2.87, SD = 1.47). Respondents agreed with all the remainder of the outlined determinants for reading sale books as outlined in Table 9.

Table 9

Reading Determinants for Sale Books Delivered

Determinants	*M*	*SD*
Proximity of the sale to my herd (*n* = 814)	5.37	1.73
Reputation of the seller (*n* = 809)	5.76	1.37
Size of the sale book (*n* = 784)	3.20	1.59
Genetics (pedigrees) of featured lots (*n* = 809)	5.77	1.27
Familiarity with herd (*n* = 805*)*	5.41	1.31
Prior purchase from herd (*n* = 798*)*	5.09	1.68
Cover design of the sale book (*n* = 804)	3.43	1.56
Eye appeal of the sale book (*n* = 806)	3.68	1.63
A large amount of information is provided on animals (*n* = 812)	5.00	1.54
Only the most important information is provided on animals (*n* = 796)	4.21	1.58
Sale book is bound into the magazine(*n* = 798)	2.87	1.47
Sale book is loose in the box or bag (*n* = 800)	4.21	1.73

**Note*. 1 = Strongly disagree, 2 = Disagree, 3 = Moderately disagree, 4 = Neutral, 5 = Agree, 6 = Moderately agree, 7 = Strongly agree

Respondents were asked to select their level of agreement with specific determinants regarding reading the editorial and/or articles in the publication (Table 10). Respondents agreed

(*M* = 5.89, *SD* = 1.16) that they read the editorials/articles to keep up with current news and events about the major beef cattle breed association. Additionally, respondents agreed that news and perspective on industry issues (*M* = 5.87, *SD* = 1.80) was an important determinant of reading the editorial/articles in the publication. Of all the determinants listed for reading editorials/articles in the publications, the respondents agreed with all of them except, able to stay informed of junior programs and opportunities (*M* = 4.25, *SD* = 1.59). Respondents were neutral on this determinant.

Table 10

Reading Determinants for Editorials/Articles

Determinants	*M*	*SD*
To keep up with current news & events about the association & its entities(*n* = 828)	5.89	1.16
To gain greater understanding of association programs and services (*n* = 829)	5.63	1.18
For news and perspective on industry issues (*n* = 824)	5.87	1.08
To learn basic management skills (*n* = 827)	5.29	1.37
To learn advanced management skills (*n* = 813)	5.56	1.28
To learn more detail about information I may have heard somewhere else (*n* = 827)	5.37	1.17
To read about people in the major beef cattle breed and beef industry (*n* = 823)	5.19	1.25
To get ideas for better ways to market seedstock (*n*= 826)	5.59	1.24
To keep up with what people in the major beef breed world are doing *(n = 821)*	5.34	1.28
For reference information, such as who to contact (*n* = 823)	5.06	1.24
To stay abreast of the most recent technological advances (*n* = 823)	5.73	1.11
To identify dates and particulars for upcoming sales and events (*n* = 818)	5.04	1.38
To read commentaries by staff and industry (*n* = 822)	5.07	1.30
To read about producers from other parts of the country (*n* = 820)	5.30	1.16
To read information I can't get elsewhere (*n* = 819)	5.37	1.29
To stay informed of junior programs and opportunities (*n* = 820*)*	4.25	1.59
To read about producers in my part of the country (*n* = 821)	5.39	1.23

**Note.* 1 = Strongly disagree, 2 = Disagree, 3 = Moderately disagree, 4 = Neutral, 5 = Agree, 6 = Moderately agree, 7 = Strongly agree

Respondents were asked to what degree they agreed with statements about the current departmental divisions of the magazine (Table 11). The majority of respondents (*M* = 5.15, *SD* = 1.23) agreed that the departmental breakouts help them find the information they are looking for. Respondents were neutral on two statements regarding their opinions of current departmental

divisions as outlined in Table 11. Respondents moderately disagreed that the current breakout was too narrow in scope (M = 3.78, SD = 1.03).

Table 11

Opinion about Current Departmental Divisions

Statement	*M*	*SD*
This departmental breakout helps me find information I am looking for. (n = 820)	5.15	1.23
This breakout is too broad in scope and not all departments are represented in the smaller issues. (n = 811)	4.05	1.11
This breakout is too narrow in scope. (n = 800)	3.78	1.03
Feature articles should be located in the departments in the Table of Contents to simplify finding information. (n = 808)	4.84	1.25

**Note*. 1 = Strongly disagree, 2 = Moderately disagree, 3 = Disagree, 4 = Neutral, 5 = Agree, 6 = Moderately agree, 7 = Strongly agree

Respondents were questioned about their longevity of subscribing to the beef breed publication. A large percentage (48.5%) of the respondents (f = 361) had been subscribing for over 10 years. This was followed by the second most occurring group (21.6%) of respondents (f = 161) which had been subscribing for three to five years. A very small minority of respondents (1.1%) had been subscribing (f = 8) for less than 6 months. Additional responses are outlined in Table 12.

Table 12

Length of Subscription (n = 744)

Time	*f*	*P*
Less than 6 months	8	1.1
6 months – 1 year	54	7.3
1-3 years	40	5.4
3-5 years	161	21.6
5-10 years	120	16.1
More than 10 years	361	48.5
Total	744	100.0

Respondents were also asked if they intended to renew their subscriptions to the major beef breed publication. A majority (87.3%) of the respondents indicated that they intended to renew their subscriptions (f = 652), followed by 9.4% who indicated that they were unsure of their intention to renew (f = 70). The minority (2.4%) of the respondents stated that they would not renew their subscriptions (f = 18).

Conclusions and Implications

Data showed that the majority (79.8%) of respondents utilized all of the issues received in a year. This should assure the publishers of the major beef breed publication that they are not delivering the magazine too frequently. The majority (56.6%) of respondents also indicated that they read at least three quarters of the journal. That majority raises considerable (76.7%) when you include those respondents who read at least half of each issue. It is obvious, despite the large size of a typical journal issue (between 200 and 400 pages, excluding sale book inserts), that responding readers are interested in utilizing most of the journal. Additionally, respondents expressed a strong tendency to save their issues for future reference. A large portion of respondents (73.3%) stated that they kept issues for reference for at least six months. This data implies that readers prefer to have a physical copy of the journal for reference.

When analyzing readers' purpose for reading the journal, it is obvious, based on respondent feedback regarding their primary purpose for reading (61.9%) and the percentage of time that they spend reading each section (44.5%), that they are primarily focused on the articles or articles included in the journal. Again, when comparing those responses it can be assumed that their second interest is herd or animal advertising. Respondents noted spending the least amount of interest and time on product and sale advertising and sale books.

Data based on number of pass-along readers showed that each publication issue is generally viewed by two or less people. This, along with the previously mentioned tendency to save copies for an extended period of time, showed respondents having a strong feeling of ownership toward the breed publication. Respondents may be hesitant to allow the journals to leave their possession. Furthermore, data indicated the most common reading habit is to read the journal from front to back (48.8%), and the second most common reading habit is browsing the journal for articles and advertisements of interest (37.5%). This implies that the majority of readers will be drawn to interesting or eye-catching articles or advertisements that are located in the front of the magazine.

When respondents were asked to indicate what actions were taken as a result of reading advertisements included in the journal, the majority of respondents indicated they had either visited an advertiser's Web site and/or made plans to attend a sale at the location identified in the advertisement. Overall, data indicated that advertisements are effective in stimulating a positive response for the advertisers.

Major factors that affected the respondents decision to read a sale book were the genetics of featured lots (M = 5.77, SD = 1.27) and the reputation of the seller (M = 5.76, SD = 1.37). Following in close succession were familiarity with the herd (M = 5.41, SD = 1.31) and proximity of the sale to my herd (M = 5.37, SD =1.73). Although data did not provide a clear distinction of a single determinant or group of determinants for reading the sale books, the majority of respondents agreed that all the determinants listed were reasons to read the sale books and potential success of the books.

Conversely, respondents were able to identify what determines if they will read an article/ editorial. The strongest agreed upon determinant was to keep up with current news and events

about the major beef cattle breed association and its entities (M = 5.89, SD = 1.16). Closely following this was reading for news and perspective on industry issues (M = 5.87, SD = 1.08). Implications can be perceived that the readership relies on the publication to keep them informed of current information that impacts their cattle businesses. The weakest determinant was to stay informed of junior programs and opportunities (M = 4.25, SD = 1.59), respondents were neutral. This data indicates a potential disinterest in junior events reported and highlighted in the publication; this may be partially due to a large percentage of the respondents being between 50 and 70 years of age. Respondents generally agreed with the current departmental division of the publication. Respondents agreed that the departmental breakout helps them find information they are looking for (M = 5.15, SD = 1.23). Though they also noted that the feature articles should be located in the departments in the table of contents to simplify finding information (M = 4.84, SD = 1.25). This general satisfaction tends to indicate that all-in-all the readership can easily understand and navigate the current departmental layout.

Concerning subscriptions, the largest percentage of respondents (48.5%) had been subscribing for over 10 years. Also, a large majority (87.3%) indicated an intention to renew their subscriptions. Subscriptions in many cases are linked to memberships thus these points demonstrated a deep loyalty held by the readership. A vast majority of respondents were between 21 and 60 years of age (71.9%). This demonstrated that the readership falls below retirement age and there is a strong indication from the amount of respondents over retirement age (31.9%) that they will remain active throughout their retirement. Also a vast majority (80.2%) of respondents were male. This is consistent with current industry and membership trends for this major beef cattle breed association.

In conclusion, this research supports Lowery and DeFleur (1983) by identifying what

audience members desire in terms of content to fulfill their needs or to satisfy their interests. Because this study focused on subscribers of a major beef breed association, designers and editors from all cattle breed publications may find this information of use and value.

Recommendations

Because of the tendency for respondent to save their issues for reference for an extended amount of time, it is recommended that the cover or binding of the journal be improved to allow the readers greater ease in researching specific/desired articles. Additionally, the table of contents should begin on the page directly following the cover for easy access.

The least amount of time and attention displayed by the readership was given to the product and sale advertising and the sale book sections of the publication. It is recommended those sections be kept concise and designed in a way which is more eye-catching, improving the opportunity for reader attention and increasing time spent reading specific content. Data indicated that readers will more easily be drawn to information and advertisements which are interesting and eye-catching and located toward the front of the journal. Therefore, it is recommended that topics that the major beef cattle breed association or publisher feels are important to readership be placed toward the beginning of the journal. Furthermore, respondents noted a disinterest in the junior information being included in the journal. Therefore, recommendations based on this finding include printing a separate junior publication which may have greater efficacy by being sent to those who express an interest specifically in the junior information/content. Impacts based on this recommendation could result in potential savings in production costs.

A final recommendation for the publication, based on data gained from income level, is that a future emphasis be placed on providing information to improve production efficiency

industry-wide to aid readers in achieving their goals. This could lead to improvement in the industry as a whole while making the major beef breed publication an indispensable tool for anyone in the cattle industry. In today's financial times, it is imperative to educate the readership base on the need for efficiency in an effort to maximize profits and increase reader ownership and reliability on this publication.

This research supports the uses and gratifications approach as it attempted to determine "what people do with media" (Katz, 1959, p. 87) provided to subscribers from a major beef breed association/publication. This research was used to strengthen a particular publication and add literature to provide additional information on measurement in editorial research and assist with building a more comprehensive body of comparative research literature as specified by Tucker, Wood-Turley, and Truong (1997). Furthermore, research by McQuail (1983) indicated that audiences maintain four common reasons for media use: (a) information, (b) personal identity, (c) integration and social interaction, and (d) entertainment. Based on this information, respondents to this study noted that the publication was meeting their needs for information. One may also assume that personal identify (due to length of subscription) and entertainment (due to length of storing and referencing back issues) are also being met through this particular medium. Based on this information, this major beef breed publication can more fully realize audience needs and make changes and adjustments in media content and delivery. Recommendations from this article can strengthen both research literature and beef cattle breed publications.

