Consumer Perceptions and Knowledge and Genetically Modified Organisms:
A Case Study of the Belgian Potato Event

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Abstract

It is widely known that controversy regarding genetically modified organisms (GMO) is strongest among European policymakers and public. In 2011, scientists at a large research institution in Belgium planted a field trial of GM potatoes, and on May 29, an activist group arrived at the field and uprooted the potatoes. The event resulted in scientific damage, media coverage, a court trial for defacing government property, and mixed perceptions among the public. This study assessed the Belgian potato event and determine perceptions, knowledge, and awareness of GMOs among a small sample of the Belgian public. Nine emergent themes occurred: 1) variation in GMO definitions; 2) concerns about potential economic risks; 3) Concerns About Potential Environmental and Health Risks; 4) media influence; 5) government involvement; 6) public perceptions/opinions; 7) potato event impact; 8) perception of medical biotechnology; and 9) awareness of GM food;. All respondents recognized that a GMO was genetically engineered for a specific purpose such as higher yield, lower costs, and less negative environmental impact. Respondents were more concerned with economic effects of GMOs than environmental or health risks. Respondents also expressed the need for more scientific communication. This study brings a clearer understanding of consumer perceptions of GMOs in Belgium, which can be pivotal to understand if Europe fully embraces GM technology in the future. These findings support the conclusions that informed journalists and educational campaigns about GMOs will provide the Belgian public with objective knowledge to guide GMO perceptions.

Keywords: genetically modified organism, perceptions, awareness, knowledge, Belgium.

Introduction

"Genetically modified products are products of modern biotechnology that are created by transferring a gene from one species (plant) to another in order to produce a product with a new desirable trait" (Skogstad, 2011, p. 901). Genetically modified (GM) food is one of today's most controversial biotechnology policy issues, and with global populations expected to increase by 50 percent before 2050, the development of GM foods has gained increased attention to meet food and nutritional needs (Durant & Legge, 2010).

Despite the United States' and other countries biotechnology advancements, European Union (EU) policy makers still argue over the regulation of genetically modified organisms (GMOs) into the market. Although the issue is visible on a political and social level, the slow decision-making process has caused uncertainty and controversy among the European public (Drott, Jochum, Lange, Sklerka, Vach, & van Asselt, 2013). Agricultural production risks can include environmental issues, technology experiments, and food safety matters. Many European policy makers and public consumers are concerned about GMO risks on the environment, economy and human health. "As it is contested whether GMOs constitute a risk to the environment and/or human health, scholars have pointed out that GMOs should be conceived of in terms of uncertainty" (Drott et al., 2013, p. 1123). Economic risks from introducing GMOs are another concern for European policy makers; however, previous studies show economic benefits of GMOs for farmers. Surveys gathered by Carpenter (2010) in 12 countries found that farmers received direct benefits from growing GM crops, such as increased yields.

Risk management decision-making is defined first at the democratic level; a democracy and its public policy depend on the unified stance, or opinion, of the public (Jacob & Schiffino, 2011). The lack of a unified stance between policy-makers in Belgium and the EU is directly

reflected in the opinion of the public (Jacob & Schiffino, 2011). The internal uneasiness of Belgium citizens about GMOs portrays a negative attitude toward their possible regulation (Jacob & Schiffino, 2011). The public's perception of the trustworthiness of the national and transnational governments and the large-scaled EU government—rather than fear of potential health and environmental risks—could be the main factor in resistance to GM food products. "GMO regulation is in need of adequate mechanisms ensuring that decision-makers justify and account for their behavior" (Drott et al., 2013, p. 1124). Subjective knowledge is "a person's perception of the amount of information about a product class stored in his or her memory" and objective knowledge is "the actual amount of accurate information stored in his or her memory" (Klerck & Sweeney, 2007, p. 174). Consumers relying on subjective knowledge are more prone to psychological risk when making GM food decisions than the consumers relying on objective knowledge (Klerck & Sweeney, 2007). Individuals rely upon emotion rather than fact when faced with a decision about GMOs (Durant & Legge, 2010).

Maseele and Shuurman (2008) cited survey results (Claeys et al., 2004; Devos et al., 2008; van Brabander, 2003) that found Belgian citizens' perceptions regarding biomedical biotechnology were positive, while agricultural biotechnology perceptions were controversial. Maeseele and Schuurman (2008) noted that recent and former surveys confirmed the consistent popularity of biomedical technology among Belgians and the lack of the same feelings toward agricultural biotechnology. This leads to questioning if Belgians have both an awareness for and understanding of the risks and side effects of new biomedical treatments and agricultural biotechnologies.

More than 500 million consumers are represented within the EU member states and 10.4 million of those consumers are Belgian. Since 2005, Belgium has followed the European

legislation Directive 2001/18/EC that does not ban GMOs. A member state can create a

safeguard clause to ban GMO use within its borders once approved by the European Commission

(EC), if the member state justifies specific environmental or health risks the GMO in question

poses (ECHC, n.d.a). In 2010, the EC released GM crop research results: "According to the

projects' results, there is, as of today, no scientific evidence associating GMOs with higher risks

for the environment or for food and feed safety than conventional plants and organisms" (ECPR,

2010, para. 4). Since 1982, the EC has invested over €300 million for GMO research.

 For activist groups to gain outside support, their actions must be generally accepted by

society (Schurman & Munro, 2010). Activist groups can strongly influence subjective

knowledge and negative perceptions of biotechnology through their media presence (Maeseele &

Schurrman, 2008), but Klerck and Sweeney (2007) credited the media itself for causing most of

the fear toward GMOs among consumers. As a result, the public is caught between activists and

scientists (Maeseele & Schuurman, 2008), creating confusion, tension, and ignorance. A study

by Vestal and Briers (2000) gathered information on the knowledge, attitudes and perceptions of

metropolitan journalists concerning GMOs, and found low level of knowledge about GM

technology. However, "journalists' level of acceptance of biotechnology increased among

journalists with greater perceived level of scientific knowledge" (Vestal & Briers, 2000, p. 142).

Agricultural communicators and extension educators should create an educational knowledge

base of biotechnology information that is attractive to journalists (Cartmell, Dyer & Birkenholz,

2001; Vestal & Briers, 2000). Agricultural communicators should value building relationships

with journalists to provide an accurate view of agricultural issues for communication to the

public (Kubitz, Relg, Irani & Roberts, 2012). One study showed "accusations leveled against it

[GM technology] by the mass media are not grounded in fact and these media rarely communicate the many benefits of GM foods to the public" (Klerck & Sweeney, 2007, p. 175).

Mass communication has been referred to as mass education (McQuail, 2005). In the early twentieth century, the idea that media "could be a potent force for public enlightenment, supplementing and continuing the new institutions of universal schooling, public libraries and popular education" (McQuail, 2005, p. 52) gained popularity. The functionalist theory describes the media as an outlet for communication to serve the society in relation to the environment and culture. The media functions in society include "providing information about events and conditions in society and the world" (McQuail, 2005, p. 97) and "providing support for established authority and norms" (McQuail, 2005, p. 98).

In 2011, Belgian scientists at a large research institution, in conjunction with two Belgian universities and a Flemish biotechnology institution, planted the first GM crop field trial in Belgium since 2003 – a field trial of GM potatoes engineered for increased resistance to late blight potato disease (*Phytophthora infestans)*. This group of consortium scientists created and administered the trial, aiming to "assure that the trial results would be socially relevant within a Belgian context" (de Krom, Dessein & Erbout, 2013, p. 4). On May 29, 2011 about 300 people, as part of an activist group called "Belgian Field Liberation Movement", arrived at the field in Wetteren and destroyed 15% of the trial (Kuntz, 2012). The activists proposed that 30 people would nonviolently destroy the potatoes and not resist arrest, but after a few activists were arrested, the group invaded the field (Kuntz, 2012). Prior to the event, consortium scientists and the government proposed a dialog meeting for May 7 to discuss the research with the opposing activists. The government and consortium "stressed that independent and objective scientists had been involved in designing and assessing the biosafety of the trial" (de Krom et al., 2013, p.

4), but their argument was found unacceptable and unauthoritative by the opposing activists. The event resulted in wounded police officers, scientific damage, and a court trial for defacing government property, and it did not go unnoticed in the media.

A public debate began in Flanders after the event concerning "the risks and benefits of the GM crop field trial, and on the rights and responsibilities of scientists, politicians, and the broader public in assessing and managing these" (de Krom et al., 2013, p. 2). The debate continues at both the political and social levels.

GM technology has undeniably grown at a rapid rate, yet Europe continues to remain stagnant about fully implementing the technology. The goal of this research was to identify consumer perceptions and knowledge of GMOs, and to determine if the potato event had influence on consumer beliefs, through qualitative interviews. Consumer media consumption was also examined to determine if media bias effects consumer perceptions. This study brings a clearer understanding of consumer perceptions of GMO technology in Belgium, which can be pivotal to understand if Europe fully embraces GM technology in the future.

Purpose and Objectives

The purpose of this study was to examine the Belgian potato event and determine perceptions, knowledge, and awareness of GMOs among a small sample of the Belgian public.

Two objectives guided the study:

1. Describe participants' perceptions and knowledge of GMOs and associated risks, and

2. Capture participants' perceptions of the potato event.

Methods

A qualitative study was used to measure Belgian perceptions and awareness of GMOs based on the potato event. Belgian scientists ($n = 5$), farmers ($n = 4$), general consumers ($n = 10$)

and an activist ($n = 1$) participated in individual interviews ($N = 20$), which took place from May through July 2012. A structured interview guide consisting of 20 questions was developed to guide each interview. A panel of experts ($N = 4$) with experience in agricultural communications ($n = 3$) or who served on the honors program committee ($n = 1$) reviewed the guide for face and content validity. The researcher received Internal Review Board (IRB) approval to complete this research. The guided questions were asked to each participant during interviews and were structured to encourage a conversational tone for the participant's comfort and ability to answer honestly, allowing for depth and opportunity for expansion in each participant's response. Participants were selected through the use of snowball sampling, with the first participants recommending other scientists, farmers, or willing participants of other professions represented in the general consumer category. Interviews were recorded with a voice recorder and loaded into NVIVO 9 software for transcription. Physical notes were also taken and transcribed to assist in analyzing findings. To follow the constant comparative method, coding of the content in its original context lead to identification of emergent themes (Creswell, 1998; Strauss & Corbin, 1998). Trustworthiness and dependability were established through the use of purposive sampling, interview notes, transcription coding, thick description, and the NVIVO 9 audit trail. Credibility of the findings in this study was supported by the use of participants' reflections of the potato event and GMOs in Belgium.

Limitations to the study could have occurred due to the language barrier between the researcher and the study participants. Interviews were conducted in English, which is a second or third language to the Flemish-speaking Belgians. Google Translate was heavily relied upon when reviewing some literature and media articles to support this study; however, it was never found as unreliable. A translator assisted in interviews ($n = 3$) (R8, R9, R10) where the farmers

were not confident or fluent in an English interview. Member checks were not conducted

because of language and geographical barriers. The shortest interview was nine minutes and the

longest was 86 minutes, with varying times in between. Interviews took place in comfortable

environments usually chosen by each participant, including public cafés and respondents' homes

or offices. All interviews took place in Belgium, but travel outside of Melle was required for

interviews ($n = 5$) to Gent and Brussels. The translated interviews ($N = 3$) took place outside of

Brussels in the respondents' homes. Respondent professions consisted of scientists (R1, R2, R3,

R5, R7), farmers (R6, R8, R9, R10), general consumers (R11, R12, R13, R14, R15, R16, R17,

R18, R19, R20), and activist (R4).

Results

Key words, phrases, and opinions stated by the respondents during interviews lead to

identification of emergent themes. Nine emergent themes occurred: 1) variation in GMO

definitions; 2) concerns about potential economic risks; 3) concerns about potential

environmental and health risks; 4) media influence; 5) government involvement/political

preferences; 6) opinion of public perceptions; 7) potato event impact; 8) perception of medical

biotechnology; and 9) awareness of GM food. Respondents are referred to as R1-R20 in the

emergent themes listed below.

GMO Definitions

Interview questions were open-ended to encourage conversation, but one question

generated similar responses from all 20 respondents. When asked to define a GMO, every

respondent recognized that a GMO was a result of genetic engineering that could not happen in

nature. The respondents also said that the purpose for changing, transferring, or replacing DNA

between organisms was done for a purpose such as higher yield, lower costs, and less negative

environmental impact. Respondents used key words such as "change genetic code," "modify DNA," "manipulated" and "cannot happen in nature." Although the respondents had different levels of understanding regarding the definition of a GMO, each understood that it was a scientific technique that introduced foreign genes into the DNA of another organism.

Concerns About Potential Economic Risks

Although respondents recognized the argument for potential positive economic effects of GMOs for farmers and even consumers, many expressed that private industry profit was the driving force behind the science. Respondents often remarked that industry profit was not the issue, but that industry monopoly was something to be feared. Although no questions concerning Monsanto were in the questionnaire, the company was mentioned by 14 respondents, nearly always used as the respondent's example of economic concerns and impact on farmers. When one respondent (R8, farmer) explained skepticism toward Monsanto's presence in Europe, the respondent remarked, "I would prefer to see small companies giving local employment on foods sold locally, rather than transported halfway around the world." Many respondents noted that the potential negative economic impacts such as monopolistic corporations were the driving force behind the activist actions. However, the activist involved in the GM-potato uprooting (R4) never addressed any economic concerns, including concerns regarding multinational corporations and monopolies. Notably, not all respondents were negative about private industry profit. "I don't see why they shouldn't make a profit. An industry is made to make a profit otherwise it cannot survive. Personally, I have no objection against it. The problem, of course, is the monopoly" (R7, scientist). However, one respondent (R14, general consumer) said monopolistic corporations have the most influence in every industry because, "it's just how the world is turning, you get to one thing and that's money." The idea that companies will

eventually control government regulation decisions concerning GMOs was frequently mentioned among respondents.

Concerns About Potential Environmental and Health Risks

Environmental concerns were also identified as an emergent theme, with seven respondents expressing concern that GMOs would have a negative impact on the environment, while eight respondents mentioned the positive environmental impacts from GMO usage. However, some respondents recognized that GMOs affect more than just the environment – and that scientists understand the environment on a high level. One respondent (R8, farmer) stated, "The scientists are a lot further than we know as the big public. So I don't expect problems with the environment if GM potatoes are introduced." The respondent (R1, scientist) involved in the GM potato field trial said the technology could benefit the environment. "We do our best for our society. We work on sustainable agriculture because we think that this technology can be of benefit for agriculture and also for [the] environment" (R1, scientist). Only one respondent (R17) expressed concern for health risks, by stating that he/she did not know if any health effects existed with GMOs. Five respondents offered that they were not concerned about health effects from GM foods. One respondent (R15, general consumer) said there is no reason to believe scientists would try or allow a GM food product to harm the health of humans.

Media Influence

Although respondents said the activists had no influence through media, respondents said the media could influence the general public's view of GMOs based on how the issue is presented. While eight respondents reported the media was neutral and gave exposure to both sides equally, some respondents claimed the media only reported the event as a story rather than an issue. "I think if it hadn't been for the destruction of the fields no one would have talked

about it" (R13, general consumer). Another respondent (R1, scientist) remarked: "Journalists want to bring sensation. People have educated themselves a bit, but that is limited of course." Notably, the respondent directly involved with GMO studies (R1, scientist) said the media portrayed the news in a neutral way, while the activist (R4, activist) said the media was very biased against the activists. Some respondents felt the news was biased toward the activists or the researchers—rather than for or against GMOs. One farmer (R9) said the respondent found the biggest problem with information from the media is because "they are not waiting for the whole picture" instead of fact-checking before informing the public. A common remark among respondents was that the media's intent is to bring a story, or sensation, and this type of communication should not be trusted to present complete, factual information. "We need deep journalism, and that is missing. And… as much [many] views as possible… to give the facts so they [public] can form all their opinions, not like sensation. (R17, general consumer)

Government Involvement/Political Preferences

The views on government involvement and opinions on GMOs differed among respondents. One respondent (R6, farmer) said, "If the government is pro, the majority will be pro. If the government is not sure, then I think the people is [are] not sure." Another respondent expressed there is a valid argument that the public needs more effective communication with "things we are in more doubt about, like GMOs" (R16, general consumer). Respondents had mixed views on if GMO issues should be completely dealt with at the EU government level or member state levels. Respondents did not know how the government addresses GMO issues. "I've got no idea what the government thinks about it or how they handle the whole thing" (R13, general consumer). The desire for transparency among policy makers and their respective stances on GMO issues was communicated by respondents. "Europe is opposing tons of laws. It

does not really communicate to the people. So there is a certain need for information, which isn't [given] at the moment" (R17, general consumer). Respondents noted that slow decision-making concerning GMO regulation was due to the challenge of finding a consensus between the Flemish government, Belgian government, and EC, and that the EU's anti-GMO stance is hindering scientific progress.

> There's kind of a double-speech about the government who says, 'GMOs are okay,' and the EU who says, 'No, the GMOs do not enter.' Who is wrong? Who is right? I would say that the EU and European Commission has more respect from the general public than the Flemish government and institutions, but I think people are just not connected with food—they don't know where their food comes from. (R2, scientist)

Opinion of Public Perceptions

Respondents frequently referred to the general public as being confused, uninformed, and indifferent in regard to GM decisions. According to the respondents, because the science of GMOs is sometimes difficult to understand, general consumers are naturally confused, and thus resort to uncertainty and fear of GM food. As a scientist, one respondent had another view on opposition against GM food trials. "The problem that I discovered in my career is that people that are against something are often using the wrong argument" (R1, scientist). This respondent (R1, scientist) attributed the public's opinion to emotion. "So when you ask if the public is in favor, against or afraid: it is emotion. It's only emotion" (R1, scientist). Respondents noted that the public does not have an opinion on GM foods because the major disconnect between the public and the food system created indifference among consumers.

Potato Event Impact

Half of the respondents said the FLM activists should not have destroyed scientific research or trespassed private property to destroy the research. "They're going too far. It's not because you are against it that you have to destroy it. You can share your idea with other people,

but destroying it is a step too far" (R3, scientist). Most respondents attributed the reason for the

activists' actions to an economical disconnect, and one respondent (R8, farmer) thought the

activist actions were against globalization instead of GMOs. When asked for the motive of

destroying the field trial, one respondent (R4, activist) was unable to give any reason other than a

personal duty to activism for destroying the field. "I helped with a lot of actions in different

ways. You know, I try to be an all-around activist. I have a whole network of people and it

interests me a lot" (R4, activist). This respondent identified as a participant of the destruction:

"Yes, I did participate. I was one of the people to get inside the field and actually tear up some

potatoes" (R4, activist). The respondent (R4, activist) also declared that he/she knew taking

action was breaking the law for trespassing private property and destroying scientific research,

and that he/she did not have any objections to GM studies.

> Personally, I have no problem with GM studies. I think biotechnology is one of
> the most interesting study fields at this moment. I think it's just great to see how
> life works and how evolution and genetics work. And wow, why not spend a lot
> of time and money and people on the study of it? But the introduction in our
> ecosystem and on our plates – that is the political discussion for me. (R4, activist)

Respondents offered alternative ways the activist should have presented their ideas, such

as opinion pieces in newspapers, having discussions with scientists, and "achieving something in

their lives and not make it a goal to break down someone else's work" (R8, farmer).

Medical Biotechnology

Eight respondents recognized medical biotechnology as a form of genetic modification,

despite it being more culturally acceptable than GM food. "People say, 'I don't want GM,' but

once you are ill and need insulin or a vaccine, then normally you won't say no" (R1, scientist).

When discussing awareness of genetically engineered food and medicines, one respondent (R14,

general consumer) answered, "I think they're more aware of food, but when they're sick they

just get the medicines and don't ask. It's just the next step. I think they say, 'It's going to be ok because the doctor gave it to me.'" One respondent (R20, general consumer) expressed concern about the use of biotechnology and how it can be easily abused. This respondent's experience working in a hospital caused question of the long-term effects of medical equipment with radiation techniques. "I think they do a lot of examinations too much. They are not necessary. It's easy; it's easy money for the doctors… But I don't really believe that's the good way to go" (R20, general consumer).

Some respondents remarked that existing alternatives to GM food is what creates skepticism, while there are not existing alternatives to medicines for treating illnesses. Four respondents did not recognize medical biotechnology as genetically modified. One respondent (R19, general consumer) expressed that open communication between the doctor and patient made medical biotechnology safer than agricultural biotechnology and was informative to the consumer.

Awareness of GM Food

Some respondents discussed awareness of potential present GM food in the current market. Respondents discussed the possibility of already consuming GM foods, along with the possibility of GM foods being introduced into the food chain without notifying citizens. "Because it will become a necessity. I think we are already eating them now. I don't think it's dangerous to eat them" (R11, general consumer). Two respondents (R1, R17) mentioned noticing GM-free labels on food packages, and how these labels cause confusion for consumers and manipulate the market.

Conclusions and Recommendations

The findings of this study achieve the objectives to assess participants' perceptions and knowledge of GMOs and associated risks and to determine participants' perceptions of the potato event. Participant level of understanding varied when defining a GMO. However, all respondents had an accurate idea of what a GMO was, even if they could not fully describe how crops were scientifically generated. All responses referred to an unnatural, controlled change in genetic code. This allowed perceptions to be gathered with support that previous knowledge of a GMO was already established.

Respondents showed much skepticism about the economic effects of GMOs. However, according to Drott et al. (2013), scholars recommended regarding GMOs as uncertain because of environmental and health risks, without mention of economic risks. Many respondents in this study expressed fear and uncertainty about monopolistic corporations, instead of the farmers, receiving all the profit from GMOs. Carpenter (2010) administered surveys finding GM crops benefitted farmers with increased yields, productivity, and efficiency. Twelve respondents expressed skepticism of effects GM food would have on the market, particularly on smaller companies providing local employment. One respondent was especially concerned on the impact GMOs would have on the market competition for small farmers. However, benefits not expressed in the market value price are not always seen by consumers, even if valued by farmers. The peer-reviewed surveys by Carpenter (2010) indicated that "farmers may value intangible benefits of GM insect-tolerant crops," such as cost savings in equipment, labor, and handling, and increased safety for human health and the environment (p. 320).

Concerns regarding environmental and health effects were low. The EU's outright ban clause declares for a member state to enforce an outright ban, it must justify why the GMO

presents an environmental or human health risk (ECHC, n.d.b.). According to the Belgian

Biosafety Server (2009), GMO legislation serves to protect citizen's health and the environment.

However, only one respondent expressed health concerns. Respondent concerns for health and

environmental risks do not support the claim by Drott et al. (2013) that scholars recommend

uncertainty toward GMOs due to a risk to the environment and/or human health. The low

concerns of environmental and health effects agree with the 2010 EU press release: "There is no

scientific evidence associating GMOs with higher risks for the environment or for food and feed

safety than conventional plants and organisms" (ECPR, 2010, para. 4). Eight respondents

acknowledged positive potential environmental effects from GMO usage, including less use of

chemical control mechanisms, such as pesticides.

Klerck and Sweeney (2007) found that the mass media rarely communicated GM food

benefits to the public, but instead made nonfactual accusations against GM technology. In this

study, four respondents found the media to focus on sensation regarding the potato event, instead

of fact. Vestal and Briers (2000) reported that agricultural communicators and extension

educators should create an educational environment of biotechnology information that is

attractive to journalists. This source of information could have an effect on the reporting,

leading to less sensation and more information. Five respondents reported that the media was

biased when covering the potato event, while eight respondents said the media does influence the

general public's perception of GMOs. With an information source like the one recommended by

Vestal and Briers (2000), the bias view of consumers on journalistic reporting could be reduced

or eliminated.

Media coverage of the potato event supports the functionalist theory, which portrays the

media as the communication outlet for society to learn about the environment and culture

through reporting about events and conditions (McQuail, 2005). Although responses were split about media reporting the potato event biased or neutral, the opposition against the activists was rooted in the disapproving responses toward the activists' violent actions. This supports the functionalist theory claim that the media "provides support for established authority and norms" (McQuail, 2005, p. 98).

The idea that uncertainty among the public is a reflection of uncertainty among the different levels of EU government (Drott et al., 2013; Jacob & Schiffino, 2011) was supported by the findings of this study. Confusion among respondents about the government's stand on GM regulation support the lack of stability among the EU policy-makers concerning GM technology discussed by Drott et al. (2013). Respondents credited the governments for causing confusion and contradiction, with the Belgian government approving GMOs and the EU rejecting GMOs. However, although the EU has made GMO entry difficult, it has not banned the entrance completely. Rather, the Belgian government denied field trials after 2003 until the potato event in 2011. The findings in this study support the idea that the indecisive viewpoint of GM regulation on different governmental levels is hindering Belgian and European agricultural advancements (de Krom et al., 2013; Jacob & Schiffino, 2011).

One respondent (R4, activist) expressed that because of insecurity toward introducing GM crops into the ecosystem, GM regulation should be a political discussion. Although only one activist was interviewed, the response does not support the claim by Durant and Legge (2010) that anti-GM food activists are primarily concerned about health risks. The respondent's (R4, activist) claim to being "an all-around activist" and having "no problem with GM studies" and support of spending "a lot of time and money and people on the study of it" supports strong

consideration of another respondent's (R8, farmer) opinion that the activists were "not just against GMOs only," but were against globalization.

Ten respondents expressed that the activists were wrong to destroy scientific research/property, but also stated that the social movement of the activists should have been carried out differently, through public discussions and opinion pieces in newspapers. This supports findings by Schurman and Munro (2010) that the actions must be generally accepted by society to gain outside support. No respondent reported they were convinced by the activists' actions that GMOs were bad, rather, the respondents focused on the disrespectful actions the activists performed. The violent attitude and actions pointed the attention away from the GM field trial and toward the destruction.

Jacob and Schiffino (2011) found that Belgian citizen's internal uneasiness about GMOs caused negative concerns toward GMO regulation. Most respondents identified the general public's perception of GMOs as negative, confused, uninformed and indifferent. One respondent (R1, scientist) stated that the public was not for, against, or afraid of GMOs, because it is all based upon emotion. This response directly supports Durant and Legge's (2010) claim that individuals make GMO decisions based on emotion rather than fact.

Many respondents explained that the general public was uninformed, so they could not fully understand or support the science. Responses indicate that the public generally trusts the scientists performing the research, but skepticism lies in the companies funding the research. Other responses support the uninformed public idea by claiming that the public is simply not connected with their food. Respondents were likely to be more supportive of medical biotechnology than agricultural biotechnology, supporting survey results cited by Maeseele and Schuurman (2008). Many respondents were unable to give their opinion on the relation of

agricultural biotechnology and medical biotechnology. Interestingly, some respondents did not consider the two types of biotechnology on the same level by classifying medicine as a solution and GM crops as an alternative.

Although all respondents had an accurate definition of a GMO, there was confusion about GMO effects. A key recommendation for further research is to apply this study to a larger sampling group to determine subjective versus objective knowledge. Klerck and Sweeney (2007) found that consumers relying on subjective knowledge were more prone to performance and psychological risk when making decisions regarding GM food. The same study also attributed subjective knowledge to media influence and bias (Klerck & Sweeney, 2007). The participants expressed the Belgian general public is uninformed and cannot support or understand the scientific experiments because they are only presented in a high scientific level, unsuited for the general consumer. The findings from this study present recommendations directly from the respondents about making information easier to access and understand, while still maintaining scientific objectivity. For consumers to possess objective knowledge over subjective knowledge, objective knowledge must be disseminated. "The overall findings thus suggest the need for cooperation among government, scientific institutions, and the food industry to foster effective communication strategies that increase consumers' objective knowledge, reduce their risk perceptions, and encourage consumer adoptions of GM technology" (Klerck & Sweeney, 2007, p. 171). This recommendation is linked to the strong support for government cooperation, stability, and transparency. This research supports finding and recommendations noted in the Klerck and Sweeney (2007) and Drott et al. (2013) research.

One recommended method for presenting information is an educational campaign implemented in Belgium to provide consumers with objective knowledge. Further research

could measure a larger sample's perceptions, knowledge and behavior, incorporate a campaign

with objective information—including the economic benefits of GMOs and research proving

they are not harmful to health or the environment, and then measure any change in consumer

perceptions, knowledge, and behavior. Another method is roundtable discussions, where

scientists, policy-makers, activists, journalists, and consumers meet and discuss the benefits and

concerns of GMOs. Vestal and Briers (2000) and Cartmell et al. (2001) expressed the need for

an educational environment provided by agricultural communicators to provide objective

information on GMOs and agricultural issues to journalists. The influence such a program

would have on journalists could eliminate activist influence on the media and promote objective

knowledge among the Belgian public. It is important that these communication

recommendations explain the technology and its purposes to advance the agricultural industry

against opposition (Kubitz et al., 2012). "Many problems in this world are not caused by the use

or misuse of technology. They are mostly caused by the humans themselves" (R17, general

consumer). By receiving and processing objective knowledge about GMOs, consumers will feel

less indecisive or fearful, and more informed and empowered when making decisions regarding

GMOs.

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Reaching Millennials: Implications for Advertisers of Competitive

Sporting Events that Use Animals

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Reaching Millennials: Implications for Advertisers of Competitive

Sporting Events that Use Animals

ABSTRACT

The purpose of this mixed method, multi-modal case study was to identify the most acceptable video images of animals to use when advertising competitive sporting events. Data were collected from college students at Arizona State University, California State University-Fresno, Texas A&M University, University of California-Berkeley, University of California-San Diego, and University of Texas. This study investigated which sporting events are most acceptable among members of the Millennial generation, if there were differences in responses based on Millennials' gender, and if perceptions differed among rodeo and non-rodeo events. Based on our results, gender did not influence Millennials' perceptions of the use and treatment of animals in 16 competitive sporting events presented in this study. However, non-rodeo events were perceived more positively than rodeo events. Of the eight rodeo events, barrel racing was perceived as most acceptable and the event in which the animal was treated most kindly. Team roping was perceived as least acceptable and the event in which the animals were treated least kindly. The results of this study may be used to improve advertising strategies for rodeo and non-rodeo events by selecting images that are most acceptable to Millennials. Further research may be conducted to qualitatively assess Millennials' perceptions of animals used for competitive sporting events to improve advertising strategies.

Keywords: Animal Welfare, Rodeo, Advertising, Millennials, and Target Audience

INTRODUCTION

Animal welfare

Researchers have suggested there are various levels of animal welfare (Coleman 2008).
However, there is a lack of literature investigating the perceptions of animal welfare in
competitive sporting events. A thorough understanding of how animals are perceived in sports
may lead to improved marketing and advertising strategies for rodeo and non-rodeo events.

Animal welfare is ensuring that an animal's physical state, mental state, and ability to fulfill
natural needs and desires are considered and attended to (Bousfield & Brown, 2010). According
to Coleman (2008), across all of the animal sectors for which there are data, there clearly is a
widespread belief that animal welfare is important. Additionally, animal use has been the
subject of many empirical studies. Research exists for animals used in research and food
production, but little is known about the perceptions of animals used for competitive sporting
events. For example, Driscoll (1992) concluded that pet owners considered animal research as
less acceptable than those who did not own pets. Although previous studies have focused on
various issues of animal welfare, no obvious studies have solely described the public's
perception of animals being used in rodeo events and how these perceptions may influence
advertising, specifically image selection, in the rodeo industry.

According to the International Finance Corporation (2006), higher animal welfare standards are
considered to be a prerequisite to enhancing business efficiency, profitability, satisfying internal
markets, and meeting consumer expectations. Animal welfare policies are implemented in the
rodeo industry as recommended by the American Veterinary Medical Association (PRCA,

2000). Beyond general treatment of animals, cowboys cannot achieve high scores without peak performance from their "animal athlete" counterparts (PRCA, n.d.). Additionally, the PRCA has an Animal Welfare Committee to review all PRCA animal-related policies and issues (PRCA, 2000, p. 13).

Rodeo advertising

The advertising of rodeos is a potentially difficult task, and failure is possible. Failure can be associated with one or more of the following reasons: 1) lack of interest in or understanding of customers; 2) improper blending of product, place, price, and promotion; 3) lack of understanding of or adjustment to the marketing environment (Perreault, Cannon, & McCarthy, 2009).

A thorough understanding of customers allows companies to more effectively communicate (Injazz & Popovich, 2003). Better communication will allow higher retention rates and, therefore, allow a company to build a relationship with their customer (Injazz & Popovich, 2003). By studying perceptions surrounding animals used in competitive sporting events, companies and marketers may be able to better target the Millennial generation. It is important to note there is no apparent literature that analyzes rodeo advertising or building consumer relationships within the rodeo industry.

In addition to understanding customers, marketing strategies must include the proper blending of the "Four Ps" – product, place, price, and promotion (Perreault et al., 2009). Marketers must produce *products* desired by consumers, make them available at a *place* that is easily accessible

at an attractive *price*, and use *promotion* to communicate the advantages of the product over the competition (Yudelson, 1999). Marketers may use the "Four Ps" as a basic framework to market the entertainment derived from sports and to decrease the risk of business failure.

Lastly, to prevent business failure, marketers should strive to understand and adjust to the marketing environment. In recent years, the marketing environment has adapted to include members of the Millennial generation. According to Nielsen (2014), the Millennial generation makes up 24% of the U.S. population. Millennials are technologically connected and will often endorse brands they can personally relate to (Nielsen, 2014). No apparent studies have investigated Millennials' perceptions of animals in competitive sporting events. Therefore, there is a void in understanding the most effective strategies in the rodeo industry for targeting Millennials.

In addition to targeting the Millennial generation, marketers should also consider consumer gender. Gender reportedly plays a role in attitudes toward animal use. Mathews and Herzog (1997) studied the personalities of 99 undergraduates from West Carolina University and found women generally had more positive attitudes toward animals than men did. In 2007, Herzog conducted further research on gender differences in human-animal interactions and found that in 31 studies, women were more sympathetic to the treatment of animals than men. It is clear that women represent a substantial grouping in the community with regard to attitudes about animal welfare (Karniol, Gabay, Ochion, & Harari, 1998).

Moreover, women make up about 51% of the nearly four million people who attend Professional Rodeo Cowboy Association sanctioned rodeos across the United States (PRCA, n.d.). Each year, more than 600 rodeos are sanctioned by the PRCA (PRCA, n.d.). Most of the events are held in the Western United States (Daneshvary, Schwer, & Rickman, 1993). PRCA's broad audience includes several generations and, as a group, are demographically similar to NASCAR fans (PRCA, n.d.). As NASCAR has grown in popularity, its fan demographic has become diverse and although formerly concentrated in the Southeastern United States, it has spread to different areas of the country (Hugenberg & Hugenberg, 2008). Although some generations' demographics overlap, it is important to understand how the generations differ. Understanding these differences could help advertisers target each generation, which will lead to more effective advertising strategies.

PURPOSE OF THE STUDY

The purpose of this mixed method, multi-modal case study was to describe Millennial college students' perceptions of acceptable animal images in advertising for competitive sporting events. Developing an empirical understanding of Millennials' perception of animals in competitive sporting events will fill a void in literature and may lead to a more comprehensive understanding of rodeo perceptions. Moreover, an investigation of what Millennials considers to be acceptable images may lead to improvements in rodeo advertising.

Research questions and objectives

RQ1: Does Millennials' gender affect how individuals perceive the use of animals in competitive sporting events?

RO1.1: Describe Millennials' perceptions of the use of animals in competitive sporting events by gender.

RO1.2: Compare Millennials' perceptions of the use of animals in competitive sporting events by gender.

RQ2: Do Millennials' perceptions of the use of animals differ among various competitive sporting events?

RO2.1: Describe Millennials' perceptions of the use of animals in rodeo events and non-rodeo events.

RO2.2: Compare Millennials' perceptions of use of animals in rodeo events and non-rodeo events.

METHOD

Participant characteristics

According to Nielsen (2014), the Millennial generation makes up 24% of the U.S. population. "And while many are still climbing the income ladder, this group's size and age range highlights its long-term purchase power" (Nielsen, 2014). For this reason, we chose the Millennial generation as the sample for this study. A convenience sample of 177 participants were included in this study (50.85% male, 49.15% female). The target population for this study included students from Arizona State University, California State University-Fresno, Texas A&M University, University of California-Berkeley, University of California-San Diego, and University of Texas. Only members of the Millennial generation were included in the sample for this study. Table 1 breaks down the sample population by Millennial gender for each

university. Male and female participants were closely represented at each university. Of the six

universities, the largest sample was from University of Texas (28.3%).

Table 1
Distribution of participants

	Male		Female		Total*	
	f	%	*f*	%	*f*	%
University of Texas	26	29.0	24	27.6	50	28.3
Texas A&M University	20	22.2	18	20.7	38	21.5
Arizona State University	12	13.3	13	14.9	25	14.1
University of California, San Diego	10	11.1	12	13.8	22	12.4
California State University, Fresno	4	4.4	8	9.2	12	6.8
University of California, Berkeley	18	20.0	12	13.8	30	16.9
Total**	90	100.0	87	100.0	177	99.9

Note. * Column totals are noted for each university. **Row totals are noted for gender and total.

Design

This case study used a cross-sectional design to describe Millennials' perceptions of the use and

treatment of animals in competitive sporting events. Data were collected using a mixed-method,

multimodal approach. This study was based on two independent variables divided into two

scales of dependency. It is important to note this study showed the range of perceptions between

the independent variables.

> *Dependent variables:*
> - Acceptability for animals to be used in sporting events

- Belief that animals are being treated kindly in sporting events

Independent variables:

- Millennial Gender

- Rodeo and non-rodeo events (*Event Type*)

Instrumentation

As part of a larger mixed-method, multimodal case study, this study focused on the quantitative strand. Data for this study were collected using paper questionnaires and electronic media (video clips). The parts of the questionnaire applicable to this study included the following sections:

1. In the first section of the questionnaire, a series of 5-point Likert scales (1 = Strongly Disagree to 5 = Strongly Agree) were used to measure participant reactions when shown a series of video clips. Each video clip contained a different competitive sporting event involving an animal (e.g., bull riding, mutton bustin', dock dogs). For each video clip, participants selected the option (1 = Strongly Disagree to 5 = Strongly Agree) that best described their beliefs toward the following statements:

   - I believe it is completely acceptable for animals to be used in this event.

   - Animals in this event are being treated kindly

2. The last section of the questionnaire consisted of six demographic questions asking each participant's classification (freshman, sophomore, junior, senior, graduate student), age, zip code, gender, race, and annual family household income.

To estimate the reliability of the questionnaire, we pilot tested the instrument on the Texas A&M University campus. The questionnaire used in the pilot test was double-sided and consisted of the scales participants used to measure their reaction to the video clips (section one). The demographic section of the questionnaire (section two) was not added until after the pilot testing of the instrument because the questions were not considered to be summatable items.

Video selection

Another component of the larger study involved a content analysis to select videos depicting the use of animals in competitive sporting events. Because of the number of competitive sporting events that include the use of animals, only events that are widely recognized by the general public were included in this study (e.g., bull riding, horse racing, and dog sledding). After choosing the events, we searched publically accessible video clips on YouTube. Once the videos clips were chosen, we used Adobe® Premier Pro CS6, a video editing software, to continuously stream the four to eight second video clips in one video. Each video clip demonstrated the basic concept of each sporting event under typical conditions.

As each clip played, the video number was displayed on the bottom of the iPad screen and corresponded to the video number on the questionnaire to prevent confusion. Following each clip, a screen stating "Please answer the questions for video (number)" appeared for 15 seconds, allowing the participant time to respond to the two corresponding questions listed on the paper questionnaire. Participants who were familiar with iPads were allowed the opportunity to skip

the 15 second pause. Therefore, in some cases the participant did not use the entire 15 second pause and proceeded to the next question.

In the pilot study, 16 video clips were tested. Based on feedback from the participants, we decided to reduce the number of video clips included in the questionnaire by dividing it into two series with 10 video clips each. Of the 10 clips, four remained constant in both video series for a basis of comparison. Based on the results of the pilot study data, we selected two clips that were perceived as most negative (bull riding and calf roping) and two clips that were perceived as most positive (dock dogs and pig racing). We randomly assigned the remaining videos to one of the two series (see Table 2) with the assumption that the middle range events would have comparable reactions if the most extreme events do. To test this assumption, we used t-tests to compare the mean scores of four videos common to both series (bull riding, calf roping, dock dogs, and pig racing). A Bonferroni correction was used to adjust the alpha value for multiple comparisons (inflated alpha). Subsequently, there were no significant differences ($p < 0.01$).

Table 2
Video series breakdown

	Video Series 1	Video Series 2
Clip 1	Bull riding	Bull riding
Clip 2	Horse racing	Dog racing
Clip 3	Bareback riding	Saddle bronc
Clip 4	Dock dogs	Dock dogs
Clip 5	Mutton bustin'	Steer wrestling
Clip 6	Dog agility	Dog sledding
Clip 7	Calf roping	Calf roping
Clip 8	Barrel racing	Cross country eventing
Clip 9	Team roping	Tie-down roping
Clip 10	Pig racing	Pig racing

Validity and reliability

For this study, inter-rater agreement (reliability) was assessed using kappa (κ) statistics. To test

the causal impact of the independent variables on the dependent variables, we created a

questionnaire consisting of 20 items with corresponding 5-point Likert scales (1 = Strongly

Disagree to 5 = Strongly Agree). Pilot test data were entered into Microsoft Excel and then

imported into IBM® SPSS® Statistics version 21.0 for analysis. Based on the guidelines from

Altman (1999), and adapted from Landis & Koch (1977), a κ of .743 represented a substantial

strength of agreement. Furthermore, because $p < .001$, the κ coefficient is statistically

significantly different from zero.

RESULTS

Data analyses

We analyzed the data using IBM® SPSS® Statistics version 21.0 and followed the multivariate analysis procedures noted by Tabachnick and Fidell (2013). Descriptive statistics (Min, Max, *M*, *SD*) were calculated for the dependent variables in RO1.1 and RO1.2. MANOVA, or multivatiate analysis of variance, was used to address RO1.1 and RO1.2 of by comparing the summated means (acceptability and treatment) by Millennial gender. For the MANOVA, the Hotelling-Lawley trace (Hotelling's T^2) statistic was used because it is considered the most robust when comparing two equal groups (Field, 2009). Two paired-samples *t*-tests were used to address RO2.1 and RO2.2 by comparing the summated means (acceptability and treatment) by event type (rodeo events vs. non-rodeo events). Bonferroni correction was used to adjust the alpha value for multiple comparisons (inflated alpha). Subsequently, there were no significant differences ($p < 0.025$). Cohen's *d* was calculated and reported as an indicator of effect size.

Research objective 1.1

The purpose of the first research objective was to describe how each gender perceived the use of animals in competitive sporting events. As depicted in Tables 3 and 4, neither gender displayed a positive or negative reaction to the events depicted in the study. The sport of cross country eventing was the most positively perceived event for female participants. For both the question based on acceptability and the question based on treatment, female participants responded more positively than male participants. However, when the events are separated into rodeo events and non-rodeo events, the mean scores are more telling of a division.

Results for individual events are listed Table 3 by question. When interpreting mean scores, it is important to note "3.0" is a "neutral" or "I am indifferent" score; whereas, "1.0" was the most negative reaction and "5.0" was the most positive reaction.

Table 3

Acceptable for animals to be used in this event

Event	Male				Female			
	Min	Max	Mean	*SD*	Min	Max	Mean	*SD*
Bareback Riding	1	5	2.23	1.14	1	5	2.38	1.22
Barrel Racing	1	5	3.34	1.00	1	5	3.84	1.14
Bull Riding	1	5	2.59	1.26	1	5	2.57	1.20
Dock Dogs	1	5	3.78	1.11	1	5	3.86	1.13
Dog Agility	1	5	3.74	1.07	1	5	3.62	1.31
Dog Racing	1	5	3.39	1.02	1	5	3.37	1.30
Dog Sledding	1	5	3.60	1.04	1	5	3.55	1.34
Eventing	1	5	3.57	1.01	1	5	4.05	1.10
Horse Racing	1	5	3.45	1.12	1	5	3.39	1.24
Mutton Bustin'	1	5	2.63	1.22	1	5	2.11	1.37
Pig Racing	1	5	1.90	1.15	1	5	1.63	1.04
Saddle Bronc	1	5	2.42	1.24	1	5	2.33	1.21
Steer Wrestling	1	5	2.51	1.13	1	5	1.81	1.20
Team Roping	1	5	1.76	1.04	1	5	1.71	1.16
Tie-Down Roping	1	5	1.94	1.17	1	5	1.82	1.15

Scale. 1 = Strongly Disagree to 5 = Strongly Agree

Table 4

Animals in this event are being treated kindly

Event	Male				Female			
	Min	Max	Mean	*SD*	Min	Max	Mean	*SD*
Bareback Riding	1	5	2.14	1.06	1	5	2.20	1.06
Barrel Racing	1	5	3.26	1.09	1	5	3.73	1.20
Bull Riding	1	5	2.29	1.18	1	5	2.25	1.16
Dock Dogs	1	5	3.70	1.16	1	5	3.83	1.15
Dog Agility	1	5	3.59	1.14	1	5	3.58	1.34
Dog Racing	1	5	3.29	1.07	1	5	3.28	1.32
Dog Sledding	1	5	3.39	1.08	1	5	3.48	1.36
Eventing	1	5	3.48	1.05	1	5	3.95	1.23
Horse Racing	1	5	3.28	1.14	1	5	3.24	1.25
Mutton Bustin'	1	5	2.48	1.12	1	5	1.97	1.24
Pig Racing	1	5	1.74	0.97	1	4	1.43	0.74
Saddle Bronc Riding	1	5	2.19	1.11	1	5	2.22	1.11
Steer Wrestling	1	5	2.25	1.11	1	5	1.64	0.97
Team Roping	1	5	1.66	0.89	1	4	1.46	0.83
Tie-Down Roping	1	5	1.73	1.08	1	5	1.58	0.92

Scale. 1 = Strongly Disagree to 5 = Strongly Agree

Research objective 1.2

The purpose of RO1.2 was to compare the differences between each gender's perceptions of the use of animals in competitive sporting events. A MANOVA was used compare the summated means (acceptability and treatment) by gender. Box's test of equality of covariance was not significant ($p = .146$), which was an indicator that the assumption of equality of covariance was violated. Results of the MANOVA indicated no significant effect of gender on individuals' perception of the use of animals in competitive sporting events: $T^2 = .007$; F (2, 191) = 0.625; $p = .536$; $1 - \beta = .154$).

Research objective 2.1

The purpose of RO2.1 was to describe the perceptions of animals used in rodeo and non-rodeo events. As depicted in Tables 5 and 6, the sporting events were divided into two groups, rodeo

events and non-rodeo events. On average, participants viewed animals competing in rodeo events as "less acceptable" than animals competing in non-rodeo events (Tables 5 and 6). Looking at the individual events, there are a few points that stand out. For example, barrel racing was the rodeo event that was perceived as most positively, based off its acceptability and treatment ratings. Although the mean scores associated with acceptability ($M = 3.65$; $SD = 1.10$) and treatment ($M = 3.54$; $SD = 1.17$) were considered "neutral," when compared to the mean scores of other rodeo events, barrel racing was the most widely accepted. Additionally, team roping had an associated mean of 1.80 ($SD = 1.15$) and was deemed by participants as "least acceptable" of all the rodeo events. Participants, on average, did not believe the animals involved in team roping were treated kindly, which was indicated by the event's mean score. Based on the mean scores for both questions, team roping was categorized as the event participants perceived as the most negative.

When analyzing data for non-rodeo events, it was clear that participants, on average, did not have particularly negative or positive reactions. However, it should be noted that when comparing the mean scores for treatment and acceptability of non-rodeo events to rodeo events, non-rodeo events were viewed positively. However, participants did not indicate that they considered non-rodeo events positive but rather more positive than rodeo events.

Table 5

Acceptable

Event	*n*	Min	Max	Mean	*SD*
Rodeo Events (summated)	196	1	5	2.45	1.07
Barrel Racing	142	1	5	3.65	1.10
Bull Riding	194	1	5	2.63	1.23
Mutton Bustin'	143	1	5	2.47	1.38
Saddle Bronc	145	1	5	2.39	1.23
Bareback Riding	143	1	5	2.38	1.22
Steer Wrestling	145	1	5	2.20	1.23
Tie-Down Roping	194	1	5	1.94	1.21
Team Roping	143	1	5	1.80	1.15
Non-Rodeo Events (summated)	196	1	5	3.68	0.94
Dog Agility	194	1	5	3.86	1.11
Dock Dogs	144	1	5	3.80	1.08
Dog Sledding	143	1	5	3.74	1.20
Eventing	145	1	5	3.59	1.19
Horse Racing	143	1	5	3.45	1.16
Pig Racing	194	1	5	3.40	1.23
Dog Racing	145	1	5	3.38	1.15

Scale. 1 = Strongly Disagree to 5 = Strongly Agree

Table 6

Treatment

Event	n	Min	Max	Mean	SD
Rodeo Events (summated)	195	1	5	2.20	0.91
Barrel Racing	142	1	5	3.54	1.17
Mutton Bustin'	143	1	5	2.33	1.29
Bull Riding	194	1	5	2.31	1.19
Bareback Riding	143	1	5	2.24	1.09
Saddle Bronc	145	1	5	2.21	1.11
Steer Wrestling	145	1	5	1.99	1.11
Tie-Down Roping	194	1	5	1.69	1.03
Team Roping	142	1	5	1.59	0.92
Non-Rodeo Events (summated)	196	1	5	3.55	0.95
Dog Agility	194	1	5	3.81	1.16
Dock Dogs	144	1	5	3.71	1.16
Dog Sledding	142	1	5	3.65	1.25
Eventing	145	1	5	3.44	1.21
Horse Racing	143	1	5	3.29	1.18
Dog Racing	145	1	5	3.28	1.19
Pig Racing	194	1	5	3.23	1.26

Scale. 1 = Strongly Disagree to 5 = Strongly Agree

Research objective 2.2

The purpose of RO2.2 was to compare perceptions of the use of animals in rodeo and non-rodeo events. Two, paired-samples *t*-tests were used to compare the summated means (acceptability and treatment) by event type (rodeo events vs. non-rodeo events). Based on the results of the *t*-tests, individuals' perceptions of the acceptability for animals to be used in sporting events significantly differed ($p < 0.025$) between rodeo events ($M = 2.45$; $SD = 1.07$) and non-rodeo events ($M = 3.68$; $SD = 0.94$), $t = -21.98$; $df = 196$; $p < 0.01$). Further, Cohen's effect size value ($d = 1.224$) indicated a large practical significance. Individuals' beliefs that animals are being treated kindly in sporting events significantly differed ($p < 0.025$) between rodeo events ($M =$

2.20; $SD = 0.91$) and non-rodeo events ($M = 3.55$; $SD = 0.95$), $t = -25.45$; $df = 195$; $p < 0.01$).

Further, Cohen's effect size value ($d = 1.452$) suggested a large practical significance.

DISCUSSION

Research objectives 1.1 and 1.2

Existing literature suggested a person's gender influences how he or she perceives animal use. Studies have found that women are generally more sympathetic to the use of animals (Mathews and Herzog, 1997) and the treatment of animals (Herzog, 2007) than men. However, in this study, Millennials' gender did not significantly influence how participants perceived each competitive sporting event. Each gender's mean scores for acceptability and treatment indicated an indifferent attitude for each sporting event. It is not until the sample is analyzed as a whole that significant differences existed. Practitioners should make note of the findings of this study; particularly, gender does not always influence Millennials' perceptions of animal use. Ultimately, marketing strategies should be focused on the sporting event, whether it be a rodeo or non-rodeo event.

Research objectives 2.1 and 2.2

For this study, barrel racing was the rodeo event in which study participants reported the most positive perceptions. Conversely, rodeo events that involved calves, such as steer wrestling, tie-down roping, and team roping, were the most negatively perceived. Practitioners would be well served to not solely focusing on these events in their marketing strategies. Objectionable events may entail negative consequences for advertisers because the public may not be familiar with the sport being advertised.

Recommendations

To gain a better understanding of animal welfare in competitive sporting events, it may be beneficial to conduct a qualitative study. This would give researchers and industry professionals an opportunity to gain a better understanding as to why the sample population in this study reacted to the videos the way they did. Gaining insight as to why the sample perceived some events more negatively than others would assist marketers in targeting messages to the appropriate audiences. Furthermore, additional research on video images could lead to a better understanding of the best still images to use in multi-media advertisements.

Marketers should advise rodeos on which events are best to use when selecting video images for advertising purposes. In addition, marketers should assist rodeos in choosing the least negative image for each rodeo event. For example, if a marketing professional for a rodeo chose a roping event image for the advertisements, the marketers should recommend them not using an image that shows the rope being pulled tight on the calf. The results of this study indicate that participants perceived roping events as the least acceptable. Participants also perceived that the animals used in roping events were not being treated kindly. Therefore, if rodeos use video images of the rope being pulled tightly on the calf, it may leave consumers with a negative perception. By providing marketers with this information, they can bring more value to their rodeo clients when they are able to suggest the video images that will provide the most positive consumer reaction. The results of this study should be used to expand the limited research for competitive sports involving animals and to develop visual rhetoric frameworks for the rodeo industry.

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Channel Surfing: An Examination of Preferred Communication Channels by Agricultural Opinion Leaders

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Abstract

In the information rich society of the 21ˢᵗ century consumers have had access to many different communication channels where they can find information about agricultural topics. Individuals seek information that fulfills their needs and opinion leaders have been identified as a solution to communicating with audiences about complex topics. However, previous research has neglected to focus on the most effective means of communicating with opinion leaders. Using four self-actualization needs associated with the theory of Uses and Gratifications (cognitive, affective, integrative, and contact needs) a sample of 3,234 agricultural opinion leaders were surveyed about their communication channel preference. Almost 73% (n = 2,356) of respondents preferred to receive communications through a dedicated web page or blog. Inferential statistics in the form of bivariate correlations and logistic regression were completed to further analyze the relationships between self-actualization needs and communication channel preference. The results revealed statistically significant differences in preferred communication channel based on demographic and professional characteristics. The largest observed correlation indicated that 22% of the variance in preference for informal meetings was predicted by contact needs. Individuals with the highest integrative needs had a strongest preference for a dedicated web page. Results from this research indicated that contact and integrative needs drive the selection of media among agricultural opinion leaders more so than cognitive needs. Consequently, an important implication for agricultural communicators is to use the results of this research to provide information through the appropriate communication channel to satisfy the needs of their intended audience.

Introduction

As the field of agricultural communications has evolved, there has been a shift from the need to communicate with those in the industry to a need to communicate with a more targeted general consumer audience (Telg & Irani, 2012). Through industrialization and technology, agriculture has advanced, but at the same time consumer skepticism and concerns toward agricultural production have increased (Sparks & Shepherd, 1994; Weatherell, Tregear, Allinson, 2003). Boone, Meisenbach, and Tucker (2000) noted that one of the most critical factors affecting the future of agriculture was consumers' perceptions, opinions, and demands of agriculture. In discussing the future challenges for agricultural communication Jim Evans, a regarded agricultural communication scholar said,

> Agriculture and society will need new and improved agricultural information channels and services that are geared to the scientific, progressive, change-oriented dimensions of a culture. At the same time, agriculture and society will need a communications system that recognizes and maintains the stabilizing, deep-rooted human and social dimensions of a culture. The frictions will be tremendous because we are dealing with human values in conflict (Boone et al., 2000, p. 49).

In the information rich society of the 21st century (Edmunds & Morris, 2000; Nisbet & Scheufele, 2009), consumers have had access to many different communication channels through which they can find information about agricultural topics. However, new media has changed how people exchange information. Individuals seek information that fulfills their needs (Lin, 1999) and new media allows consumers to create and share information (Telg & Irani, 2012) about agricultural topics that meet their needs as well as the needs of the people close to them. Nisbet and Scheufele (2009) said that information delivered through "a message frame is only

effective if it is relevant- or "applicable" –to a specific, existing interpretive schema acquired through socialization processes or other types of social learning" (p. 1770). Therefore, the plethora of information available today does not equate to effective communication. Despite the information available, knowledge of science topics, including agricultural science, has continued to remain relatively constant (Nisbet & Scheufele, 2009).

Opinion leaders have been identified as a communication channel that provides a solution to communicating with difficult audiences about difficult topics (Nisbet & Scheufele, 2009). These leaders are commonly viewed as role models and can communicate in an influential manner to those who follow them (Burt, 1999; Valente & Davis, 1999). Opinion leaders participate in a two-step communication process in which they receive information about a topic and then share that information with their social connections or followers (Lazarsfeld, Berelson, & Gaudet, 1948). Face-to-face communication, commonly obtained in opinion leadership, has been identified as one of the most effective communication strategies when dealing with topics of challenge and conflict (Nisbet & Scheufele, 2009). Nisbet and Scheufele (2009) called for science-based organizations and industries "to mobilize specially trained opinion leaders who can bridge the communication gap between news coverage and inattentive audiences, talking to their friends, family, and co-workers about the relevance of science-related issues…" (p. 1776). When discussing these issues, opinion leaders are viewed as a credible communication source that delivers important information on important issues (Lazarsfeld et el., 1948; Nisbet & Scheufele, 2009). In order to share this information with followers, opinion leaders must first receive the information. Previous literature has indicated that opinion leaders are exposed to more mass media than non-opinion leaders and tend to gravitate toward more informational media channels, such as print, rather than entertainment-based media channels such as television

(Chan & Misra, 1990). Little, if any, research has examined the preferred media channels among agricultural opinion leaders so that they can receive important information and deliver it to their followers.

The American Association for Agricultural Education's National Research Agenda has prioritized research examining the process by which consumers make informed decisions about agricultural topics (Doerfert, 2011). One area of scientific focus includes determining the potential of communication strategies to equip the public to make informed decisions on agricultural topics (Doerfert, 2011). Therefore, the purpose of this study was to examine how demographic and professional characteristics of agricultural opinion leaders influenced their preferred channel of communication, so that they may effectively receive information through these channels and disseminate agricultural information to their followers.

Theoretical Framework

The theoretical framework that guided this study was Herzog's (1940) theory of Uses and Gratifications. The theory explains the choices audiences make in their media selection and use (Lin, 1999). Media selection behaviors are built upon an individual's needs and their desire to fulfill those needs (Katz, Blumler, & Gurevitch, 1974). The needs identified with media selection are self-actualization needs, or needs with social origin and the ability to aid in self-development (Blumler, 1985; Maslow, 1970). Throughout history, several scholars have suggested varying needs or factors said to influence media selection in order to fulfill gratifications (Ruggiero, 2000). Katz, Gurevitch, and Haas (1973) identified five self-actualization needs that apply to the theory of Uses and Gratifications including cognitive, affective, integrative, contact, and escape needs.

Cognitive needs simply refer to the need to access information through a media channel in order to understand (Katz et al., 1973; Lin, 1999). The need for emotional experiences drives the selection of media channels based on affective needs. If a communication channel provides access to information that strengthens the receiver's confidence, credibility, or stability then the channel is fulfilling the individual's integrative needs. Contact needs refer to the needs fulfilled through social contact with family, friends, and others. Lastly, the escape need refers to the selection of a media channel to allow one to forget about current problems or troubles (Katz et al., 1973; Lin, 1999).

When looking at a specific audience, such as agriculture opinion leaders, a consistent preferred media channel can often be identified according to shared motivations or needs (McQuail, 2010). Agriculture opinion leaders, or those in another specific audience, are thought to be actively involved in the topic, have similar goal-directed needs relative to the topic, and thus select similar media channels (Littlejohn, 2002). However, scholars caution that studies examining the Uses and Gratifications of an audience by self-reported typologies, attitudes, and lifestyle variables may be limited and suggest behavioral observation as the ideal measure of these variables (Rosenstein & Grant, 1997). Additionally, the advent of new media has called for the theory to be reexamined through the prediction of media consumption based on sociological, psychological, and structural variables (Ruggiero, 2000).

A study by Lev-On (2012) used the theory of Uses and Gratifications to examine communication in a time of crisis among a community. The results found that those within a community who shared feeling, thoughts, and opinions maintained communication with each other during a crisis through shared media channels that met their needs and circumstances, but those with differing feelings, thoughts, and opinions commonly sought alternative media

channels to communicate with those more similar to them. The study also found that mass media channels did not fulfill the needs of the participants as effectively as smaller media channels, such as those channels utilized specifically for only those involved in the crisis (Lev-On, 2012).

When assessing the preference of communication channels among farmers in Nigeria to receive information about new farming technologies, Okwu and Daudu (2011) found that interpersonal communication channels were preferred. In this study relatives, friends, and neighbors were the most used interpersonal channels of information about farming technologies. However, extension agents and television were reported as being more highly preferred, but were inaccessible to the farmers thus, suggesting that the needs and gratifications of these farmers were not being satisfied (Okwu & Daudu, 2011). Education level, household size, farm size, and gender were significantly related to frequency of the communication channel used among the farmers in the study (Okwu & Daudu, 2011). This result suggests a connection between demographics, needs, and media use.

Purpose & Research Objectives

The purpose of this study was to examine how demographic and professional characteristics of agricultural opinion leaders influenced their preferred channel of communication. The study was driven by the following research objectives:

1. Describe agricultural opinion leaders preferred channels for communication.
2. Identify the relationship between demographic and professional characteristics and preferred channel for communication in agricultural opinion leaders.
3. Identify how demographic and professional characteristics predict preferred channel for communication in agricultural opinion leaders.

Methods

A quantitative research design was used for this study. To address the research objectives a cross-sectional survey was used with a census of tangibles and intangibles (Ary, Jacobs, & Sorensen, 2010). A census approach was used to collect the most complete data possible (Ary et al., 2010). The population of interest for this study was alumni and current participants of Agricultural and Natural Resource (ANR) Leadership Development Programs (LDP). Previous research has found the ANR LDP recruit and develop emerging and established opinion leaders within the ANR industry (Lamm, Lamm, & Carter, 2014).

To conduct a census of the population all ANR LDP affiliated with the International Association of Programs for Agricultural Leadership (IAPAL) were invited to participate. A total of 41 active LDP were invited, 28 programs elected to participate in the research. Of the 13 programs that opted not to participate, one program indicated they were in their first class, which meant they had just begun programming, and did not feel as though they had the time to assist with the research. The other 12 programs did not provide a response regarding the request and were subsequently removed from the available sample frame. The participating programs represented all four regions of the United States: Western (six programs, $n = 1,134$), North Central (nine programs, $n = 1,474$), Southern (eight programs, $n = 960$), and Northeast (three programs, $n = 383$) as well as Canada (two programs, $n = 234$). A total of 7,152 alumni from the 28 ANR LDP programs were invited to participate in the research; 4,185 questionnaires were started for a preliminary response rate of 59%; however, after analysis of missing data a total of 3,234 questionnaires were considered complete for an effective response rate of 45%. Based on established social science response rates, this was considered acceptable for generalization (Baruch & Holtom, 2008). Nonresponse analysis was conducted by comparing early and late respondents based on the recommendations of Lindner, Murphy, and Briers (2001). No

statistically significant differences between the two groups were observed. Consequently, non-response bias was not found to be an issue.

Demographic data were obtained through respondent self-report. The sample was 68.3% ($n = 2,271$) male and 31.7% ($n = 1,052$) female. The mean age of respondents was 50.7 ($SD = 11.1$) with reported ages ranging between 23 and 82. For the purposes of the study respondent race and ethnicity were defined as self-perceived membership in population groups that define themselves by cultural heritage, language, physical appearance, behavior, or other characteristics ("Standards", 1995, p. 26). In regard to respondents' race, 95.6% ($n = 3,055$) identified themselves as White, 2.6% ($n = 84$) identified themselves as American Indian or Alaska native, 2.6% ($n = 82$) identified themselves as Other, 1.4% ($n = 45$) identified themselves as Asian or Pacific Islander, and 1.0% ($n = 31$) identified themselves as Black or African American. Regarding ethnicity, 1.5% ($n = 47$) of respondents considered themselves to be Hispanic/Latino(a)/Chicano(a).

Data were collected based on instrumentation aligned to four of the five self-actualization needs associated with Uses and Gratifications (Katz et al., 1973). Specifically, the areas of cognitive, affective, integrative, and contact needs were germane to the research objectives. A combination of demographic characteristics, existing scales, and researcher-developed measures were used to quantify associated self-actualization need categories. Respondents were asked to indicate whether they were interested in interacting with alumni of ANR LDP through a list of eight potential communication channels. Channels were based on a researcher-developed list that included traditional (formal and informal meetings), quasi-traditional (conference calls and web pages), quasi-emergent (Facebook and LinkedIn), and emergent (Twitter or Other) channels. A

panel of experts knowledgeable in agricultural communications, leadership development, program evaluation, and survey design reviewed the questionnaire for internal validity.

To measure cognitive needs, or understanding needs, respondents were asked to indicate what percentage of their total net annual income was from production agriculture (0% to 100%). Previous research in Knowledge Gap theory (Tichenor, Donohue, & Olien, 1970) has found that level of involvement in a topic area (income as a proxy in this research) is associated with higher levels of knowledge in the topic area.

Affective needs were measured using demographic characteristics, specifically respondent age and gender. Previous research has shown that both age (e.g. Terracciano, McCrae, & Costa, 2010) and gender (e.g. Costa, Terracciano, & McCrae, 2001) are related to personality and subsequently to emotion (Revelle & Scherer, 2009).

Integrative needs, or the desire to strengthen confidence, credibility or stability, were measured using the Childers' (1986) opinion leadership scale. The scale included six questions presented in a five-place bipolar response format. Pairs of dissimilar statements were presented, one at each end of a rating scale. A one indicated the negative statement; a five indicated the positive statement. *Ex post facto* reliability was calculated on the opinion leadership construct and a Cronbach's α of .90 was obtained.

Lastly, contact needs, were measured using a researcher developed scale associated with behavioral intent, specifically whether the participant planned to participate in future ANR related leadership conferences. The scale was developed based on Ajzen's (2002) recommendations within a planned behavior context. Individuals indicated their response to three statements on a five-point, Likert-type scale. Possible responses to each item included: 1 –

Strongly Disagree, 2 – *Disagree*, 3 – *Neutral*, 4 – *Agree*, 5 – *Strongly Agree. Ex post facto*

reliability was calculated on the intent construct and a Cronbach's α of .93 was obtained.

Data were collected in the spring of 2014. Participant responses were collected using an

online questionnaire based on the target population's access to e-mail and the Internet (Dillman,

Smyth, & Christian, 2008). Alumni from the Florida LDP were surveyed as a pilot of the survey.

Potential respondents were contacted by e-mail using Dillman et al.'s (2008) tailored design

method and asked to respond to the online questionnaire developed in Qualtrics. A total of 185

potential respondents were invited to participate, there were 98 surveys returned for a 53%

response rate. Data from the pilot test were analyzed to verify survey reliability and validity.

Minor modifications to the survey were made based on pilot responses. No modifications were

made to areas related to this particular research study. The revised survey was reviewed and

approved by an expert panel.

The survey was piloted a second time with the current class of ANR opinion leaders from

the Florida LDP. Potential respondents were contacted by e-mail using Dillman et al.'s (2008)

tailored design method and asked to respond to the online questionnaire developed in Qualtrics.

A total of 29 survey invitations were sent out and 27 surveys were completed for a 93% response

rate. Data were analyzed to verify survey reliability and validity. No modifications were made to

the survey following the second pilot. Based on the objectives associated with the study, results

from both pilot studies were included in subsequent analysis (Rossi, Lipsey, & Freeman, 2004).

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version

21. Descriptive statistics were calculated to describe agricultural opinion leaders preferred

channels for communication. Pearson's product-moment correlation coefficient using Davis'

(1971) convention was used to identify the relationship between demographic and professional

characteristics and preferred channel for communication in agricultural opinion leaders. Finally, logistic regression (Peng, Lee, & Ingersoll, 2002) was used to identify how demographic and professional characteristics predict preferred channel for communication in agricultural opinion leaders (Ary et al., 2010). A level of significance of .05 was established *a priori*.

Results

Preferred Channels for Communication

Almost 73% (*n* = 2356) of respondents preferred to receive communications through a dedicated web page or blog. Respondents were least interested in receiving information through conference calls, with only 16% (*n* = 486) selecting this communication channel. The 56 individuals that selected the "Other" category had the opportunity to provide a free text response describing their preference. Most frequently respondents indicated e-mail, followed by commodity/industry based meetings, and online or printed newsletters. Specific response data are presented by communication channel in Table 1.