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Animal Rights vs. Animal Welfare: Is Society able to distinguish the Difference and make Informed Decisions on Animal Care Legislation?

Research Paper

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Animal Rights vs. Animal Welfare: Is Society able to distinguish the Difference and make Informed Decisions on Animal Care Legislation?

Abstract

United States citizens have increasingly become concerned with the treatment and care of animals. In correlation with their concerns, legislation aimed at improving animal protection has been more prevalent on the political agenda. Most of the items on the political agenda claim to be supporting animal welfare; however most are developed and lobbied for by animal rights organizations such as the Humane Society of the United States (HSUS). A concern among agriculturalists has emerged saying that citizens do not understand the difference between animal rights and animal welfare, which could negatively result in legislation that may adversely affect important economic industries, such as the agriculture industry. For this study researchers conducted a directly administered questionnaire of Ohio citizens to determine their understanding and beliefs of animal rights and animal welfare. Through voluntary participation of citizens visiting the Agriculture/Horticulture Building at the Ohio State Fair, 508 citizens completed questionnaires. Results indicate that the citizens who completed questionnaires do not have a direct understanding of animal rights and animal welfare. In addition, the results indicate that citizen's beliefs of current legislation are not accurate. In order to protect the agriculture industry, agriculture advocates must improve their ability to educate and communicate with general public about the difference between animal rights and animal welfare, as well as other pertinent topics concerning animal agriculture and the industry as a whole.

Keywords: Animal Rights, Animal Welfare, Agricultural Legislation, Issue 2, Social Learning Theory, Cognitive Dissonance Theory

Introduction

The History of Animal Protection and Legislation

There is evidence that humans were thinking about the cognition of animals in the 17th century when Rene Descartes philosophized that animals had no thought (Regan, 2004). Since then more theories have been made about the cognition of animals. Many people now believe that animals possess "conscious awareness" (Regan, 2004, pg. 2). This in return suggests that animals can feel pain, think, plan, and possibly have feelings. When animals are given these human like characteristics many people identify with them and become concerned with the way in which they are treated and cared for, thus resulting in a push for animal protection.

The European Union has led the way in animal protection standards. In 1822, Great Britain implemented their first animal protection legislation (Radford, 1996). Animal protection laws have continued to progress in the European Union, and treatment regulations have been placed on calves and egg laying hens. Additionally, politicians have banned veal crates as well as any other action determined to be inhumane (Sullivan et al., 2008). With the success these acts have had, similar legislation has begun spilling over into other countries, including the United States.

Prior to the movement toward animal protection, which has surfaced and intensified within the last 30 years, two primary federal regulations were in place in the United States concerning animals. These included the Humane Methods of Slaughter Act of 1901 and the Federal Meat Inspection Act of 1906 (Becker, 2009; Garner, 1996). The Humane Methods Slaughter Act included that "…livestock must be slaughtered in a humane manner to prevent needless suffering, research methods on humane methods of slaughter, the non-applicability of these statues to religious or ritual slaughter, and the investigation into the care of non-ambulatory livestock" ("Humane Methods," 2009). In addition, the Federal Meat Inspection Act provides

regulations on: ante mortem and post mortem inspections, humane methods of slaughter, meat inspectors, marks of inspection, labeling, packaging, sanitation, export inspections, import inspections, storage, handling, and record keeping among other things (Food Safety Inspection Service, 2009). In 1966, the Animal Welfare Act became a federal law in the United States (United States Department of Agriculture, 2009e). Since then the Animal Welfare Act has been amended six times, the most current amendment being in 2007 (United States Department of Agriculture, 2009e). The Animal Welfare Act originally set legislation to "…regulate the transportation, sale and handling of dogs, cats, and certain other animals intended to be used for purposes of research or experimentation, and for other purposes" (United States Department of Agriculture, 2009a). The Act has been expanded to include: all warm blooded animals being used for experimentation or exhibition, has set restrictions on animal fighting, set requirements of health certifications by a veterinarian, established that an Institutional Animal Care and Use Committee must be in place at institutions of animal experimentation in order to insure the most humane care, and created holding periods for shelter animals (United States Department of Agriculture, 2009f; United States Department of Agriculture, 2009b; United States Department of Agriculture, 2009c; United States Department of Agriculture, 2009d).

Within the last few years the focus has shifted from federal legislation to a focus on individual states for animal protection legislation. In 2002, Florida became the first state to ban gestation crates for housing sows (The Humane Society of the United States, 2009b). Similar legislation has now passed in seven states, some of which also include a ban on veal crates and cages for egg laying hens (The Humane Society of the United States, 2009b). This single state legislation concerning livestock housing is expected to continue as states like Ohio and Indiana have been targeted (White, 2009; Truitt, 2009). In addition to livestock housing legislation, other

individual state focused legislation includes the Prevention of Equine Cruelty Act, also known as the "Horse Slaughter ban," which was originally implemented in Texas and Illinois in 2007 (Becker, 2009). As animal protection regulations have increasingly become part of the United States political agenda the question has arose regarding whether the regulations are fulfilling an animal rights or animal welfare agenda.

Animal Rights vs. Animal Welfare

The difference between animal rights and animal welfare generally appears to be a gray area. Many people confuse the terms, and it is unknown if the general population really understands the difference between the two. In addition, different groups of people will provide diverse definitions for the two terms. According to the American College of Animal Welfare Organizing Committee, animal welfare is defined as the ethical responsibility to care for the well being of animals, ensuring good health, the ability to cope effectively with their environment and the ability express a diversity of behaviors specific to the individual species (American Veterinary Medical Association, 2009). Animal Rights is often defined as giving basic rights to animals and all sentient beings (The Vegetarian Resource Group, 2009). Gary Francione an animal rights extremist explains the animal rights position similarly, "…the rights position maintains that at least some animals are rightholders and that treating animals solely as means to human ends violates those rights. (1996, pg. 42)" However, Francione's explanation of animal welfare is far removed from the animal welfare definition stated above. According to Francione "The welfare position maintains that animal interests may be ignored if the consequences for humans justify it. (1996, pg. 42)". It is evident that there are many ideas about the correct definitions of animal rights and animal welfare.

Issue 2

In response to threats of HSUS legislation and proposed negotiations with HSUS, Ohio became the first state to take a proactive approach to creating their own livestock care legislation (White, 2009). This legislation was given the title of "Issue 2" and was decided by voters on November 3, 2009. Issue 2 proposed an amendment to the Ohio Constitution that will create a Livestock Care Standards Board (The Ohio Ballot Board, 2009). The Board will set standards for the care and well being of livestock, maintain food safety, support locally grown food, and protect Ohio farmers and families (The Ohio Ballot Board, 2009). Thirteen members will sit on the Board; these members will be appointed by the Governor, the President of the Senate, and the Speaker of the House of Representatives (The Ohio Ballot Board, 2009). Members appointed to the Board must be Ohio citizens and both political parties must be represented. A diverse array of expertise will make up the 13 member board which will include the following: the director of the Ohio Department of Agriculture, three family farmers, a food safety expert, two members from a statewide farming organization, two veterinarians, a dean of an Ohio college of agriculture, two consumers, and one local humane society representative (The Ohio Ballot Board, 2009). Issue 2 is an animal welfare proposal; however, organizations in favor of animal welfare, such as HSUS, oppose the issue (The Humane Society of the United States, 2009a).

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Theoretical Framework

To better understand how such issues resonate with the citizens this study is guided by the cognitive dissonance and social learning theories.

Cognitive Dissonance Theory

Dissonance occurs when conflict exists in an individual's mind between two cognitions (Aronson, 1969). Leon Festinger developed the theory of cognitive dissonance in 1957; he

concluded that cognitive dissonance was present when cognitive information was inconsistent with ones' perceived personal attributes (as cited in Hunt, 2004). Three assumptions concerning human cognition lay the foundation for Cognitive Dissonance Theory. These assumptions include the following:"…(1) people have a need for cognitive consistency; (2) when cognitive inconsistency exists, people experience psychological discomfort; and (3) psychological discomfort motivates people to resolve the inconsistency and restore cognitive balance. (Hunt, 2004, p. 147)" In instances of dissonance one may change one or both of the conflicting cognitive thoughts in order to add consonance, allowing the cognitions to come in line with one another and restore cognitive balance (Aronson, 1969).

Dissonance becomes very prevalent in decision making, especially decisions of a complex nature. If there is considerable conflict before a decision, the dissonance that follows the decision is also expected to be significant (Festinger, 1964). Thus one would validate their decision rather quickly to reduce dissonance (Festinger, 1964). However, Cognitive Dissonance Theory does not imply that the right decision will be made; it simply suggests that one would rationalize their decision in order to feel confident and secure with themselves as well as appear rational to others (Aronson, 1969).

Social Learning Theory

Individuals often learn through the interactions of their daily environment; this may include observing other's behaviors and using or participating in forms of mass media (Bandura, 1969; Perry, 2004; Klapper, 1960). The knowledge gained through observation is then cognitively stored and later used to influence future behaviors (Klapper, 1960). Social Learning Theory can be identified through indentaficatory events (Bandura, 1969). An indentaficatory event is defined as "…the occurrence of similarity between the behavior of a model and another

person under conditions where the model's behavior has served as the determinative cue for matching responses (Bandura, 1969, p. 217)." However, pseudo-identification can also occur. This is when different situations or observations generate comparable behaviors in different individuals (Bandura, 1969). Although one may be able to identify the source of an individual's behavior, it is difficult to specify the specific influence of the social behavior (Bandura, 1969).

Social learning is said to be one of the many effects of mass media (Klapper, 1960). The ideas present in mass media are often reflected by individuals in the general public (Klapper, 1960). For example, fashion, nutrition, popular home products, how to interact with others, and much more is disseminated through mass media outlets (Klapper, 1960). This notion ties closely to the ideas presented in the Social Cognitive Theory. Social Cognitive Theory takes these ideas one step further by suggesting that social influences develop an individual's beliefs, emotions, and cognition (Bandura, 1986). Standard emotional reactions of individuals can be mapped through modeling, instruction, and social persuasion (Bandura, 1986). When social cognitive theory is applied to media, it can be implied that attractive images and ideas catch the attention of individuals which later may be reflected in their behavior (Nabi & Oliver, in press).

Purpose

Due to the increasing concern for animal well being in the public sphere, as well as the increasing presence of animal protection legislation, it is important that communicators are adequately disseminating information; in addition, it is important that communicators possesses an awareness of the general public's knowledge on the topic. The goal of this study is to assess the perception of agricultural practices and legislation that is held by a sample of citizens attending the Ohio State Fair. Having an understanding of such perception is important to

agricultural communicators and educators; this information will allow them to understand what information citizens currently possesses as well as indicate the means of effectively targeting their legislative campaigns. Agricultural professionals will be able to analyze their current uses of messaging and establish improvements to their information dissemination processes in order to increase citizen's knowledge of agriculture through the use of this information. Understanding current perceptions will allow the agriculture industry to correct misunderstandings about agriculture and combat competing organizations with anti-agricultural values.

The following objectives directed this study:

1. To determine the demographics of Ohio citizens visiting the State Fair.
2. To evaluate the knowledge of animal rights and animal welfare held by Ohio citizens visiting the Ohio State Fair.
3. To determine the understanding and beliefs of agricultural legislation held by Ohio citizens visiting the Ohio State Fair.

Methods

Researchers used directly administered questionnaire methods to determine the knowledge and perceptions of agriculture amongst a sample of Ohio State fair attendees. Directly administered questionnaires are a research tool that enables researchers to obtain information from individuals who have gathered at common place for a common purpose (Ary, Jacobs, Razavieh & Sorensen, 2006). A benefit to directly administered questionnaires includes that researchers are able to guide participants through the questionnaire (Ary et. al., 2006).

The study sample was obtained at the 2009 Ohio State Fair. The data was collected at a booth in the Agriculture and Horticulture building. Participants voluntarily participated in the study. Subject recruitment was obtained by the use of a sign above the research booth which read "Are you 18 year or older? Are you an Ohio resident? Do you want Free Ice Cream?" Six individuals administered questionnaires over a period of eight days. Each participant was given a coupon for a free single-dip ice cream cone from the Ohio Dairy Producers booth at the fair. A sample of 508 questionnaires were collected, 502 questionnaires were deemed usable and were evaluated as a part of this study. The six questionnaires dismissed from the research were deemed unusable due to lack of responses or Ohio citizenship. In addition to the 508 subjects who participated in the study, 57 other individuals inquired about the study and then declined participation.

Questionnaire administers underwent a training prior to data collection. This allowed the administers to practice and become familiar with the questions, learn how to listen carefully and pick out important details, as well as eliminate personal bias when talking with participants. The questionnaire began with two prescreening questions which established that the participants were adults and Ohio citizens. Additional information that was collected throughout the questionnaire included: demographics; knowledge of the difference between animal rights and animal welfare; rank of perceived treatment of animals by farmers; rank of the importance of humane treatment to food animals; awareness of individual state legislation banning conventional livestock housing methods; knowledge of the difference between HSUS and local humane societies; and knowledge of the constitutional amendment to Ohio's constitution to create a livestock care standards board to be voted on in the November 2009 election. A panel of researchers and Farm

Bureau staff closely associated with the amendment evaluated the questionnaire instrument to ensure validity.

Upon the completion of the data collection, data was entered into SPSS© and quantitative statistics were calculated. Qualitative information was explored using open-coding and themes were pulled from the data.

Results

The first objective of the research was to determine the demographics of Ohio citizens visiting the State Fair. Researchers collected demographic information on age, ethnicity, gender, highest level of education, voting status, area of residence, and agriculture experience. The age of participants had a range of 18 to 88. The mean age was 44.35, with a median of 46, and a mode of 50. When divided into age groups of 18-29, 30-39, 40-49, 50-59, 60-69, 70-79, and 80-89, the forties aged group had the most participants with 124 (24.7%). Eleven participants declined to answer this question.

Various ethnicities were represented among the participants. The Caucasian ethnicity was most prevalent with 412 (82.1%) of participants. African American's were represented by 41 (8.2%) individuals. Ethnicity was not reported by 13 (2.6%) respondents.

Gender was not asked, but was identified by the researchers. A gender was not specified for ten of the questionnaires. Females contributed to 62.7% (n= 315) of the sample, while 35.5% (n= 177) of the sample was made up of males. (See Table 1)

A Bachelor's degree was the most frequent response as the highest level of education, as it was indicated by 181 (36.1%) of the respondents. The category of "some college" which

included any college experience below the bachelors level, followed with 122 (24.3%) responses. A high school diploma was the highest level of education for 99 (19.7%) of the participants.

Table 1
Demographics of participants

Demographic	*f*	%
Age		
40-49	124	24.7
50-59	114	22.7
18-29	106	21.1
60-69	64	12.8
30-39	52	10.4
70-79	24	4.8
80-89	7	1.4
Ethnicity		
Caucasian	412	82.1
African American	41	8.2
Other	21	4.2
Asian	6	1.2
Hispanic	9	1.8
Gender		
Female	315	62.7

Male	177	35.3
Education		
Bachelors	181	36.1
Some College	122	24.3
High School	99	19.7
Masters	75	14.9
Professional	13	2.6
Did Not Finish High School	8	1.6
GED	1	.2

Three questions were asked about the respondents voting status. One question asked if the participants were registered to vote, followed by asking if they voted in the last election and the last three elections. The majority of respondents were registered to vote, with 95% (n= 477) indicating so. Similarly, 90.4% (n= 454) of participants indicated that they voted in the last election, while 9.2% (n= 46) did not. When looking at the distribution of voters in the last three elections, 79.5% (n= 399) of respondents voted and 19.9% (n= 100) did not. Of the 502 participants, one did not indicate if they were registered to vote, two did not specify if they voted in the last election, and three declined to identify if they voted in the last three elections. When specifying the area of residence, 202 (40.2%) participants indicated that they resided in a suburban area. The number of urban and rural residing participants was very similar; urban residence was identified by 128 (25.5%) of respondents, while rural residence was identified by

126 (25.1 %) of respondents. A farm residence was indicated by 45 (9.5%) participants. Only one participant declined to answer this question.

Participants were asked to rank their experience with agriculture on a scale of 1 to 5, with one indicating no experience and 5 indicating that they have lived on a farm. Ranking their experience with agriculture as a 5 was 132 (26.3%) respondents. Similarly, on the other end of the scale 128 (25.5%) respondents indicated that they had no experience with agriculture. (See Table 2)

Table 2
Experience with Agriculture

Rank	*f*	%
5- Lived on a Farm	132	26.3
4	53	10.6
3	101	20.1
2	87	17.3
1- No Experience	128	25.5

The second objective of the research was to evaluate the knowledge of animal rights and animal welfare held by Ohio citizens attending the Ohio State Fair. The distribution of individuals indicating that they knew the difference between animal rights and animal welfare was closely distributed. Those indicating that they did not know the difference was and 50.4% (253) of participants.

When participants were asked to describe the difference between animal rights and animal welfare several themes arose. Four common explanations of animal rights arose. These included that animal rights are rules and legislation; animals have the same rights as humans and cannot be used for human benefit; animals do not have rights; and animal rights included proper treatment and items animals are entitled to. Three common definitions of animal welfare were given. They included animal welfare was the rescuing of strays and protection of animals; that

welfare was the proper treatment and care for an animal's well being; and welfare is the idea of humane treatment while using animals for human benefit.

Respondents were asked if they felt farmers in Ohio raised their animals in a humane manner. Participants were asked to respond on a scale of 1-5. They were told that a ranking of 1 would indicate not humane and a 5 would indicate very humane. The ranking of very humane had the most responses with 174 (34.7%). The responses continued down the scale with 161 (32.1%) indicating a ranking of 4, and 112 (22.3%) identifying a neutral response. Two participants chose not to answer this question. (See Table 3)

Table 3
Do Farmers in Ohio raise their animals in a humane manner?

Rank	*f*	%
5 (very humane)	174	34.7
4	161	32.1
3 (neutral)	112	22.3
2	35	7.0
1 (not humane)	18	3.6

When participants were asked why they chose a particular ranking eight common responses arose. Three similar responses included the following: because I know, have seen, or heard that they treat their animals well; because I know, have seen, or heard that they do not treat their animals well; and some treat their animals well and some do not. Some respondents referenced media as being the reason for their ranking. In addition, some respondents indicated they chose their ranking because farming is the farmer's livelihood and income and some chose a particular ranking because they were farmers or agriculture professionals themselves. The final common response was one of uncertainty; several people indicated that they were unsure of how animals were treated, hoped they were treated well, or would like to think that they were treated well. Positive views of treatment were displayed through comments such as "I know a lot of

farmers; they treat their animals better than themselves." A negative comment was often demonstrated through comments similar to the following: "What I hear may not be representative, but what I hear is mostly bad news."

After thinking about how they felt farmers treated animals, participants were then asked how important the humane treatment of food animals was to them. They were asked to rank the importance on a scale of 1-5, with 1 representing not important and 5 very important. Of the participants, 317 (63.1%) indicated that the humane production of food was very important. (See Table 4)

Table 4
How important is the humane production of food animals?

Rank	*f*	%
5 (very important)	317	63.1
4	116	23.1
3 (neutral)	56	11.2
2	11	2.2
1 (not important)	1	0.2

Several reasons evolved when the subjects were asked why they chose their ranking for the importance of the humane production of food. Two of the most popular reasons were that it is important to treat animals humanely because they will be our food, as well as that animals simply should not be mistreated. Health along with religious reasons, money and economic issues, and protection of family (mainly children) by insuring that they are provided with quality food were also common themes regarding the importance of humane treatment. In addition, some felt that although animals are used for human consumption they are still beings and can feel pain. Participants expressed their reasoning's through explanations such as "they provide for us we should provide for them" and "I don't want bruised meat."

The last question asked to determine the fair attendees' knowledge of animal rights and animal welfare was, if participants were familiar with HSUS or their local humane society. If

they answered yes, they were asked to specify which they were familiar with. A large number of participants, 408 (81.3%) indicated that they were either familiar with HSUS or their local humane society. Only 93 (18.5%) of the respondent indicated that they were not familiar with either one of the organizations. Of the participants who indicated they were familiar, 401 specified which organization they were familiar with. Local humane societies were the most common response as 245 (61.1%) of the individuals provided this answer. Indicating that they were familiar with both organizations was 130 (32.4%) of the participants. Lastly, 26 (6.5%) indicated that they were familiar with HSUS.

Participants were then asked if they could describe the difference between HSUS and their local humane society. Common responses were that local humane societies were at a local level and HSUS was at a national level and that there was no difference between the two. HSUS was also individually described as large scale and oversees all animals, a legislative lobbying organization with a policy agenda, and as extremist and activists with animal rights agendas. Local humane societies were individually described as a pet shelter where you can adopt pets, part of the state government, and an organization that provides animal welfare. Many people could describe one organization or the other correctly, but very few could describe both. Of the sample, 55 individuals described some aspect or had a correct idea about HSUS, while 106 of the participants described local humane societies accurately.

The third objective of the study was to determine the understanding and beliefs of agricultural legislation held by Ohio citizens visiting the Ohio State Fair. To gain a better understanding of the attendees' knowledge of agricultural legislation researchers asked the participants if they knew that conventional livestock housing methods had been outlawed in six states. In addition, researchers read a description of Ohio's proposed Livestock Care Amendment

and asked participants to rank the amendment's ability to improve the humane treatment of animals in Ohio as well as the safety and wholesomeness of food produced in Ohio on a scale of 1 to 5.

Of the 502 participant sample, 405 (80.7%) participants indicated that they were not aware that conventional livestock housing methods had been banned in six states. Only 96 (19.1%) of participants were aware of such legislation.

Although the livestock amendment to be on Ohio's ballot in November of 2009 had not been given an official issue number at the time the research was collected, the researchers described the amendment to the participants and asked them if they thought it would improve the humane treatment of livestock. Respondents provided their answers on a scale of 1-5 with 1 representing not improving and 5 improving greatly. Those who felt the creation of a livestock care board would improve the humane treatment of animals included 176 (35.1%) individuals. Designated by a ranking of 4 were 150 (29.9%) of the participants' answers. Eleven respondents declined participation for this question. (See Table 5)

Table 5
Improvement of care through livestock care amendment

Rank	*f*	%
5 Improving Greatly	176	35.1
4	150	29.9
3	113	22.5
2	22	4.4
1 No Improvment	30	6.0

Conclusion/Recommendations

Although the data collected in this study is not generalizable past those who attended the Ohio State Fair and visited this specific building, it has highlighted important information for communicators. The study found that the majority of the people who participate in this research

were either in their forties or fifties. It may be assumed that these age groups are likely to pay more attention to similar topics than others are or this age group might be the individuals most interested in the agriculture and horticultural exhibits in the building. Additionally, it could be assumed that these age groups were most prevalent because they are part of the baby boomer era. Therefore, agriculturalists should consider targeting their communication and campaigns toward this population. The abundance of women participants over men could be attributed to the fact that several of the women may have had children with them who wanted ice cream.

Based on this study it can be gathered from the data that the majority of individuals who completed questionnaires were registered to vote. The voting turn out in the last election indicated that more people voted than did not; however, looking at the past three elections, a decline in voters was seen. It must be remembered that 106 of the studies participants were in their twenties, indicating that some may not have been eligible to vote in the last three elections. The decline in voters across three years may be attributed to voter eligibility. It may also be attributed to the fact that the last large election was a presidential election, which tends to draw more voters than other election days.