Table 1

Agricultural Opinion Leader Preferred Channel for Communication

Communication Channel	n	Yes	No
		n (%)	n (%)
Dedicated web page or blog	3234	2356 (73%)	878 (27%)
Formal annual meetings	3201	1908 (60%)	1293 (40%)
Informal meetings coordinated by alumni	3215	1673 (52%)	1542 (48%)
LinkedIn group	3182	1191 (37%)	1991 (63%)
Facebook group	3147	1106 (35%)	2041 (65%)
Twitter	3152	800 (25%)	2352 (75%)

Conference calls	3104	486 (16%)	2618 (84%)
Other	385	56 (15%)	329 (85%)

Relationships between Demographic and Professional Characteristics and Preferred Communication Channel

Pearson product-moment correlations between communication channel, demographic characteristics, and professional characteristics were completed to illuminate the nature of the relationship between variables. Correlation coefficients and statistical significance between variables are provided in Table 2. Correlations ranged from negligible to moderate in magnitude (Davis, 1971) in both the positive and negative directions.

Participation intent had a moderate correlation with informal meetings ($r = .47$) and a low correlation with dedicated web page ($r = .27$), formal annual meetings ($r = .15$), Twitter ($r = .16$), and other ($r = .16$). Percentage of total net annual income from production agriculture had a low correlation with Facebook groups in the negative direction ($r = -.15$). Gender had a low correlation with LinkedIn groups ($r = .26$). Finally, age had a low correlation with conference calls in the negative direction ($r = -.21$).

Demographic and Professional Characteristics Predicting Preferred Communication Channel

Logistic regression analysis was completed to determine whether a predictive relationship existed between demographic variables, professional variables and communication channel (see Table 3). Each communication channel was treated as a dependent variable. Percentage of total net annual income from production agriculture, gender, age, level of opinion leadership, and participation intent were treated as the independent variables of interest.

Age (B = -.03, p < .001, OR = 0.97), opinion leadership (B = .21, p < .001, OR = 1.23), and participation intent (B = 1.26, p < .001, OR = 3.54) were statistically significant predictors of informal meetings. These results indicated that for every one unit increase in participation intent (contact need) individuals were 3.54 times more likely to select informal meetings when controlling for all other variables.

Opinion leadership (B = .24, p < .001, OR = 1.27) and participation intent (B = .68, p < .001, OR = 1.98) were statistically significant predictors of dedicated web page or blog. These results indicated that for every one unit increase in opinion leadership (integrative need) individuals were 1.27 times more likely to select dedicated web page or blog when controlling for all other variables.

Respondent gender (B = -.53, p < .001, OR = 0.59) and participation intent (B = .33, p < .001, OR = 1.39) were statistically significantly predictors of formal meetings. These results indicated that men were 1.69 times more likely to select formal meetings, after controlling for all other variables, than women.

The Facebook groups, LinkedIn groups, conference calls, Twitter, and other communication channels all included statistically significant predictors within either demographic or professional characteristics, or some combination therein. The only predictor not found to be practically significantly related to communication channel preference was percentage of total net annual income from production agriculture.

Table 2

Intercorrelations Between Demographic and Professional Characteristics and Preferred Communication Channel

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Informal meetings coordinated by alumni	-												
2. Dedicated web page or blog	.40**	-											
3. Formal annual meetings	.10**	.17**	-										
4. Facebook group	.10**	.12**	.24**	-									
5. LinkedIn group	.12**	.14**	.30**	.30**	-								
6. Conference calls	.11**	.08**	.19**	.27**	.34**	-							
7. Twitter	.20**	.18**	.14**	.13**	.09**	.13**	-						
8. Other	.20**	.20**	0.06	0.04	-0.03	0.03	.27**	-					
9. Percent Income	.07**	.04*	-0.03	-.15**	-.05**	-0.01	0.01	-0.05	-				
10. Gender	.05**	0.02	.14**	.09**	.26**	0.03	0.02	0.08	-.16**	-			
11. Age	-.15**	-.06**	-.06**	-.10**	-.19**	-.21**	-0.03	0.07	-0.02	-.09**	-		
12. Opinion Leadership	.14**	.13**	.07**	0.03	.06**	.06**	0.03	0.07	.11**	0.01	-.14**	-	
13. Participation Intent	.47**	.27**	.15**	.13**	.12**	.08**	.19**	.16**	.11**	0.03	-.09**	.12**	-

Note. Magnitude: .01 ≥ r ≥ .09 = Negligible, .10 ≥ r ≥ .29 = Low, .30 ≥ r ≥ .49 = Moderate, .50 ≥ r ≥ .69 = Substantial, r ≥ .70 = Very Strong. (Davis, 1971)
* $p < .05$, ** $p < .01$

Table 3

Logistic Regression of Preferred Communication Channel on Demographic and Professional Characteristics

Predictor	Informal Meetings		Dedicated Web Page		Formal Meetings		Facebook Group	
	B	OR	*B*	OR	*B*	OR	*B*	OR
Percent Income	0.00	1.00	0.00	1.00	0.00	1.00	0.00***	0.99
Gender	-0.06	0.95	0.01	1.01	-0.53***	0.59	-0.19*	0.82
Age	-0.03***	0.97	-0.01	0.99	-0.01	1.00	-0.02***	0.98
Opinion Leadership	0.21***	1.23	0.24***	1.27	0.09	1.09	0.05	1.05
Participation Intent	1.26***	3.54	0.68***	1.98	0.33***	1.39	0.35***	1.42
Constant	-2.72***	0.07	-1.28***	0.28	-0.07	0.94	-0.35	0.71
Chi-square	680.41***		213.85***		102.4***		145.35***	
df	5		5		5		5	
-2 log likelihood	3025.82		2914.37		3505.92		3231.62	
Cox and Snell pseudo R^2	0.23		0.08		0.04		0.05	
Sample size	2674		2680		2674		2627	

Note. OR = odds ratio.

* $p < .05$, *** $p < .001$

Table 3. Continued

Predictor	LinkedIn Group		Conference Calls		Twitter		Other	
	B	OR	*B*	OR	*B*	OR	*B*	OR
Percent Income	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Gender	-0.96***	0.38	0.02	1.02	0.07	1.07	-0.17	0.84
Age	-0.03***	0.97	-0.06***	0.95	0.00	1.00	0.03	1.03
Opinion Leadership	0.08	1.09	0.14	1.16	0.06	1.07	0.23	1.25
Participation Intent	0.26***	1.30	0.22**	1.25	0.52***	1.69	0.47**	1.60
Constant	0.88**	2.41	-0.17	0.84	-2.66	0.07	-5.04***	0.01
Chi-square	261.99***		142.39***		92.82***		11.86*	
df	5		5		5		5	
-2 log likelihood	3244.64		2118.20		2816.88		252.25	
Cox and Snell pseudo R^2	0.09		0.05		0.04		0.04	
Sample size	2659		2603		2630		322	

Note. OR = odds ratio.

* $p < .05$, ** $p < .01$, *** $p < .001$

Conclusions, Implications, and Recommendations

The results of this study revealed there are statistically significant differences in preferred communication channel based on demographic and professional characteristics within a sample of agricultural opinion leaders. Overall, respondents preferred a dedicated web page or blog, followed by formal and informal meetings. Respondents identified conference calls, Twitter, and Other as the least preferred communication channels. Although the descriptive statistics are valuable to communication professionals to better understand macro preferences for communication channel, the subsequent inferential statistics hold more substantial insights.

Based on bivariate correlation analysis each demographic or professional characteristic variable had a statistically significant correlation with at least one communication channel option. The largest observed correlation was between participation intent and informal meetings coordinated by alumni. This finding is significant as it indicates that 22% of the variance in preference for informal meetings is predicted by contact needs. Contact needs were consistent predictors across all communication channels, most notably dedicated web page and Twitter. Consequently, as contact needs increased, preference for all communication channels increased.

The opposite trend was observed for the age variable, or affective needs. As age increased, preference for all communication channels (with the exception of the other category) decreased. In particular age accounted for 4% of the variance in preference for conference calls, as well as 4% of the variance in LinkedIn groups. Other noteworthy correlations included a consistent positive correlation between level of opinion leadership (integrative needs) across a majority of communication channels, as well as a consistent trend for women (affective needs) to have stronger preferences for a majority of communication channels than men. To further

investigate the relative importance of all independent variables in predicting communication channel preference logistic regression analysis was conducted.

While several research contributions and implications for practice are associated with this study (Ruggiero, 2000), a number of limitations must also be acknowledged. A primary limitation is the use of researcher-identified proxies to represent underlying Uses and Gratifications needs; specifically, it is possible that the underlying need is not sufficiently represented (Rosenstein & Grant, 1997). Risks associated with this limitation were mitigated by selecting items based on existing literature and to then have those selections verified by a panel of experts (Ary et al, 2010). A second limitation is associated with the population studied. Although participation in ANR LDP is associated with opinion leadership (Lamm et al., 2014), opinion leadership is not necessarily dependent on participation in ANR LDP. Surveying only those individuals associated with an ANR LDP may have inadvertently excluded other ANR opinion leaders. The use of a very large and demographically diverse sample helps to mitigate the potential for bias; however, the potential for error must be acknowledged.

Although empirical research within the theoretical context of Uses and Gratifications has been conducted previously (i.e. Lev-On, 2012; Okwu & Daudu, 2011), this is the first empirical study that focuses on agricultural opinion leaders and provides communication researchers and practitioners communication channel preferences across need categories, predicting media consumption based on sociological, psychological, and structural variables as recommended by Ruggiero (2000). Specifically, from a contact needs perspective those individuals with the highest contact needs indicated a strongest preference for informal meetings followed by a dedicated web page. Individuals with the highest integrative needs had a strongest preference for a dedicated web page. The implication of this finding is that to reach the top ANR opinion

leaders, communications professionals would be advised to focus their efforts on a dedicated website. Furthermore, results from this research indicated that contact and integrative needs drive the selection of media among ANR opinion leaders more so than cognitive needs. Consequently, an important implication for agricultural communicators is to use the results of this research to provide information through the appropriate communication channel to satisfy the needs of their intended audience.

An unexpected finding was that men had the strongest preference for LinkedIn groups, followed by formal meetings. However, the dichotomous nature of the variable and non-statistically significant relationships prevented identification of preferred communication channels for women. A second unexpected finding was the consistent negative relationship between age and communication channel preference. This result indicated that a younger audience would have a stronger preference for conference calls. However, interpretation of the age-based results should be done with care. For every year difference in age, communication channel preference only varied between 1.05 (conference calls) and 1.02 (Facebook group) greater odds between channels. Perhaps a more appropriate interpretation of the data would be that age does not appear to have a practical impact on communication channel preference.

Similar to age, the cognitive need variable measured by percentage of total net annual income from production agriculture was not found to predict communication channel preference when analyzed through logistic regression. This finding was particularly interesting given the number of significant correlations that were observed between cognitive need and communication channels. However, after controlling for all other predictive variables the statistical significance of cognitive need disappeared. An implication from this finding may be that production agriculture income is not a relevant factor when communicating with agricultural

opinion leaders. Other variables, such as contact or integrative needs might be more appropriate predictors when selecting a communication channel.

As a primary study, the results can serve as a benchmark for further explorations through research. Additional studies are recommended to verify the results, as well as to explore alternate proxies for underlying Uses and Gratifications needs. Additionally, future research is encouraged to examine how opinion leaders are actively using communication channels to receive and disseminate information. For example, an evaluation of the use and efficacy of interactive websites and Facebook pages in combination with conference calls might illuminate not only preferred channels, but also an appropriate combination of channels to maximize value.

The results for this study make a significant contribution to both the agricultural communications literature, as well as the practice of agricultural communication. From a practical perspective, agricultural communicators can use the study results to select an appropriate communication channel to target their preferred audience most effectively (Rumble & Buck, 2013). Understanding and using the preferred communication channels of agricultural opinion leaders should aid in the effective dissemination of information to this group of influential individuals and their followers, ultimately helping to equip the public to make informed decisions on agricultural topics (Doerfert, 2011).

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Florida in the 21st Century: Exploring the Relationship Between Critical Thinking Styles and Food Safety Behaviors

Abstract

Consumers have struggled with maintaining consistent food safety behaviors over the years. Researchers in this study set to determine Florida residents' food safety behaviors, while also assessing their critical thinking styles. Social cognitive theory was used as the guiding framework for this study and critical thinking styles served as the conceptual framework. The Critical Thinking Styles Inventory (CTI) has emerged as an effective tool in measuring how an individual's critical thinking is expressed, performed, or done. Online survey responses were collected from 510 Florida residents and data analyzed using non-probability and weighting measures. The majority of respondents washed their fresh fruits and vegetables before eating, and washed their hands before food preparation. However, respondents were not as likely to disinfect their countertops before food preparation; additionally, they exhibited infrequent food label reading behaviors. When receiving food related information, seekers of information preferred printed facts sheets, bulletins or brochures, and demonstration or displays, while engagers preferred websites. A negligible relationship was observed between food safety behaviors and critical thinking styles; however, future research should evaluate this relationship on a national level to better understand this study's findings. Recommendations also included communication efforts focused on targeting message development and mediums with each critical thinking style in consideration. Researchers also recommended focusing efforts on the importance of reading food labels to reduce food safety risks. Research efforts should focus on expanding the CTI to better understand factors influencing individual's critical thinking styles.

Keywords: food, food safety, critical thinking styles, critical thinking, communication, social cognitive theory, surveys, UFCTI

Introduction

Food safety was something exclusively discussed in the food industry, and not amongst consumers, during the 60s and 70s. This was a time when consumers rarely questioned whether or not their food was safe, and the newsworthiness of the topic was rarely pursued (Anderson, 2000). However, the United States has seen a growing trend of people renewing their interest in food, concerned about food hazards and their health (Dimitri, Effland, & Conklin, 2005; Lusk & Norwood, 2011; Miles & Frewer, 2001). The dispersion of information about known food risks makes communicating about food hazards unique and different than any other type of communication between the government, industry, consumer groups, and the public (Hallman & Cuite, 2010).

Technology has changed the way people obtain information and knowledge (Littlejohn & Foss, 2011). Health campaigns, like those that address food safety, ultimately target changing people's behaviors (Abbot, Policastro, Bruhn, Schaffner, & Byrd-Bredbenner, 2012). People are more receptive to changing their behaviors as the result of food safety education when the risk of foodborne illnesses exists (Medeiros, Hillers, Kendall, & Mason, 2001a). In order for individuals to process and store information for future behavioral use, messages must be relevant and personalized (Abbot et al., 2012; Petty, Barden, & Wheeler, 2009).

Mayer and Harrison's (2012) study looked at the use of social media to educate college students about food safety. Through the use of a pre-test, researchers found college students' lack of food safety knowledge was a result of limited "exposure to food safety education and opportunities to learn and practice safe food handling practices" (Mayer & Harrison, 2012, p. 1460). This study also found lack of time was the most frequent barrier between people receiving food safety information (Mayer & Harrison, 2012). YouTube, Facebook, videos, and the Internet

were not only found as the preferred method of receiving food safety information, but researchers found these mediums contributed to an increase of food safety knowledge among participants using a post-test. Abbot et al. (2012) similarly found assorted print media, electronic media, and interactive events improved participants' food safety behaviors: self-ratings of food safety knowledge and skills, actual food safety knowledge, food safety self-efficacy, stage of change for safe food handling, and reported hand washing behaviors.

Food is evaluated on many levels, consciously and unconsciously (McWilliams, 1997), and deciding whether food is safe ultimately falls to the individual consumer (VanGarde & Woodburn, 1994). American consumers commonly participate in risky food handling and consumption behaviors (Byrd-Bredbenner, Abbot, Whaetley, Schaffner, Bruhn, & Blalock, 2008). Of the food-borne illness cases reported, large portions of those have resulted from eating raw foods or engagement in unsafe food preparation practices (Cody & Hogue, 2003; Klontz, Timbo, Fein, & Levy, 1995). Several studies have assessed consumers' self-reported food handling and sanitation practices. Cody and Hogue (2003) found that among the respondents in which a family member had experienced food borne illness, 14% reported no change in cleaning activities. However, when respondents did increase their cleaning behaviors, they were typically in response to a family illness.

Consistent with many studies conducted, Cody and Hogue (2003) found a high percentage of consumers reported washing their hands during food preparation (approximately 90%) but almost half were extremely/very likely to forget to wash their hands before they began to cook. In contrast, Abbot, Byrd-Bredbenner, Schaffner, Bruhn, and Blalock (2009) found only 39% of participants reported washing their hands with soap and water before preparing food. Study's have shown consumers are less likely to wash their hands when handling raw meats, and

at times, this includes when handling raw vegetables (Altekruse, Yang, Timbo, &Angulo, 1999; Cody & Hogue, 2003). Over the 3-year span of Cody and Hogue's (2003) study, consumers remained consistent in rinsing or wiping the counter with soap and water after handling raw meat.

Additionally, Abbot et al. (2009) assessed individuals food safety knowledge. In a study of young adults, Abbot et al. (2009) found participants to be knowledgeable about foods that were known to cause foodborne disease, but not aware of the pathogen causing the disease. Finch and Daniel (2005) found emergency food relief organization workers had limited knowledge regarding hand washing practices. Furthermore, Abbot et al. (2009) found two-thirds of their participants were knowledgeable enough to keep raw meat separate from ready-to-eat food, but only 3% used a thermometer to ensure their meat was cooked to a safe temperature. Finch and Daniel's (2005) pre-test in their study found only 13% of participants were familiar with using a thermometer to determine safe food-holding temperatures. Participants in this study were also unfamiliar with safe egg and meat practices.

Wang, Zhang, Ortega, and Widmar (2013) evaluated consumers' food safety behaviors regarding country of origin labels (COOL) on seafood products. These labels are seen as an effective means to assess country safety standards and process quality, which differ from each country. COOL is often the only available source for this information, as the cost for a consumer to obtain this information would be substantial (Wang et al., 2013). The results from this study found consumers believed country of origin (COO) information to be important; however, 41% of the participants did not observe the COO information on seafood packaging. This study also found older consumers were more likely to care about COO's, while individuals with high seafood consumption cared more about safety labels (Wang et al., 2013).

Decisions are made everyday, some minor (i.e., when to wake up, what to wear, what to buy at the store, etc.) and some major (i.e., who to marry, whether or not to have children, medical decisions, etc.) (Halpern, 1997). Some of the minor decisions are made without any thought and some major decisions are made with considerable deliberation (Halpern, 1997; Lannon & Gurak, 2014). "Critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome" (Halpern, 1997, p. 4). Critical thinking is a method of evaluation using purposeful, reasoned, and goal oriented consideration; it is used to calculate the outcomes of the thought process.

"Critical thinking calls for a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends" (Glaser, 1941, p. 6). Critical thinking, no different than any other skill mastered, requires training and development (Pally, 1997). Reicks, Bosch, Herman, and Krinke, (1994) found the use of role-playing, scenarios, personal relevance, and reflective thinking and practice, were effective methods to encourage participants to critically thinking about food safety. Participants were able to recall previous situations they had experienced, which made the information more meaningful and germane (Reicks et al, 1994).

In accordance with the national research agenda priority one, Informed Choices (Doerfert, 2011), this study sought to assess Florida residents' food safety behaviors and preferred communication method when receiving information concerning food related information as it relates to critical thinking styles. The focus of this study was to understand Florida residents' food safety behaviors and communication preferences, enabling the agricultural industry to provide consumers with the effective communication strategies to encourage proper food safety behaviors, ultimately decreasing foodborne illness. These efforts

not only serve consumers but are also beneficial to the sustainability of the agricultural industry (Doerfert, 2011).

Theoretical and Conceptual Framework

Social Cognitive Theory

Social cognitive theory guided the theoretical framework of this study. In creating the social cognitive theory, Albert Bandura combined the framework of social learning and human behavior (Stajkovic & Luthans, 1998). Social cognitive theory concentrates on individuals who socially interact with others to learn "knowledge, skills, strategies, beliefs, rules, and attitudes" (Schunk, 2012, p. 101). People simultaneously obtain new knowledge and learn behaviors through social environments. Social cognitive theory categorizes learning in two distinct methods of obtaining knowledge: *enactively* and *vicariously*. Enactive learners are able to take past experiences, successful and unsuccessful, and apply them to future situations (Schunk, 2012). Some unsuccessful experiences are discarded, but others are modified in efforts to produce positive outcomes. Social cognitive theory is unique in the scheme of other behavioral theories, with regards to consequences, in that it "informs people of the accuracy or appropriateness of behaviors" (Schunk, 2012, p. 104). People strive to perform behaviors that have positive consequences, rather than behaviors resulting in negative consequences. While enactive learning focuses more on what people have learned, vicarious learning emphasizes the observation of others (Schunk, 2012).

Vicarious learning occurs more through the observation of others. This may occur in a classroom, from a film, or through everyday interactions with others (Schunk, 2012). "Human self-development, adaptation, and change are embedded in social systems" (Bandura, 2001, p.

266). Vicarious learning is the most common method of learning for people and is generally a result of being a part of society (Schunk, 2012; Stajkovic & Luthans, 1998). The benefit of vicarious learning is that it comes without the consequences of actually performing actions, even while learning still occurs, and is a quicker method of learning versus performing each action (Schunk, 2012). Through the process of observation, individuals choose what events will have an impact on them and how they will act based on this new information (Bandura, 2001). Several factors play a role in the performance of learned information, which may occur at a later time: "motivation, interest, incentives to perform, perceived need, physical condition, special pressures, and competing activities" (Schunk, 2012, p. 105).

The concept behind social cognitive theory is the idea that a change in one element will exhibit a change in another (Winham, Quiroga, Underiner, Woodson, & Todd, 2014). Using the concept of the social cognitive theory, Medeiros, Hillers, Kendall, and Mason (2001b) suggested that in order to change food safety behaviors, individuals must realize risks associated with a particular action. The expectation of a certain outcome will motivate individuals to change their behaviors associated with food safety. Schafer, Schafer, Bultena, and Hoiberg, (1993) found the risk of unsafe food leads to personal health threats (self-efficacy), the notion that one has the power to address the threat, and the motivation to maintain good health all served as predictors of food safety behaviors. Respondents who scored high on self-efficacy in this study did not ignore food safety threats but responded by engaging in safe food handling behaviors. The perception that food safety risks exist, and individuals have the ability to control their own food safety, encourages safe food behaviors (Schafer et al., 1993). Knowledge alone does not change behaviors, but rather, as established by the social cognitive theory, the interaction between personal factors, behavioral patterns, and environmental events address behavioral change

(Bandura, 2001; Winham et al., 2014). Mayer and Harrison (2012) linked the social cognitive theory with social interactions and found social networking served as a tool to engage the cognitive development of learners, which provided a learning environment for social interactions.

Critical Thinking Styles

While everyone engages in some form of critical thinking (Halpern, 1997), this study focused on critical thinking styles; this is not in reference to the degree to which an individual critically thinks, but rather the process of obtaining new information or knowledge (Lamm & Irani, 2011). Individuals typically operate within one of two distinct critical thinking styles: those that *seek* information when thinking critically and those whom *engage* when thinking critically (Lamm & Irani, 2011). No one source of material contains all the information about a topic, which illustrates the need for individuals to exhibit a balanced critical thinking style. While most individuals tend to naturally work within a specific style, the ideal critical thinker would be able to operate in both styles when the need for each is necessary.

The concept of critical thinking style directly correlates with how individuals express, perform or complete critical thinking (Lamm & Irani, 2011). Individuals who seek information are able to see the larger picture and are genuinely hungry for information. In a desire to understand complex problems in which a multitude of solutions exist, even some that might go against an individual's beliefs and opinions, seekers insist on discovering diverse view points (i.e., research, readings, and questioning) (Lamm & Irani, 2011). In pursuing a better understanding of complex situations, seekers are able to identify their own biases, predispositions and opinions, and are able to identify how those might influence their decisions and understanding. Engagers tend to be more confident in their ability to assess their

surroundings and use their reasoning skills in situations: ability to reason, solve problems, and make decisions. Engagers prefer collecting new information from their environment and via word of mouth. As a confident communicator, engagers are able to articulate the reasoning behind their resolution to others (Lamm & Irani, 2011).

Lamm, Strickland, and Irani (2010) looked at college students' critical thinking styles. The findings in this study explained critical thinking styles as a method of understanding how individuals learn and the necessity of tailoring information to encourage people to seek and engage with information. In creating informational material, educators and/or communicators have the ability to encourage critical thinking and enhance an individual's learning experiences.

Gorham, Lamm, and Rumble, (2014) assessed respondents' water conservation behaviors in conjunction with their critical thinking style. Results established that the more likely an individual was to seek information when thinking critically, the more likely he/she was to participate in water conservation behaviors. Conversely, individuals more likely to engage information when thinking critically were less likely to participate in water conservation behaviors. The results illustrated differences in behaviors associated with respondents' critical thinking style (Gorham et al., 2014).

Purpose

The purpose of this study was to determine the relationship between consumers' critical thinking styles and food safety behaviors, and to assess Florida consumers' communication preference when receiving information concerning food related issues.

RO1: Determine Florida consumers' food safety behaviors.

RO2: Determine Florida consumers' critical thinking styles.

RO3: Identify the preferred communication medium for seekers and engagers of information.

RO4: Determine whether a relationship exists between Florida consumers' critical thinking style and food safety behaviors.

Methods

An online survey was distributed to 827 Florida residents, 18 and older, and 510 completed responses were recorded. The data for this study were part of a larger survey; however, only three sections were used to meet this study's objectives: critical thinking styles, food safety behaviors, and preferred communication medium. Question development was generated from research-developed questions and previous studies. Respondents were presented with five items to measure food safety behaviors, using a five-point Likert-type scale ranging from 1 = *Never*, 2 = *Rarely*, 3 = *Sometimes*, 4 = *Often*, and 5 = *Always*. A food safety behavior index was created to assess the relationship between food safety behaviors and critical thinking styles by summing and averaging the five items to create an overall food safety behaviors index score. Respondents' critical thinking style was measured using the University of Florida Critical Thinking Inventory (Lamm & Irani, 2011), which requires respondents to react to 20 items on a Likert-type scale ranging from 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, and 5 = *Strongly Agree*. The UFCTI identifies learners as either an engager or seeker of information. Critical thinking style scores for engagement were reversed coded and then calculated by the summation of related items from the construct and then multiplied by 1.866. The critical thinking style score was calculated by the summation of items in the respective construct. The summation of both respondents' engagement and seeker scores produced the overall critical thinking style score for respondents (Lamm & Irani, 2011). Critical thinking scores range from 26-130. Scores 79 and above are associated with seekers of

information and scores 78 and below are associated with engagers of information (Lamm & Irani, 2011).

Respondents were presented with 12 different communication mediums, with the option to select all that applied, and were asked to indicate their preferred communication medium when receiving food related information. Davis' convention was used in the interpretation of the correlation coefficient where relative association values of .01-.09 = *negligible*, .10-.29 = *low*, .30-.49 = *moderate*, .50-.69 *substantial*, and over .70 = *very strong association* (Davis, 1971). Reliability was calculated post hoc for the food safety behaviors index and resulted in a Cronbach α of .79. The reliability was also assessed for each construct in the UFCTI and resulted in a Cronbach α of .90 for the seeker construct, and a Cronbach α of .87 for the engager construct.

To ensure content and face validity of the survey instrument, six individuals with expertise in food science, agricultural policy and national affairs, horticulture, and survey design served on the panel of experts. Respondents were recruited via non-probability sampling measures. To ensure validity and selection of a sample representative of the target population, demographic information was weighted according to geographic location, age, gender, and race from the 2010 U.S. Census data. Weighting methods allow researchers to compensate for nonresponse, noncoverage, and conform to external values. Weighting methods also allow the data to better represent the population of interest (Kalton & Flores-Cervantes, 2003). There have been several studies where non-probability samples yielded results that are as good as, or even better than probability sampling (Baker et al., 2013).

The data were analyzed using SPSS ® 22 statistical software. Descriptive statistics were calculated to record respondents' food safety behaviors and critical thinking style. To determine

seekers' and engagers' preferred communication medium when receiving information concerning food related issues, a chi square analysis was calculated. A two-tailed Pearson correlation was calculated to establish the relationship between critical thinking style and food safety behaviors.

A descriptive analysis was completed to track the demographics of the respondents on this study (Table 1). Respondents were composed of 52.7% female (n = 269) and 47.3% male (n = 241). Overall, there were 87.3% (n = 445) Caucasian/White (Non-Hispanic) respondents, 10.6% (n = 54) were Hispanic, and 9% (n = 46) were African American. Almost half of the respondents were between 50-59 years old (24.7%, n = 126) and 60-69 (23.5%, n = 120). According to the rural-urban continuum code classification, 91.8% of respondents lived in metropolitan counties (United States Department of Agriculture Economic Research Service, 2013).

Table 1

Demographics of Respondents

Characteristic	*n*	%
Gender		
Female	269	52.7
Male	241	47.3
Race		
African American	46	9.0
Asian	7	1.4
Caucasian/White (Non-Hispanic)	445	87.3
Native American	5	1.0
Other	12	2.4
Hispanic Ethnicity	54	10.6
Age		
19 and Under	10	2.0
20-29	61	12.0
30-39	63	12.4
40-49	75	14.7
50-59	126	24.7
60-69	120	23.5
70-79	42	8.2

80 and Above	13	2.5
Rural-Urban Continuum Code Classification		
1 million or more metropolitan area	288	56.5
250,000 to 1 million metropolitan area	153	30.0
Few than 250,000 metropolitan area	27	5.3
20,000 or more, near metro area	30	5.9
20,000 or more, non-metro area	0	0.0
2,500 to 19,999 near metro area	8	1.6
<2,500 near metro area	1	0.2
<2,500 completely rural non-metro area	0	0.0

Results

RO1: Determine Florida consumers' food safety behaviors.

Respondents were asked to indicate the frequency with which they practice certain food safety behaviors (Table 2). Over 90% of respondents often or always made sure fresh fruits and vegetables were washed before eating (91.3%, $n = 466$) and washed their hands before preparing food (94%, $n = 479$). However, only 31% ($n = 158$) of respondents always read food labels for food safety information, and only 45.7% ($n = 233$) always disinfected counters before preparing food.

Table 2

Respondents' food safety behaviors

	Never $f(\%)$	Rarely $f(\%)$	Sometimes $f(\%)$	Often $f(\%)$	Always $f(\%)$
Make sure that fresh fruits and vegetables are washed before you eat them	4 (0.8)	6 (1.2)	34 (6.7)	96 (18.8)	370 (72.5)
Read food labels for food safety information	19 (3.7)	56 (11.0)	138 (27.1)	139 (27.3)	158 (31.0)

Disinfect counters before preparing food	11 (2.2)	37 (7.3)	92 (18.0)	137 (26.9)	233 (45.7)
Wash hands before preparing food	4 (0.8)	6 (1.2)	21 (4.1)	88 (17.3)	391 (76.7)
Wash hands before eating food	6 (1.2)	11 (2.2)	48 (9.4)	120 (23.5)	325 (63.7)

RO2: Determine Florida consumers' critical thinking styles.

The original 20-item UFCTI instrument for measuring critical thinking styles was used to fulfill objective 2 (Table 3). Respondents with scores 79 and above were identified as seekers and respondents with scores 78 and below were identified as engagers. There were 261(52%) engagers and 242 (48%) seekers in this study. Respondents' overall UFCTI scores ranged from 66.45 to 94.98 ($M = 79.09$, $SD = 4.04$). A continuum is used to measure critical thinking style, indicating that a high or low score is not better than the other, but rather a low score indicates a seeker style and a high score indicates an engager style.

After reviewing construct scores, scores in the engager construct ranged from 13.06 to 57.85 ($M = 26.20$, $SD = 7.30$), with a lower score signifying an individual's likelihood to engage more with information. Scores in the seeker construct ranged from 31.00 to 65.00 ($M = 52.90$, $SD = 6.51$), with a higher score signifying an individual's likelihood of seeking information when critically thinking.

Table 3

Respondents' critical thinking styles

	N	M	SD
Overall UFCTI Score	510	79.09	4.04
Engager Score	510	26.20	7.30
Seeker Score	510	52.90	6.51

RO3: Identify the preferred communication medium for seekers and engagers of information.

Respondents' communication preferences were compared with each critical thinking style (engagers and seekers) using a Chi square test (Table 4). Among the respondents that chose *printed fact sheets, bulletins, or brochures* ($n = 298$) as their preferred communication method, a larger amount of seekers ($n = 155$) than engagers ($n = 143$) preferred these mediums ($p = .04$). This finding indicated the association observed was significant between seekers and printed fact sheets, bulletins, or brochures when receiving food related information. There was a similar observation with respondents who chose *demonstrations or displays* ($n = 80$) as a preferred method of receiving information concerning food related issues. There were more seekers ($n = 47$) than engagers ($n = 33$) who preferred these mediums ($p = .04$). This finding also denoted a significant association between seekers and demonstrations and displays when receiving food related information. When receiving food related information from *websites* ($n = 377$), engagers ($n = 205$) preferred this medium more often than seekers ($n = 172$) ($p = .05$). This finding indicated a significant association between engagers and websites when receiving food related information.

Table 4

Respondents' preferred communication methods for receiving food related information by individual critical thinking style

	n	Seekers (f)	Engagers (f)	χ^2	p
Printed fact sheets, bulletins, or brochures	298	155	143	4.46	.04*
Demonstration or display	80	47	33	4.31	.04*
Website	377	172	205	3.73	.05*
Attend a short course or workshop	55	22	33	1.63	.20

Seminar or conference	57	30	27	0.53	.47
Fair or festival	35	15	20	0.42	.52
One-time volunteer activity	42	22	20	0.34	.56
Newspaper article or series	214	100	114	0.29	.59
TV coverage	262	129	133	0.28	.60
Other	12	5	7	0.21	.65
Video	161	76	85	0.08	.78
Get trained for a regular volunteer position	28	13	15	0.03	.85

Note. * $p < .05$

RO4: Determine whether a relationship exists between Florida consumers' critical thinking style and food safety behaviors.

In order to determine whether a relationship existed between respondents' critical thinking style and food safety behaviors, a summated scale was created for the five food safety behaviors ($M = 4.31$, $SD = .67$). Using respondents' overall critical thinking style and the food safety behaviors summated scale, a two-tailed Pearson correlation was conducted to identify whether a relationship existed between the variables. In accordance with Davis' convention, the relationship observed was negligible ($r = -.04$), where $r = 0$ signifies the absence of any linear relationship.

Conclusions

This study assessed Florida residents' food safety behaviors and preferred communication methods when receiving information regarding food related issues, as they relate to respondents' critical thinking styles. In the course of determining consumers' food safety behaviors, the majority of respondents often or always made sure fresh fruits and vegetables were washed before eating, and washed their hands before preparing food. This was consistent

with Cody and Hogue's (2003) study where a high percentage of consumers reported washing their hands before food preparation. In contrast, just under half of respondents reported always disinfecting counters before preparing food. While the potential of exposure to foodborne illnesses was reduced by washing their hands, respondents appeared to increase the chances of foodborne illnesses by failing to disinfect their counters as often.

Respondents in this study also reported reading food labels for safety information on an infrequent basis. Food labels serve as the most practical method for consumers to receive product and country safety information (Wang et al., 2013). While the results in this study were similar to Wang et al. (2013), respondents in this study reported even lower instances of observing food safety information on labels. These results illustrate unsafe behaviors from consumers and exposure to several unknown risks with the food they are consuming (Wang et al., 2013).

This study also observed respondents overall critical thinking styles. Approximately half of the respondents were seekers and half were engagers. The results show a balanced representation of each critical thinking style, consistent with Gorham et al. (2014). In addition to identifying respondents' overall critical thinking style, individual seeking and engaging scores were compared to preferred communication methods when receiving information concerning food related issues. A significant preference for printed fact sheets, bulletins or brochures, and demonstration or displays was observed among information seekers. These results support Lamm & Irani's (2011) findings in which these individuals seek out information and welcome others viewpoints.

A significant preference for websites when receiving food related information was observed among engagers. Largely, both seekers and engagers utilized this medium; however, how they use websites may differ. This is similar to Mayer and Harrison's (2012) study in which

respondents preferred mediums, regarding food safety, were more web-based (i.e., YouTube, Facebook, videos, and Internet). While it was outside the scope of this study to determine how respondents of each critical thinking style used websites, the literature provides insight to preference when retrieving information among the different critical thinking styles. Focusing on the needs of engagers' to communicate with others and their desire to utilize reasoning skills through interactions with others, engagers may favor websites using word of mouth methods (i.e., public discussion boards/forums, blogs, vlogs, social networking sites, personal websites, etc.) (Blackshaw & Nazzaro, 2006; Lamm & Irani, 2011). This supports the vicarious learner explained through the social cognitive theory, where individuals obtain new knowledge and behaviors from others with the idea of being embedded into social systems (Bandura, 2001; Schunk, 2012; Stajkovic & Luthans, 1998). These mediums also present the opportunity to be personalized and relevant for engagers, which was found to promote the process and storage of information for behavioral future use (Abbot et al., 2012; Petty et al., 2009).

Seekers desire new information, considering multiple viewpoints on topics, while acknowledging their own biases with an objective perspective, and therefore are more likely to search for information that observes the same. This resembles enactive learners, which uses past experiences as a gauge to evaluate themselves when critically thinking. The desire to seek out the truth would result in retrieving information from trustworthy and researched based sources, which the use of the Internet would enable them to do. The difference in seekers and engagers both using this medium would be the interpretation of the information they receive. Seekers' objectivity and decision-making skills would allow them to process the information differently to reach a solution (Lamm & Irani, 2011).

The last objective for this study was to determine whether or not a relationship existed between respondents' overall critical thinking style and food safety behaviors. The relationship observed was negligible and this correlation was not large enough to indicate a substantial relationship between respondents' food safety behaviors and critical thinking styles. However, it is important to remember that these are self-reported food safety behaviors, and with the limitations of non-probability sampling and weighting in mind, the correlation between food safety behaviors and critical thinking styles might be stronger, or weaker, in a different or larger population.

Implications and Recommendations

The researchers recognize the limitations associated with respondents' self reported food safety behaviors which may not completely represent actual food safety behavior engagement, as noted by other studies which explored food safety behaviors (Abbot et al., 2012; Clayton et al., 2002; Mayer & Harrison, 2012). While this study found no substantial relationship between Florida residents' critical thinking style and food safety behaviors, several interesting findings provided insight regarding consumers' self reported food safety behaviors, their preferred communication styles, and critical thinking styles.

Despite respondents washing fruits and vegetables before eating, and washing their hands before preparing food, several behaviors bring to question unnecessary risky food safety practices. The low reported washing of counters before preparation still serves as a vector for foodborne illnesses. Therefore, while consumers remove one risk for the introduction of foodborne illnesses, they introduce another. Also, while respondents in this study appeared to be actively using various communication mediums, they displayed minimal regard for reading food

labels, implying consumers are not actively taking advantage of all resources to receive the correct information concerning the food they are consuming.

Additionally, while only three communication methods displayed a significant preference between engagers and seekers of information, there was no significant difference between those with different critical thinking styles for the rest of the mediums in this study. However, the results showed some consistencies between the types of mediums and the critical thinking style constructs. Seekers were more likely to search for material from information-oriented sources: printed fact sheets, bulletins or brochures, demonstration or displays, seminars or conferences, and a one-time volunteer activity. Engagers preferred communication methods were more consistent with word of mouth or entertainment methods of retrieving information: websites, short workshop, fair or festival, TV coverage, and videos. This implies the need for more than one communication medium to be used when delivering information concerning food related issues to reach individuals with seeker and engager critical thinking styles.

From the results of this study, in coordination with the results from the literature reviewed, communicators should focus message development and medium selection based on the two critical thinking styles addressed in this study: engagers and seekers of information. Critical thinking style considerations must guide communicators and be purposively executed, using the preferred mediums established in this study. Overall, both engagers and seekers preferred websites, printed fact sheets, bulletins, brochures, TV coverage, and newspaper articles or series, in contrast to the other mediums, when receiving food related information. While both critical thinking styles preferred similar mediums, the way they use these mediums will differ. Communicators need to identify their target audiences' critical thinking style, utilizing the social cognitive theory concept of interacting personal factors, behaviors factors, and environmental

events, to personalize their efforts and content to their audience. Establishing these criteria would eliminate unnecessary efforts, and create a more meaningful and personalized experience for consumers, resulting in consumers participating in more thoughtful, informative, and safe food behaviors (Abbot et al., 2012; Petty, Barden, & Wheeler, 2009).

Message development around food safety should address both critical thinking styles and promote positive food behavior changes, while encouraging consumers to think critically. Messages should address risks associated with certain food safety behaviors, and reinforce the control consumers possess to reduce these risks (Medeiros et al., 2001b; Schafer et al., 1993). While various mediums may be used to disperse these food safety messages, they should also include the importance of reading food labels for safety information. These messages should reiterate the risks associated with not reading food labels. Food labels are the most convenient and factual tool in educating and reducing food safety risks for consumers, and communicators need to take advantage of this opportunity.

Future research should continue to explore critical thinking styles to better understand how to implement findings of this study and others in various fields. While the UFCTI instrument defines each construct well, researchers have the opportunity, through further study, to contribute to the attributes, preferences, and behaviors associated with each critical thinking style. A national and international study might also explore how different factors (i.e. culture, geography, etc.) might affect critical thinking styles. In addition, while critical thinking style was not found to be related to food safety behaviors further research should examine other factors related to or predicting food safety behaviors. This study was limited to Florida residents and future research should further explore critical thinking styles and food safety behaviors on a national level. Doing so will help clarify the accuracy of methods used in this study to represent

a larger population. Researchers should also explore a wider variety of food safety behaviors. In doing this, certain unknown risks may surface which could be communicated to consumers, ultimately reducing the prevalence of foodborne illnesses.

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Developing Writing Identity in an Advanced Agricultural Communications Media Writing Course

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Developing Writing Identity in an Advanced Agricultural Communications Media Writing Course

Abstract

Writing is a complex process that students use to interpret assumptions, make meaning, solidify intentions, and convey knowledge. The purpose of this study was to use Chickering and Reisser's (1993) theory of education and identity to understand students' perspectives on how their experience in an advanced agricultural communications media writing course helped them develop their identity as writers. At the end of the course, 57 students completed one-page reflections that were analyzed using a qualitative content analysis guided by Chickering and Reisser's (1993) seven vectors of college student development. Students showed evidence of experiencing growth in each vector and became media writers who could identify themselves as writers even if they did not intend to pursue a writing career. Student/faculty relationships were key factors in writing identity development because students valued the instructor feedback and human connection. The second major assignment was the point at which they either identified themselves as writers or they did not. Perhaps this was because students were immersed in a structured writing process during that time. Students indicated that the value is not in the word but in the author's ability to connect words into a cohesive structure that captures an audience. Based on this study, agricultural communications instructors should focus on teaching students the pathway to the end product and not focus on teaching the end product. More research, therefore, needs to be conducted on what components of the second major writing assignment helped students become more effective writers and helped them develop identity as writers.

Keywords: advanced media writing, writing-intensive course, education and identity

Introduction

Is writing more than communication? It is a complex process that encompasses intricacies, functions, and possibilities (Gries, 2011). Writing as story telling confirms identity, heartens others, and creates community (Tappenden, 2010). "The metacognitive nature of creative writing has freed the minds of learners and unleashed them to play again with their thoughts and construct them into their use of language as an art and form of communication" (Tappenden, p. 268). An understanding of discourse community contributes to students' ability to develop a sense connection with their writing, allowing them to see writing as meaningful and worthwhile (Lunsford, Fishman, & Liew, 2013). "If it is language that defines and bounds us, then perhaps the most radical form of agency we can grant students is the ability to manipulate the very language and discourses that define them" (George, 2012).

When students arrive at college, they are growing as writers and facing new struggles in an unfamiliar academic environment (Brockman, Taylor, Kreth, & Crawford, 2011). College is an important time in students' personal transformation and growth (Chickering & Reisser, 1993), which has the potential to influence the students as writers (Brockman et al.). During college, students encounter experiences that challenge their identities, emotions, thoughts, beliefs, and assumptions, and they are forced to solidify those experiences in the presence of environmental influences (Chickering & Reisser). Faculty members should empower "students to become aware of and proficient in the performance of those identities and roles that will now be expected of them within academia" (George, 2012, p. 321).

Students become effective writers through "deepening engagement and commitments, in lively association with other students and teachers, in fields of study they want to write about" (Gottschalk & Hjortshoj, 2004. p. v). Effective writers use writing to learn, understand, and

retain information (Foster, 1983; Strachan, 2008). Curriculum is important in students' ability to become effective writers. "Effective curriculums are achieved when a balance is found between student interest, faculty vision, and industry need" (Watson & Robertson, 2011, p. 16). Therefore, curriculum should be designed to foster students' development, help them develop identity, enhance their learning process, and challenge their thoughts and beliefs (Evans, Forney, Guido, Patton & Renn, 2010).

Conceptual Framework

Chickering and Reisser (1993) indicated that college student development is best described as vectors, meaning to impart direction and magnitude (Foubert, Nixon, Sisson, & Barnes, 2005). Developing competence, the first of Chickering and Reisser's seven vectors, has three components: (a) intellectual competence (use of mental skills to comprehend, solve problems, reflect, analyze, synthesize, interpret, and engage in active learning); (b) physical and manual skills (use of body to increase performance, self-expression, and creativity); and (c) interpersonal competence (ability to listen, ask questions, provide feedback, and engage in meaningful conversations).

Chickering and Reisser's (1993) second vector is managing emotions—"anxiety, anger, depression, desire, guilt and shame have the power to derail the educational process when they become excessive or overwhelming" (p. 46). In college, students learn how to release vexations and cope with opportunities and challenges before exploding. The balance of self-control and self-expression guided by awareness and integration are important components of students' ability to manage emotions (Chickering & Reisser).

The third vector describes students' movement through autonomy toward interdependence—mutually reliant relationships (Chickering & Reisser, 1993). As students

become interdependent, they learn to be self-sufficient, gain a sense of self-direction, and accept the responsibility of setting and reaching their goals. During the process, students become less reliant on constant feedback and more reliant on their ability to think critically and independently (Chickering & Reisser).

Vector four involves developing mature interpersonal relationships, including "tolerance and appreciation of differences [and] capacity for intimacy" (Chickering & Reisser, 1993, p. 48). Students learn to establish strong relationships and make enduring commitments with honesty, responsiveness, and respect as the foundation (Chickering & Reisser). Development includes learning how to share, accept differences, appreciate the good and bad, and build relationships that endure crises, distance, and separation (Chickering & Reisser).

Establishing identity, the fifth vector, depends partially on the first four vectors (Chickering & Reisser, 1993). "Development of identity includes … clarification of self-concept through roles and life-style, sense of self in response to feedback from valued others, self-acceptance and self-esteem, and personal stability and integration" (Chickering & Reisser). Established identity is a precursor to students' feeling of competence and worthwhileness. However, students' establishment of their overall identity is dependent on their ability to establish physical, sexual, personal, social, historical, cultural, and spiritual identity (Chickering & Reisser).

In the sixth vector, developing purpose, students increase their ability to assess their interests and options, illuminate their goals, make plans, and find opportunities despite challenges (Chickering & Reisser, 1993). Developing purpose requires students to develop action plans and work toward work-life balance. It "involves a growing ability to unify one's

many different goals within the scope of a larger, more meaningful purpose, and to exercise intentionally on a daily basis" (Chickering & Reisser, p. 50).

Developing integrity, the final vector, closely aligns with establishing identity and clarifying purposes. Chickering and Reisser (1993) wrote that developing integrity involves overlapping stages of humanizing values, personalizing values, and developing congruence. Students will shift from strict beliefs in absolute rules to a relative outlook before choosing the rules to guide them and their life circumstances (Chickering & Reisser). Students, then, develop congruence when they achieve a behavior that is uniform with their individualized values (Chickering & Reisser).

Moreover, Chickering and Reisser (1993) wrote that seven environmental factors—including student-faculty relationships, teaching, and curriculum—influence student development (Evans et al., 2010). Chickering and Reisser claimed that "any environment is a system or a totality of interacting parts" (p. 279), suggesting that "an educationally powerful environment coordinates all elements" (p. 279). Evans et al. (2010) emphasized that Chickering and Reisser had a notable impact on interventions in higher education. It's important, however, to remain aware of the limitations of Chickering and Reisser's theory and to appreciate its value when used correctly (Evans et al., 2010). With this in mind, college instructors should acknowledge the usefulness of the seven vectors but remain intimately involved in the educational process and seek innovative approaches to student development.

Purpose and Research Questions

The purpose of this qualitative content analysis was to use Chickering and Reisser's (1993) theory of education and identity to understand students' perspectives of how their

experience in an advanced agricultural communications media writing course helped them develop their identity as writers.

1. What teaching techniques contributed to students' development of competence in an advanced media writing course?

2. How does an advanced media writing course contribute to students' development of their sense of integrity and their professional identity and purpose as writers?

3. How do students in an advanced media writing course move from being autonomous to be interdependent?

4. How do students develop relationships and manage emotions in an advanced media writing course?

Context of the Study

Agricultural Media Writing II is an undergraduate major-specific course that is the second of two writing-intensive courses that Texas A&M University agricultural communications and journalism majors and minors are required to complete. It builds on the skills learned in *Agricultural Media Writing II* by allowing students to apply those skills to increasingly complex writing situations. Students write soft news stories for print and electronic media. They learn how to gather information from interviews and print materials, format stories for a particular medium, and write for a target audience. Course exercises and feedback help students refine their editing skills as they develop competencies that would be expected in professional settings. Upon completion of the course, students should be comfortable with gathering information; be able to write clearly, creatively and concisely using Associated Press (AP) style; and have obtained a basic knowledge of how to report facts in a clearly objective manner.

Agricultural Media Writing II is taught each fall, spring, and summer semester. The 15-week, two-component course met four days a week and was taught during the spring 2014 semester. The lecture component of the course met twice weekly and was 50 minutes in length. The laboratory component met twice weekly and was 75 minutes in length. The course featured weekly lectures designed to stimulate creativity, improve writing skills, and serve as a complement to the course's laboratory exercises and major writing assignments. The laboratory exercises included AP style quizzes, copy editing exercises, group work, research assignments, and weekly small incremental assignments that funneled into the course's major assignments. An instructor was present and available to assist students during each laboratory session.

Students were required to complete three major writing assignments. For the first major assignment, students were given the option of doing a column or a review. The column option allowed students to write about any topic with some connection to agriculture. The review option required students to write a review about a restaurant, movie, or book. Criteria for the first assignment included 500 to 600 words; proper attribution, grammar, and mechanics; and a topic statement specifying a target audience and target publication for the story.

The second major assignment was an informational/educational or how-to soft news story. Students could pick their topic for the second major assignment as long as it was connected to agriculture. Criteria for the second assignment included 600 to 800 words, use of at least two interview sources and one print source, and proper attribution, grammar, and mechanics. Prior to topic approval, students submitted a query letter that included a discussion of the topic, a target audience, a target publication, the student's qualification to write about the topic, and the method of follow up.

For major assignment three, students completed a personality profile or a descriptive soft news story. Students selected their own topic as long as it was related in some fashion to agriculture. Criteria for the third major assignment included 1,000 to 1,200 words with a minimum of three interview sources and one print source as well as proper attribution, grammar, and mechanics. A query letter was also required for major assignment three.

Formative and summative feedback was provided within one week for laboratory assignments and two weeks for major assignments, and students could rewrite each of the major writing assignments. An important ingredient in major writing assignments two and three was a peer edit conducted during a regularly scheduled laboratory session. Students were required to complete peer reviews. However, they were given the liberty to incorporate the suggested revisions and edits as they saw fit. Mandatory editor meetings with the course instructor were required for each students' third major assignment.

Method

This qualitative study investigated how agricultural communications students in an advanced media writing course developed writing identity. We sought deep insights from students into the developmental challenges they faced during the course as well as how they constructed their own identity framework throughout the course. We also recognized that the intimate interaction between the environment and the students made it impossible to separate the course context from the students themselves. For these reasons, this research problem necessitated investigation by qualitative methods (Lincoln & Guba, 1985).

As a means of evaluating the effectiveness of the course, the instructor asked all students to complete a one-page reflection evaluating their experience in the course. These evaluative reflections served as the data for this study. The population for this study was undergraduate

agricultural communications students enrolled in *Agricultural Media Writing II* at Texas A&M University during the spring 2014 semester ($N = 57$). The majority of the students were upper-class, female students majoring in agricultural communications and journalism. Prior to enrolling in the advanced media writing course, students had completed an introductory media writing course. Students were asked to reflect on their advanced media writing course experience by answering four questions:

(1)   Describe yourself as a writer before this class and now.

(2)   What class activities helped you the most (e.g., peer review, instructor feedback, AP style quizzes)?

(3)   At what point in the course did you begin to see writing differently?

(4)   How has this course helped develop your idea of writing as a profession?

Each participant received a random two-digit number identifier ranging from one to 57. Each one-page reflection was unitized or broken down into words and phrases that held meaning as a unit (Merriam, 2009). Each unit was labeled with a sequential code. Therefore, the first unit of student 25 would be labeled as 25:01.

Data were analyzed using analytic induction (Patton, 2002). Analytic induction uses an established theory to provide a framework for analyzing qualitative data, extending the application of that theory into new contexts. In this case, Chickering and Reisser's (1993) theory of college student development was used as the lens through which we analyzed the student reflection data to extend the understanding of college student development into development of writing identity. Although the data aligned with the seven vectors outlined in Chickering and Reisser's theory of education and identity, the data were not collected based on the theory. After we began the initial data analysis, we realized the data fit the theory. At that time, we chose

analytic induction using Chickering and Reisser's theory. Within each vector, the data were analyzed using content analysis (Fraenkel & Wallen, 2009).

Qualitative studies require special attention to trustworthiness. To achieve credibility (Merriam, 2009), the certainty that findings match reality, we kept a reflexive journal and engaged in persistent observation. The course instructors kept reflexive journals through their teaching experience and through the course of the data analysis. Instructors achieved persistent observation as they taught students throughout the semester. To achieve dependability (Merriam, 2009), the certainty that results are consistent with the data, we triangulated the data, circulated peer debriefing memos, and kept an audit trail. Data was triangulated using theory (Chickering & Reisser, 1993) and instructor observation. Instructors and researchers circulated peer debriefing memos among ourselves and to other qualified peers as a check on our analysis. The audit trail connects the data to the theory, and that served as our interpretive framework. To achieve transferability (Merriam), or applicability to other outside settings, we used thick description in reporting the results so readers might be able to easily determine whether the findings could apply to their own settings. Using reflexive journals, triangulation, and peer debriefing memos also served to build confirmability, assurance of objectivity (Merriam).

Findings

Research Question One

Although students may not have sought to become professional writers (26.01), they became more familiar with and confident in writing because of the positive influence and encouragement they received (28.10). "I was always so scared to write and I didn't truly love it, but now I have confidence" (6.11). The media writing course not only helped students become more confident in their writing ability, but it also helped them execute their thoughts using

journalism techniques and develop their writing style and voice (2.01; 4.01). "I now understand that the order of information is almost key to writing a great piece" (24.03).

The second major assignment was a significant turning point where the light bulb became brighter (7.08; 20.11; 30.05; 42.08). Before the second major assignment, students wrote mostly editorial type assignments. During the second major assignment, they learned about the writing process and developed each piece of the feature story during lab (9.03). They worked to construct the story one section at a time using audience identification, instructor and peer feedback, examples, AP style quizzes, and continuous practice through multiple drafts. The lecture about lack of quality rough drafts was the turning point for one student—"The lecture was uncomfortable and made me squirm; it was the clicking point where I learned the importance of writing more before the work is due" (20.11).

Writing continuously helped students improve as writers (15.05; 36.13) and "helped make writing enjoyable" (31.15). "I realized the only way to be a better writer is to practice. I look forward to improving my skill set" (27.19). Students wrote once a week in lecture for 10 to 15 minutes to form habits of writing (15.05). "You did things that really helped develop us individually, instead of simply teaching us the steps of writing a feature story or a review" (31.15).

Students expressed that choosing an interesting topic, completing each piece of the story in lab, and submitting it separately for feedback before submitting the story for a grade helped them be more focused writers who cared about their writing (22.05; 24.07; 50.03; 51.08). "Credible edits help me improve … and learn how to make my writing more efficient" (24.07). Students were encouraged "not to just throw things together for an assignment. … and [to] put everything you have into what you write" (51.08). Spending short amounts of time writing

instead of writing everything at once helped students retrieve their thoughts (50.03) and take their writing from word count to language (30.09; 34.12). The guidelines and requirements discussion was when the challenge became clear—"I began to see that writing is so much more than sitting in front of a computer and typing your thoughts until you reach your desired word count" (34.12).

Class examples as well as stories students read outside of class helped them visualize mistakes (15.07), understand audience needs, and appreciate concise sentences and paragraphs (40.05). Students saw the value of hooking the reader early in the story, drawing the reader into the story, and "writing something everyone wants to read" (24.06). "Authors of these papers were beckoning the reader to continue through their work. [Journalism style] made reading the paper easier as the readers' eye was more willing to dive into a digestible short paragraph rather than a longwinded large paragraph" (40.05). Words, when used correctly, are powerful and can greatly affect their readers (21.02). "This course has challenged me to take my story telling talents to the next level" (49.05).

Being in lab and doing hands-on assignments were also important. "I really enjoyed the Oreo lecture because it was a fun and cool way to apply what we were doing" (48.05). However, students had mixed emotions about the AP Style quizzes completed in lab (15.05; 48.04; 57.11). "I know they serve a purpose, … but I rarely saw a time where they helped me improve as a writer" (19.13).

Research Question Two

Students started the advanced media writing course having humanized writing-related values but had not yet personalized those values. "I have always been someone that thought words are a powerful thing and this class just reinforced that" (41.02). Others personalized their

writing-related values and were working toward developing congruence. Those students may not want to write professionally, but the course solidified the need for writing ability in the workforce (45.09). "I have never really desired to be a writer, … but I do, however, desire to be a better writer" (53.11).

At various points in the course, students' ideals of themselves as writers shifted as they questioned their identity and place in society. "Playing the field as a writer is a very important aspect, especially in the news world, but being able to adjust yourself and your writing style is imperative" (4.19). At the end of the course, though, students described the course as instrumental in identifying themselves as a willing writer, a writer who knows what drives him or her to or away from different types of writing, a hardworking writer with a desire to impress, a confident writer, a writer who understands his or her audience and publication (22.06; 28.08; 34.07; 43.13; 46.03; 49.04). "I love hunting down stories and having the opportunity to tell them through text" (49.04).

Oral and written feedback helped students develop their writing identity even though they worked hard not to be offended by constructive criticism (34.07). "Editing and being able to take constructive criticism without getting offended is something that takes time to develop" (17.03). Real-world deadlines and feedback prepared students for a career in a fast-paced journalism environment (17.03). Feedback on "what I did right or wrong was really a breakthrough for me. It made me break out of my shell a little bit and feel more comfortable with myself and my style of writing" (34.06)

Students' writing identity was challenged between staying true to themselves and reporting the facts to their audience. "I have a bad habit of voicing my opinion in works, allowing my style to show" (4.13). Anyone can write but being an author takes work and is

tedious (21.12). "Writers are undervalued" (21.12) because writing is more than putting words on paper. "The space between the letters, words and lines paint beautiful pictures … What happens when we see the intention exactly as the author intended?" (5.14). Some students fell "in love with writing" (43.12). "I do love writing now. I have started looking at positions that require a lot of writing, because I know I can do it" (6.13). Others, however, appreciate the writing profession and feel prepared to write if needed but do not plan to write professionally (13.02; 17.09; 29.13; 38.11; 45.09; 46.11; 53.11; 54.04). "I like the idea of writing as a profession more than the actual act of writing" (17.09).

The course did help students solidify their decision to pursue or not pursue a writing profession (6.13; 18.15; 30.07; 35.15; 37.16; 40.10; 44.05; 45.09; 47.11). "I do not want to be a professional writer … I already get intimidated enough when a peer edits my paper, I would sweat bullets if I had a professional editor edit my paper every week" (35.15). Assignments that focused on developing writing style helped students develop purpose and understand their career goals related to writing (23.08; 46.10). "I have always enjoyed writing and it has been one of my strong suits, but finding my style unlocked a whole new world in writing" (46.10). However, "I am not sure it is the path I want to take anymore. … It is a viable option for which I am qualified, but I don't love it like I did before" (30.11).

Students gained writing experience and encouragement they can use in broader writing professions (18.15; 20.14). "I have had fun interviewing people and writing in this class. … My goal … is to become an extension agent in Texas, and this course [has] given me knowledge … to become more successful in that career" (20.14). Students enjoyed writing but do not plan to be professional writers because it is tedious and time consuming (2.10; 13.02; 27.17). Thus,

students have "a whole new respect for journalism and media writing industries. I always knew writing wasn't an easy career path, but I didn't think it entailed as much work as it does" (2.10).

Research Question Three

Students emphasized that before the class they were shallow, lazy writers who lacked research skills, revising and editing ability, structure, and an understanding for the complexities of writing (14.01; 27.11; 31.20; 35.12; 49.01). "Research was boring" (49.01), and "My writing style was poor before this class. I did not have any organized structure to my writing" (16.01). However, after the class they were deep writers who started researching earlier, wrote in increments, read aloud, and asked for opinions and reviews (1.08; 25.04; 50.04). Students "take time out of each day (or most days) to write and work on whatever project," which helps them "see the paper with fresh eyes each day so I can catch any mistakes" (25.04). Developing habits to write and read continuously as well as edit and revise is important in building a successful writing career (8.08; 8.09; 47.02). "Writing is a vital skill to have for any job, not just a strictly writing job" (51.07).

The course encouraged students to dig deep into writing, work hard to make their writing more effective, and organize their thoughts (9.07; 34.02; 34.04). "It was refreshing to know that writing wasn't really as simple as I thought it was" (12.05). Writing is an equation, "a system of parts coming together to make a masterpiece. Before, I consider[ed] writing like painting, a mixing of colors to make something beautiful. I suppose it can be seen either way depending on what I want to write" (49.09; 49.10).

Additionally, course exercises and assignments helped students overcome barriers and move toward interdependence. "I never thought that a writing class could be so demanding. Even though we just had three papers, each one challenged me in a different way" (57.07). During the

interviewing exercise, one student realized her success was dependent on getting an interview with a random student on campus. "After I asked one person, it was like a wall fell down. I was not scared to ask people after that" (19.10; 19.11).

Students depended on feedback from their instructor and their peers to become more effective, independent writers (3.07; 6.07; 50.04). Feedback guided students toward becoming polished writers (19.17) who could analyze their writing from another's perspective (20.06). "I saw my rough drafts become better each time I made changes" (3.07). Students appreciated that the positive and negative feedback was not about how to change it but about what was wrong (4.10; 16.09; 37.08). "Positive encouragement is great to hear, and negative feedback helps make your work even stronger, so it was a win-win situation" (37.08). "The harsher the criticism, the more it is remembered" (4.10). Peer reviews taught students how to critically analyze the feedback and make decisions based on the quality of feedback. "I did take everyone's suggestions into consideration, but I also had enough faith in myself to know when to go with my original writing or make my own changes" (34.08).

Research Question Four

Before the course, students suffered from stifled creativity because of mundane writing assignments (23.10; 31.01)—"I lost confidence in my writing and sort of shied away from it" (38.03). The course changed students' opinions and emotions about writing, though (7.02; 29.11). "Now I see that journalism isn't quite the monster I made it out to be" (7.02); "It no longer scares me to try and apply to positions where writing is required" (29.11). The course helped students regain creativity and dedicate 30 minutes to writing. "I began to view writing as more of a creative process rather than a stale burden. Writing became fun and colorful, but it was still really hard" (9.09). In addition to creativity, writing was a way students released their

emotions and made sense of life—"I did not realize before now how insightful and therapeutic writing can be" (28.12). However, other students found the course hurt their ability to write creatively. "Finding other people's opinions about what I was interested in wasn't fun for me" (49.02).

Furthermore, human connection during the feedback process was an important piece of the course (1.05). Accepting and providing constructive criticism and feedback about one's work takes courage and strength, though (42.06). "Critiquing work was nerve racking because I didn't want to come off as picky or overcritical to [my] peers" (42.06). Students' peers were instrumental in helping them catch mistakes that they would have not found on their own (14.05). "On major assignment 2, my peer review helped me to the point where my whole paper had to be changed because it was not written correctly" (14.05). Peer reviews, therefore, should not be short changed as unnecessary exercises (2.06) because they gave students the opportunity to improve their critiquing abilities and the opportunity to apply the review process to their own materials (9.06). "Peer reviews were very helpful … because I learned how to peer review" (9.05)

Students valued peer feedback, but they valued instructor feedback more (1.06; 36.08; 36.09). "I feel more comfortable asking about questions that I feel my peers might not want to deal with" (50.07). Students appreciated the instructor explaining the why behind course material and grammar mistakes (1.06; 2.06; 36.08). Instructor feedback "helps me see the instructor's style of writing and what she is looking for. … I remember it more because it's for a grade and taken more seriously than a friend reading it" (36.08).

In 16 weeks, therefore, students in an advanced media writing course developed competence, managed emotions, moved from autonomy to interference, developed mature

interpersonal relationships, established identity, developed purpose, and developed integrity through feedback, classroom assignments, and major writing assignments.

Conclusions and Recommendations

Students in the spring 2014 *Agricultural Media Writing II* used the course as a vehicle to become media writers who could identify themselves as writers even if they did not intend to pursue a writing career. In this study, students showed evidence of moving through, at different times and at different rates, Chickering and Reisser's (1993) seven vectors of college student development.

Student-faculty relationships, noted by Chickering and Reisser (1993) as influential in college student development, were key factors in students' development of their writing identity. Feedback was a key player in students' ability to move from being autonomous to being interdependent and helped them become more confident in their writing abilities. Students valued the human connection and one-on-one feedback the instructor provided them, and they appreciated the encouragement received from their peers, which Chickering and Reisser described as developing interpersonal competence. Although peer feedback was not as constructive or as powerful as students would have liked, it did help them become critics of others' work and become more effective and engaging writers.

Each phase of the course was taught independently but connected to help students understand and work through the writing process, which is a factor important to students' movement from autonomous to interdependent (Chickering & Reisser, 1993). Students showed improvement throughout the semester, but the majority of them cited the second major assignment as the turning point assignment and the point at which they either identified themselves as writers or they did not. Perhaps this was because students were engaged and

immersed in a structured writing process for the development of the second major assignment. Students were walked through and provided feedback at each step in the process—from brainstorming and query letter proposal to final revisions and edits. This teaching method helped students to not only understand the writing process but also improve each step before it had the potential to negatively impact their grade.

Reading story examples during class helped students improve their creative writing abilities because they were given the opportunity to engage in free writing that enabled them to be creators and not just writers. A prerequisite to the advanced media writing course is the basic media writing course where students learn about hard news writing and how to write for quick consumption using who, what, when, where, and why. Therefore, the first four weeks of the advanced media writing course is designed to help students become more creative media writers who stay true to the facts while telling a compelling story. Media writing relies on the author's ability to tell the story in a creative way that engages the reader. Students engaged in creative writing exercises that enhanced their writing style and voice and moved them to become story tellers and not just writers. Tappenden noted in 2010 that telling stories confirms identity. Thus, as students tell stories in a media writing course, they have the potential to confirm and develop identity, Chickering and Reisser's (1993) fifth vector. Perhaps, giving students the opportunity to hone their creativity skills and tell stories contributed to their course enjoyment.

Students' thoughts about writing changed as a result of the course. Students, now, understand and respect writing professions and effective writing even if they choose not to pursue a writing career. Lunsford, Fishman, and Liew (2013) noted that an understanding of discourse community is important to seeing writing as worthwhile. Being an author takes work because writing is more than grammar and punctuation. Some students came into the advanced

media writing course with an understanding of writing-related values but they had not yet personalized those values (Chickering & Reisser, 1993). The value is not in the word but in the author's ability to connect words into a cohesive structure that captures an audience. The course guided students' behaviors (Chickering & Reisser) in adopting new writing practices. For example, they now conduct in-depth topic-related research, write every day in short increments, read their stories aloud while revising and editing, and seek advice and opinions from peers.