The data suggests that participants did not have a clear understanding of the difference between animal rights and animal welfare, even though some may have thought so. When the question was asked if the participants thought Ohio farmers raised their animals in a humane manner, many individuals responded by specifically referencing things they had heard, seen, or read in the media. By making reference to the media and basing their answer off of what they observed through media, one could conclude that the participants gained their perception through observation of the media, cognitively stored their observations and now used their observations to influence their behavior, thus exhibiting implications of social learning theory (Klapper,

1960). Additionally, this finding supports the notion that social learning is an effect of mass media and that ideas presented in the mass media are often disseminated into the general public (Klapper, 1960). Agricultural communicators should be aware of mass media effects on social learning in order to produce effective communication campaigns and combat their competition.

Similarly, most respondents felt that the majority of animals were treated well due to what they had seen, heard or personally experienced, not specifically through the media. Further studies should be conducted to analyze how the general public responds to agriculture images and if the images effect their perceptions of agriculture in any way. Studies of aesthetics and semiotics of agricultural images paired with consumer's perceptions may enable agriculturalist to identify how to produce more effective, educational, and accurate advertisements.

Although many respondents were familiar with either their local humane society or HSUS, the majority were unable to accurately describe the difference. Many participants stated that there was no difference between the two, or that they were the same one was just local and the other was national. This common misconception could be attributed to the properties of the cognitive dissonance theory. Dissonance occurs when inconsistent information is present in one's mind, the dissonance causes the person to be uncomfortable and as a result they correct one of their thoughts in order to restore cognitive balance (Aronson, 1969). When researchers asked participants to describe the difference, cognitive dissonance occurred in the minds of many of the participants. The question was implying that there was a difference; however many of the respondents thought the two organizations were the same, likely because both have the words "humane society" in their title. In order to balance the conflicting information respondents would change their thought of "there could be a difference" to "there isn't a difference". It is important for agriculturalists to recognize items that might cause dissonance when educating the public;

this will allow them to prepare for the dissonance and produce effective educational methods to eliminate the dissonance without returning to prior misconceptions.

Agriculturalists in should use the information in this study to prepare an effective campaign for Issue 2 in Ohio and other similar future campaigns. The findings show that many participants are not familiar with livestock legislation. Therefore, the communicators should shape an educational campaign to inform voters about the legislation. In addition, respondents felt strongly that the livestock care amendment would improve the humane treatment of animals as well as the safety and wholesomeness of food produced in Ohio. By keeping a campaign focused on excellent animal care and food safety it is likely that voters will respond favorably. The results show that the proper treatment of animals is important to most of the participants. Enforcing this benefit of the livestock care amendment will allow voters to feel emotionally confident that they are doing what is best for animals.

It is important to note that the results of this study may have been influenced by individuals in the building, other participants or the exhibits in the building. This study should be replicated at a different venue in order to get a wider selection of the population. Further replication should also include sampling in a rural venue as well as an urban venue. A chi-square analysis of these geographical samples with the elements indicated as part of this questionnaire would provide valuable results in regards to the relationship between geographical region and knowledge and perceptions of agriculture. In addition, further analysis should be done to establish if those participants with an agricultural or rural background answered differently that those who did not have such background. (It should be noted that Issue 2 did pass in the state, and findings from this study were shared with campaign organizers.)

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Social Agriculture: Adoption of Social Media by Agricultural Editors and Broadcasters

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Abstract:

Web 2.0 technologies have been a hot button of discussion amongst media professionals, educators, and the general public over the last few years. With such important issues being covered in agriculture today it is important to understand how agriculture media is perceiving and adopting such tools. This study surveyed members of the Livestock Publications Council and the National Farm Broadcasters Association to see how they are currently using Web 2.0 technology, how they perceive its use in the profession, and how they feel their audiences are using it. Findings indicate that while the organizations are heavily on websites, they are only moderately on social networking and microblogging sites, and are rarely using blogging, podcasting, or online video networks to share information with their audiences. Most see the benefits of such tools, but some are still leery to adopt them in fear of time and resources. Lastly, most take into account their audiences' needs when selecting technologies, but most don't actually poll their audiences to find out what those are. Conclusions and suggestions for further research are made.

Keywords: Social Media, Web 2.0, Technology, Farm Broadcasters, Editors, Diffusion, Blogging

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Introduction/Theoretical Framework

The World Wide Web has made finding and retrieving information easier, and has often been viewed as a reliable source of information because of the readiness of the information (Henroid Jr., Ellis & Huss, 2004). The Internet has been found to be a cost effective way to provide consumers with the information they are seeking (Henroid Jr., Ellis & Huss, 2004). "As more audiences become dependent on the Internet as a source of information, it has become increasingly important for companies and organizations to have a strong Web presence" (Ruth, Bortree, Ford, Braun, & Flowers, 2005). The newest phenomenon in the technology world for information sharing has been the idea of Web 2.0. Web 2.0 refers to popular technologies that have survived the "dot-com bust" and are labeled 2.0 because they generate from previous technologies that were invented during the last wave of Internet innovations (Rigby, 2008).

Agriculture media is beginning to understand this phenomenon and utilize Web 2.0 technologies for their audiences. Therefore, it is important to look at each of these Web 2.0 applications. It is also important to understand how audiences would like their information presented to them in this fast-paced society.

Blogging

Blogging has been gaining popularity rapidly on the Internet (Fannin & Chenault, 2005). According to Hogg, Lomicky, and Hossain (2008), the terms blog, weblog and blogger first entered into media's lexicon was July 8, 2000, on CNN during a story that was trying to define this new innovation. Many national publications, like the New York Times, have implemented blogs on their Web sites (Fannin & Chenault, 2005) to draw in new readers. Rigby (2008)

suggests that blogs might be the "ideal gateway" for organizations to participate in the Web 2.0 movement. The main attraction to readers is the immediacy of news that blogs can offer, as well as the "open" relationship bloggers have with their readers. Readers can receive new news at any hour and do not have to wait for the morning paper (Fannin & Chenault, 2005). Blogs have also created a platform for new reader feedback. Readers can now comment on news stories and be drawn into the conversation (Fannin & Chenault, 2005). Thirty-three percent of Internet users say they read blogs, with 11% of the users reading blogs daily and 42% of Internet users indicating that they have read a blog (Smith, 2008).

Blogging popularity has also spread to the world of agriculture. In 2007 Rhoades and Hall noted the large presence of blogs covering agriculture topics and rural life. Many of the blogs were formally written and sited sources, similar to what you would expect from media. However, in their study they noted that the vast majority were not media related.

Social Networking Sites

There are hundreds of social networking sites and within each there has been a self-organization of subgroups and cliques (Rigby, 2008). In order for organizations to have a successful profile on a social networking site, it requires an active and committed group of supporters (Rigby, 2008). In a recent Pew Internet study, researchers found that as of September 2009, 19% of online American adults update their status, or view other's status updates on services like Twitter (Fox, Zickuhr, & Smith, 2009). This is an increase from 11% that was reported earlier in the year (Fox, Zickuhr, & Smith, 2009). This increase in microblogging technologies is fueling many media to consider its' use in their reporting toolboxes.

Sites such as Facebook MySpace have overwhelmingly been adopted by the general population since their introductions in the early 2000s. A total of 75% of adults 18-24, and 57%

of 25-34 year-olds are currently using these sites (Lenhart, 2009). Many mainstream media organizations have begun to capitalize on this technology by developing their own sites to reach audiences in a new way.

Video Sharing Sites

In April 2009, Pew Internet found that 62% of adult internet users have watched videos on internet sites, with 19% watching videos on video sharing sites on a typical day (Madden, 2009). YouTube's most popular clips are viewed by millions (Haridakis & Hanson, 2009), and the audience has become an integral part of the distribution chain of these videos. Media and audiences alike have taken advantage of the social-networking capabilities (Haradakis & Hanson, 2009) offered through such sites. Organizations like CNN have even developed their own video sharing sites (iReport.com) to allow users to develop the news.

While little research has looked at how agricultural media has used such sites, it is evident that agricultural topics are being posted. Rhoades and Ellis (In Press) found that many videos on YouTube were covering food safety issues, and several media and agricultural agencies were the sources of such uploads. Goodwin and Rhoades (2009) in a study of the use of YouTube during an agriculturally related ballot issue, noted that that the site was used heavily to share opinions of those for the ballot.

Podcast

With the decline of farm radio and media, rural markets have been left without agriculture news (Fannin, 2006). Podcasting is a new method of audio news distribution, "because it bypasses traditional radio media outlets to reach agricultural producers and general news consumers" (Fannin, 2006). Podcasting has the ability to fill that void of farm radio.

While podcast downloading continues to increase, only 19% of internet users say that have downloaded podcast to listen or watch at a later time (Madden, 2008).

How audiences want their information?

It is important for agriculture media to know how their audience likes to receive information. In a study questioning leaders in Florida Farm Bureau, it was found that leaders were positive about the use of communication technologies (Telg, Basford & Irani, 2005). While respondents thought that e-mail was a fair substitute for some forms of communication, they were less likely to believe it was an adequate substitute for face-to-face and telephone conversations (Telg, Basford & Irani, 2005). Whereas, Ruth and Lundy (2004) studied what form of communication opinion leaders would like to receive information about agricultural issues. Respondents indicated that newspapers would be the best form of communication to receive information on agriculture, followed by "television, government agencies, and radio" (Ruth & Lundy, 2004). Recent studies of audiences in rural America are still noting that farmers, in particular, still value face-to-face communication over that of online information (Hall, & Rhoades, 2009). However, as more mainstream media jump on to the new social media to report their stories, it can be assumed agriculture audiences and media will follow. While its widespread adoption is evident, agricultural audiences and media have traditionally tended to lag behind their mainstream counterparts due to finances and availability, making it important to monitor their adoption.

Diffusion of Innovation

Due to this lag, it is important to look at agricultural medias' adoption of the use of new social networking technologies through the lens of diffusion. Diffusion looks at the process to which an innovation is communicated through particular channels over time among members of

a social system (Rogers, 1995). Diffusion is a special type of communication where the messages are about a new idea (Rogers, 1995). This new idea creates uncertainty in members of society, and the diffusion creates a type of social change (Rogers, 1995). Innovation is "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 1995). "Diffusion of innovations is the process during which an innovation is adopted" (Hogg, Lomicky & Hossain, 2008). Several steps allow new knowledge and products to spread through societies (Baldwin, Perry & Moffitt, 2004). Media first introduces these new products and technologies and the audience may not know what this new innovation does (Baldwin, Perry & Moffitt, 2004). Soon some audience members may want to seek out the new innovation. This group of early adopters becomes the opinion leaders (Baldwin, Perry & Moffitt, 2004). These opinion leaders will then invite their friends to join in on this new innovation (Baldwin, Perry & Moffitt, 2004). Diffusion of innovation is about "using media to learn information that leads to adopting new behaviors" (Baldwin, Perry & Moffitt, 2004). After the opinion leaders spread to the early majority, the innovation spreads down through the population going through cycles of a late majority and then laggards. While mainstream media has started to fully adopt such new technology, it is important to gauge at what level agriculture media is in their adoption.

Purpose and Objectives

Given the information, little research has been done in regards to agriculture media perceptions of their use and their audience's use of Web 2.0. This study's aim is thus to evaluate the current use of agriculture media's use of Wed 2.0 as well as uncover those perceptions. The following questions guided the study:

1. What is the current use of Web 2.0 by agriculture media?
2. What are agriculture media's perceptions of their usage of Web 2.0?

3. What are agriculture media's perceptions of their audiences' use of Web 2.0?

Methods

To fulfill the objectives of the research, a quantitative methodology was implemented in which agriculture media was asked to respond to an online questionnaire. The instrument was developed by the researchers through exploration of previous media adoption studies. The instrument consisted of 60 questions including multiple-choice, open-ended, and Likert-type questions. All were designed to assess the type of new Web 2.0 agriculture media is currently using and what they see as the future of its use for their organization. The questionnaire also assessed what agriculture media perceptions are toward their audiences' preference of receiving news online.