Chickering and Reisser's theory of education and identity has not been cited as a commonly used theory in written communication research, but it does have applicability. Extending the theory into the writing classroom has unique implications that could transform writing instruction in agricultural communication programs. Based on the evidence provided in this study, agricultural communications instructors should focus on teaching students the pathway to the end product and not focus on teaching the end product. When students work through the process, they immerse themselves into telling the story, an input for confirming identity and building community (Tappenden, 2010). Instructors should stress the importance of storytelling and not just writing because authors may be more invested in their work when they can identify with the story.

Further, writing done in a solitary or group environment needs constructive feedback in an organized, guided manner. The feedback process should be a structured process that includes both instructor and peer feedback. Instructors should provide students feedback during each phase of the writing process to be proactive in catching mistakes. Moreover, instructors should use the feedback process as a chance to teach students how to provide critiques and valuable feedback to their peers. Providing valuable, constructive feedback is a skill that students can learn and transfer to other capacities.

It is important to note that this study cannot be generalized beyond the population because it is one study conducted with a specific cohort at a particular time. Therefore, more research needs to be conducted on what components of the second major writing assignment helped students become more effective writers and helped them develop identity as writers. Chickering and Reisser (1993) noted the importance of environmental influences in students' development which are prevalent in media writing courses and should be explored to determine the most influential environmental influences. Additionally, more research needs to be conducted on the environments that encourage students' creativity in media writing.

Implications

Undeniably, students developed their writing identity in the advanced media writing course. Students' development of their writing identity was enhanced by the environmental influences that Chickering and Reisser (1993) explored in-depth. Students were given the opportunity to be creative in an environment that encouraged content development guided by consistent feedback and writing practice, which should be representative of the professional writing environment. Consequently, agricultural communications instructors should work to provide students with a realistic environment representative of the workplace.

Understanding how students develop identity will help agricultural communication instructors not only prepare students to communicate but also equip them with the education and identity they need to contribute to the 21st century workforce. Students enter college looking to find themselves and identify with their role in society, as George noted in 2012. Therefore, because writing can be used as a tool to clarify meaning, students can use opportunities in media writing courses to establish their identity and clarify their purpose and career goals.

Hence, writing is a tool to interpret assumptions, make meaning, solidify intentions, and convey knowledge. Writing is more than communication.

<div align="center">**References**</div>

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**Student Expectations and Reflections of a Study Away Course Experience
to Washington, D.C.**

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Abstract

Active, out-of-the-class learning experiences have proven to provide students with a variety of benefits. One way to offer these valuable experiential education opportunities this is through study away to international or domestic destinations. The purpose of this study was to explore students' perceptions of a study away course experience to Washington, D.C. This course was a collaborative effort between two universities. Twenty-two students participated in the study away experience and 21 completed pre- and post-trip questionnaires to determine their expectations and reflections of the experience. Through qualitative analysis of students' open-ended responses, emergent themes were identified. Students expected to gain a new experience, network with others, and have an enjoyable trip. Post-trip reflections revealed students gained a great deal more than they anticipated, both personally and academically. Recommendations for practice and research are provided.

Student Expectations and Reflections of a Study Away Course Experience
to Washington, D.C.

Introduction

According to the National Association of State Universities and Land-Grant Colleges

(NASULGC, 2000), "the United States needs its higher education sector to provide leaders who

can understand and guide the economic, political, and social forces that will control or influence

the path of the international community in the 21st century" (p. 3). Study abroad programs assist

in accomplishing this need by developing students' cultural awareness, broadening the academic

experience, and building personal skills (Bobbitt & Akers, 2012). Although they may realize the

importance of studying abroad, many college students are unable to take advantage of that

opportunity due to limitations on time, finances, or lack of opportunity. An Institute of

International Education (2011) study found college representatives said "more affordable

opportunities for students to gain international experience" are needed (para. 6). One way

students can gain a more global perspective is to participate in a "study away" experience.

Sobania and Braskamp (2009) suggested the term "study away" be used as both a "concept and

educational strategy that integrates study abroad programs with domestic programs" (p. 23).

While study abroad opportunities are valuable in developing personal and professional skills,

domestic-based programs can also encourage positive learning outcomes. "As both a concept

and strategy, study away recognizes that students can have experiences that open their minds,

hearts, and behaviors to difference and allows them to experience such difference firsthand,

either internationally or domestically" (Sobania & Braskamp, 2009, p. 24).

Previous research has shown that active engagement in learning is an important concept

of undergraduate education (Anderson & Adams, 1992; Chickering & Gamson, 1987; Johnson,

Johnson, & Smith, 1991). Out-of-the class learning experiences are a significant part of the

overall undergraduate experience and should be integrated into the classroom to enhance critical

thinking, problem solving, teamwork, leadership skills, and personal development (Kuh, 1995;

Seidman & Brown, 2006; Terenzini, Pascarella, & Bliming, 1996). Seidman and Brown (2006)

discussed the need for college instructors to reevaluate delivery of classroom material to

maximize outside experiences. Studies have found that these experiences are more valuable than

those in the classroom (Kuh 1993, 1995; Nathan, 2005; Terenzini et al., 1996; Tinto, 1997).

Nathan (2005) found that 65% of undergraduate students reported they learned more outside the

classroom than within. Kuh (1993, 1996) reported that integrating outside experiences into a

course creates a seamless learning experience for both students and faculty.

The purpose of this study was to explore students' perceptions of a study away course

experience to Washington, D.C. Study away experiences are one of the many types of activities

used to engage students in learning beyond the classroom. Exposing students to various cultures,

environments, and activities assists in practical application of knowledge in different contexts

(Barrick, 1989; Buriak, McNurlen, & Harper, 1996; Phipps, Osborne, Dyer, & Ball, 2008;

Townsend & Briers, 1990). Beard and Wilson (2006) emphasized the importance of placing

careful consideration on the experiential activity design and environment in order for the

learning to be effective. The long-term impacts of study away experiences have been shown to

improve students' links between personal, physical, and social contexts that assist in the

application of prior knowledge to new experiences (Falk & Dierking, 1997).

The study away course researched in this manuscript was a partnership between two

universities designed to help students better understand how policy decisions regarding

agricultural issues are made and communicated. Washington, D.C. was selected as the

destination because it is home to federal agencies, lobbying firms, and special interest groups

that all have significant roles in the development, integration, and distribution of agricultural knowledge that impacts people both nationwide and abroad. This course met one to two times monthly during the spring semester to prepare for the trip on May 26-June 1, 2013. Students were financially responsible for class tuition and certain travel costs; the majority of expenses were supplied through grant funding. The faculty collaborated on developing the same course for both universities with required enrollment in the semester prior to the trip. During the week in Washington, D.C., students visited 12 agricultural organizations and took notes in a notebook to encourage later reflection.

Theoretical Framework

The theoretical framework used in this study was Kolb's Theory of Experiential Learning (1984), which is "the process whereby knowledge is created through the transformation of experience" (p.41). Kolb (1984) said knowledge was the result of both grasping and transforming experience. Experiential learning creates concrete experiences for learners to engage, apply, reflect, and experiment with concepts learned (Scales, Roehlkepartain, Neal, Kielsmeier, & Benson, 2006). Kolb's (1984) experiential learning cycle identifies four components: concrete experience, reflective observation, abstract conceptualization, and active experimentation. The concrete experience is described as an experience useful for testing and validating abstract concepts, ideas, and implications for personal application (Kolb, 1984; Arnold, Warner, & Osborne, 2006). The reflective observation component fosters critical thinking and self-directed learning that engages students both mentally and emotionally in the experience (Proudman, 1992; Zilbert & Leske, 1989). Abstract conceptualization forces learners to make generalizations about principles learned and discover new application methods. Active

experimentation promotes the transfer of learning to a different context. Students engage in a "trial-and-error" process where the other components of the model are tested (Petkus, 2000).

Experiential approaches are not guided by specific activities or goals, but instead allow for freedom in learning (Chapman, 1992). This free structure encourages students to explore educational concepts, which can lead to unanticipated and valuable learning outcomes. Experiential learning theory emphasizes "the application of instruction, active engagement in learning, and connects prior knowledge to new knowledge" (Arnold, Warner, & Osborne, 2006, p. 31). Students are allowed to engage in self-directed and exploratory learning commonly practiced in agricultural education (Chapman, 1992). "Agricultural education has always had a strong orientation toward learning by doing, or experiential learning" (Zilbert & Leske, 1989, p.1). This form of learning creates opportunities for students to apply principles learned in a classroom setting to real-life scenarios for immediate application (Cheek, Arrington, Carter, & Randell, 1990). However, it is important to consider the organization of activities in order to reinforce the link between cognitive learning and life skills (Wulff-Risner & Stewart, 1997). Overall, experiential education can "provide greater depth of information processing, and thus a greater potential impact on learning, than less active methods" (Robinson & Torres, 2007, p. 2).

Purpose & Research Questions

The American Association of Agricultural Education National Research Agenda 2011-2015 Research Priority Area 4 states that, "Learners in all agricultural education learning environments will be actively and emotionally engaged in learning, leading to high levels of achievement, life and career readiness, and professional success" (Doerfert, 2011, p. 9). This priority area also states the need to design, develop, and assess effective learning environments.

The purpose of this study was to explore students' perceptions of a study away course experience to Washington, D.C. The following research questions guided this study:

1. What were students' expectations regarding the study away experience in Washington, D.C.?

2. What were students' reflections upon completion of the study away experience in Washington, D.C.?

Methodology

The population for this study was 22 students enrolled in a required special problems course at each university in Spring 2013. Eleven students attended from each university. Students were required to complete a pre-trip and post-trip survey to discover any change in values, knowledge, attitudes, and aspirations. Questions were derived from previous literature on out-of-class and experiential learning important for undergraduate education (Anderson & Adams, 1992; Chickering & Gamson, 1987; Johnson, Johnson, & Smith, 1991; Kolb, 1984; Leggette, Black, McKim, & Lawrence, 2013). The majority of survey questions were open-ended to allow student reflection before and after the experience.

The pre- and post-trip questionnaires were designed in SurveyMonkey. The pre-trip questionnaire was open for one month at the beginning of the spring course and the post-trip questionnaire was open for 10 days immediately following the study trip. Data collection procedures outlined by Dillman, Smyth, and Christian (2009) were followed for web survey implementation. The pre-trip survey consisted of 13 questions; the post-trip survey had 27 questions. Only questions that directly related to this manuscript's research questions were used in data analysis. One student did not complete the post-trip survey, so the final response rate was 95%.

To analyze open-ended responses, all data were entered into NVivo 8.0 qualitative software for content analysis. "Content analysis is a technique that enables researchers to study human behavior in an indirect way through an analysis of their communications" (Fraenkel & Wallen, 2009, p. 472). Content analysis is useful to identify, organize, code, and label themes found within the data (Patton, 2002). In NVivo, each student's pre- and post-trip questionnaire responses were entered as individual sources. Pseudonyms were assigned prior to coding to ensure confidentiality. For the coding process, the data were first categorized by topic and labeled with a descriptive term (Creswell, 2013). These codes were then organized into themes, which are "broad units of information that consist of several codes aggregated to form a common idea" (Creswell, 2013, p. 186). Data analysis debriefing sessions were conducted between the researchers to reduce bias (Guba, 1981). Credibility was established through peer examination of the data and use of direct participant quotes; trustworthiness measures included inter-rater comparisons and audit trails; transferability was accomplished through rich details of the context and situation; and confirmability was achieved with peer review and use of NVivo to analyze data (Ary, et al., 2006; Guba, 1981). These evaluation criteria were implemented and applied to produce a reliable and valid qualitative research study.

Findings

Of the students who participated in the study away experience, 10 had never been to Washington, D.C. while the other 12 had been for class trips, work, vacation, or conferences.

RQ1: What were students' expectations regarding the study away experience in Washington, D.C.?

The analysis of students' open-ended responses on the pre-questionnaire indicated three major themes for their expectations of the study away experience: 1) Gain a new perspective on agriculture, 2) Expand personal and professional networks, and 3) Have an enjoyable experience.

Gain a new perspective on agriculture.

Students said they anticipated this trip would broaden their understanding of a variety of agricultural issues, policies, and organizations. Hillary said, "I think this trip will help to give the full spectrum of the industry and how it is affecting us at the grass-roots level." Students commented that they expected the study away experience would give them exposure to the specifics of agricultural policy and how those policies impact agriculture nationally. Jane said: "I want to reach my goal of having ag policy literacy. Government and policy has always bored me, but it is so vital for every aspect of my life." Richard said he hoped the trip would help him "broaden my perspective of agricultural policy and gain a better sense of my academic future." Grace said one of her goals is "to become a more active proponent of the industry. I believe that seeing agricultural politics first-hand will help me attain this by broadening my understanding of agriculture's stance in government and strengthening my personal ties."

Students were excited to visit the headquarters of many agricultural organizations to gain first-hand experience in how they operate. Laurie said the course would allow her to "gain more experience within the agriculture industry on how decisions are made and become more familiar with the agriculture organizations." Robin also said she was eager to visit the agricultural organizations and how that experience could influence her future: "When on the trip, I hope to see that the officials within the organizations are sincere and truly care about the future of agriculture. I hope this experience will open my eyes to a mostly unfamiliar aspect of agriculture."

To gain this new perspective on agriculture, students recognized that being in D.C. and visiting with agricultural organization representatives would provide them with opportunities for first-hand experiential learning. Sophia said: "Thus far, the extent of my dealings with agriculture practices/laws/and standards have been from the perspective of what is already in place. This will allow a better understanding of the background for why laws/standards are the way they are." Students commented that they expected to see the topics they learn about in their collegiate classes actually in action while on this study away experience. Cara said, "I will finally be able to see the things I am taught being used in real life situations." Patricia further emphasized this:

> This experience will allow me to actually see for myself the concepts that I have been taught in my coursework. I am a visual learner, so I believe this trip will help me have a deeper understanding of what I have been lectured over in class. I also believe that talking to the ag businesses, lobbyists, etc. will help me gain understanding based on the face-to-face conversation I will be able to have.

Students said the first-hand exposure to agricultural organizations would reinforce what they have been learning in classes. Emma commented, "I believe a great deal of concepts that are taught in my coursework have been about promoting agriculture and this is a perfect way to learn about it and have a better understanding of it." Kelly said: "We are taught a lot about the importance of communication in agriculture. I am hoping by meeting with the different organizations, we will be able to see hands on how the things we are taught come into play." Robin also said she wanted to see how communication efforts are used in the organizations: "I believe this experience will take concepts I have been taught in ag comm courses and apply them to careers. I will be able to see the importance of the communications position within an organization rather than just being told."

Expand personal and profession network.

Another emergent theme regarding students' expectations was the desire to expand their personal and professional networks. Students said they anticipated learning from the students who attended from the partnering university. Kayla said she wanted to "come home with closer friends who I can connect with throughout my career as well as have a wider view of American agriculture." Emma said she was looking forward to "connecting with other agriculturalists and finding out what the other side of agriculture is."

Students also expected to network with professionals at the organizations they would visit. Hillary said she wanted "to network and talk with others about the direction the industry is going." Jacob echoed this sentiment: "I hope to gain network contacts within my current organizations on a national level." Katie said the study away experience sounded "like a good opportunity to meet some important people." Several students mentioned that they expected the study away experience would provide them with more insight for potential careers. Robin said, "I also hope for clarity within my future career choice," and Patricia remarked, "I also hope to understand how I as a future communicator for the agricultural industry can make an impact and help make the best decisions for the future of the industry."

Have an enjoyable experience.

The final emergent theme for students' expectations was a general sense that the study away experience would be enjoyable. Many students were eager to visit D.C. for the first time or to go back now that they were older. Patricia said, "I wanted to be part of this experience because I have never been to Washington DC and this may be the only chance I ever have to go." Grace commented she thought going to D.C. "would be fun, of course, but also that it would be very beneficial to travel with a class." Several students mentioned that this may be their only opportunity to visit these agricultural organizations. Claire said, "I feel like it is going to be a laid

back educational experience that won't come around again for myself." Sylvia noted the unique nature of the trip: "The opportunity was too good to pass up! The activities we have planned are once in a lifetime experiences, and I just couldn't miss out."

RQ2: What were students' reflections upon completion of the study away experience in Washington, D.C.?

Coding of the post-trip open-ended questions revealed six emergent themes.

Appreciated gaining behind-the-scenes view of agricultural organizations.

The primary purpose of this study away experience was to meet with representatives of a variety of agricultural organizations. Students commented that these visits were some of the most interesting aspects of their time in D.C. Students recognized that they were able to gain a better understanding of how these organizations work and the first-hand exposure clarified what the organizations do. Grace said, "It was incredible to be able to visit organizations and learn what they each do. Most of us have heard the names, and we know that they are supporters of agriculture, but they seem so far removed." Emily said she enjoyed "being able to gain a deeper understanding of the organizations involved in agriculture and how they operate at a national and even international level." Timothy said: "I must say that the most interesting aspect of the experience was our visits with the commodity groups. I found their jobs interesting, especially our visit with US Wheat since they were in crisis mode." Robin shared:

> I enjoyed seeing the behind the scenes people. I followed a lot of the organizations we met with on twitter and see all of the blogs and messages they post. On this trip I was able to see who they were and that they really care about agriculture and getting the facts to the people. I also enjoyed meeting with the organizations that you see often but really never know what they do.

Many students said they did not realize how much the organizations really do. John said, "I enjoyed meeting the people behind the organizations that I hear about on the news, and

learning about the organizations I didn't know about, and all they do for the agricultural industry." Students said getting to listen to several organizations discuss agricultural issues gave them a broader understanding of the topic. Hillary said, "I think it was most interesting to have the opportunity to hear several industry perspectives on the same topic (i.e. AFBF, US Grains Council and NCBA's view of the Farm Bill)." Kelly shared a similar comment, "I am satisfied with what I learned because I felt that we got an in depth knowledge of government within agriculture, but from several different views…we truly got an idea of how things go from beginning to end."

Students also said they gained a different perspective of what lobbying meant and its significant role in agricultural policy. Laurie said, "I didn't know so many organizations were based in Washington, D.C. or had a presence there, where lobbying is a big part of business operation." John said: "I understand better what these organizations do, more than just the big bad term 'lobbying'. I understood that lobbying was a good thing, but the national level was a little different story and how they operate."

Provided more insight into future career options.

After visiting with organization representatives, several students said they now had a better idea of what they might want to do in a future career. Cara said, "I wasn't completely sure what I wanted to do with my life before this trip, but now I know I want to work for farmer co-operatives. I am certain that I don't want to be in lobbying." The study away experience reaffirmed many students' goals for the future. Timothy commented: "I think the overall experience solidified my desire to be in the agricultural industry. Before going my career plans were pretty open, but now I feel more certain about my decision to enter agriculture." Kayla said, "This further drove my current goal of wanting to go to law school." Patricia said she had

considered applying for an internship in D.C. but wasn't sure if she should before attending the study away experience. She said, "After actually being in D.C. and seeing how many students go on to work full time after their internships, I realized that I must not miss out on the opportunity to intern there." Grace said:

> This has strengthened my want to be an advocate for the agriculture industry, but it has also given me the idea that I truly think I would prefer to implement agricultural relations on a more localized level. I appreciate and respect all the work that these organizations do, and I could see myself working for one of them one day, but hopefully in a more rural area where I can bring new communications strategies to audiences that are less familiar with them.

> Several students were involved with the organizations they visited at a local or state level.

Getting to go to the national headquarters seemed to further strengthen their desire to remain involved. Jacob said, "I want to become more active with advocacy and become even more involved in the organizations which I am a member of such as Farm Bureau, NCBA and CHS."

John commented:

> I am a member of Farm Bureau and will always be, but this trip has made me think of how I want to be involved within organizations like Farm Bureau. Be on a local coop board, state committee on something, be a producer that goes testifies on bills when I need to. And also knowing that its people like me and my fellow classmates that are doing these jobs with everyone we met with in DC, that's us in 2-5 years.

> Students also said being in D.C. made them realize they might want to work there. Kayla

said, "I decided that if the opportunity arises, I would move to DC and work on Capitol Hill, or as a lobbyist." Timothy shared, "The idea of working in DC has always been floating around in my mind, now I really want to pursue this." Hillary said:

> This experience will impact me in the future because I have gained a lot of information about the orgs I could potentially work for. From a social and professional perspective, I think it helped me to network. I got a business card from every organization, I have connected with these people on Linkedin, and I plan to further my professional network with these contacts. I set a goal to apply for positions in D.C.

Study away experience extends the classroom.

Overall, students recognized that the study away experience was a unique learning opportunity. For example, Hillary said, "I think the education we got in D.C. was one that we could not have gotten in a classroom." Michelle said the experience showed her "that beyond the classroom the skills that we learn are relevant and useful for potential job opportunities." Timothy commented, "The experience certainly illuminated the real world applications of the numerous topics which were presented in my undergraduate and graduate experiences." Kelly said: "We are always taught that what we learn in the classroom can be real life. I learned that most of what I learn can really help me in a career."

Other students mentioned specific classes that were beneficial to what they heard in D.C. Linda said, "I could see lots of things from my leadership courses tying in and being very important in advancement in the workplace." Tracy commented: "I realized just how important my economics classes were. I wish I could understand econ better than I do because it is a huge, huge, huge part of our government." Kayla said, "I found it beneficial when the organizations would discuss the recession or the Dodd-Frank act because I have done so much work with those topics in econ classes. It was interesting to see how the recession affected these organizations first hand." Richard noted that being able to visit with lobbyists and policymakers gave him a better sense of agricultural policy. He said: "This trip transformed agricultural policy from something that seemed complicated and unapproachable to a process that I could participate in the future. I have a completely new perspective on politics after my experience in DC."

Many of the students were majoring in agricultural communications and were able to make connections of what they heard during the organization visits to their coursework. Robin said she "was amazed by the importance of the knowledge of news writing and blog writing and social media. I now see all of the possibilities within my major and what I am learning." Cara

said she appreciated being "able to see communications efforts in real life rather than just hearing about them in the classroom." Claire said, "Targeting your audience is something that every single organization has to do on a daily basis and we thoroughly learn about audience segmentation." Grace said:

> While we have discussed, studied, investigated, and analyzed the communications practices of many agricultural organizations in so many of my classes, visiting these organizations and speaking with the people heading up these practices was such an insightful experience. They were able to explain why they use the methods they use, and the mission behind their communications practices.

Sylvia also made connections to her coursework, "At the U.S. Wheat Associates, I very much enjoyed learning about their crisis communication plans, and their monitoring techniques of social media…it was exciting to see that the concepts we discussed in class being applied."

Study away was an "eye-opening" experience.

For many students, getting to travel to D.C. and visit with many organizations was an experience that gave them a broader perspective on agriculture. Grace said: "I believe this experience has opened my eyes to the level of agriculture in the federal government. It is not the 'small town' industry that it so often appears to be – it impacts everyone, and legislators know that." Laurie commented: "I did not know there were so many organizations against animal agriculture and that people were not satisfied in hearing that agriculture provides them with food for life. They want more, they want a story to go with it."

Several students commented that this experience gave them exposure to a different aspect of agriculture. Kayla said: "I loved seeing the political side of Ag. That's something we don't see much of in [state] so it was great to see something different." Emma said she enjoyed "meeting the 'other side' of agriculture and putting faces with that other side. This experience allowed myself and others to see something that was completely different from [state] Agriculture."

For some students, leaving their comfort zone pushed their own perceptions of what they knew. Hillary said: "I think the trip made me more open-minded. I was not sure about re-visiting D.C. However, now I would consider working there, if given the opportunity." Kayla said, "In [state] we are very sheltered and conservative. I think it was good for us to get out and experience something different. It was a huge culture shock for many but I think it's a shock everyone needs to experience.

Advocating for agriculture is a shared national effort.

After visiting with the organizations, students said they realized advocating for agriculture is happening on an individual and organization level. Students said they appreciated knowing that the agricultural industry has support at the national level. Jacob said, "It was great to see some large Ag Advocacy groups out there petitioning and defending the nation's most important industry." Emily commented she "gained an overall deeper understanding of how agriculture is supported at a national level." Sylvia said, "The most interesting aspect of the trip for me was learning more about 'ag'vocacy at a level where actions and decisions directly influence the lives of our nation's agriculturalists." John said, "I have more faith in the people working for the agriculture industry in DC, I understand it's a tough battle, but meeting them made me have a better belief in the future of ag." Robin commented:

> The experience changed my beliefs in the sense that though these men and women in DC didn't grow up on a farm or directly in agriculture, they still fight for the small town farmers and ranchers. I saw the passion for agriculture within them, and know that though they may have never worked in the dirt, they want to see agriculture thrive just as I do.

Many of the students commented that this experience made them proud to be in the agricultural industry. Emma said, "It strengthened my beliefs and values in American agriculture and the American way of life." This experience made several say they are more passionate about representing the agricultural industry. Grace said, "I also feel I have been strengthened as an

agriculturalist. I left these organizations feeling a sense of pride in the field I have chosen, and a want to promote the positive word of agriculture." Sylvia specifically mentioned how significant this experience was for her:

> The experience re-energized my passion for agriculture. School is difficult and it is easy to lose sight of what drives your decisions as a student. Recently, I found myself not really enjoying anything I am involved with anymore, but found after this trip I am refocused on what my love and passion is, which is agriculture. Through this experience, my voice and point of view as an agricultural communicator is forever changed for the better.

Michelle said what she learned during the experience influenced her goals "to be willing to learn all I need to, to be well equipped as an advocate of agriculture and communicate it properly." On the other hand, Kelly said, "I learned I do not have enough passion for any specific aspect of agriculture to be a lobbyist for their organization. You could tell that each one of the individuals really had a passion for what they were working for.

Enjoyed being in D.C.

Although students said they learned a great deal from visiting with agricultural organization representatives, they also commented on how much they enjoyed being in Washington, D.C. Overall, students enjoyed the variety of activities and attractions in D.C. Michelle said, "This was my first time to Washington D.C. so I liked seeing the whole city and everything it had to offer." For many, getting to visit the nation's capital helped them gain a stronger sense of patriotism. Emily said, "This experience greatly influenced my values and beliefs. I now have a much greater appreciation and understanding of the depth of those who have fought for our country…gave me more drive to get my equine therapy program running for veterans." Grace said:

> I feel I have been strengthened as a patriot. It may sound a little cheesy, but since I have returned from the trip, I have told everyone I know to make every effort to visit Washington, D.C. Every U.S. citizen should have the opportunity to see where our

nation as we know it really began. To read about it and see pictures and postcards is one thing, but to see and experience the city in-person is truly incredible.

Several students specifically mentioned the significance of visiting historical sites. Richard said, "Getting to see national landmarks and museums added historical depth to the experience." Linda said "getting to see the history first hand" was something she enjoyed. Tracy said, "I really liked that we were in DC on Memorial Day. Being in Arlington on that day was really awesome." Patricia said, "For me, the most interesting aspect of the trip was being in Arlington National Cemetery on Memorial Day. It was an amazing experience."

Conclusions/Implications/Recommendations

As NASULGC (2000) pointed out, higher education needs to prepare students who can think critically about economic, political, and societal factors that will influence future actions. Study abroad can provide these opportunities (Bobbitt & Akers, 2012), but not all college students will be able to participate in these experiences. In these cases, domestic study away experiences can still provide students with opportunities to broaden their understanding and perception of the world (Sobania & Braskcamp, 2009).

The National Research Agenda recognizes that "designing, developing, and assessing meaningful learning environments that produce positive learner outcomes is essential to properly educating the citizens of the 21st century" (Doerfert, 2011, p. 22). For those college students who cannot study abroad due to financial or time limitations, visiting Washington, D.C. provides an experiential opportunity to learn more about our nation's capital and how many decisions that impact agriculture nationally and internationally are made. This study attempted to assess the experiential learning opportunity of a study away course to Washington, D.C. between two universities.

An analysis of the students' pre-trip expectations for the study away experience revealed three major themes: To gain a new perspective on agriculture, expand personal and professional networks, and have an enjoyable experience. Students stated they expected to learn more about the agricultural organizations they would visit and the issues those organizations address. They also said they looked forward to meeting students from the partnering university and representatives from the organizations. Finally, they were excited to visit Washington, D.C. for either the first time or again in a different context.

Overall, students did not provide as much rich detail or information about their expectations for the study away experience when compared to their reflections after the visit to D.C. Analysis of their reflections revealed six emergent themes: Appreciated gaining behind-the-scenes view of agricultural organizations; Provided more insight into future career options; Study away experience extends the classroom; Study away was an "eye-opening" experience; Advocating for agriculture is a shared national effort; and Enjoyed being in D.C. These themes are similar to what other researchers have identified as benefits of out-of-class learning experience – critical thinking, leadership skills, and personal development (Kuh, 1995; Seidman & Brown, 2006; Terenzini et al., 1996). Students were able to think more critically about agricultural issues from a variety of perspectives. Students valued the opportunity to have first-hand exposure to organizations and discuss current agricultural issues. By hearing differing organizational approaches to an issue, students were able to see and interact with agricultural problems in a realistic setting, thereby increasing their ability to analyze decision making processes.

Bobbitt and Akers (2012) found that study abroad programs helped agricultural science and natural resource students broaden their academic experience. Students in the current study

were able to connect concepts from prior courses to what they learned during the study away experience. The concrete experience of meeting with organization representatives clarified the lessons and allowed for personal application (Kolb, 1984). Zilbert and Leske (1989) said the reflective observation component of Kolb's model allows students to critically examine a concrete experience. Students demonstrated through the post-trip responses to open-ended questions that they thought critically about what they learned at each organization visit. During the abstract conceptualization stage (Kolb, 1984), students were able to make generalizations based on what they learned during the experience. Students commented that the visits helped them realize what they were learning in college could be applied in a future career. Many even said the study away experience helped them narrow in on what it is they want to do.

Visiting D.C. helped to build students' self-confidence and their worldview related to living in a large city with diverse and varying viewpoints. Sobania and Braskamp (2009) stated that domestic experiences can provide students opportunities to "open their minds, hearts, and behaviors to difference" (p. 24). Several commented on how the experience exposed them to broader and different perspectives of agriculture, specifically on the political, business, and activist sides. Students realized that advocating for agriculture is a national initiative practiced by all to defend "the nation's most important industry" and how lobbying directly influences decisions that are made.

Just being able to visit the many historical attractions in Washington, D.C. was impactful. Students reflected on the stronger sense of patriotism gained by being in the nation's capital. The majority felt they gained a greater appreciation and understanding of the history of our country during the experience. All agreed on the added value of collaboration between two universities to enhanced the depth of the experience. Overall, the students were extremely

satisfied with the collaborative study away experience and its educational benefits. They all recognized the experience was a unique learning opportunity and made many real-world applications to what they learned in the traditional classroom.

While study away experiences are not a new concept (Kuh, 1993, 1995, 1996; Leggette et al., 2013; Sobania & Braskamp, 2009), findings from this study revealed unique and practical information for educators to consider when planning learning experiences. The students' feedback provides valuable insight that can guide decisions when planning, organizing, and implementing study away experiences. To make the experience enjoyable, educators should strive to create a balance of social and educational activities. Students desired opportunities to broaden their overall understanding of agricultural issues, policies, organizations, and careers; therefore, a variety of experiences should be incorporated to increase exposure to governmental, public, and private institutions from both sides of agriculture. Organizational representatives must be adequately selected and prepared to offer advice and lead discussion on topics that connect with students' academic interests. In order for experiential learning to be meaningful, a daily reflection period should be built into the schedule to allow time for mental and emotional engagement in the recent experience (Kolb, 1984; Proudman, 1992). Reflective journaling can encourage students to make generalizations about the learning that can then be transferred and applied to their own lives (Petkus, 2000).

Additional research could be conducted with these students to determine how they were able to actively experiment with what they learned to transfer and apply the concepts to new situations (Kolb, 1984). Future research should also analyze students' perceptions of each agency visited and develop a quantitative instrument to measure change in knowledge, attitudes, and perceptions.

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Characteristics of U.S. Agricultural Communications Undergraduate Programs

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Characteristics of U.S. Agricultural Communications Undergraduate Programs

Abstract

This study was designed to characterize agricultural communications undergraduate programs nationwide. A total of 40 undergraduate agricultural communications programs were identified via the National ACT database, Internet searches, and previous academic program research. Objectives included creating an accounting of existing programs, a description of those programs, identifying program demographics and identifying top programs. This study employed a census approach and used a descriptive quantitative survey design. The survey included questions to gain both qualitative and quantitative data to meet this study's objectives. The quantitative data were analyzed via descriptive statistics. A total of 26 respondents from undergraduate agricultural communications programs participated in this study. An increase in the number of academic programs across the U.S. was observed, compared to the last similar study published in 2000, suggesting an increase in popularity and student demand, which is most likely a result of an increase in industry demand for agricultural communications graduates. Current faculty projected an increase in enrollment, driven by industry needs. Future studies characterizing the discipline should be conducted on a more frequent, standardized schedule, and improved participation in the study should be a goal. National curriculum studies should also be conducted to tie program characteristics and instructional methodologies to program success and to correlate program characteristics and demographics.

Keywords: Agricultural communications, curriculum development, program development, program evaluation

Introduction

With roots dating back more than 100 years in higher education, the professional field of agricultural communications has developed and expanded from the early days of print media (Doerfert & Miller, 2006). As the profession has grown, so has the enrollment in post-secondary agricultural communications academic programs (Weckman, Witham, & Telg, 2000a). In a survey of 22 agricultural communications academic programs, Weckman, Witham, and Telg (2000a), found the number of students majoring in agricultural communications in programs across the nation ranged from four students to 115 students, and the average number of students for departments was 36.63. In 1991, 30 agricultural communications programs across the country were identified (Doerfert & Cepica, 1991). Both Doerfert and Cepica's (1991) work and Weckman, Witham, and Telg's (2000a) work noted the growth of the academic discipline. As the discipline develops, the academic programs and the relatively small group of faculty who teach and conduct research in them are challenged to prioritize their time among increasing responsibilities including teaching, advising, recruitment, mentoring, club sponsorship, and placement of graduates (Weckman, Withham, & Telg, 2000a). Because of the increasing number of responsibilities placed on faculty members, there is an apparent need for new strategies to manage and guide program growth.

Acquah's (2010) academic program growth model proposes the stages of academic program life cycles. The model has been tested for forecasting accuracy by cross-validation and tested for correlations between current student enrollments and predicted enrollments to prove its reliability. The life cycles of most programs follow a traditional bell curve, but Acquah suggests some programs may follow an s-shaped cycle-recycle curve. Understanding the academic program life cycle enables higher education professionals to evaluate their programs' current

stage in the life cycle and readily prepare for the next step in program development. Therefore, if the agricultural communications discipline can identify an applicable model (bell or s-shaped curve), it can more easily predict future growth patterns of programs and their various stage of growth.

Previous research (Doerfert & Miller, 2006; Miller, Stewart, & West, 2006; Morgan, 2012) indicates the need for agricultural communications curriculum to be systematically reviewed and updated. This process would allow programs to evolve, leading to stronger programs and better-prepared students entering the workforce. The concept of describing program growth patterns was emphasized in a study conducted 20 years ago by Terry, Vaughn, Vernon, Lockaby, Bailey-Evans, and Rehrman (1994, p. 24). Their study, which became a guidebook for new and growing programs across the U.S., exemplified the value of conducting a thorough review of agricultural communications programs every few years to revaluate and make changes to the agricultural communications curriculum. Terry et al. (1994) analyzed the opinions of leaders from the agricultural communications profession and established the undergraduate agricultural communications curriculum should include coursework in 28 disciplines and 89 specific competencies. These recommendations have guided program growth at some institutions for two decades. Over the last four decades, numerous institutional, regional, and national agricultural communications curriculum studies have been conducted (Bailey-Evans 1994; Ettredge & Bellah, 2008; Fryar & Miller, 2006; Irani & Scherler, 2002; Kroupa & Evans, 1973; Reisner 1990; Sprecker & Rudd, 1997; Sprecker & Rudd, 1998; Weckman, Witham, & Telg, 2000a and b). However, literature fails to note a more recent comprehensive assessment of agricultural communications undergraduate programs since 2000. Therefore, to direct the future

growth of the agricultural communications discipline, an accurate and recent characterization of national programs is necessary.

The purpose of this study was to describe and characterize agricultural communications undergraduate programs. The following research objectives guided the study:

1. To create an updated account of existing national agricultural communications academic programs.

2. To describe demographic characteristics of national agricultural communications programs and describe potential trends in the discipline.

3. To identify the best agricultural communications academic programs as valued by agricultural communications faculty from programs across the country.

Methods

The data reported in this article resulted from a larger project, which was a mixed-methods descriptive examination of agricultural communications undergraduate programs, employing both quantitative and qualitative survey research and focusing not only on program demographics but also on faculty, faculty support, and curriculum. However, this article reports only the quantitative data describing the demographics of the identified programs.

Subjects

The subjects of this study were agricultural communications faculty and administrators from colleges and universities in the United States. Programs falling under the umbrella of agricultural communications included those that offered majors, minors, concentrations, specializations, emphases, and/or options.. Existing agricultural communications academic programs were first identified from the National Agricultural Communicators of Tomorrow's (ACT's) membership databases from 2001-2013, the Association of Public and Land-Grant

Universities (APLU) membership, and from online searches. ACT is the premier college student organization for agricultural communicators. Though not every academic program has an ACT chapter, the national organization maintains the most up-to-date list of programs in the U.S. Once academic programs were identified from the ACT database, the APLU website was used to identify additional universities with agricultural communications programs. The APLU website acted as a starting point to lead to institutional websites. University members of the APLU websites were searched and reviewed for the presence of an agricultural communications program at each institution via degree options offered. Web searches were also conducted to identify existing programs. Terms used in search engines included "agricultural communications," "agricultural communications degree," and "agricultural communications degree program." Some institutions were contacted directly via personal communication (telephone or email conversations) to verify the presence of an agricultural communications program where program existence may have been uncertain. In many instances, programs were verified by more than one method, leading to triangulation. Additionally, the snowballing method, as described by Ary, Jacobs, and Razavieh (1996), was employed during surveys to further identify programs not identified by previous methods. The snowballing technique involved asking survey participants to name any additional programs they were aware of that might not be in the database or easily accessible via web searches. Finally, a few programs were identified and included in the study as a result of having been identified in a recent study by Ahrens (2014). In all, 40 programs recognized as agricultural communications were identified.

Unit heads or equivalent faculty members overseeing the agricultural communications programs were contacted and asked to choose the most appropriate faculty member, based on his or her institutional knowledge related to the agricultural communications program, to participate

in the survey. Prior to subjects being contacted, the Institutional Review Board at the [university] reviewed and approved the survey instrument.

Survey Instrumentation and Administration

The survey instrument consisted of a collection of researcher-developed questions, as well as questions from previous instruments used in similar research. The survey consisted of 64 questions and included Likert-type, rank-order, fill in the blank, and open-ended questions. The questions reported upon in this article were guided by two constructs: (1) basic program information and (2) perceptions of model programs.

To ensure stability of the instrument over time, test-retest reliability was calculated using data from a pilot test of the survey. The Cronbach's alpha calculated for the instrument was .818. The closer the Cronbach's alpha level is to 1, the more reliable the instrument (Gliem & Gliem, 2003). A coefficient of .7 and above is acceptable for proving reliability of the instrument (George & Mallery, 2003). Additionally, academic faculty—experts in agricultural communications involved in conducting the study—reviewed the instrument for content and face validity. Prior to the pilot test, cognitive interviews were conducted with qualified faculty members (but who were not selected to participate as subjects in the actual study). Their feedback led to further improvements in the validity and reliability of the instrument. The instrument was deemed valid for content and face validity both for the pilot test and actual study, and minor changes were made to the wording of the questions as a result of the cognitive interviews and pilot test.

Following the recommendations of Dillman (2007), a series of emails was used to contact all identified subjects between March 18 and March 31, 2014. The emails contained a link to the online survey, created and offered through Qualtrics™.

Data Analysis

After the administration of the surveys, a quantitative analysis of the data was performed. The answers to Likert-type questions were reported as frequencies and percentages. In most instances, frequencies and percentages were reported along with means and standard deviations. A simple point system was developed to report the responses related to subjects' perceived top five agricultural communications academic program. A first-ranked program was awarded five points, a second-ranked program four points, and so on.

Results

Identification of Programs

A total of 40 programs across the U.S. were identified and verified as having an agricultural communications undergraduate program. A total of 26 subjects representing their programs responded to the survey, resulting in a 65% response rate. At total of six respondents, representing six programs, chose to have their answers remain anonymous. Therefore, these programs were assigned letter identifiers A-F.

Table 1 identifies all 40 of the verified agricultural communications programs and the method by which their existence was most recently verified. The methods of verification included examination of the program's website, personal communication with a representative of the program, and the presence of the program in a recent agricultural curriculum study by Ahrens (2014).

Table 1

Identified Agricultural Communications Programs (N = 40)

Institution	Method
Auburn University	Institutional website
California Polytechnic State University	Institutional website
Clemson University	Personal verification

Connors State College	Institutional website
Cornell University	Institutional website
Fresno State University	Institutional website
Iowa State University	Institutional website
Kansas State University	Institutional website
Louisiana State University	Institutional website
Michigan State University	Personal verification
Mississippi State University	Personal verification
Murray State University	Institutional website
New Mexico State University	Institutional website
North Dakota State University	Institutional website
Northwest College (Wyoming)	Institutional website
Ohio State University	Institutional website
Oklahoma State University	Institutional website
Pennsylvania State University	Institutional website
Purdue University	Institutional website
South Dakota State University	Institutional website
Southern Illinois University	Institutional website
Tarleton University	Institutional website
Tennessee Tech University	Institutional website
Texas A&M University	Institutional website
Texas Tech University	Institutional website
University of Arkansas	Institutional website
University of Florida	Institutional website
University of Georgia	Institutional website
University of Idaho	Institutional website
University of Illinois at Urbana-Champaign	Institutional website
University of Kentucky	Institutional website
University of Minnesota	Institutional website
University of Missouri	Institutional website
University of Nebraska-Lincoln	Institutional website
University of Tennessee	Ahrens, 2014
University of Wisconsin-Madison	Institutional website
University of Wisconsin-River Falls	Institutional website
University of Wyoming	Institutional website
Utah State University	Ahrens, 2014
West Texas A&M University	Ahrens, 2014

Table 1 displays the 40 identified agricultural communications programs from across the

country. Many of the programs were first identified via the National Agricultural

Communicators of Tomorrow (ACT) database. Online searches, recent previous academic

program research (Ahrens, 2014) and/or personal verification were secondary. In many instances, programs were identified by more than one method.

Program Demographics

The second objective of this study was to describe the identified programs. Demographic characteristics included program name, college in which the program is housed (if applicable), program type, degree type, program age, and degree awarded. Tables 2-4 provide the demographic data pertaining to the programs represented in this study and responding to the questions (N=26). Table 2 provides basic program information, including name of program, college and department in which the program is housed, and position in the organizational structure. Table 3 includes the year the agricultural communications program began at each institution along with the academic degree awarded to students. Table 4 displays current, historical (last five years), and projected (next five years) program enrollment.

Table 2

Basic Program Information (N = 26)

Institution	Name of Program	College Housed	Department	Position in Organizational Structure	Degree Type
Program A*	Agricultural Communications	College of Agriculture	It is an interdepartmental (multidisciplinary) program overseen by an appointed faculty advisory group.	Shared program housed by more than one unit	Major
Cal Poly State University	--	College of Agriculture, Food and Environmental Sciences	Ag Education and Communication	Program in multi-program unit	Major, Minor, Concentration/ specialization/ emphasis/option
Clemson	--	--	The School of Agricultural, Forest, and Environmental Sciences in the College of Agriculture, Forestry and Life Sciences	It is one option of three in Ag Ed, others are teaching option and leadership	Concentration/ specialization/ emphasis/option
Connors State College	Agricultural Communications	N/A	Division of Agriculture	Program in multi-program unit	Major
Kansas State	Agricultural	College of	Communications	Academic unit that	Major

University	Communications and Journalism	Agriculture	and Agricultural Education	also houses the service group	
Program B	Agricultural Communication	School of Agriculture	School of Agriculture	Program in multi-program unit	Major
New Mexico State University	Agricultural Communications	Agricultural, Consumer and Environmental Sciences	Agricultural and Extension Education	Program in multi-program unit	Concentration/ specialization/ emphasis/option
Program C	Agricultural Communication	College of Arts, Humanities, and Social Sciences	Department of Communication	Program in multi-program unit	Major, Minor
Ohio State University	Agricultural Communication	College of Food, Agriculture and Environmental Sciences	Ag Communication, Education, Leadership	Program in multi-program unit	Major, Minor
Oklahoma State University	Agricultural Communications	College of Agricultural Sciences and Natural Resources	Agricultural Education, Communications and Leadership	Program in multi-program unit	Major
Pennsylvania State University	Agricultural Communications	College of Agricultural Sciences	Agricultural Economics, Sociology, and Education	Program in own academic unit	Minor
Purdue University	Agricultural Communication	College of Agriculture	Department of Youth Development and Agricultural Education	Program in multi-program unit	Major
South Dakota State University	Agricultural Communications	College of Agriculture & Biological Sciences	Teaching Learning and Leadership	Program in service unit	Major

Southern Illinois University	Agricultural Communications	College of Agricultural Sciences	Dept. of Plant, Soil and Agricultural Systems	Program in multi-program unit	Concentration/ specialization/ emphasis/option
Texas A&M University	Agricultural Communications and Journalism	College of Agriculture and Life Sciences	Agricultural Leadership, Education, and Communications	Program in multi-program unit	Major
Texas Tech University	Agricultural Communications	College of Agricultural Sciences and Natural Resources	Department of Agricultural Education and Communications	Program in own academic unit	Major, Minor
University of Arkansas	Agricultural Communications	Dale Bumpers College of Agricultural, Food and Life Sciences	Agricultural Education, Communications, and Technology	Program in multi-program unit	Minor, Concentration/ specialization/ emphasis/option <u>Table 2 continues</u>
University of Florida	Communication and Leadership Development	College of Agricultural and Life Sciences	Agricultural Education and Communication	Program in own academic unit	Major, Minor
Program D	Agricultural Communication	College of Agricultural and Environmental Science	Agricultural Leadership, Education and Communication	Program in own academic unit	Major
University of Idaho	Agricultural Science, Communication, and Leadership	College of Agricultural and Life Sciences	Department of Agricultural Education and 4-H Youth Development	Program in own academic unit	Concentration/ specialization/ emphasis/option
University of Illinois at	Agricultural Communications	College of Agricultural,	The Agricultural Communications is	Shared program housed by more than	Major

Urbana-Champaign		Consumer and Environmental Sciences and the College of Media	a freestanding academic unit.	one unit	
Program E	Community and Leadership Development	College of Agriculture, Food and Environment	Dept. of Community and Leadership Development	Program in own academic unit	Concentration within a minor
University of Nebraska-Lincoln	Agricultural and Environmental Sciences Communication	College of Agricultural Sciences and Natural Resources	Agricultural Leadership, Education and Communication	Program in multi-program unit	Major
Program F	Life Sciences Communication	College of Agricultural and Life Sciences	Department of Life Sciences Communication	Program in own academic unit	Major
Utah State University	Agricultural Communication and Journalism	College of Agriculture and Applied Sciences	School of Applied Sciences, Technology and Education	Program in multi-program unit	Major
West Texas A&M University	Agricultural Media and Communication	College of Agriculture, Sciences and Engineering	Department of Agricultural Sciences	Shared program housed by more than one unit	Major

Note: Subjects from programs A-F chose to keep their responses anonymous.

Most respondents referred to their programs as agricultural communications or a close variant, and most reported programs being housed in colleges of agriculture. Seventeen of the respondents reported their programs offering a full major in the discipline, while others reported offering concentrations, emphases, specializations, options, minors, or combinations of all these. Another notable characteristic of the identified programs was the finding 16 of the 26 programs responding reported being housed in departments with *agricultural education* or some variant in the departmental name.

Table 3

Age of Program and Degree Type (*N* = 26)

Institution	Year Founded	Degree Awarded
Program A*	--	Bachelor of Science
Cal Poly State University	--	Bachelor of Science
Clemson	1999	Bachelor of Science
Connors State College	2006	Associate in Science
Kansas State University	1946	Bachelor of Science
Program B*	1995	Bachelor of Science
New Mexico State University	1995	Bachelor of Science
Program C*	2009	Bachelor of Science
Ohio State University	1980	Bachelor of Science
Oklahoma State University	--	Bachelor of Science
Purdue University	1971	Bachelor of Science
South Dakota State University	--	Bachelor of Science
Southern Illinois University	2007	Concentration/specialization/emphasis/ option of a B.S. degree
Texas A&M University	1918	Bachelor of Science
Texas Tech University	1992	Bachelor of Science
University of Arkansas	1998	Concentration/specialization/emphasis/ option of a B.S. degree

University of Florida	1993	Bachelor of Science
Program D*	2000	Bachelor of Science
University of Idaho	2000	Bachelor of Science
University of Illinois at Urbana-Champaign	1961	Bachelor of Science
Program E*	--	Bachelor of Science
University of Minnesota	--	Bachelor of Science
University of Nebraska-Lincoln	--	Bachelor of Science
Program F*	2006	Bachelor of Science
Utah State University	2006	Bachelor of Science

Note: Several respondents did not provide a year in which their program was founded. Respondents from programs A-F elected to keep their responses anonymous.

Of the responding programs, a total of 88.5% offered a bachelor of science degree, while 7.7% offered a concentration/specialization/emphasis/option of a bachelor's degree. It is also noteworthy that one program reported offering an associate's of science degree. Of the programs surveyed, Texas A&M reported having the oldest agricultural communications program, established in 1918. The youngest program was established in 2009. (The respondent from this program chose to keep his/her responses anonymous.)

Each institution's current undergraduate student enrollment numbers, past enrollment and future enrollment are shown in Table 4. Historical enrollment trends were based on the respondent's description of the last five years, and future enrollment trends for the next five years were based on the respondents' projections for their program.

Table 4

Current, Historical (Last Five years) and Projected (Next Five Years) Enrollment (N = 26)

Institution	Current	Historical	Projected
Program A	37	Increased	Increase
Cal Poly State University	130	Increased	Increase

Clemson	8	Remained constant	Increase
Connors State College	10	Increased	Increase
Kansas State University	68	Increased	Remain constant
Program B	60	Increased	Increase
New Mexico State University	30	Increased	Increase
Program C	40	Increased	Increase
Ohio State University	83	Increased	Increase
Oklahoma State University	150	Increased	Increase
Pennsylvania State University	8	Increased	Increase
Purdue University	44	Increased	Increase
South Dakota State University	20	Remained constant	Increase
Southern Illinois University	7	Remained constant	Increase
Texas A&M University	360	Increased	Increase
Texas Tech University	160	Increased	Increase
University of Arkansas	41	Increased	Increase
University of Florida	85	Increased	Increase
Program D	40	Remained constant	Increase
University of Idaho	50	Increased	Increase
University of Illinois at Urbana-Champaign	40	Remained constant	Increase
Program E	--	Remained constant	Remain constant
University of Nebraska-Lincoln	25	Remained constant	Increase
Program F	--	Increased	--
Program A	37	Increased	Increase
Cal Poly State University	130	Increased	Increase

The average student enrollment per institution was 69. In the past, 26.9% of institutions' student enrollment numbers remained constant, whereas 73.1% of institution's student enrollment increased. A total of 84.6% of respondents reported their programs plan to increase

student enrollment numbers in the future, and 8% projected student enrollment numbers would remain constant over the next five years. No respondents reported a decrease in program enrollment over the last five years, nor did any respondents predict a decrease in student numbers in the coming five years.

Programs offering majors (n=14) reported graduating an average of 23.9 undergraduate students per year; programs with minors, 8.8 students; and programs with concentration/specialization/emphasis/option only, 6.0 students. Agricultural communications majors were perceived as more likely to find a job within agricultural communications, while minors were viewed as more likely to find jobs in other aspects of agriculture. Students graduating from a concentration/specialization/emphasis/option program were viewed as more likely to find a job outside communications.

Though the focus of this article is on the demographics of the programs, considerable amounts of data were collected on the characteristics of the programs' faculty. A more complete explanation of these characteristics will be reported in a future article, but basic characteristics are germane to describing the programs across the nation. Programs varied in number of faculty, tenure/non-tenure track positions, gender and rank. Per program, there was an average of 2.16 full-time faculty per program and .45 part-time faculty, with an average of 1.8 males and 2.4 females. Among 20 responses to a question about tenure track positions, the programs employed 10 full professors, 9 associate professors, 13 assistant professors, and 16.5 instructors. On average across all responding programs, full professors taught 2 courses per semester/quarter, associate professors 3.5 courses, assistant professors 2.6 courses, and instructors 2.6 courses. Furthermore, 77.2% of institutions ($n = 17$) planned to hire an average of 0.90 new faculty members within the next five years, and 22.8% ($n = 5$) did not plan to hire any new faculty.

Some programs 28.5% (*n* = 6) predicted losing .42 current faculty members to retirement or

resignation in the next five years; 71.5% (*n* = 15) did not anticipate faculty loss.

Identification of Programs Held in High Regard

Table 5 shows a ranking of agricultural communications program across the United

States, according to the opinions of 17 subjects who responded to this question. Respondents

were asked to identify and rank what they believed to be the top five agricultural

communications programs. Below are the results of these rankings from the top ranked program

to the tenth-ranked program.

Table 5

Top Agricultural Communications Programs (N = 17)

Program	First rank (5 points)	Second rank (4 points)	Third rank (3 points)	Fourth rank (2 points)	Fifth rank (1 point)	Total points
1. Texas Tech University	3	7	1	1	0	48
2. University of Florida	5	1	5	0	3	47
3. Oklahoma State University	4	2	4	3	1	47
4. Texas A&M University	2	3	3	0	2	30
5. Kansas State University	2	2	1	1	1	25
6. Ohio State University	1	0	1	2	1	13
7. University of Arkansas	0	1	0	4	1	13
8. California Polytechnic State University	0	0	1	2	0	7
9. University of Nebraska-Lincoln	0	1	0	0	0	4
10. Purdue University	0	0	0	1	2	4

Texas Tech University's agricultural communications program, which was established in

1992 and had 160 students, emerged as the top-ranked program in this poll. The Texas Tech

University program was followed closely by the agricultural communications programs at the

University of Florida and Oklahoma State University. The programs at Texas A&M and Kansas State were fourth and fifth. Five points were awarded for each first place vote, four points for second place votes, and so on. In three instances, ties were revealed from the data. The program with largest number of higher-ranked votes was assigned the higher rank.

Conclusions, Implications, and Recommendations

In the early 1990s, Doerfert and Cepica (1991) compiled a list of 30 known agricultural communications programs nationwide. While some programs have been phased out over the last two decades, the data from this study indicates the creation of several new agricultural communications programs. Forty agricultural communications programs were identified and verified in this 2014 study. Similar studies (Weckman, Witham, & Telg, 2000a; Weckman, Witham, & Telg, 2000b) were conducted on both a regional (southern) and a national level nearly 14 years ago. A total of 14 programs were reported in the South, of which nine programs responded, and 22 programs responded nationwide. The national study by Weckman, Witham, and Telg [2000a] did not indicate a total number of programs nationwide but only a number of programs that responded. Also, these studies did not concretely identify the institutions where the existing programs resided. This made it impossible to track exactly which programs have closed since 2000.

The fact that some programs have disappeared while even more have emerged should be of specific interest to those who are interested in tracking the discipline's growth. Acquah (2010) noted most academic program lifecycles follow a bell curve, while some programs may follow an S-shaped curve. If U.S. agricultural communications programs follow the more common bell curve, with a net increase of at least 11 new programs over 23 years, it is possible that disciplinary growth nationwide is still on the rise. This increase in agricultural communications

academic programs over the last two decades is likely a result of an increased demand for agricultural communications practitioners and an increase in popularity of the discipline among college students and college-bound high school students.

This study also indicates agricultural communications programs are diverse in structure and degree type, and require a variety of faculty resources. This finding aligns with Reisner's (1990) findings that the most predominant characteristic of agricultural communications programs was variety. This appears to remains true for the most part in 2014.

Additionally, this study found a majority of programs are titled "agricultural communication" or "agricultural communications." Other (fewer) programs are called "agricultural science, communication, and leadership," "agricultural communication and journalism," and "agricultural media and communication." This finding suggests the common theme present among all programs is a focus on agriculture or sciences, with a second, equally important focus on communications. All responding programs offered a bachelor degree (with a major, minor, or concentration/specialization/emphasis/option), except one (Connors State College), which offered an associate degree in agricultural communications. The emergence of this first-ever documented associate degree program could mark the beginning of a new trend among junior colleges and community colleges. Also, all but one program was housed in a college of agriculture, so the data clearly indicate that colleges of agriculture have remained the home of the agricultural communications discipline.

Agricultural communications programs also vary in age. Some programs began in the early 1900s, while the newest program began in 2009. The vast differences in program age allow the opportunity for newer programs to model themselves after the older, established programs and for developing programs to use other successful, older programs as models for development.

Student enrollment in these programs varied from an enrollment of 7 total students to 360 total students. The average student enrollment per institution was 66 students. The average enrollment in 2014 is more than twice the average of 29 students enrolled in agricultural communications programs as reported by Doerfert and Cepica (1991) and nearly twice the average of 36.6 reported by Weckman, Witham, and Telg (2000a). The increase in student enrollment is further evidence that the discipline's growth may still be on the left side of Acquah's (2010) proposed bell curve. Furthermore, a large majority of programs reported having experienced growth in their programs over the last five years and also predicted growth in enrollment over the next five years. No programs reported decreases in the last five years, and none predicted drops in enrollment in the near future. These data are an indicator that the academic discipline of agricultural communications is growing, which supports the notion of a growing industry demand for agricultural communicators. It is apparent students are becoming more aware of career opportunities in the discipline and that academic programs are attentive to these opportunities for students as well.

The purpose of this research was to describe the current and future direction of agricultural communications programs across the United States to create an updated description of the current status of agricultural communications academic programs nationwide. This study now offers refreshed and modern data and conclusions pertaining to agricultural communications programs. Outdated research and data on the academic discipline itself have now been updated, much like what the past disciplinary dialectic calls for. Tucker (1996) noted, "Agricultural communication cannot only survive, but benefit from a thorough critique of its methods and objectives." (p. 37).

The first recommendation for further research is to conduct descriptive national studies on a regular basis to achieve the best and most accurate responses to understand programs' current standing. Program descriptions and evaluations need to be conducted more frequently, with similar constructs measured to allow for longitudinal comparisons. Similar studies could also be conducted to gain more in-depth data with a more narrow focus. Moreover, future studies should attempt to cross check reported information such as program size with official university records. It should be noted that the information in this research study was self-reported. Therefore, cross checking program information with university records would ensure a more accurate profile of agricultural communications programs.

Secondly, a study with a higher response rate would increase the accuracy of describing all agricultural communications programs nationwide. A substantial response rate (63.4%) was obtained in this study, but more responses would only improve the descriptions of agricultural communications programs and would constitute an even more accurate census of the discipline.

In relation to the previous two recommendations, program demographics could be correlated along with other statistical tests to reveal further information about agricultural communications programs and their characteristics. This study sought to establish a basic description of agricultural communications programs, but further research and more in-depth statistical analyses could be performed, especially with regard to differences in characteristics among types, sizes, and ages of programs.

Finally, specific regional studies (North Central, Southern, and Western) should be conducted to describe programs in these specific locations along with identifying their needs and future plans. Variation in program characteristics likely exists among geographic locations due to different regional industry-related needs and overall program demographics. In addition to

regional and nationwide studies, agricultural communications academic programs are emerging on an international forefront. Further research and discussion could be conducted to identify programs in other countries and what they are teaching.

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Millennial Alumni Perceptions of Communications Media Utilized by the Dale Bumpers College of Agricultural, Food and Life Sciences

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Millennial Alumni Perceptions of Communications Media Utilized by the Dale Bumpers College of Agricultural, Food and Life Sciences

Abstract

Alumni relationship cultivation is the foundation of higher education and is maintained to keep alma maters connected to graduates. To assess this relationship, researchers sought to determine Millennial alumni perceptions of media distributed by the Dale Bumpers College of Agricultural, Food and Life Sciences (Bumpers College) from 2012 through 2014. Assessed media included alumni magazines, an e-newsletter, key event invitations, College website, and social media presences. Active and inactive alumni responses were gathered via telephone interviews and qualitatively analyzed for emergent themes. Researchers identified Building the Professional *and* Interest in Giving Back *as themes related to respondents' connection to Bumpers College. Five additional themes emerged related to assessed media and included* Message Relationship*,* Specialized Content*,* Communications Medium*,* Message Barriers*, and* Need for Promotion*. Alumni valued The Graduate magazine for its professionalism and personal highlights, but found weakness in its theme-based structure. Participants liked AR Culture magazine's student-focused approach but believed its quality could be improved. Participants valued the e-newsletter's convenience, but stressed refining messaging to increase engagement. Alumni favorably received the tailgate event, but emphasized reducing the invitation's content. In contrast, the mocktail invitation was too vague for participation. The website was perceived as user-friendly, but alumni content was minimal. Last, most were unaware of the College's social media presences and emphasized engagement through promotion. While findings revealed Bumpers College made an impression on participants as students, media must be adapted to meet Millennial alumni preferences and assist them in transitioning from inactive alumni to active.*

Keywords: Millennial alumni, agricultural communications, higher education, alumni relations, development, communications media, agricultural education

Introduction and Purpose

Today's land-grant institution is challenged to reach new and non-traditional audiences by redefining and diversifying the agricultural field (Baker, Abrams, Irani, & Meyers, 2011). In addition, the world is facing new and complex issues (National Academy of Sciences, 2009), therefore there is a need to produce highly skilled graduates to identify solutions (Doerfert, 2011). This need was recently emphasized in the 2011-2015 *National Research Agenda* as a research priority with the hopes of driving "…sustainable growth, scientific discovery, and innovation in public, private, and academic settings…" (Doerfert, 2011, p. 18). Although there is a need for higher education to produce agricultural scientists and professionals who meet industry demands (Doerfert, 2011), progress is dependent upon the generosity of external constituents to assist in providing opportunities to agricultural students. With the decline of government appropriations and general economic climate, public institutions depend on alumni donations for a considerable portion of their overall budget to keep education affordable (McDearmon & Shirley, 2009). Further complicating the issue, a land-grant university's fundamental product, education, is "largely intangible" (McAlexander, Koenig, & Schouten, 2006, p. 109). Land-grant university branding is used to give face to an institution and increase valued behaviors such as "donations, college referrals, engagement in alumni groups, and participation in continuing education" (McAlexander et al., 2006, p. 115). Understanding and managing a university or college's brand community can have a strong impact on advancement programs (McAlexander et al., 2006).

Advancement programs perceive alumni as the most loyal supporters of an institution (Muller, 1986); however, these programs must keep alumni informed and involved with their alma mater to generate interest and investments over time (Webb, 1989). According to Weinreich (2010), "[t]he single biggest problem in communication is the illusion that it has taken

place" (p.135). While alumni are significant contributors to funding public institutions, the number of alumni donors is decreasing (McDearmon & Shirley, 2009). Though research has been conducted to identify factors that impact alumni giving, it was not until recently that researchers began considering generational differences in their analyses (McDearmon & Shirley, 2009). Millennials as history's first "always connected" generation (Taylor & Keeter, 2010). Millennials, or individuals born during 1981 or later, comprise the smallest percentage of giving (Rovner, 2013). Although studies have suggested student loan debt may delay alumni giving (McDearmon & Shirley, 2009), a recent survey also revealed nonprofit practitioners did not see the value in prioritizing Millennials because they did not yield a great return on investment (Achieve & Johnson, Grossnickle and Associates [JGA], 2012). This stance is problematic as alumni-alma mater relationships are not only important for generating future investments (Webb, 1989), but help provide insight regarding alumni needs as well as an assessment of the quality of its education (Miles & Miller, 2000).

Consistent alumni communication and relationship cultivation is the backbone of higher education and essential in keeping an alma mater from remaining an alumnus' past (CASE, 2014a; CASE, 2014b). This study was guided by the Shannon and Weaver Model (1949) and Berlo's Source-Message-Channel-Receiver Model of Communication (1963) to better understand where breakdowns in communication can occur. Although transmitters can control how a message is encoded, this does not ensure that the desired message reaches the receiver. Petty and Cacioppo's (1986) Elaboration Likelihood Model maintains there is a central and peripheral route to persuasive communication. When individuals lack information to form an opinion on new technology, they will rely on peripheral cues such as a message's treatment, structure, or code to shape an attitude (Miller et al., 2003). As emphasized in previous studies

(AAA, 2009; McAdoo, 2010), branding higher education's messaging can increase valued behaviors including "donations, college referrals, engagement in alumni groups, and participation in continuing education" (McAlexander et al., 2006, p. 115). Alumni relations programs must ensure proper messages are being communicated through appropriate channels to strengthen and maintain relationships across the world.

A college is a marketing institution that offers a range of services through its brand (McAlexander et al., 2006). Although education's product is elusive, the strength of a college's brand relationship with consumers is apparent in the frequency consumers adorn themselves and spaces with branded merchandise (McAlexander et al., 2006). Consumers who invest in a common brand form a brand community (McAlexander et al., 2006; Muniz & O'Guinn, 2001). As cited by McAlexander et al. (2006), a brand community is formed through social relationships amongst consumers of a common brand, regardless of location, who acknowledge their commonness and share traditions and a sense of duty related to the brand (Muniz & O'Guinn, 2001). In higher education, consumer relationships include: (a) alumni-product, (b) alumni-brand, (c) alumni-institution, and (d) alumni-alumni, (McAlexander et al., 2006). The alumni-product relationship is one of the most meaningful relationships an individual can have because the product (education) shapes the consumer's identity (Belk, 1988), and is formed as a student (McAlexander et al., 2006). An alumni-institution relationship follows graduation and is damaged or improved through interpersonal relationships with alumni relations (McAlexander et al., 2006). An alumni-brand relationship is also a core concern for institution marketers in building a consistent message and an emotional connection with consumers (McAlexander et al., 2006). Understanding an institution's identity can strengthen a customer's sense of pride for their alma mater as well as strengthen the alumni-brand relationship (McAlexander et al., 2006).

This shared pride builds the alumni-alumni relationship (McAlexander et al., 2006). Alumni-alumni relationships are the most important bond in maintaining a brand community (Muniz & O'Guinn, 2001) and impact buyer behaviors through communication (McAlexander et al., 2006).

Methods

The purpose of this study was to determine Millennial alumni perceptions of print and electronic communications media utilized by the Dale Bumpers College of Agricultural, Food, and Life Sciences [Bumpers College]. Through this assessment, researchers sought to identify Bumpers College Millennial alumni: (a) perceptions regarding current electronic and print communications media utilized by the College; (b) communication preferences; and (c) giving preferences (fund, time, or services).

Researchers conducted a series of telephone interviews with inactive and active Millennial alumni to evaluate media utilized by the Bumpers College from 2012 through 2014 to maintain relationships with graduates. This time frame was selected to assess media utilized during the introduction of a Director of Development, Director of Communications, and Communications Graduate Assistant. Selected print media included *The Graduate* alumni magazine and the *AR Culture* student-written magazine. Digital media included (a) *The Graduate* e-newsletter, (b) email invitation to the *Bumpers College Alumni & Friends Tailgate*, (c) email invitation to the *Connecting Bumpers Professional Mocktail Party*, (d) Bumpers College website and alumni homepage, and (e) Bumpers College social media presences (Facebook, Twitter, and LinkedIn). Although there are currently no existing communications media or events solely targeted toward Bumpers College Millennial alumni, assessed media (identified by key communications personnel) included a sample typically shared with Millennial alumni.

To identify participants for this study, subjects were supplied by Arkansas Alumni Association [AAA] database based on the following sampling frame: (a) obtained bachelor's degree from Bumpers College and (b) age of 32 and younger. This query produced 1,134 male or female subjects labeled as active or inactive alumni and living in-state, out-of-state, or out-of-country (418 active, and 704 inactive). Individuals classified as active alumni had either received a one-year complimentary AAA membership following graduation or had paid the membership fee, while inactive alumni were those who had discontinued their AAA membership or allowed it to expire (T. Tucker, personal communication, December 20, 2013). From the list of subjects, prospective participants were identified through a stratified random sample. Because "there are no rules for sample size," in qualitative research, a baseline of 20 alumni (Erlandson, Harris, Skipper, & Allen, 1993) was established to easily replicate the six to four, female to male, gender ratio of the Bumpers College as of 2013. Each individual from the list was contacted until researchers obtained 10 active and 10 inactive alumni ($N = 20$) with the goal of redundancy in data. Researchers found that a sample size of 20 did sufficiently yield saturated data.