The instrument was first shown to a panel of research and media experts to look for content and face validity. It was then pilot tested by members of the Ohio Agricultural Communicators Association. Once the instrument was complete and reliability was found to be acceptable, the Dillmian Tailored Design method (Dillman, 2007) was followed for data collection. A pre-notice letter was sent followed by an invitation to do the study and three reminder emails. All emails indicated the support of the organizations being studied. To develop the population, two agricultural media organizations were approached and asked to allow for their memberships to be surveyed. The population for this study thus included the 208 members of the Livestock Publication Council and the 147 members of National Farm Broadcasters Association. Out of the 328 initial request sent, 26 questionnaires were returned due to incorrect e-mails addresses and one respondent refused to participate in the study, reducing the sample size to 301. Ninety-two members participated in the study creating a response rate of 30.5%. In

a study surveying newspaper editors, it was found that those in the media receive many surveys in a week and do not have time the participate (Chang, Voelker & Lee, 1990). "Questionnaires take time and effort to answer and editors usually have rather tight time budgets in the newsroom" (Chang, Voelker & Lee, 1990). So while this is a low response rate, it is not uncommon for such an audience. Early and late responders were compared on demographics and no differences were found. Due to that data analysis was completed on the data. This study is limited by the response rate, but still sheds light on the adoption of these technologies by this audience.

Results

Of the 92 respondents, the majority were male (52.6%, n=41) and had a Bachelor's degree (70.5%, n=55). Thirteen respondents had a Master's degree, and none had a PhD. The majority majored in some form of journalism, broadcasting, agricultural communications in their highest degree (60.2%, n=56). Of those responding, 35.3% (n=33) have worked in the field over 20 years, while 20.4% (n=19) have worked less than 10 years. Job positions ranged from owner/president to farm broadcaster and reporter. Membership in the National Farm Broadcasters Association made up 59.4% (n=38) of the respondents, while 35.9% (n=23) were members of the Livestock Publications Council. Participants also indicated being members of the American Ag Editors' Association, the Ag Relations Council, the National Association of Agricultural Journalists, and the American Horse Publications Council.

Respondents were asked to indicate what challenges they were currently facing in their organization. The majority, 42.3% (n=33) indicated low revenues, while lack of skills with new technology (30.8%, n=24), learning new news gathering techniques (24.4%, n=19), consolidation (20.5%, n=16), and lack of knowledge about new technology (20.5%, n=16) were also of concern. A small percentage (16.7%, n=13) were concerned with working with new

millennial hires and having a lack of updated technology (15.4%, n=12). Several respondents, however indicated that they saw many of these things as new opportunities for them as well.

Objective 1: What is the current use of Web 2.0 by agriculture media?

To address objective one, participants were asked to indicate the types of technologies they were using to reach audiences online. Over 95% of respondents (m=86) indicated their organization had a website. Of those, 28.1% (n=25) said they update it multiple times a day. Some respondents indicated updating every day (24.7%, n=22) while others updated every week (20.2%, n=18). Only 13.5% (n=12) say they update their site only a few times a year or less. When asked how the site has changed over the last five years many respondents indicated that they are updating it more frequently with news and have added more features such as blogs, calculators, and other multimedia to the site to help users gain more information.

While websites were abundant among the group, only 37.1% (n=33) indicated having a company blog. Of those who did not have a blog, 38.6% (n=32) indicated they believe will have a blog in the future. Companies indicated that blogs are updated weekly (22.5%, n=16) or daily (15.5%, n=11). Only one respondent claimed to post on their blog several times a day. A certain reporter or staff member blogged for 32.8% (n=23) of the companies, while all employees, a company CEO, or the editor/general manager blogged each for 7.1% (n=5), respectively. Similar to blogs, only 41.6% (n=37) indicated producing podcasts. When asked what makes up the material in their blogs and/or podcasts, 25.0% (n= 21) said that they used their traditional information but added further resources. The others indicated (16.7%, n=14 respectively) that they either put up their traditional content or that they put something up that is totally different from their traditional content.

Respondents were then asked about their use of Web 2.0 technologies. A slight minority (47.7%, n=42) said that they do have a microblog (twitter like) account, which again is mostly updated by one individual (29.3%, n=24). Of those, 40% (n=30) indicated the microblog they used is Twitter. Many respondents indicated in an open-ended question that they use their account to highlight breaking news, show audiences where they are broadcasting, update on events and shows they are covering, or to draw them back to the website. In terms of social networking, only 28.2% (n=24) have social networking features highlighted on their website. However, 41.9% (n=36) did say they have a Facebook profile or fan page for their company on Facebook. Only 7.0% (n=6) indicated the same for MySpace. Other social networking sites used by 14.0% (n=12) of respondents included FFA Nation, LinkedIn, ProudToDairy, FriendFeed, tumblr, and the NAAE Community of Practice.

When asked more in-depth about their company's social networking use, 42.4% (n=36) indicated that they update their profile regularly, and 39.0% (n=32) said they post upcoming events on their page. The majority, 38.8% (n=33) also post news on their page, while 34.9% (n=29) work to engage their audience to give feedback on the company's reporting on their social networking page.

Lastly, respondents were asked about their use of video sites like YouTube. Only 20.9% (n=18) post videos to such sites, and only 11.8% (n=10) have a channel on YouTube. The majority use staff members to produce these videos (27.6%, n=21). No organization has utilized sites like iReport to post information.

Objective 2: What are agriculture media's perceptions of their usage of Web 2.0?

To address objective two, participants were asked their opinions of the adoption of Web

2.0 technologies into their organizations. Respondents were first asked their purpose in using blogs and podcasts to reach their audiences. The majority (50.6%, n=40) said they feel it is a new way to engage their audiences, while 11.4% (n=9) feel that it is a way to share more information about their company, and 6.3% (n=5) use it to filter information for their audiences. Write in responses to this question also indicated they felt such tools allowed for transparent, two-way communication and a way to provide longer interviews than on-air content.

When asked why they felt it was important to be engaged in social networking sites, the participants indicated several reasons. From getting more content to their audiences to reaching younger and wider audiences, many felt this was a benefit to their organization. Others indicated, however, that they do not see the benefits to their organization since most farmers are not readily using the technology or there are no good "business" models yet developed to put forth the investment of time to use such tools.

Participants were asked to indicate what technologies they felt will be used by their peers in the next five years. Items such as content made for telephones, further use of online meetings, social networking, and on demand markets were mentioned. Most respondents however, said that they couldn't have imagined the tools today, and are unsure of what is to come. Several say they don't have time to worry about today's new technology and thus are unconcerned with the future technologies. One respondent indicated that it is not necessarily the emerging technology, but the need to change the way they write to match it.

Lastly to address objective two, respondents were asked to respond to several Likert items on a 1-5 scale (1=Strongly Disagree to 5=Strongly Agree). When asked if agriculture media would only serve to organize information created by others in the future, the majority (72.3%, n=55) disagreed to strongly disagree, and only 11.8% (n=9) agreed to strongly agreed.

When asked if their organization will hire other companies to fulfill their online media needs, 55.9% (n=43) strongly disagreed to disagreed. Lastly, when asked if agriculture media should be at the forefront of using online technologies 75.6% (n=59) agreed to strongly agreed. (Table 1)

Table 1.
Level of agreement with the future role of technology in agricultural media

	Strongly Disagree	Disagree		Agree	Strongly Agree
Agriculture media would only serve to organize information created by others in the future	19.7% (15)	52.6% (40)	15.8% (12)	10.5% (8)	1.3%(1)
My organization will hire other companies to fulfill their online media needs	14.3% (11)	41.6% (32)	26.0% (20)	14.3% (11)	3.9% (3)
Agriculture media should be at the forefront of using online technologies	2.6% (2)	3.8% (3)	17.9% (14)	42.3% (33)	33.3% (26)

Objective 3: What are agriculture media's perceptions of their audiences' use of Web 2.0?

Respondents were asked if they currently survey their audiences to learn their preferences of receiving information online. The majority (57.9%, n=44) indicated that they do not, while 15.8% (n=12) said they plan to soon, and 3.9% (n=3) said they keep up with their opinions through feedback on social networking sites. When asked how they survey their audiences, 17.6% (n=12) indicated using web surveys, while 13.2% (n=9) use email, and 10.3% (n=7) use mailed surveys.

The respondents were then asked how they feel their audience prefers to receive information. Forty-two percent (n=30) indicated their audiences wanted information from the radio, and 23.9% (n=17) said through magazines. None of the respondents felt their audiences wanted information through blogs, podcasts, or television. (See Table 2)

Table 2.
Agricultural medias' beliefs on which medium their audience prefers to get information

Medium	f	N
Radio	42.3%	30
Magazine	23.9%	17
Email	9.9%	7
Web	8.5%	6
Face-to-face	8.5%	6
Newspapers	7.0%	5
Blog	0.0%	0
Television	0.0%	0
Podcasts	0.0%	0

Study respondents indicated they for the most part (37.3%, n=28) do not know how their audiences connect to the internet, while 32.0% (n=24) feel the connect on high-speed and 21.3% (n=16) feel they are on dial-up. Only 9.3% (n=7) feel their audience connects via broadband or satellite.

When asked how their audiences are currently contacting them, participants indicated that email (93.6%, n=73) and telephone calls (n=88.6%, n=44) are the most popular. However, very few individuals from their audiences use blogs (2.6%, n=2) or video comments (1.3%, n=1) to reach out to them. (See Table 3).

Table 3.
How audiences reach out to agricultural media

	f	*N*
Email	93.6%	73
Telephone Calls	88.5%	69
Letters	56.4%	44
Social networking wall posts	38.5%	30
Websites	33.3%	26
Blog Comments	9.0%	7
Blogs	2.6%	2
Video Comments	1.3%	1

Lastly, respondents were asked how concerned they are with their audiences' use of technology when selecting what technology tools to use on a 1-5 scale (1= not at all concerned to 5= highly concerned). Respondents were somewhat highly concerned with their audiences' preference for technology, their current use of technology, and their ability to connect easily to the internet. However, they are less concerned with their audiences' demographics. (See Table 4).

Table 4.
Organizations' level of concern with audience characteristics when deciding on what new media to use.

	M	n
Audiences' ability to connect easily to the internet	4.13	75
Audiences' preference for technology	4.08	75
Audiences' current use of technology	4.0	75
Audiences' demographics	3.92	74

Conclusions and Recommendations

As mentioned previously, this data is not generalizable past the respondents and the organizations they belong to; however, the data does start to shed light on how these media are adopting new technologies to reach their audiences. When comparing the results to the diffusion process (Baldwin, Perry & Moffitt, 2004) it is apparent that this group is in several phases of adoption amongst its members. However, as a whole one could categorize them in the early to late adaptor categories based on the current use of these technologies as reported by the Pew Internet Life studies (2009).

When looking at the results to objective one these media representatives have fully adapted to the use of websites for communication purposes and understand the importance of updating them regularly. However, of those using blogs, the importance of updating regularly is

not a concern. This is a problem in that for audiences to stay involved in blogs they must be updated on a regular basis with new information to keep attention and use the tool in its best way. Similar to blogs, many organizations reported not using podcasts as well. These findings are not surprising when one looks at the findings under objective three that indicated that they do not feel their audiences are using blogs or podcasts, and that they are not reaching out to the media using those tools. If they do not see the value in these technologies the media may not find their adoption to be important, and thus will be laggards in adoption (Rogers, 1995).

On the contrary, 47.7%, indicated using twitter and 41.9% indicated having a Facebook profile or fan page. Based on responses in objective two it is apparent that the media feel that these tools are useful new ways to broad their audiences to younger adults and to provide faster news and information. It is interesting to note that respondents also indicated being members of FFA Nation, LinkedIn, ProudToDairy, FriendFeed, tumblr, and the NAAE Community of Practice. These media professionals see the value of reaching out to their audiences in many new ways. With the majority of the population using such sites it is important that they have started to adopt them as communication tools (Lenhart, 2009). This adoption could be attributed to the feedback they are receiving on such tools. Comments on social networking sites were the third highest way audiences were contacting the agricultural media. If a new technology tool produces new feedback from audiences never seen before, such organizations will easily find value in its use.