Before conducting telephone interviews, participants were contacted by the graduate student's research advisor to verify involvement, confirm the study's credibility to participants, and increase response rate. Correspondence with participants followed a specific script developed by researchers based on a sample script developed by Consumer Assessment of Healthcare Providers and Systems (CAHPS®) (2009). The IRB approved all data collection materials including initial and follow-up contact scripts and interview protocol. Interviews were held in the spring of 2014 and aimed to last 45 minutes (Creswell, 2009). Participants scheduled their own interview, and the print and digital media were sent to participants at least a week before interviews to allow participants ample time for reviewing content. Speakerphone was

implemented during each interview and conversations were recorded using two varying audio recording devices and handwritten notes (Creswell, 2009). All but one interview took place via telephone with one participant, despite instructions, appearing for a face-to-face interview.

Once the subject and researcher were acquainted through an ice-breaker question (Creswell, 2009), the interviewer led participants through a series of semi-structured questions regarding identified media utilized by the College. Interviews were neo-positive in nature as the interviewer aimed to ask good questions, minimize bias, and generate quality data as well as conversation (Merriam, 2009). Interview questions were open-ended and few in number to evoke participant opinions as suggested by Creswell (2009). A few questions focused on participant's ability to recall or engaged in the particular communications medium, their impression of the medium, and the type of information they would like to receive and how they preferred to receive it. After the questioning route was completed for a single medium, the interviewer conducted member checking to ensure recorded data agreed with the participant's intended perception (Creswell, 2009; Lincoln & Guba, 1985). This process was repeated until each medium was reviewed. A brief survey was then administered at the end of each interview to gain a deeper understanding of participant's past and present relationship with Bumpers College. This survey collect data on participants' level of education and whether they had made a donation to Bumpers College, were a first generation college graduate, had a relative graduate from the U of A, or had received financial aid to complete their education.

Following each interview session, audio recordings were saved to a computer and assigned a number based on interview order and labeled with an AR or IR depending on their active (n_a) or inactive (n_i) alumni status. Once sessions were completed, transcribed data were arranged according to their information source (Creswell, 2009) and interview question.

Triangulation was implemented as the interviewer used various modes to record data including notes and two audio recordings, each with differing audio quality to increase transcription accuracy (Merriam, 2009). Transcripts were hand coded using color schemes and key segments were placed under categorical themes (Creswell, 2009). Open codes from each interview were clustered and consolidated through axial coding (Creswell, 2009; Tesch, 1990). Findings were reported through narratives supported by respondent quotations and included a general summary written to capture lessons learned in thick description (Creswell, 2009; Lincoln & Guba, 1985). Peer debriefing between the researcher and a panel of experts was used to reinforce the data's accuracy and reach intercoder agreement (Creswell, 2009; Gibbs, 2007). Transferability was increased through rich, thick description so that individuals in a similar context may draw commonalities (Lincoln & Guba, 1985; Merriam, 2009). Dependability was maintained through a detailed audit trail and use of an interview protocol/script (Merriam, 2009).

Findings/Results

Participants were 22 to 29 years of age with no correlation between age and AAA status. The majority of participants ($n_a = 5$, $n_i = 6$) had completed a bachelor's degree with the remainder having received at least a master's degree. Six of these participants ($n_a = 3$, $n_i = 3$) had returned to the College for graduate school with two of these participants ($n_a = 1$, $n_i = 1$) enrolled as graduate students within Bumpers College at the time of their interview. One active alumna was completing her doctoral degree and one inactive alumnus had completed his Ph.D. There was no relationship between distance from campus and their AAA status. Sixteen of the 20 participants ($n_a = 8$, $n_i = 8$) resided in Arkansas with 10 ($n_a = 6$, $n_i = 4$) living an hour or less from the University of Arkansas (U of A) campus. Looking at participants' academic relationship with Bumpers College, half ($n_a = 4$, $n_i = 6$) were first generation college graduates. Of those who

were not first generation graduates, eight participants (n_a = 5, n_i = 3) had a relative graduate from U of A. Nineteen participants (n_a = 9, n_i = 10) reported receiving financial aid to complete their education.

Two key themes emerged related to Millennial alumni's connection to the College and included: *Building the Professional* and *Interest in Giving Back*. As participants reviewed and discussed each of the eight communications media, the following themes emerged related to Bumpers College Millennial alumni's connection to the media: A) *Message Relationship*; B) *Specialized Content*; C) *Communications Medium*; D) *Message Barriers*; and E) *Need for Promotion*.

Alumni Connection to College – Building the Professional

Regardless of whether respondents were directly using their degree in their occupation, no alumni said they were unprepared or upset with their collegiate experience. In fact, four participants (IR3, AR15, IR16, AR19) made it known that they have considered returning to Bumpers College to pursue a master's degree in the future. Only one alumna displayed a detached outlook of her relationship with the College. She reflected, "…I was more involved with my sorority and that kind of thing. Sorry, I'm not really helpful on that one. My major helped me get a job" (AR10).

Alumni Connection to College – Interest in Giving Back

While money was perceived as a barrier to the alumni-college relationship (n_a = 5, n_i = 2), most responded positively toward the idea of giving back financially. When asked if they would rather donate funds, time, or services, nine alumni (n_a = 5, n_i = 4) said they would prefer to give back financially. One alumnus cited monetary donations as a convenience because he just began his career. "…[T]here's not a lot of time to donate, but definitely in the future as I get more

involved and more comfortable in my job, I might [have things] that I could contribute and advice I could give" (AR8). Making a financial gift was also viewed as the most convenient option for respondents who lived far from the College campus. Some were more interested in providing directly to current students rather than the College as a whole "…[I]f I ever came to the point where I had a considerable amount of money to give the program, it'd likely go into some form of scholarship... Funding *that* to help some of the other current students out" (IR5). Although many showed interest in giving back financially, participants noted needing more time to accumulate money to give.

Contributing to the College through mentorship and service opportunities also appealed to alumni. This was a way alumni could easily give back directly to students with some in the capacity to do so presently. Few respondents (n_i = 3) mentioned that they had or were currently collaborating with past professors to help mentor or offer services for students. Not only did they feel good about giving back to their alma mater, but they were glad to be providing meaningful opportunities. An alumna explained, "I want to offer those students what I had as a student... College was so great and I think helpful to me in that aspect that I feel like I owe them in returning that for future students" (AR17). Finally, alumni were least likely to donate their time for general volunteer opportunities. As with monetary donations, alumni cited being too fresh in their careers to donate.

Alumni Connection to Media – Message Relationship

While reviewing each medium, respondents wanted to feel like Bumpers College was connecting with them on a personal level. When asked about what they wanted to receive from their alma mater, all participants referenced desiring updates on specific people in the College.

Whether through visual and textual content, special events, or event invitations, alumni wanted

to feel they have made a connection with someone.

> My favorite part was the 'Bumpers Family Album.' It showed what alumni have been doing and pictures of like the girl meeting Clinton... I really like things that are related to particular people instead of just Bumpers College in general. It makes it more personal. (AR10)

> Sections in *The Graduate* magazine such as the "Bumpers Family Album," "Class

Notes," and angle of *AR Culture* articles were standout moments to alumni who encouraged the

College to add more people-focused content. Respondents noted that they typically did not read

everything distributed by the College, but scanned content for key words and images related

specifically to their interests. Participants only read an article when they found a personal

connection to the content. One respondent who typically leaves their copy of *The Graduate*

unread reflected, "I think I sat down and read one article in this one, and the *only* reason was

because when I opened that very first page, one of the photos was a friend of mine..." (IR1).

Instances of seeing familiar faces and programs were not only what respondents noted as a point

of entry, but were what they remembered most.

Anticipating familiar faces and having an opportunity to reconnect with instructors and

classmates was also a reason most alumni ($n_a = 8$, $n_i = 9$) considered attending a college event.

Most respondents ($n_a = 8$, $n_i = 8$) were drawn to the alumni and friends tailgate as football attracts

many former students and professors. On the other hand, while many related the event to seeing

familiar faces, others said they would be more swayed to attend specialized, departmental events.

"Just a random invitation like this wouldn't really entice me to come… It would probably be

just a room full of people I've never seen before eating a buffet" (IR13). Along with an intimate

approach to alumni events, few respondents ($n_a = 2$, $n_i = 3$) noted they valued personalized

invitations or being approached by an individual to attend a Bumpers College event. Alumni

were more willing to give Bumpers College their time when it looked like a message had been specially crafted for select individuals rather than forwarded to the masses.

Alumni Connection to Media – Specialized Content

Along with interest in a people-focused approach to communication, alumni desired to hear about research being conducted at their alma mater. Regardless of level of education, almost half ($n_a = 3$, $n_i = 5$) wanted to continue to hear about advancements made within the agriculture industry and their personal field. Research served as a thread that not only linked alumni to their past but also related to their current industry positions. Two alumni in particular noted interest in hearing about community and global impacts of research being conducted on campus. One alumna noted, "I like that [*AR Culture*] highlights different things that students are doing around the world... That's just interesting to know students from my alma mater are able to have that sort of have a hand in something big" (IR6). Hearing these stories helped alumni to see how Bumpers College continues to connect and impact their lives even though they are no longer on campus.

Finally, strong visuals were cited by respondents as a point of entry. In discussing invitation design, an alumnus explained, "[T]he invitation design encouraged me to read the whole invitation. But as far as encouraging me to come the event,… I think that's the function of the event itself" (AR7). While the message or purpose was perceived as the most important part of a communications medium, the quality of the visuals encouraged alumni to invest time in the College's message. When discussing the *AR Culture* magazine, one alumnus added, "It's got good pictures in almost every story. And I think that does a lot for reading purposes. It helps engage the readers" (IR2).

Alumni Connection to Media – Communications Medium

Alumni's willingness to receive and engage in Bumpers College messaging was dependent up on the communications medium. Over half of respondents had a particular medium preference for different information and was largely dependent on personal convenience. "…I think it's just one of those things. I like them sent to my inbox so I can read them where I want to if I'm on the computer. But I do also like having a hard copy so that way if there's a really cool article, I can give it to somebody else to let them read it" (AR18). Although some alumni flexibly engaged in print and electronic media, others were unwavering in their medium preference. One alumna explained, "I would like to receive *nothing* in the mail. I don't like mail[ed] items. They end up being thrown away, and then they're just waste which I think is bad for the environment" (IR4). Essentially, alumni saw a benefit in having a variety of media at their disposal to opt in and out of at their leisure.

Not only did personal preference play a role in medium selection, but alumni also admitted to reading print and electronic news media differently. Respondents typically perceived print media as lengthy, in-depth, and needing more time to read, while electronic media was described as providing a quick list of topics for scanning. An alumna with a preference for print also described instances where content frequency and length determined the medium/channel.

> I would read a printed version–I'd always read that more thoroughly. I just like to have paper in front of me. But for just a monthly [publication], I would rather get it digital and I'll just scan through it. It's easier to just kind of glance through and click on the topics that are interesting to me. (IR11)

Clearly, some alumni were willing to compromise their personal preferences at times to ensure information was sent in the most practical manner.

Focusing specifically on electronic media, alumni identified unique benefits and expectations for messaging. With everything a click away, alumni expected interconnectivity between varying electronic media including e-newsletter, webpage, and social media presences. This caught one alumna off-guard as she looked at the mocktail party invitation and noticed it didn't have website link to RSVP. "If I was sending someone an email or if there was a website or link for that party, I would expect to be able to click on it and it send me right to it" (AR12). In addition, alumni did not want to be overwhelmed with content. Some alumni suggested linking emails to a landing page to prevent being bombarded with a lot of content upfront.

Alumni also viewed electronic media as an opportunity to save the College money ($n_a = 3$, $n_i = 4$). "Well I think that electronic form, it could probably be published more than twice a year as in it could possibly be a cheaper way to get higher volume out" (AR14). Respondents expected (but did not necessarily want) a higher frequency of news and timely content because it was available online. Along with the instantaneity that comes with electronic media, alumni expected social media to be kept up-to-date, active, and engaging as a digital form of public relations. One alumna was disappointed when she visited the Bumpers College LinkedIn page.

> I think for me, if you're going to be on social media, you shouldn't just say that you have a page. You should have a page that you could share and post information, where you can be authentic and engage in two-way conversations... I really think it's important for there to be an active, engaged presence on social media. Not just a presence. (AR18)

Respondents were not content with just recent updates from the College, but wanted their alma mater to be seeking a relationship or dialog with alumni.

Alumni Connection to Media – Message Barriers

As active and inactive Millennial alumni began to justify their perceptions of each medium, a theme of *Message Barriers* emerged with nine subthemes. 'Time' was frequently identified as the reason for a respondent's inactivity with the College and its media. Their choice

to invest in content was often dependent on the time available. When asked their likelihood of opening an email based on its subject line, one alumnus respondent, "If I had time to sit there and look through it, I would just open it. If I didn't [have time], I wouldn't and I'd probably not come back to open it" (AR7). No matter how well-crafted a subject line may be, an alumnus will not open an email if they do not believe they have time to look through it. Messages with chunks of content were also perceived as taking too much time, and often set aside for later. One respondent explained, "I always have the best intentions to read things like this because I'm a very proud alumna,... [b]ut it's just hard to keep up with time and that kind of thing" (AR10).

Another external barrier cited by almost half respondents was the issue of distance. This barrier was only mentioned when discussing alumni events and the possibility of making a gift of time or services. When asked which events they would return to campus for, one alumnus replied, "Well if we're just talking about me, I live four and a half to five hours away, so probably about the only thing I'm coming for is a sporting event" (IR7). Those that lived quite a distance away from the campus cited only returning for sporting or other major events. Distance also made alumni selective about which messages they would receive. If a respondent anticipated being unable to attend an event due to distance, the alumnus would instantly discard or skip an electronic or print invitation.

Also when discussing the likelihood of engaging in Bumpers College communications media, a subtheme of 'vague messages' emerged. If alumni were unable to understand the key purpose of a message without additional research, these messages were discarded or skipped. This theme emerged when discussing the *AR Culture* magazine and reemerged when reviewing the mocktail party invitation. An alumnus shared, "It says 'An Evening of Engagement, Networking Among Bumpers Alumni and Current Students.' I think it'd be nice if it listed for

the networking side what alumni or what businesses might be there" (IR2). Rather than

understanding it as a mentorship opportunity, the alumnus was seeking ways he would

professionally benefit from the mocktail event. A lack of details not only led alumni to

misinterpret the event but see no value in attending.

On the other hand, too much information was perceived as a barrier preventing the

receiver from discerning a key message. Discussing the tailgate invitation's subject line, one

alumna remarked, "That's way too long for a subject line. You could easily just leave it as

'Bumpers College Alumni Tailgate,' and I'd probably open it… That's a really, really, long

subject line. You lost me after Register Aug. 31" (IR1). Digging into the invitation, respondents

felt they had to sift through information to find event information. On top of being bombarded

with content from a single source, respondents receive an overflow of print and electronic media

from external sources, vying for their attention. This lead alumni to prioritize messages worthy

of their time and attention with some messages never reach the receiver.

Another barrier presented by respondents was the inability to relate to subject matter. As

mentioned in the in *Message Relationship* theme, alumni wanted to read content that appealed to

their interests and history. Stories featured in *The Graduate* or *AR Culture* that had no relation to

their interests were skipped. This was also true for invitations and events. When speaking about

her likelihood of opening the tailgate invitation, an alumna responded, "Whenever I think

tailgate, I'm thinking football. If that pops up, usually I'm never interested in it. It's one of

those things I just kind of think football and that just goes into the trash" (AR20). While an

aspect of the tailgate could have appealed to this participant, she saw no initial connection and

discarded the invitation.

During participant interviews, a seventh barrier was presented when alumni were unable

to properly view electronic media due to technical errors. Although the same email was distributed to all alumni, each viewed the electronic media differently based on their email provider and screening method (desktop/mobile devices). When photos did not appear and electronic templates were warped, participants lost patience and abandoned the message. An alumna who had difficulties with *The Graduate* e-newsletter commented, "It's not lined up correctly or anything. So even on my computer screen, they didn't even manage to line up everything correctly" (IR4). Instances like these reflected poorly on the College as alumni perceived the creative piece as being carelessly thrown together.

The final subtheme identified by Millennial alumni was 'outdated information'. This theme was mentioned by two respondents while reviewing the Bumpers College alumni webpage and social media presences. "…[W]hen you look at on the left-hand side at the 'Alumni and Friends Blogs,'… the most recent post is from October 8, 2011… It's completely neglected" (IR4). Alumni showed interest in the 'Alumni and Friends Blogs' link, however content was no longer timely to be relatable.

Need for Promotion

A final theme addressed during participant interviews was the *Need for Branding and Promotion* for Bumpers College. Although alumni were attracted by the reference of their alma mater in subject lines, media distributed by the two entities (Bumpers College and U of A) had little brand recognition. Though Bumpers College and the U of A are not competing entities, each send separate messages which confused alumni. Not only were *The Graduate* and *AR Culture* magazines interchangeable in the minds of alumni, participants viewed the AAA and Bumpers College Alumni Society as two separate organizations. "…When Bumpers College goes to events and tries to get people to join the alumni society, [they think] there's an alumni

society for the University and one for Bumpers College. And they're two separate alumni societies..." (AR17).

Last, it was noted that the College needed to promote their social media presence. A little over half of participants ($n_a = 6$, $n_i = 5$) were unaware of Bumpers College social media presences, and those that were aware confused the separate student and alumni Facebook pages.

Conclusion and Recommendations

While discussing their relationship with the Bumpers College, alumni showed *Interest in Giving Back* to the College. Though most were fresh in their careers and unable to presently make a gift of their funds, time or services, they still hoped to make a contribution–whether to the College or directly to students–sometime in the future. Alumni were so pleased with their experience that they wanted to offer the same advantages and opportunities to the next generation of Bumpers College students. By creating personal connections with alumni while they were students, the Bumpers College has established a strong customer-product tie for Millennial alumni and can continue to develop its brand community by answering the call for a fruitful customer-institution relationship.

In addition to their relationship with Bumpers College, alumni discussed their relationship with distributed media. A theme of *Message Relationship* emerged as alumni described information they would like to receive from their alma mater. One alumna commented,

> I feel like Bumpers College was really kind of personal with me as far as I made a lot of good connections with the faculty, and staff, and my friends, and so I want to still kind of feel that connection to the Bumpers College as a whole. (AR19)

Alumni valued relatable, familiar, and specialized messaging and communicated a need for the College to build its customer-brand relationship to foster an emotional connection. This may be caused by a lack of branding associated with distributed media. Bumpers College currently does

not have a brand identity, so alumni adopted faces of students and professors to form the College's identity. Alumni were not nostalgic for a tradition or symbol, but for the personal connections (customer-customer relationships) they made while students. The theme *Need for Promotion* emerged, also signaling a need for clear identity messaging.

Participants showed interest in *Specialized Content* including compelling research visuals to "catch their eye" as they scanned messaging. Most alumni expressed a desire to hear about Bumpers College research with a focus on professors and students. The few participants who were seeking employment preferred job listings and networking opportunities for reviewed media. These preferences were largely dependent on an alumnus's stage in life and will evolve as participants mature in their role as an alumnus.

In discussing their relationship to the College's media, a theme of *Communications Medium* emerged. Alumni acceptance of a medium depended on individual preference but wanted to flexibly select which to receive. If the College failed to send a message through a desired channel, this led to a communication breakdown caused by the receiver's unique attitude. Print and digital media were consumed differently with separate expectations. Print media was viewed as more in-depth and involving more time, while digital media was prompt and easy to scan. While the particular issue of the *AR Culture* magazine was two years old, alumni were more shocked by the three-year-old 'Alumni & Friends Blog' post. Alumni expected instantaneity and timeliness from digital media and were more forgiving of print. Communications that failed to encode the message to meet alumni expectations were more susceptive to noise interference and prevented the message from reaching the receiver (Berlo, 1963; Shannon & Weaver, 1949).

Finally, as alumni justified their perceptions of distributed media, the *Message Barriers*

theme emerged. While time, distance, and an overflow of external messaging were barriers beyond the College's control, most of the listed barriers or noise could be solved. These included vague messaging, too much information, unrelatable subject matter, technical errors, and outdated information. By noting and addressing these barriers and its delivery to specific channels, Bumpers College could foster growth in alumni involvement. One alumnus commented,

> In the end, it all comes down to me as an individual if this is something that I want to have as part of my life… A website one way or the other isn't going to convince me. (AR14)

Although media distributed by alumni relations isn't going to sway an alumnus to get active, making information available to alumni is important to help keep them connected enough to easily become active if they decide to do so.

Because Millennials are the first generation to grow up with the Internet (Twenge, 2006), it is important to begin understanding their preferences and habits now as they likely differ from previous generations. Studies regarding alumni communications media should continue since they are often the only element linking Millennials to their alma mater post-graduation. This will allow alumni relations to identify and be mindful of barriers hindering relationships. Secondly, researchers also suggest alumni involvement be increased through a personable approach. Not only does this method communicate sincerity, but it also gives face to an institution. This tactic builds the alumni-brand relationship by instilling an emotional connection for their alma mater—a core concern for marketers wishing to strengthen their brand community (McAlexander et al., 2006). Finally, practitioners must ensure that strategy implementation is driving their tactics rather than visa-versa. Before jumping to the next social media frenzy, alumni relations must evaluate whether these tactics truly align with strategies for reaching an overarching goal.

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Bringing the Farm to the School: Connecting Food Service Directors and Agricultural Producers through Communication

Research Paper

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Bringing the Farm to the School: Connecting Food Service Directors and Agricultural Producers through Communication

Abstract

Childhood obesity is one of the leading problems facing Americans today. As children continue to struggle with obesity, many parents and doctors look to schools to be responsible for providing healthy meals and setting the foundation for life-long eating habits. Established in 2009, the National Farm to School program aims to bring fresh, local produce into cafeterias. After five years of implementation in Florida, researchers used the two-way communication model to better understand the experiences of producers and food service directors involved in the program. Through semi-structured interviews with producers and food service directors, researchers were able to discuss the barriers identified with the program as well as identify potential program enhancements for producers and food service directors alike. Producers and food service directors identified barriers such as difficulties with distribution, high food safety requirements, lack of communication, and lack of central processing centers, which limits the program's success. Potential opportunity for program enhancements include local farmers working as cooperatives, improving communication lines between schools and producers, and increasing producer's presence in schools. In the future, the Farm to School program can continue being successful by increasing interaction between farmers and schools, developing common communication platforms for program participants, and increasing funding for the program.

Bringing the Farm to the School: Connecting Food Service Directors and Agricultural Producers through Communication

Introduction

Currently, there are 23.9 million children in the United States that are considered overweight and/or obese (Go et al., 2013). Additionally, the adolescent obesity epidemic continues to grow exponentially due to malnutrition and lack of activity (Go et al., 2013). Despite children's growing waistlines, concerns surrounding food insecurity and hunger have become major threats to children's health in the United States. Coleman-Jensen, Nord, Andrews, and Carlson (2012) found that in 2011, 50.1 million Americans lived in food-insecure households including 16.7 million children. More interesting, food insecurity in households with children has been more prominent than in households without children.

In order to combat both the obesity and food security epidemics, the United States Department of Agriculture (USDA) established the national Farm to School (F2S) program in 2009 to empower children and their families to make informed food choices (USDA Office of Communication, 2014). In addition to fighting these epidemics, the F2S program has sought to strengthen local economies by developing communities through the introduction of local food in cafeterias as well as educational programs (National Farm to School Network, 2014a). To help strengthen local communities, schools that participate in F2S purchase produce from local farms, as well as provide agricultural education opportunities through school gardens, cooking lessons, and farm field trips (National Farm to School Network, 2014b).

The F2S program is a federally funded school meal program (National Farm to School Network, 2014c) that is overseen by each individual state (USDA Food and Nutrition Service, 2014). The F2S program in most states has been managed through the state's department of education; however, in Florida the program was initially managed by both departments of

education and agriculture (USDA Food and Nutrition Service, 2014). In 2012, Florida F2S was transferred to the department of agriculture and has been managed solely by the department since the transfer. The participation of farmers and schools in Florida's F2S program before and after the transition of the administration is unknown (Holt & Rumble, 2014).

The importance of participation from both farmers and school districts in achieving success within the F2S program is self-evident. A successful F2S program needs effective communication strategies to promote participation of both farmers and school districts in order to bring nutritious local food to schools as well as provide a "potentially huge market" for producers (Vallianatos, Gottlieb, & Haase, 2004, p. 415). This study sought to identify the perceived barriers producers and school food service directors face when participating in F2S as well as identify their suggestions for enhancing the F2S program through improved communication in Florida. This study aimed to contribute to the national research agenda by gaining insight on more efficient and effective agricultural education and communication programs (Doerfert, 2011). Through the identification of the perceived barriers producers and food service directors face when working with the F2S program, recommendations for improved communication methods and agricultural education programs can help to facilitate a more efficient and effective F2S program in Florida and nationally.

Literature Review

Not only has the F2S program been beneficial to school-aged children, but the program has also provided a potential market for local farmers (Izumi, Wright, & Hamm, 2010; Vallianatos, Gottieb, & Haase, 2004). In 1997, USDA started making efforts to connect schools with local small farmers (USDA Farm to School, 2010). By the 2011-2012 school year, more

than 385 million dollars of local food was procured and served to schools nationally (National Farm to School Network, 2014d).

The F2S program is now present in more than 38,000 schools in all 50 states and Washington D.C.; however, the F2S program has differed by state and school district, as well as from one food service director to another (USDA Office of Communication, 2014). Each F2S program has included one or more of the following components: a) local food procurement, b) education on agriculture, and c) school gardens (National Farm to School Network, 2014b). Schools that participate in the F2S program have used local food for cafeteria meals, snacks, or taste-tests (National Farm to School Network, 2014b). Educational activities have often been created in schools participating in the F2S program for school children to learn about agriculture, food, health, and nutrition (National Farm to School Network, 2014b). Additionally, school gardens have been a highly utilized learning tool in the F2S program (National Farm to School Network, 2014b). School gardens have allowed students to get hands-on learning experiences while learning core curriculum through gardening practices (National Farm to School Network, 2014b). Previous literature has suggested that food service directors are motivated to participate in F2S for two reasons: the F2S program provides economic support for the local economy, and a healthier alternative when feeding school-aged children (Izumi et al., 2010).

Even though advocates of F2S argue the benefits for farmers, previous literature has indicated that food sales to schools provide a minimal or negligible economic benefit for farmers (Izumi et al., 2010; Joshi, Azuma, & Feenstra, 2008). Joshi et al. (2008) suggested that farmers and producers looked for the sociological benefits of teaching school children about agriculture and provided more nutritious meals as a mental benefit, rather than a purely economic gain.

At the same time, previous literature suggested local food was often more costly than canned, processed, or frozen food delivered by distributors; however, in this F2S program, food service directors found that the food was cheaper when bought straight from the farmer as opposed to buying local food through a distributor (Izumi et al., 2010). Izumi et al. (2010) also suggested F2S might be more profitable if cooperative facilities were developed. These facilities would allow farmers to work collaboratively to sell larger amounts of produce instead of each individual farmer selling smaller amounts to schools.

Florida is an ideal place to implement F2S programs as Florida's climate provides a longer growing season, which enables a variety of nutritious fruits and vegetables to be available to students the entire school year (Florida Department of Agriculture, 2013). In 2013, there were 47,500 commercial farms in Florida, which led the nation in the production of many edible commodities such as oranges, grapefruits, snap beans, sweet corn, squash, and watermelon (Florida Department of Agriculture, 2013). However, it is not clear to what degree F2S is integrated in schools not only in Florida, but also nationwide (Izumi et al., 2010).

Theoretical Framework

Clear communication strategies are necessary for both parties, producers and food service directors, to effectively work together. The two-way symmetrical model of communication provides a theoretical framework to guide the development of communication strategies.

The two-way symmetrical model of communication is a public relations model introduced by Grunig and Hunt (1984). It relies on an open two-way communication model, which focuses on mutual respect and negotiation by the message sender and receiver, rather than one-way persuasive communication to achieve mutual understanding (Grunig & Hunt, 1984). Culbertson (1989) indicated that the two-way symmetrical model appeared to be involved with

the diachronic mode introduced by Thayer (1968). The diachronic mode discussed the behaviors that pertain mutual communication such as exchanging knowledge, opinions and willingness to adjust objectives, beliefs and behaviors on account of the partners' opinions and situations (Thayer, 1968).

Entities performing two-way symmetrical communication use bargaining, negotiating, and strategies of conflict resolution to bring about symbiotic changes in the ideas, attitudes, and behaviors of both an organization and its publics (Grunig, Grunig, Sriramesh, Huang, & Lyra, 1995). Public relations practitioners use "publics" to define "the people with whom organizations interact in their environment" (Grunig, Nelson, Richgurg, & White, 1988, p. 26). According to Grunig et al. (1988), the concept of publics in the two-way symmetrical model was examined by considering the interests of the publics instead of only using demographic characteristics. For example, practitioners using the two-way symmetrical model would look at the innovativeness of farmers, and ask farmers what enhancement the organization could make to help farmers with information or making sense of their situation (Grunig et al., 1988).

The two-way symmetrical model allows two groups of people to share thoughts and gain knowledge and mutual understanding from each other (Grunig & Hunt, 1984). The two-way symmetrical model has been applied and recommended in a variety of agricultural and natural resources settings. Cooper (2009) compared two cases that applied different approaches to handle pressure from activists. The results showed that the two-way symmetrical model created a win-win situation when responding to activist publics about environmental issues as the model was used to communicate with activists turning criticism and misunderstanding into opportunities (Cooper, 2009).

The two-way symmetrical communication model is a principle of risk communication (Bradbury, 1994). Risk communication is relevant to many issues and topics, including food issues. A number of national and international organizations such as the World Health Organization (WHO), the U.S. Food and Drug Administration (FDA), and the Food and Agriculture Organization of the United Nations (FAO) have provided risk communication handouts and reports informing practitioners to apply two-way communication (Food and Agriculture Organization of the United Nations, 1999; Lang, Fewtrell, & Bartram, n.d.; Stuart & Achterberg, 1997). A report issued by FAO recognized two-way communication as one of the principles when communicating about food and medical issues (Food and Agriculture Organization of the United Nations, 1999). An FDA report (Zwanziger, 2010) stated, "Communication is a two-way interaction and is most effective when communicators and audiences achieve a connection" (p. 209). Stuart and Achterberg (1997) indicated that a nutrition education and communication program evolved from a one-way flow of communication to a two-way process. A two-way communication process achieved "freely exchange knowledge, values, and practices on nutrition, food, and related areas" among participants in a nutrition program (para. 3). Stuart and Achterberg (1997) also stated that two-way communication in a nutrition program ensures active involvement of decision makers, and motivates and provides participants with "easy access to nutrition-related information, resources, and services" (para. 3).

The two-way symmetrical model applied in the Cooperative Extension has also provided a dynamic exchange of information (Irani, Ruth, Telg, & Lundy, 2006). Florida Extension proposed a marketing campaign to foster two–way relationships between Extension and its stakeholders (Irani et al., 2006). This campaign created a slogan focusing on extension-clientele relationship and a two-way interactive website. Irani et al. (2006) found the dynamic website

with changeable content was a usable information source for the users. Additionally, the changeable content motivated the audience to visit the site frequently for up to date information (Irani et al., 2006). This study also found mutual agreement of terminology, or user-friendly terminology, was of value when communicating with stakeholders, as these terms were mutually meaningful to the stakeholders as well as the organization (Irani et al., 2006).

Studies have shown that major barriers to the success of F2S programs included a lack of communication between farmers and food service directors, awareness of the opportunities offered by F2S among farmers, and experience among school food service directors purchasing produce directly from local farmers (Gibson et al., 2011; Rosanburg & Leib, 2011). Therefore, the two-way symmetrical model of communication was used to guide this research and achieve the purposes of developing improved communication strategies.

Research Questions

This study sought to identify the perceived barriers and suggested opportunities for enhancement of the F2S program from the view of producers and school food service directors. After the identification of existing barriers and potential opportunities, communication strategies should be developed to guide the future of F2S in Florida. The research questions were as follows:

RQ$_1$: What are the producers' perceived barriers to participating in F2S?

RQ$_2$: What are the producers' suggested opportunities for enhancements of F2S?

RQ$_3$: What are the food service directors' perceived barriers to participating in F2S?

RQ$_4$: What are the food service directors' suggested opportunities for enhancements of F2S?

Methods

In order to gain insight to the barriers faced by producers and food service directors participating or hoping to participate in the F2S program, face-to-face semi-structured interviews were used to collect data. This qualitative approach was used to interview five producers and seven school food service directors throughout Florida. Qualitative research was chosen due to its ability to guide the researchers in understanding the producers' and food service directors' perceptions of the F2S program as well as its ability to show how these perceptions relate to one another (Ary, Jacobs, & Sorenson, 2010; Denzin & Lincoln, 2011).

Semi-structured interviews are a form of qualitative research that is used to provide a descriptive narrative of the data (Ary et al., 2010; Denzin & Lincoln, 2011). According to recommendations by Dooley (2007), a sample was selected based on the specific criterion of the population. In this case, the researchers selected 1) producers and school food service directors involved in the F2S program and 2) producers and school food service directors interested but not involved in the F2S program in varying geographic locations throughout Florida. In this study, participants were selected through snowball sampling. Snowball sampling occurs when the researcher asks each participant to name additional participants within the selection criteria (Dooley, 2007). Additional selection criteria guided researchers to select participants from multiple geographic locations: producers were chosen based on their location and the various types of crops grown across Florida, and school food service directors were chosen for the variety of size and demographic difference found in school districts in Florida.