Very few organizations however are utilizing the power of online videos or services like YouTube or iReport to reach new audiences. This is a concern as many agricultural opponents have been using such tools in anti-agriculture campaigns (Goodwin & Rhoades, 2009). Agriculture media should consider the incorporation of such video tools to integrate their news

messages into these arenas. Sites like iReport offer places for stories to not only be seen widely by online audiences, but they are also shared on cable television through CNN.

When looking at the agricultural media's perceptions of these media tools, the majority reported seeing the benefits to reach new audiences and further promote their organizations. While they do not feel their role is to mostly filter information, nor do they feel they will be contracting out such work, these media members feel that they must use these tools in new ways to engage audiences with up-to-date information such as markets. Many feel that agriculture media needs to be on the cutting edge of this technology use and should be exploring the use of sending information to cell phones and other networking technologies further in the next five years. While the majority see the value, there are still a large portion of the respondents who indicated they are still trying to figure out the technology or do not see its value. One respondent indicated good reporting was still the most important tool for him/her. It is agricultural communication faculty's role to help not only educate current students on the benefits and successful uses of such tools, but to also reach out to current media and help them to develop best practices to help them easily integrate these tools.

Some of the most intriguing findings of the study are related to objective three. While the majority of respondents do not regularly survey their audiences, they do have beliefs on how their audiences use such technologies. This is not surprising as over 50% were members of NAFB, and this organization does its own audience survey every year. These professionals may thus not feel the need to do their own.

When asked how their audiences prefer to get information, the majority said radio and magazines. This is not surprising since the media surveyed for this study were primarily agricultural broadcasters and magazine editors/writers. One would assume they would feel their

medium to be their audiences' preferred source. While email and the web were the following highest responses, it is also interesting to note that none felt their audiences wanted information through blogging or podcasting. As found in objective one, many are not using these tools, however 38.6% indicated they would be adding a blog to their media output in the near future. These media outlets tend to produce only the things they feel their audiences will enjoy, but in this case they are starting to embrace blogs even though they may not see the value to their current audiences.

All respondents seem to take their audiences' technology needs and preferences into account as they decide which new technologies to use. However, it begs the question if this is a concern of theirs why are they not surveying their individual audiences more to determine clearly what their needs and desires are. Such technology availability is greatly widespread across rural America.

This study offers new insight into how these new technologies are being adopted by agricultural media. If the general population and mainstream media abundantly use these (Lenhart, 2009), it is important that agriculture media are aware of the uses and benefits of such tools. It is important for agricultural communicators and Extension educators to work with these individuals to utilize such technology. It is also important that researchers continue to monitor the adoption of these tools and develop best practices that can be shared with agriculture media. Further studies should look at other agricultural media professionals to compare these findings with other groups. Research should also be done with the audiences of these organizations to see how much they truly want or do not want their information in these ways. Technology will continue to grow and change, and for agriculture to stay in the forefront of sharing with a non-agricultural public, they must be ready to embrace each new tool as it comes down the wire.

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Relative Effects of Visualized and Verbal Presentation Methods in Communicating Environmental Information among Stakeholders: Okavango Delta, Botswana.

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Abstract

The purpose of the study was to examine the relative effectiveness of two public instructional communication methods' in improving selected predictors of knowledge-sharing behaviors among community stakeholders in the Okavango Delta in northwestern Botswana. Thirteen community-based natural resources management Boards of Trustees, comprising a total of 120 subjects, took part in a quasi-experimental study. Each subject took part in the two experimental treatments, in the form of presentations, one using visualized PowerPoint presentation, while the other was presented verbally without use of visual aids. After each presentation, subjects completed a retrospective pretest instrument. Data was analyzed using doubly repeated measures analysis of covariance. The results indicated no significant difference between the visualized public instructional communication method and the traditional verbal method, suggesting that neither method was more effective than the other in impacting subjects' knowledge, beliefs, attitudes, and behavioral intentions, even though significant differences were found between groups on attitudes towards the two public instructional communication method.

Keywords: information visualization; knowledge sharing; information diffusion; natural resources communication; communication methods; visualized PowerPoint; Public instructional communication methods.

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Introduction

Communication of information about natural resources conservation is an essential component of sustainable development (Jacobson, 1999). While environmental conservation information is essential for everyday living, it is argued that scientists have failed to generate meaningful dialogue with different lay-audience groups, such as policy makers, local communities and other stakeholders (Rhoads, Wilson, Urban, & Herricks, 1999; Siepen & Westrup, 2002). Inadequate dialogue and communication failure have partly been blamed on the complex nature in which ecological and environmental issues are presented by experts, making it difficult for non-technical audiences to understand (Heong & Escalada, 2005; Schiller et al., 2001). In the environmental conservation field, the situation may be exacerbated by the contemporary approach of demonstrating and explaining environmental scenarios using system ecological models and environmental indicators (Zimmerman, Akerelrea, Smith, & O'Keefe, 2006). The need for exploring effective communication techniques and strategies that will interpret these models to stakeholders becomes important. Effective response to global environmental challenges requires analysis of communication patterns about nature and humanity's relation to it (Johnson & Chess, 2006).

The Harry Oppenheimer Okavango Research Center (HOORC), a research wing of the University of Botswana, has embraced as part of its overall environmental research objective, a social responsibility approach by ensuring that research outcomes are meaningfully communicated to all stakeholders. The motivation came through a consultancy report which revealed that research findings were not being used in policy and management decision-making,

as well as translating into positive behavioral changes among local stakeholders (Brown & Russo 2002). Reasons advanced were that the research findings were inaccessible and not communicated to stakeholders. In line with the felt need, it became imperative that the HOORC empirically examine stakeholder communication patterns in the region to ensure that its outreach intervention strategies are guided by theory and research for maximal effect. The current applied study was, therefore, an initial attempt towards exploring communication approaches appropriate for disseminating Okavango Delta environmental information to the stakeholders.

The purpose of the study was to examine the relative effectiveness of two public instructional communication methods in improving selected predictors of knowledge sharing behaviors of the local communities in the Okavango Delta in northwestern Botswana. The target predictors of behavior were knowledge, belief, attitude and behavioral intention. The two public instructional communication methods compared were the traditional verbal method and the visualized method. On the basis of the research purpose, the following research hypotheses were formulated: 1) A visualized public instructional communication method will lead to higher improvement in subjects' knowledge, attitudes, beliefs and behavioral intentions than the traditional verbal method; and 2) Subjects will have more favorable attitudes toward the visualized public instructional communication method than the traditional verbal method. The findings are discussed in the context of practical utility to practitioners in environmental communications and guiding the HOORC in its outreach and information dissemination strategy.

Theoretical Framework

A variety of models and theories of behavioral change have been used to guide communication interventions. To conceptualize a research model based on the constructs examined in the study, the theory of reasoned action (Ajzen, 1991; Ajzen & Fischhoff, 1980) and

the responsible environmental behavior model (Hines, Hungerford, & Tomera, 1986) were used to guide the study. Constructs drawn from these two theories were as follows: knowledge, belief, attitude, and behavioral intention. The theories have been used to understand, explain and predict behaviors that are intended to facilitate social change.

The responsible environmental behavior (REB) framework posits behavior as a product of behavioral intention and situational factors (Hines et al., 1986; Hungerford & Volk, 1990). Behavioral intention is in turn influenced by two factors: personality factors and knowledge factors. The personality factors are comprised of attitudes, locus of control, and personal responsibility, while the knowledge factors are made up of three knowledge domains: issues, action strategies, and skills knowledge. The model hypothesizes that the three knowledge domains concertedly contribute to the knowledge factor. The three constructs comprising the personality factor independently contribute to the latent personality factor. The theory of reasoned action (TRA) posits behavioral intention as the lone determinant of behavior (Ajzen, 1991; Armitage & Conner, 2001; Hagger, Chatzisarantis, & Biddle, 2002). Behavioral intention is influenced by attitude toward a behavior and subjective norms. These are turn influenced by behavioral and normative beliefs respectively.

For the purposes of the overall study, the knowledge, locus of control, and attitude components of the REB framework, belief factor from the TRA, and the behavioral intention component posited by the two theories were used to guide the study, and conceptualize a research model focused on the overall long-term research study program. The behavior of interest that will be explored is the knowledge sharing behavior, viewed as an action taken by an individual to disseminate acquired knowledge to other members (Hsu, Ju, Yen, & Chang, 2007; Ryu, Ho, & Han, 2003). In the context of the study, the responsible environmental behavior

explored is the knowledge-sharing demonstrated by individuals, often used as agents of information diffusion. The behavior was chosen because it is the responsibility that the leaders such as board members should perform. Moreover, the reason why agencies use community leaders such as community-based natural resources management (CBNRM) boards as channels and sources of environmental information is based on the expectation that as the people's representatives, they are best placed to give due feedback to their constituents accordingly, i.e., by sharing what they have learned. Through this approach, it is anticipated that information diffusion campaign messages will be spread widely within communities, and ultimately translate into requisite behaviors and broader social change.

Literature Review

In the past, environmental communication studies had focused on environmental risk communication associated with toxic waste and hazardous substances from landfills, technologies used in agriculture and industry, pollution, environmental public health, safety, and the medical health field (Baker, 1990; Bordenave, 1976; Bradbury, 1993; Rogers, 2002; Thomas, 1986). Some studies, though few, have specifically focused on environmental conservation and communication (e.g., water conservation and environmental conservation) (Chess, Johnson, & Carey, 2000; Johnson et al., 2006; Trumbo & O'Keefe, 2001, 2005). Other studies have addressed effective communication strategies that contribute to favorable attitudes and a better understanding of ecological phenomena by policy makers, local communities, and the general public (Chess & Purcell, 1999; Schiller et al., 2001; Zimmerman et al., 2006). Most of these studies were conducted in developed countries, with very few in cultures within the developing world (Greco, 2005; Lee, 2008), such as rural Africa.

Others studies have explored the potential of using visuals to enhance communication. Reviews in 1996 and 2006 revealed that visuals can facilitate attention, comprehension, recall, and adherence to instructions or responsible medication behavior (Filippatou & Pumfrey, 1996; Houts, Doak, Doak, & Loscalzo, 2006). Studies also have highlighted that design features may contribute to the effectiveness of visuals (Neto, 2006; Scheiter, Gerjets, & Catrambone, 2006). Design features includes cultural relevance of the visual (Katz, Kripalani, & Weiss, 2006; Mansoor & Dowse, 2003; Ngoh & Shepherd, 1997), simplicity, relevance, and color (Katz et al., 2006; Ngoh et al., 1997; Spence, Wong, Rusan, & Rastegar, 2006) and type or form of visual aid, i.e., picture, cartoon or photograph (Moll, 1986). Other studies examined the subjects' attitudes towards visualized and non-visualized pedagogical approaches (e.g., Amare, 2006; Harknett & Cobane, 1997; Szabo & Hastings, 2000).

A study by Zimmerman et al. (2006) investigating the effect of different communication media in communicating forest models to stakeholders, found that rural adults benefited significantly from visualized and animated presentations than other groups, such as students and urban residents, that made their study sample. The study concluded that visualized presentations could enhance lay publics' understanding of complex ecological information in natural resources management. The study recommended future research to focus on adult audiences. Similar calls for focusing information visualization research to adult samples were echoed by other scholars (e.g., Large, 1996).

Methodology

The study was conducted in the Ngamiland district, northwestern Botswana (Figure 1). The district is known for its rich biodiversity, both in terms of animal and plant species, as well as ecosystems. The key ecological feature in Ngamiland is the Okavango Delta, a relatively

pristine natural wetland environment in southern Africa (Mendelsohn & Obeid, 2004). The delta and its immediate environs is home to multi-ethnic groups, having a history of intimate relations with the Okavango Delta and its resources (Tlou, 1985) and accounting for a total population of about 125,000 people (Central Statistics Office [CSO], 2002). More than 95% of these people depend directly or indirectly on the natural resources found in the wetland to sustain their livelihoods (Mbaiwa, 2002).

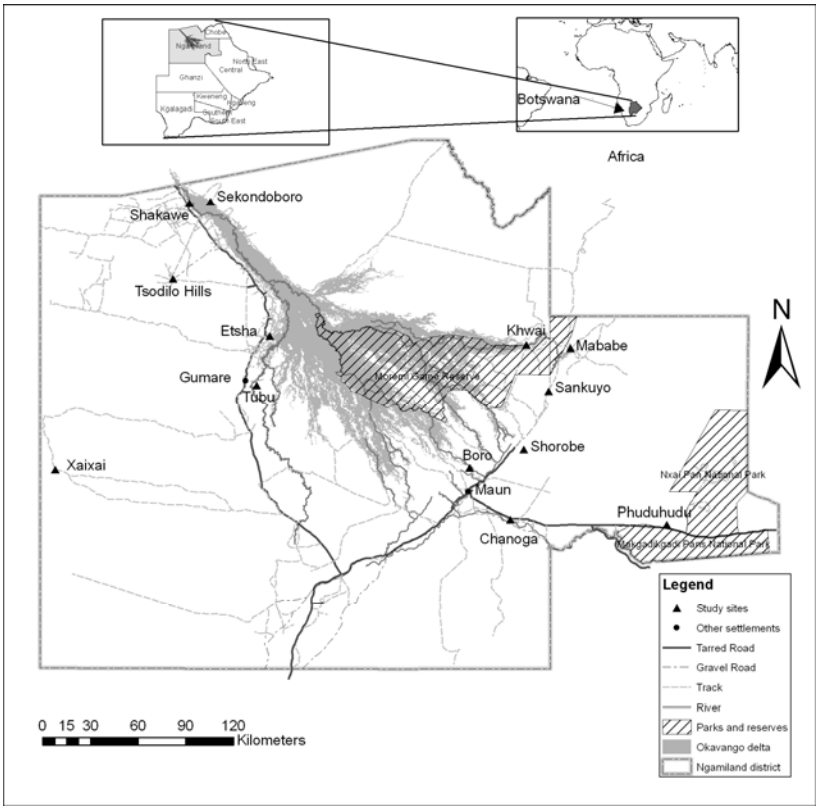

Figure 1. Map Showing Study Area

The population of the thirteen villages which took part in the study ranged between 157 and 4,389 inhabitants (CSO, 2002). The main economic activity in Ngamiland is tourism, which is the second largest earner of foreign exchange in Botswana, accounting for 9.7% of the country's gross domestic product through its direct and indirect impacts (World Travel & Tourism Council, 2007).

The government of Botswana has established collaborative natural resources management initiatives with primary stakeholders, the local communities, known as community based natural resources management (CBNRM) programs. Through the programs, local communities are given concession areas to undertake hunting and photographic tourism activities for their own benefit as an incentive for sustainable management of the resources (Thakadu, 2005). Nationwide, the Ngamiland district houses a majority of the CBNRM organizations. Under the co-management arrangement, local communities were required to form legal management structures to oversee day-to-day management of the natural resources in their respective areas.

The management structures formed to date includes the Trusts, governed by the Board of Trustees. The CBNRM board members are elected by the respective member communities. Additional to the duties and responsibilities assumed by the Board of Trustees as defined by the Deeds of Trust, environmental agencies use the boards as channels and sources of conservation messages for their constituent communities. It is against this backdrop that the study targeted the Boards of Trustees as they presented a potential for exploring communication intervention impacts and knowledge sharing behaviors.

The study employed a quasi-experimental counterbalanced design, where subjects, in the form of established Board of Trustees, were exposed to the experimental treatments within their existing intact groups. All the groups received the two experimental treatments, with the sequence of treatment administration (visualized vs. traditional) counterbalanced across groups. The approach eliminated the confounding of order and carryover effects (Ary, Jacobs, Razavier, & Sorensen, 2006; Davis & Smith, 2005).

The study subjects were community-based natural resources management (CBNRM) projects' Boards of Trustees members (N = 120). The sampling frame consisted of registrants on

the Ngamiland District CBNRM Forum. CBO Boards were listed alphabetically and numbered sequentially. From the list, thirteen CBNRM Board of Trustees groups were randomly sampled from a total of twenty-one using a computer random number table generator. The sampling design employed by the study was probability cluster sample (Ary et al., 2006). Whilst so, the sample itself was a convenience sample since it was drawn from the accessible population only.

Data was collected using a retrospective pretest instrument (Allen & Nimon, 2007; Hill & Betz, 2005; Lamb, 2005). The instrument measured the effects of each intervention treatment on the subjects' knowledge, beliefs, attitudes, and behavioral intention. The different scales making the instrument were developed using the theoretical-rational procedure, with literature review used to guide on the content of the target construct, constraints identified within existing scales and others (Clark & Watson, 1995). The construct questions were determined using the theory of reasoned/planned action and responsible environmental behavior studies. The instrument measures included subjects' perceived knowledge, belief, attitude, and intention. The instrument scales were derived from literature and similar research studies pertaining to the specific domain and subject area (e.g., Ajzen, 2006; Bock, Zmud, Kim, & Lee, 2005; Hamilton, 1991; Hines et al., 1986; Marcinkowski, 1988). The scales were modified to fit the specific behavior investigated in the current study. Face and content validity of instrument items were determined by a panel of five experts. Instructions and items were deemed clear and easily understood. The instrument design also captured the subjects' background and demographic variables. The format of the respective treatments questions was identical across the instrument.

In term of validity concerns, the retrospective pretest design is accredited for addressing the threat to internal validity often inherent in the traditional pre-posttest design – the response shift bias (Howard, Schmeck, & Bray, 1979; Lamb, 2005; Shadish, Cook, & Campbell, 2002).

The instrument was also pretested for construct validity (Ary et al., 2006) using a similar group not sampled, using the study experimental treatments' interventions.

Each subject participated in two experimental treatments (presentations) during a half-day workshop organized in collaboration with the members of the sampled boards in their respective villages. Each subject participated in the two experimental treatments (presentations). One presentation, the visualized communication method, was a PowerPoint containing photos as visuals combined with text. The topics addressed through the visualized presentation were waste management in the Okavango delta. The visuals (photographs) used in PowerPoint were solely selected based on their simplicity, as well as cultural and contextual relevance. The PowerPoint presentation was constructed with bulleted non-heavy text slides, being mindful that some of the subjects were illiterate. All the photographs used were taken within the context of Ngamiland district and portrayed local waste management issues and scenes. The other presentation, employing a traditional communication method, was entirely presented verbally and dealt with fire management issues in the Okavango Delta. The format of the two topic presentations was identical and were all given in local Setswana language.

To maintain consistency, all the presentations were given by the researcher talking from a script with bulleted points. To reduce the experimenter effect, procedures of treatment administration were standardized. Each presentation was comparable in terms of format, content, concepts, complexity, and length, and dealt with a specific environmental scenario of the Okavango delta. Panels of experts reviewed the message and presentation stimuli, and were also pretested for manipulation check. After each presentation, which took about 40 minutes, participants completed a retrospective pretest questionnaire at the end of each presentation.

Data was analyzed using doubly multivariate repeated measures ANCOVA (Stevens, 2009; Tabachnick & Fidell, 2001) to determine the effects of the intervention. The pretest scores, age, education, and level of interaction with HOORC were used as covariates. While a number of the requisite assumptions for the doubly repeated measures ANCOVA such as reliability of covariates, correlations among covariates, linearity, multicollinearity and homogeneity of regression hyperplanes were tenable, others were circumvented by analyzing the within-subject factors and the multiple depended variables multivariately (e.g., homogeneity of variances/covariance) (Tabachnick & Fidell, 1996). All statistical computations were conducted using SPSS 13 for Windows, with statistical significance set at $P < .05$.

Results

Demographic characteristics

A total of 120 subjects, representing 13 community trusts involved in natural resources management, took part in the study. The subjects' basic demographic characteristics included gender, education, ethnicity, age and position held in the Board of Trustees. The subjects were predominantly male (71.7%, n = 86). Subjects' age ranged from 20 to 72 years, with a mean age of 35.95 years (SD = 13.02). The majority of the subjects had completed their secondary education (55.0%, n = 66), with 11.0% (n = 14) having not attended formal school at all (Table 4.1). The mean educational level indicated that, on average, the subjects had gone beyond secondary education (8 – 12 years of education).

Forty-three percent (n = 52) of the subjects held executive positions in the Board of Trustees, being, chairperson, secretary, treasurer, and their vices. The remaining subjects served as additional members (39.2%, n = 47) and ex-officio members (17.5%, n = 21). The total length of subjects' service in the Board ranged from one to 12 years (M = 2.70, SD = 1.92). About 80%

of the subjects identified with three ethnic groups, with roughly equal proportions of Bayei (26.7%, n = 32), Basarwa (27.5, n = 33), and Bambukushu (25%, n = 30) subjects.

Experimental treatment effect

The main effect of the treatment (method) was examined using doubly repeated measures analysis of covariance, controlling for the pretest scores, education, age, and familiarity with HOORC. The analysis tested the differences between the two experimental variables means of the visualized and the traditional verbal public instructional communication methods to the overall dependent variables (See Table 1.) The test indicated no significant effect of method, Wilks' Lambda = .996, F(4, 103) = .11, p = .98, suggesting that the mean groups' scores for dependent variables did not significantly differ between the two groups. The finding implied that neither of the two public instructional communication methods was better than the other in terms of effectiveness in improving knowledge, beliefs, attitudes, and behavioral intentions. The lack of significance of the main effect of method meant that the hypothesis that a visualized method would be more effective than a verbal traditional method in impacting predictors of knowledge sharing behaviors was not supported.

Table 1
Mean Tables for Dependent Variables for Verbal and Visualized Presentations

		Verbal		Visual	
Variable	N	M	*SD*	M	*SD*
Knowledge	117	4.30	.48	4.32	.59
Belief	117	4.56	.58	4.58	.54
Attitude	117	4.79	.48	4.81	.40
Intention	117	4.63	.51	4.55	.57

Effect of method by position on subjects' scores on dependent variables

The effect of method on the dependent variables was further explored by grouping factor position. A one-way mixed between-within repeated measures ANCOVA was conducted to examine the effect of method by position, controlling for education and familiarity with HOORC.

The between subjects factor was position (executive, member, and ex-officio), while the within-subjects factors was the method. Table 2 shows the mean scores for dependent variables for the three positional groups for the two methods.

Table 2
Mean Scores for Executive, Ex-officio and Additional Members Across Two Public Communication Methods

		Executive[a]		Member[b]		Ex-officio[c]	
Variable	Method	*M*	*SD*	M	*SD*	*M*	*SD*
Knowledge	A	4.37	.49	4.23	.49	4.29	.42
	B	4.44	.60	4.19	.53	4.32	.64
Belief	A	4.71	.51	4.41	.64	4.52	.55
	B	4.68	.41	4.45	.61	4.60	.61
Attitude	A	4.77	.59	4.77	.42	4.88	.22
	B	4.78	.50	4.79	.34	4.91	.15
Intention	A	4.75	.39	4.47	.60	4.66	.47
	B	4.65	.52	4.40	.67	4.66	.41

Note. A = Verbal; B = Visual
[a] n = 51, [b] n = 45, [c] n = 21

There was no significant interaction between method of public communication and position, Wilks' Lambda = .98, $F(8, 204) = .32$, $p = .96$, $\eta^2 = .012$. There was a statistically significant main effect of position between groups for the full model, Wilks' Lambda = .84, $F(8, 204) = 2.31$, $p = 0.02$, $\eta^2 = 0.08$. Further assessment revealed that among the four dependent variables, two of them – belief, and intention – showed statistically significant difference, $F(2, 105) = 4.37$, $p = .01$, $\eta^2 = 0.08$, and $F(2,105) = 4.32$, $p = .02$, $\eta^2 = 0.08$ respectively. This suggested that subjects' belief and intention mean scores differed by position across the three positions, while for the other individual dependent variables (knowledge and attitudes), there was no difference among the group mean scores.

Post hoc analysis using Bonferroni criterion indicated a non-significant difference in groups rating scores for belief variable between executive committee members and ex-officio members ($p = 1.00$), but when compared to the additional members group (non-portfolio members) there was a significant difference ($p = 0.01$). There was no significant difference

among the group belief means rating scores when the ex-officio members were compared with either executive committee members or additional members. However, a significant difference was found between executive committee and additional members for the intention measure ($p = 0.02$), while the rest of the comparisons did not yield any significant difference.

Evaluation of mean estimates showed that executive committee members' group mean rating scores were significantly higher than that of additional members. This suggested that executive committee members have more favorable beliefs towards knowledge sharing when compared to additional members. Again, examination of the mean estimates revealed a significant difference in overall group mean ratings for behavioral intention between executive members and additional members, implying that executive members demonstrated more likelihood to share the information acquired when compared to the additional members.

The main effect of method was still not significant, Wilks' Lambda = .99, $F(4, 102) = .22$, $p = 0.92$, $\eta^2 = 0.09$, suggesting no difference in effectiveness of the two public communication approaches.

Attitude towards public instructional communication method

Subjects' attitudes towards the two methods were evaluated using one-way repeated measure ANCOVA. Covariates were education and familiarity with HOORC. The mean attitude scores for the traditional verbal method was 3.81 ($SD = 1.00$, $n = 117$) while the visualized method was 4.68 ($SD = .59$, $n = 177$). The test revealed a statistically significant difference in the groups' mean attitudes scores between visualized and traditional verbal group scores $F(1, 114) = 4.75$, $p = 0.03$, Wilks' Lambda = .96, with a medium effect size ($\eta^2 = .40$). Inspection of the mean group scores shows that subjects rated the visualized presentation more highly than the traditional verbal presentation method. This suggested that visualized presentations were more

highly favored or preferred than traditional verbal communication methods. The significant finding meant that the research hypothesis that subjects will have more favorable attitudes toward the visualized communication method than the traditional verbal method was supported.

A one-way mixed between-within repeated measures ANCOVA was conducted to examine the effect of method and age group on attitude ratings, controlling for education and familiarity with HOORC. Method was the repeated measures factor, while age group (derived by collapsing the recorded age variable into four groups - quartiles) was the between factor. (See Table 3.) The analysis revealed a statistically significant difference between the overall attitude group means scores by age group $F(1, 110) = 4.15$, $p = 0.04$, Wilks' Lambda = .96, with a small effect size ($\eta^2 = .04$). This suggested that the at least one of the four age groups (Group 1: 20-26 years; Group 2: 27-31; Group 3: 32-39 years; Group 4: 40-72) was different in mean rating scores for attitudes based on method, i.e., at least one age group showing more preference for one method compared to the others.

Table 3
Mean Scores for Attitudes Towards Communication Methods Across Age Groups

	20 – 26[a]		27 – 31[b]		32 – 39[c]		40 – 72[d]		Total[e]	
Attitude	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Traditional Verbal	3.91	.98	3.29	1.14	3.97	.91	3.99	.86	3.81	1.00
Visualized	4.68	.69	4.69	.63	4.50	.62	4.83	.35	4.68	.59

[a] n = 29, [b] n = 27, [c] n = 29, [d] n = 32, [e] N = 117

Least significant difference (LSD) post hoc tests revealed significant effects between age groups 20-27 years and 27-31 years ($p = .03$). There were two significant differences between the oldest group (40-72 years), one with the 27-31 years age group ($p = .001$); and the other with the age group 32-39 years ($p = .04$). The only age group that was not significantly different from the oldest age group (40-72) was the youngest age group: 20-26 years ($p = .10$).

Inspection of the estimated means (Table 4) showed that for the significantly different age groups, the average attitude ratings decreased from the oldest age group to the second

youngest age group. On average, the older group tended to rate attitude towards a communication method more favorably compared to the two immediate age groups below them. The lack of significance difference between the oldest age group and the youngest age group pairwise comparison indicated that both the two age groups' attitude ratings towards communication method were basically the same. The ratings only differed between the oldest age group and all others except the youngest. The significant difference between the youngest age group and the one immediately following indicated that the youngest group ratings were more favorable than the next immediate ones.

Further examination of the separate group mean ratings (Table 3) for the two communication methods revealed that the two age groups, (20-26 years and 40-72 years) group mean attitude ratings were generally highest for the two treatments. For the youngest age group and its next immediate age group, separate group means indicated that the youngest age group mean attitude ratings towards traditional verbal communication method were higher (M = 3.91, SD = .98) than the age group 27 – 31 years (M = 3.29, SD = 1.15).

Table 4
Estimated Means for Least Significant Difference Post Hoc Contrast for Attitude

			95% CI	
Age Group[a]	*M*	*SE*	LL	UL
20 – 26	4.25	.11	4.03	4.46
27 – 31	3.91	.12	3.68	4.14
32 – 39	4.21	.10	4.01	4.41
40 – 72	4.52	.12	4.30	4.79

Note. CI = confidence interval; LL = lower limit; UL = upper limit
[a]Recorded variable divided age into four groups.

Discussion

The study investigated the relative effectiveness of two public communication methods (traditional verbal presentations vs. visualized presentations) on the subjects' knowledge, belief, attitudes, and intention and their overall attitudes towards the public instructional communication methods. The study hypothesized that 1) a visualized public instructional communication method

will lead to improvement in subjects' knowledge, attitudes, beliefs, and behavioral intentions more than the traditional verbal method; and 2) subjects will have a more favorable attitude towards the visualized public instructional communication method than the traditional verbal method.

The first study hypothesis was not supported as the statistical tests revealed no significant difference in the effectiveness of the two public communication approaches, thereby concluding that neither of the two methods was better than the other in terms of improving subjects' knowledge, belief, attitudes, and intention to share the knowledge gained. The finding partly contradicts a closely related Colorado study's (Zimmerman et al., 2006) findings that rural mountain adults showed significantly higher knowledge gain scores in three of the four knowledge concepts examined. However, for the same study, the researchers found that the adults' urban residents did not differ significantly in knowledge scores between the two treatments. The findings for the urban residents conforms to the current study findings that neither visualized nor non-visualized knowledge mean scores were significantly different. Moreover, the study findings support claims by Large (1996) that adults have less need for both animated and still visuals. Based on the researcher's experience with traditional public meetings in Botswana, it is very rare for adults in rural areas to take notes during the meetings' deliberations, but their recall of the deliberations, often expressed through comments and questions, is quite impressive. This observation points to the possibility that adults' absorbance capacity of verbal talks is high, and hence they have less need of visuals. Another distinction between the two studies is the type of the visuals used; Zimmerman's study used animated visuals, while the current study used still photographs only. Research has shown that design

features such as the type of visual can affect the results (e.g., Large, 1996; Neto, 2006; Scheiter et al, 2006).

Board members holding executive positions and ex-officio positions had a more favorable belief towards knowledge sharing and demonstrated more likelihood to share information than additional members holding no portfolios. This finding points to the need to enhance the knowledge sharing capacities of the additional members. Often focus is only given to executive members at the expense of additional members, thereby leaving the latter group behind. The difference has potential implication for practice in that an agency that intends to use board members is faced with a choice between the more promising executive and ex-officio members (portfolio members) and non-position-holding additional members. The choice of either one may be a choice between effectiveness and ineffectiveness, though at the expense of the much needed broad-based impacts. It is, therefore, necessary that prior to using board members as agents of information diffusion, capacity needs assessments be undertaken for structures used as agents of information diffusion to identify requisite areas that need attention. The process will help bring about awareness of the agents, their needs, and the strengths. In the case of the additional members, based on the results of this study, communication skills enhancement training and self-efficacy may be necessary to make their knowledge-sharing beliefs more favorable so as to build their confidence in public communication.

The second research hypothesis that subjects will have more favorable attitudes toward the visualized public instructional communication method than the traditional verbal method was supported. The highly significant difference between visualized and traditional verbal public communication method signified more favorable attitudes or preference for the visualized method. However, the favorableness of the visualized presentation over traditional verbal

presentation did not translate into any significant outcomes. The results are consistent with several study findings from student and adult samples (Amare, 2006; Harknett & Cobane, 1997; Szabo & Hastings, 2000; Zimmerman et al., 2006). These studies generally found that while people preferred or demonstrated more favorable attitudes toward visualized presentations than non-visualized, there was no accompanying commensurate outcome in terms of performance, grades, or scores.

The finding that the oldest and the youngest age groups' overall ratings toward a communication method were higher, compared to other groups, points to the generational effects on attitudes toward communication methods. It may be the case that the youngest age group is getting acculturated to both visualized communication and the traditional verbal method, while the oldest group may rely on the experience and utility of the traditional verbal method, but at the same time see the visualized method as an innovation worth adopting. The youngest age group, considering that they are also educated, may be more used to visualized communication approaches from school and, thereby, has more favorable attitudes towards it, and is more likely to rate it highly. The oldest group may perceive it as an innovation, thereby rating it highly, compared to the traditional verbal method.

While the current study results indicated that preference for a communication method did not necessarily correlate with outcomes, the more favorable attitudes demonstrated by the youngest and oldest age groups points to the need to use combined or integrated presentation methods to promote attention. Since audience segmentation based on age may be impractical in the community setting, a combined verbal and visual method will help address the needs and communication preferences for the different age groups. Again, continued use of visualized communications may help further the acculturation process among the younger generation. This

is necessary because the natural resources/environmental issues that are often communicated to the stakeholders in local communities are becoming more complex and abstract, and hence the use of visuals may greatly aid appeal for such issues (Zimmerman et al., 2006).

Conclusions

The findings provide initial guidance to HOORC on communication approaches and methods that can be employed in communicating environmental information to local community stakeholders. While results, in terms of effectiveness, did not show significant differences between the two methods of public instructional communication examined in this study, it can be implied that it is advisable to use combined or integrated presentation methods for communicating environmental issues, since subjects showed more preference for visualized presentation over the traditional verbal method. Notwithstanding the lack of superior outcomes, other researchers have posited that use of visuals may still benefit recall and attention (Amare, 2006; Szabo & Hastings, 2000).

The study also provides guidance to environmental agencies regarding the choice of agents to be used in information diffusion campaigns. Choices may be informed by factors such as an individual's knowledge-sharing attitudes, belief towards knowledge-sharing, and demonstrated intention to share acquired knowledge. This makes understanding of factors that promote knowledge-sharing among agents necessary. However, the study also recommends that agencies should undertake knowledge-sharing capacity needs assessments with a view to providing requisite capacity enhancement based on the needs. Apart from the immediate applicability of the findings to the environment within which the HOORC is working, the study findings advance understanding and scholarly research on the response of adults to visuals, with focus in natural resources management, a scholarly field of research often neglected.

The study findings should be interpreted in the light of the study limitations. First, self-reported scale measures were used instead of more objective measures, thereby presenting a potential for social desirability bias among the subjects. Second, the use of a retrospective pretest, while it addressed the problem of response shift bias, created challenges for meeting the ANCOVA design ideal that the covariate should be measured before the intervention. Third, the study used a convenient sample of CBNRM boards from one district, representing one stakeholder only, thereby limiting the generalizability of the study findings beyond similar boards outside the district and other stakeholder groups. Future studies should focus on other stakeholder groups as well, using more objective measurements scales using the traditional pretest-posttest design and research designs with control groups.

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