While developing the interview guide, the researchers used recommendations from the literature (Birks, Chapman, & Francis, 2007; Erlandson et al, 1993; Gaskell & Bauer, 2000; Kreuger, 2002). Birks et al. (2007) suggested researchers gain prior knowledge of participants through the identification of the occupation and culture of the participants and stressed the

importance of building rapport. Following these suggestions, the researchers gathered preliminary data on the occupations of the participants, (i.e. what they grew, the size of their school districts), and developed an interview guide with initial questions to build rapport discussing local food and the participants' occupation. Following the initial questions, the interview guide was developed to gather information needed to meet the objectives of the study (Gaskell & Bauer, 2000). The interview guide focused on participants' perceptions of the benefits and barriers of the program, what could be done to improve the program, and what role each of the participants played in the F2S program. The semi-structured interview provided the interviewer with basic questions and topics; however, the interviewer had the freedom to diverge from the questions creating a "framework for discussion," that allowed a more comfortable and free flowing discussion about the topic of F2S (p. 40). At the end of the interview, the conversation was summarized by the interviewer, and the interviewee was asked confirm and verify the summary through member checking (Erlandson, Harris, Skipper, & Allen, 1993; Kreuger, 2002).

Data collection took place between September 2013 and May 2014. All interviews were audio recorded, and an external researcher transcribed the narrative response for each question (Guest, Bunce, & Johnson, 2006). The principle researcher analyzed the transcripts and performed constant comparative analysis using the qualitative data analysis software Weft-QDA (Guest et al., 2006). The principal researcher created an audit trail, detailing the theme formation and definition, thus increasing confirmability and dependability of the results (MacQueen, McLellan, Kay, & Milstein, 1998). Afterwards, a co-researcher confirmed the final themes for accuracy and trustworthiness (Creswell, 2007; Erlandson et al., 1993). Pseudonyms were assigned for each participant for confidentiality. The primary and co-researchers were graduate

students studying agricultural communications, who had previously been trained in qualitative

data collection and analysis. The interviews analyzed in this study were conducted as part of a

larger study, which included interviews with other stakeholders in the F2S program. For this

study, only the interviews of the producers and school food service directors were used.

Findings

This study sought to identify the perceived barriers and suggested opportunities of the

F2S program from the view of producers and school food service directors in order to develop

effective communication strategies. To fulfill the objectives, five producers and seven school

food service directors from five school districts, were interviewed. Table 1 describes each

participant's pseudonym, their geographic regional location within the state according to Florida

Extension districts, if they were participating or considering participating in the F2S program,

and percentage of students who qualify for free or reduced price school meal. Producer

descriptions include what crops they produce, whereas food service director descriptions include

the number of students in their school district.

Table 1

Description of Participants

Producers				
Participant Pseudonym	*Location*	*Crops Grown*	*Program Status*	
Joe	North East	Produce and Citrus	Participating	
Taylor	North West	Satsuma Oranges	Participating	
Melody	South Central	Blueberries and Peaches	Considering	
Ethan	Central	Blueberries, Pomegranates, and Peaches	Participating	
Phil	Central	Potato	Participating	
Food service Directors				
Participant Pseudonym	*Location*	*Students in District*	*Program Status*	*Students who qualify for free or reduced meal*

Janet	South Central	200,000	Participating	62%
Lulu	South Central	43,000	Participating	98%
Angie	North West	34,000	Participating	43%
Emma	North East	9,500	Participating	69%
Tiffany, Becky, and Haley	South	181,000	Participating	61%

RQ₁: What are the producers' perceived barriers to participating in F2S?

The producers were asked to identify the barriers they face when working with the F2S program. Following analysis, three major themes were identified: difficulties with distribution, limited amount of produce schools require and limited amount of produce small farmers can produce, and food safety requirements.

Difficulties with distribution. Producers discussed that it was expensive and laborious for them to deliver their produce to schools. Taylor explained how delivering food to multiple schools was not possible for him when he said, "I can't afford to go [to a] school and [another] school and say two boxes here, two boxes here. It's not feasible." While Joe indicated that the intensity of labor was unexpected, "If we have warning about how labor intensive it is to deliver to all those schools, that might have helped….It can be overwhelming when you are responsible for delivery."

Limited amount of produce schools require and limited amount of produce small farmers can produce. Producers discussed that on one hand, compared to retailers or overseas markets, the amount of produce schools request was limited. Therefore, selling their produce to schools was not the most profitable for some farmers. On the other hand, small-scale farmers had limited capacity of produce to sustain school needs. Even though schools have small-scale needs for fresh produce, they require a reliable and long-term supply from the farmers, which is difficult for small-scale producers to fulfill. Phil said, "It [the amount of produce schools require] doesn't ever amount to anything. Like, they come to pick up 50 bags of potatoes. They pick up

50 bags next month… it's not much [for producers to consider selling]." He also explained the challenges small-scale farmers faced,

> Now if I was a little farmer and I just had one little patch of collard greens or one patch of cabbage… it doesn't work that way. You've got to be an operator who's going to have a product for a long period of time, so they know that they're going to get that product at that time. If you're going to grow cabbage and you're going to grow five acres of cabbage over here for the Farm-to-School lunch program, what happens if your farm gets flooded out with rain? You lose your crop. They're not going to have that cabbage for the school.

Moreover, limited amounts of produce did not interest distributors or brokers working with small farmers. Taylor explained how distributors or brokers wanted larger amounts of product to fill their trucks; therefore, small farmers struggled to find distributors willing to buy small amounts of product and deliver them to schools. Taylor described the barrier and said, "When we contact a broker or something [distributor] they want to know how many semi loads we have. Well, I probably have five, six semi loads. That's not what they [distributors] are talking about. They are talking about 40, 50, 100, 200 semi loads."

Food safety requirements. The theme of food safety appeared repeatedly among producers. Producers discussed that food safety requirements created a barrier for them to participate in the F2S program. Many of the producers expressed their discontent with the food safety inspection requirements for schools. Joe explained, "If my extension agent comes out here and knows that I am good agriculture practice that really should be enough [for my produce to qualify for school safety requirements]." While Phil discussed how food safety inspections were not a cost effective option for small farmers, "They [schools] require a tremendous amount of insurance and different things [safety requirements] that would not necessarily be cost effective for various producers."

RQ₂: What are the producers' suggested opportunities for enhancements of F2S?

Producers were asked what could be done to enhance the F2S program and what could be done to facilitate a positive transition for producers into the F2S program. Producers indicated four themes for enhancement opportunity: work as a cooperative, better communication and networking, getting into the school, and educating schools about farming.

Work as a cooperative. Producers shared their opinion that working as cooperatives allowed producers, especially small producers, to work collectively. Working as a cooperative allows producers to share the responsibilities, which can be beneficial to multiple producers. For example, when one farm has crop failure, the other one in the cooperative can fill in. A cooperative can purchase supplies collectively, and thus lower the cost for small farmers. Additionally, a cooperative would allow for a larger amount of product to be sold to either school food services or distributors. When discussing the benefits of working as a cooperative, Taylor said,

> The way to go is through co-ops…. In my opinion, we are losing out by not all combining and having a central location to carry our product to and let that location sell…the product for us…. We could also get into brokers if we were all combined like that because then we would have the number of semi loads to interest a broker.

Melody, who was considering participating in the Farm to School program said,

> I know cooperatives can help on a whole lot of levels because usually in a co-op you can trade equipment and maybe even boxes…. I think that's a huge benefit of co-ops. It's just to work together so everybody wins.

Better communication between producers and schools. Producers consistently mentioned better communication as a way to enhance their experience of selling to schools. Better communication would establish mutual understanding of the concerns of both sides; it can also be helpful when there is an immediate opportunity for schools. Joe said, "[We need] definitely more communication with them [school districts]…. Sometimes you get in that situation where you got 'x' amount left and you just want it gone. That could be really good deal

for both sides." Taylor explained how a middleman should connect the farmers to the schools, "What is missing is that person that knows the farmer and knows the school to be able to match them up."

Getting into Schools. Producers identified that getting into schools was the most difficult to get started. Producers expressed that it would be of great help if schools or someone else initiated contact with them. Producers explained that they did not have sufficient knowledge and resources to initiate conversation or contracts. Ethan believed the F2S was a good program, but he wanted food service directors to select farms and say, "You are the selected farmers for the F2S program in [county], We want this this and this, Yes or no' and that's it." Taylor stated similarly, "To help farmers to get into the schools is where the help is needed. Once I'm in there, you can leave me alone, we'll get along fine, but it's somebody to help us get into them."

Educating schools about farming. Producers discussed that schools have limited knowledge about producers' work. Educating schools about farming by hosting field trips or speaking in the classroom could build trust and understanding between schools and producers. Joe said, "It [educating schools of producer's work] would help them have faith in what we do, you know, in that they're getting something healthy and safe." Ethan explained specifically,

> We would like [to] teach teachers as to what goes on, on the farms, how it's done. Not just go out and visit the cows, not go out and visit the blueberries, but how do blueberries grow, where do they come from? From the bees to the pollination and everything, it should be in the education system.

RQ3: What are the food service directors' perceived barriers to participating in F2S?

For this objective, food service directors were asked what barriers they have faced associated with the F2S program. Four major barriers were discussed, cost of local food, convenience of modern school food system, perishability of fresh produce, and lack of communication.

Cost of Local Food. Food service directors discussed that it cost more to purchase local fresh food than other forms of food such as frozen or canned food. Janet indicated, "I have got to balance it with cost. Fresh green beans are about 32 cents a portion, my commodity frozen green beans are around nine cents." Becky stated similarly,

> It's one of those things that when we evaluate the cost of the fresh produce, it's much more expensive than a like item in the frozen, or if we were going to do canned, which we don't if we use a vegetable that is frozen. But cost is a huge barrier.

Convenience of modern school food system. The modern school food system has been set up to best serve in a quick and convenient manner, which includes pre-cut and pre-packaged food as well as a highly dependent distributor. Food service directors described the difficulties they have faced to train school staff and plan menu to adjust local procurement process. Angie discussed one barrier of F2S as training employees how to work with local fresh produce,

> I really have a big training issue and I'm trying to train people because you can say it, say it, say it, but I've got to put them in different context where they realize that I really mean what I'm saying.

> Emma discussed that she couldn't have multiple menus,

> I have just two high schools, but they can be very different in what they like. They like something at our school, but they don't like it over here at this other school. But we write one menu, can't have different. [I] got nine elementary schools, they're all on the same menu. I'm not going to have four different menus.

Perishability of fresh produce. Food service directors mentioned that fresh food was more perishable than frozen and canned food, which makes it difficult for storage and distribution. Fresh food distribution requires storage at a certain temperature, and also faster and more sophisticated processing, while canned and frozen foods do not need all of these special arrangements. Tiffany explained the short shelf life of fresh produce was a barrier,

> [The] shelf life [for fresh food is short], obviously. If you are looking at frozen you can keep that, you can store that for a long time. Fresh you can't, but there are so many more benefits to the fresh.

Lulu discussed how fresh produce needs to be used immediately or it spoils, "When you're dealing with produce, the big challenge is you've got to get it and you've got to get it out to the schools in a timely manner, or it's rotten"

Lack of communication. Food service directors repeatedly identified a lack of communication between schools and farmers and other stakeholders. Lulu indicated that making contact with local farmers was difficult,

> It's making contact with the local farmers, which is not so easy because the local farmers don't know how we do business. We don't know who they are. What we did is we put out media, press releases and I had a lot of local farmers call me and contact me.

Haley mentioned, as food service staff, they had to repeatedly clarify their responsibilities and capabilities with their stakeholders because of misunderstanding of how school business work.

> But the relationships with that [stakeholders] was through meetings and conversations and discussion and sometimes even clarifying our responsibilities, and our capabilities because sometimes other stakeholders may think, oh, they're just not participatory of this process, but they don't understand our business.

RQ4: What are the food service directors' suggested opportunities for enhancements of F2S?

Food service directors were asked what could be done to enhance the F2S program, what incentives should be developed, and what could be done to facilitate a better transition to the F2S program. The themes surrounding this discussion were: increasing support from local distributors, improving communication with stakeholders, and educating farmers about school business.

Increasing support from local distributors. Food service directors talked about their hope of having more distributors in the school food business. Janet explained how the perceptions of producer vendors were a barrier; "I wish more of the produce vendors would see

us a viable business segment that they want to compete for and that it is something that could be steady business for them."

Improving communication with stakeholders. Food service directors repeatedly mentioned that designating a "middleman" who understood school business, farmers, and the distribution process could improve the communication and thus enhance the program. A middleman could be a distributor who communicates between food service directors and producers, or a middleman who could communicate between food service directors, producers, and distributors. Angie said,

> It's very important not to leave [distributor] out because he's the middleman here, really. And I don't want to deal really directly with the farmers, so he's the one to make sure that the produce has been grown properly and been handled properly and you know.

Lulu discussed a middleman as an opportunity for the program, "Perhaps, if it wasn't me, someone else, doing one-on-one [conversation] with the distributor that I'm using for produce [it would be helpful.]"

Educate farmers on school businesses. A number of food service directors discussed farmers needed to be educated about how school businesses work to enhance the F2S program. Lulu said, "[We need to be] putting together F2S meetings and inviting local growers to educate them on how we do business and how we need them to do business." Another food service director shared a similar thought,

> I think education to the farmers and in different terms of how school business works [would be helpful]. Because when they fill out a bid, they're afraid that they're going to be held to that bid and if their product doesn't produce the way that they think it's going to, they feel like they're going to be penalized. And so I think, too, getting them familiarized with how school business works and how the contracts are set up would be helpful, too.

Conclusions

These findings identified the main barriers producers and school food service directors face when working with the F2S program in order to understand where communication strategies could be developed to make the program more efficient. The narrative detailed many similarities in both perceived barriers and opportunities for program enhancement.

Producers and food service directors identified cost as a main barrier prohibiting them to work in the F2S program. For producers, the cost of food safety requirements required by schools prohibited them from participating in the program. With the additional cost of providing extra food safety requirements, the producers believed their profits would be minimal. This finding is consistent with previous literature that indicated food sales provide a minimal or negligible economic gain for producers (Joshi et al., 2008); however, this finding was not consistent with literature that suggested that F2S provided a reliable market for producers (Izumi et al., 2010). Additionally, the findings were consistent with previous literature that found producers perceived lack of profit to be a barrier to participating in F2S (Izumi et al., 2010). Cost was also a barrier for food service directors who discussed the high cost of a perishable local product (Izumi et al., 2010). In addition to the barrier of cost perceived by both parties, it was discussed that it was difficult for the small to mid-size producers to sustain the amount of produce required for schools on a day-to-day basis.

Further, previous literature suggested that it was not clear to what degree local food is integrated in the food system (Izumi et al, 2010). The low degree of integration is consistent with the findings that suggested food service directors only requested small amounts food to be shipped into the schools. At the same time, producers explained the difficulties of managing the distributing foods to schools, which could cause a low degree of local food integration into schools.

The two-way communication model could provide a model improve communication as well as channel to achieve a mutual understanding of the cost barriers associated with implementing F2S. The previous literature suggested opportunities for communication improvement in the F2S program that were consistent with the findings of this study (Izumi et al, 2010). One potential opportunity is the development of improved two-way communication between food service directors and producers. These findings demonstrated that a two-way communication model between producers and food service directors, similar to Cooper's (2009) study, could allow for the discussion of misunderstandings and the exchange of information. Using the two-way communication model, the exchange of knowledge and opinions of the F2S program could be developed in non-formal education programs for both food service directors and producers as well as dynamic informational websites (Thayer, 1968).

Recommendations and Implications

In order to develop effective communication strategies for the F2S program, effective two-way communication between schools and producers should be developed. Using non-formal education as a means to promote knowledge and opinion exchange, farmers should be invited to schools and school food service should be invited to farms. By bringing the two parties together, an exchange of information about current systems of procurement, business procedures, and perceptions could be discussed in detail to arrive at a mutual understanding. Additionally state representatives, such as Extension personnel, should work as middlemen to connect producers and schools together as well as to communicate opportunities.

To facilitate a two-way communication, agricultural communicators should develop a dynamic website where knowledge about the program can be obtained by producers and food service directors. Using the model developed by Irani et al. (2006), information should describe

different terminology and the operational structure of the F2S procurement process used by producers and food service directors. Not only would these definitions clear up confusion of terminology, but both producers and food service directors could have an understanding of the dynamic needs and wants of the program through changeable up to date content. This website could also use suggestions provided by Cooper (2009) to provide a platform where producers post products available on their farm, while food service directors may post what products are on their menu. This website could provide real time supply and demand information to create a win-win situation for the producers and food service directors as they could effectively communicate and work with each other to negotiate the exchange of the local food product. While a stagnant website would only provide a description of terminology and practices, the dynamic website provides a platform for communication and idea exchange between the two parties.

Future research should examine the barriers and suggested opportunities for enhancement from the perspective of distributors, extension agents, and others who have been involved in the F2S program in order to have a holistic view of the barriers and opportunities of the F2S program. Case studies of successful F2S programs should be conducted to provide lessons and experiences about how specific F2S programs successfully manage their communication practices and strategies to their stakeholders, such as a certain school district or producer-school relationship. It is also necessary to evaluate the roles of each segment of the F2S chain to evaluate the effectiveness of each role in the facilitation of the F2S program.

The qualitative nature of purposive sampling and small sample size limited the generalizability of this study (Maxwell, 2005). This study addresses the F2S situation in Florida, other programs or F2S in other states should refer to this study based on their unique realities of situation.

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Targeting True Contaminants: Florida Resident Perceptions of Animal and Vegetable Product Food Safety and Concerns Associated with Production and Preparation Practices

Abstract

Each year, nearly 48 million Americans get sick from foodborne illness, despite the US having one of the most abundant and safe food supplies in the world. During widespread outbreaks, the media plays a crucial role in how the public perceives the agricultural and food production industries. The amount of coverage an issue gets, how the outbreak is presented to the public, and who is blamed can impact consumer's perceptions of food products and even cause changes in purchasing habits. Often foodborne illness outbreaks occur at home and go unreported, resulting in a public that is disconnected from and separated from the problem. In order to understand the public's major food safety concerns and perceptions, researchers surveyed 510 Florida residents. This quantitative study measured Florida residents' perceptions of food safety, looking at individual food items and different preparation and production techniques. Respondents felt that fruit and vegetable products were safer than animal products, were concerned about conventional agricultural production practices, and not concerned about food prepared in the home. Consumers' perceptions of food safety and food safety concerns are not consistent with the major causes of foodborne illness. Agricultural communicators, Extension agents, commodity associations, and government agencies all play a role in educating and communicating with consumers about the causes of foodborne illnesses and ways to avoid contamination.

Introduction

The United States has one of the most abundant and affordable food supplies in the world. Currently, the US food system provides consumers with food that is more nutritious, varied, safe, and convenient than any other time in American history (United States Department of Agriculture [USDA], 2003). In 2011, the Food Safety Modernization Act gave the Food and Drug Administration additional authority to "regulate food facilities, establish standards for safe produce, recall contaminated foods, and oversee imported foods," (para. 16) while strengthening surveillance and outbreak response by government agencies, giving the United States one of the safest food supplies in the world (Crim et al., 2014). As a result of a growing population, the US food system has become production-to-consumption oriented, with consumers now purchasing processed foods, which are often canned, frozen, or dried (Floros, Newsome, & Fisher, 2010). This production-to-consumption model has contributed to a food system that is safe, convenient, abundant, diverse, less costly, and more readily accessible than ever before (Floros et al., 2010).

Despite the abundance and safety of the US food supply, food safety has continued to be a concern of consumers and a focal point of the food industry and regulatory agencies (Brewer & Rojas, 2008). According to the USDA (2012), "foodborne illnesses are caused by bacteria, fungi, parasites, viruses, toxins, or other harmful substances in contaminated food" (para. 1). The foods most commonly associated with foodborne illness have included poultry, raw milk, ground beef, leafy greens, deli meats, produce, eggs, and unpasteurized soft cheeses (Centers for Disease Control and Prevention [CDC], 2014). *Norovirus,* the leading cause of illness from contaminated food in the US, is most frequently spread through leafy greens, fresh fruits, and shellfish (CDC, 2013). The CDC has estimated that approximately 48 million Americans will get sick from foodborne illnesses this year, placing 128,000 Americans in hospitals and resulting in 3,000 deaths (2014).

Changes in the food production system, the environment, new and emerging germs, and a rising number of multistate outbreaks have continued to contribute to challenges in food safety (CDC, 2014). The development of new and different contaminable foods, such as prepackaged raw cookie dough, bagged spinach, and peanut butter, have also contributed to challenges associated with providing a safe food supply (CDC, 2014). In response to increased production and the challenges associated with food safety, US food producers have developed systems to track the flow of food through the supply chain. Now, consumers, producers, and government entities have the ability to track food back through the distribution chain, and can even identify the individual farm where food was produced (Golan et al., 2004). Regardless, foodborne illness outbreaks still occur in the United States, and the public has become increasingly concerned about food safety. Consumers have become concerned about food safety to the extent that they either reject foods or are willing to pay more to avoid specific food safety concerns (Brewer & Rojas, 2008).

Elevated consumer concerns about food safety have had major impacts on the food and agricultural industries, and have resulted in closures of manufacturers of particular food products (Tonsor, Schroeder & Pennings, 2009). Due to the ability of consumers to change the food system, understanding their perceptions regarding food safety has become essential to effectively dealing with food-safety events (Kornelis, de Jonge, Frewer, & Dagevos, 2007). Increasing public concerns and declining public trust regarding food safety suggests the need to identify the concerns held by the public (Miles & Frewer, 2001). In a 2008 survey by Deliotte, 57% of Americans stopped eating certain foods, either temporarily or permanently, because of food safety concerns (Clare & Huddleston, 2014). Understanding consumers' perceptions of food safety associated with production and preparation practices, as well as their perceptions of the

safety of individual food items, can allow for better communication and education to inform

consumers about food safety and the regulatory process. Therefore, the purpose of this study was

to explore and understand consumer perceptions of the safety of individual food items and the

safety of food preparation techniques. This aligns with priority area two of the National Research

Agenda for Agricultural Education (Doerfert, 2011). Priority area two focuses on adoption

decisions surrounding new technologies, practices, and products, including the identification of

potential gaps in knowledge that constrain effective communication to various target audiences.

Media Framing and Agenda Setting

The way information is structured and presented impacts how an individual processes

information and derives meaning from a message (Reese, 2010). This phenomenon can be

described by framing. Frames can best be described as how information is structured, defined,

labeled, and categorized (Eko, 1999). Frames allow individuals to "locate, perceive, identify, and

label" information for better understanding (Goffman, 1974, p. 21). As a theory, framing

explains how individuals use information and its presentation when interpreting a message

(Scheufele & Tewksbury, 2007).

Framing occurs at multiple levels and by multiple message sources, but in cases of public

issues, most commonly occurs in the media (Scheufele, 1999). Media frames refer to the words,

phrases, images, and presentation style that a media outlet uses when discussing an issue

(Gamson & Modigliani, 1989). Often, media frames are necessary to place emphasis on events

that may otherwise be meaningless or considered unimportant (Scheufele, 1999). Although the

media tries to stay objective when reporting, often they will convey a dominant frame within a

story that prevents individuals from making a balanced assessment of the event or topic of

interest (Entman, 1993). The media uses frames to present viewers with new information, new

perspectives, or to entice viewers to watch stories, rather than to change the way an individual thinks (Perloff, 2003).

Members of the general public learn through the information made available to them by the media, and the information is often presented in a frame. A media frame is described as "the central organizing idea for news content that supplies a context and suggests what the issue is through the use of selection, emphasis, exclusion, and elaboration" (Tankard, Hendrickson, Silberman, Bliss, & Ghanem, 1991, p. 3). The perspectives and frames that journalists use draw attention to certain attributes of the objects of news coverage, with some frames being broad and general while others are narrow and exclusionary (Scheufele, 2000).

Agenda setting involves the influences of the media and its ability to tell the public what issues are important (McQuail, 2008). At the core of agenda setting is the public's awareness of an issue as well as the salience of these issues. The more frequently a person hears about an issue, the more likely it is to be salient to them (Coombs, 2004). Object salience, or the connection between a specific issue or object in the media and the public agenda, is known as first level of agenda setting (Coombs, 2004).

The activities of interest groups, journalists, policymakers, and other political figures can have an impact on both the volume and character of news messages about a particular issue (Scheufele & Tewksbury, 2007). Information processing theories suggest that individuals more frequently exposed to a message and engaged in some form of elaboration of the message, either through discussion, behavior, or action, are more likely to recall the message later (Eveland, 2004). The frequency of an issue on the media agenda, therefore, can have an impact on the actions of the public (Scheufele & Tewksbury, 2007). The more coverage and attention an issue

receives, regardless of the information presented about that issue, the more likely the issue is to be on the public agenda (Schuefele & Tewskbury, 2007).

Food Safety and the Media

Food safety issues, particularly issues related to foodborne illness outbreaks, are important topics in the mainstream media (Charanza & Naile, 2012). When searching for information about the safety of food, consumers often look to government, industry, academic, and social networks for information (Kornelis et al., 2007). Consumers often turn to sources they perceive as credible, that they trust, and that fulfill their individual needs such as high-quality information, social support, or product-related information (Kornelis et al., 2007). Most consumers receive science-related information, including information regarding foodborne illness and disease outbreaks, through the media (Weigold, 2001). In fact, a majority of communication consumers receive about the agricultural industry occurs through the media (Hallman & Cutie, 2009). Media coverage of food safety and of the agricultural industry has the potential to alter consumers' attitudes toward specific commodities and the food industry as a whole (Charanza & Naile, 2012).

A study by Lockie (2006) found that American media outlets often frame food scares or foodborne illness outbreaks with a high degree of negativity and severity, creating a contrast between public fears and anxieties and the media (Lockie, 2006). Often, American media outlets frame organic food, gluten-free food, and sustainable agricultural practices positively while framing conventional agricultural practices and food safety practices negatively (Lockie, 2006). Although the majority of foodborne illness outbreaks are caused by produce (CDC, 2014), a majority of media coverage surrounding foodborne illness outbreaks focuses on meat, dairy, and other animal-product related outbreaks (McCabe-Sellers & Beattie, 2004). During foodborne

illness outbreaks, ineffective and inefficient communication can lead to unnecessary illness, suffering, or even death (Hallman & Cutie, 2009). All aspects of how the media frames foodborne illness outbreaks – what organizations and products are blamed, the number of individuals reported sick, and information about recalls - can have a lasting impact on the public (Lockie, 2006).

Purpose and Objectives

The purpose of this study was to explore and understand respondent perceptions of the safety of individual food items and their level of worry associated with the safety of food preparation and production techniques. The study was guided by the following objectives:

1. Describe respondents' concerns about the safety of food preparation and production techniques.
2. Describe respondent's perceptions of the safety of individual food items.
3. Compare respondents' perceived safety of fruits and vegetables and animal-products.

Methodology

An online survey was used as the research design for this study, and was sent to a sample of adult Florida residents. The survey instrument was made up of both researcher-developed questions as well as questions replicated from previous studies. Questions regarding perceptions of food safety were adapted from Sapp and Bird (2003); Redmond and Griffith (2004); and Ergönül (2013). A panel of experts evaluated the survey instrument for both face and content validity, and offered expertise in food safety, public opinion research, and survey design.

To measure respondents' perceptions of food safety and food concerns, two scales were used. The first scale measured respondents' perceptions of the safety of individual food products, including the safety of vegetables, fruits, and animal-based products that had been prepared in a

variety of ways including dried, canned, frozen, and raw. This was a 15-item Likert-type scale which ranged from 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, 5 = *Strongly Agree* and had an alpha reliability of .95. During analysis, the scale was divided into two separate categories, fruit and vegetable products and animal products. The fruit and vegetable products scale had an alpha reliability of .92 and the animal products scale had a reliability of .95. The scales were then compared using a paired sample t-test.

The second scale measured respondents' perceptions of food safety associated with different food production and preparation techniques, including naturally occurring food threats, food technology, residues in food, food ingredients, food production, and food preparation. This was a 14-item Likert-type scale which ranged from 1 = *Not Worried*, 2 = *Slightly Worried*, 3 = *Somewhat Worried*, 4 = *Moderately Worried*, 5 = *Extremely Worried*. The perception of food safety scale had an alpha reliability of .94.

A survey software company used non-probability sampling to recruit individuals included in the sample. Non-probability sampling allows for population estimates, and is a commonly used sampling method in public opinion research (Baker et al., 2013). Non-probability sampling does have limitations, as with other forms of survey methodology, including selection, exclusion, and non-participation biases (Baker et al., 2013). Post-stratification weighting methods were implemented to help control for these limitations.

A total of 510 individuals completed the survey, while 827 individuals started to take the survey, achieving a participation rate of 61.6%. Participants were recruited through an online survey firm, Qualtrics. The data were analyzed for descriptive statistics using SPSS ® 21.0. Respondent demographics, which included gender, race, ethnicity, age, and community size,

were weighted to ensure that the sample was representative of the Florida population according to the 2010 census.

A post-weighting descriptive analysis of the demographic data was completed and can be found in Table 1. The respondents included 269 (52.7%) females and 241 (47.3%) males. The primary race of the respondents was Caucasian/White (Non–Hispanic) ($n = 445$, 87.3%), followed by African American ($n = 46$, 9.0%). Hispanic ethnicity was reported by 10.6% ($n = 54$) of the respondents. Nearly two-thirds of respondents were between 40 and 69 (62.9%, $n = 321$) years of age and 92.7% ($n = 501$) reported residence in metropolitan counties according to the rural urban continuum code system (United States Department of Agriculture Economic Research Service, 2013).

Table 1

Demographics of Respondents		
Characteristic	*n*	*%*
Sex		
Female	269	52.7
Male	241	47.3
Race		
African American	46	9.0
Asian	7	1.4
Caucasian-White (Non-Hispanic)	445	87.3
American Indian or Alaska Native	5	1.0
Hispanic Ethnicity	54	10.6
Age		
19 and younger	10	2.0
20-29	61	12.0
30-39	63	12.4
40-49	75	14.7
50-59	126	24.7
60-69	120	23.5
70-79	42	8.2
80 and older	13	2.5
Rural-Urban Continuum Code[1]		
1 million or more metropolitan area	288	56.5
250,000 to 1 million metropolitan area	153	30.0
Fewer than 250,000 metropolitan area	27	5.3

20,000 or more, non-metro area								30	5.9
2,500 to 19,999 non-metro area								8	1.6
<2,500 completely rural non-metro area								1	0.2
Education Level									
Less than 12th grade (did not graduate high school)								11	2.2
High school graduate (includes GED)								127	24.9
Some college, no degree								133	26.1
2-year college degree								73	14.3
4-year college degree								108	21.2
Graduate or Professional Degree								58	11.4

[1]Rural-Urban Continuum Codes provided by the USDA's Economic Research Service (USDA, 2013)

Results

Objective 1: Describe respondents' concerns about the safety of food preparation and production techniques

Respondents' perceptions of the safety of different food preparation and production techniques are reported in Table 2. Respondents ranked their perceptions by selecting their level of worry associated with statements concerning food safety issues, including the safety of naturally occurring food threats, different food production practices, and food preparation techniques. Respondents indicated that they were "not worried" about the safety of foods containing gluten ($n = 238$; 46.7%), food prepared in the home ($n = 243$, 47.6%), organic foods ($n = 201$; 39.4%), and all-natural foods ($n = 179$; 35.1%). Respondents were "somewhat worried" about the safety of food preservatives ($n = 131$, 25.7%), bacteria in foods ($n = 131$, 25.7%), and food when they eat out ($n = 130$, 25.5%). Respondents indicated they were "extremely worried" about the safety of genetically modified foods ($n = 137$, 26.9%) and antibiotic residues in foods ($n = 132$, 25.9%).

Table 2

Respondents' Food Safety Concerns

Food Safety Item	Not Worried		Slightly Worried		Somewhat Worried		Moderately Worried		Extremely Worried	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Bacteria in foods	47	9.2	129	25.3	131	25.7	121	23.7	82	16.1

	n	%	n	%	n	%	n	%	n	%
Growth hormones in foods	67	13.1	95	18.6	99	19.4	119	23.3	130	25.5
Food additives	57	11.2	103	20.2	128	25.1	117	22.9	105	20.6
Genetically modified foods	77	15.1	95	18.6	110	21.6	91	17.8	137	26.9
Organic foods	201	39.4	143	28.0	92	18.0	49	9.6	25	4.9
Pesticide residues in foods	36	7.1	107	21.0	116	22.7	121	23.7	130	25.5
Antibiotic residues in foods	50	9.8	106	20.8	112	22.0	110	21.6	132	25.9
Food preservatives	65	12.7	95	18.6	131	25.7	124	24.3	95	18.6
Food when you eat out	78	15.3	102	20.0	130	25.5	124	24.3	76	14.9
Food prepared in your kitchen	243	47.6	141	27.6	68	13.3	41	8.0	17	3.3
Local food	144	28.3	177	34.7	113	22.2	47	9.2	29	5.7
All-natural food	179	35.1	156	30.6	109	21.4	44	8.6	22	4.3
Food containing gluten	238	46.7	97	19.0	93	18.2	50	9.8	32	6.3
Genetically engineered food	69	13.5	104	20.4	109	21.4	99	19.4	129	25.3

Objective 2: Describe respondents' perceptions of the safety of individual food items.

Table 3 displays respondents' perceptions of the safety of individual food items. Respondents were asked to indicate their agreement or disagreement with belief statements about the safety of fruits, vegetables, and animal-products that had been prepared in various ways including raw, canned, frozen, and dried. The respondents' perceptions of the safety of individual food items scale were categorized to the real limits standard of: 1.00 to 1.49 = *strongly disagree*, 1.50 to 2.49 = *disagree*, 2.50 to 3.49 = *neither agree nor disagree*, 3.50 to 4.49 = *agree*, and 4.50 to 5.00 = *strongly agree*.

Respondents agreed that all vegetable and fruit items were safe, with the highest levels of agreement with the safety of frozen vegetables ($M = 3.85$, $SD = 0.76$), frozen fruits ($M = 3.83$, $SD = 0.74$), and dried fruits ($M = 3.74$, $SD = 0.77$). Although the means were within agreement range, respondents had lower levels of agreement with the safety of canned vegetables ($M = 3.61$, $SD = 0.86$) and raw vegetables ($M = 3.57$, $SD = 0.88$). Respondents had lower levels of

agreement with the safety of animal products, and neither agreed nor disagreed that sausage ($M =$ 3.28, $SD = 1.00$), ground beef ($M = 3.31$, $SD = 0.96$), or pork chops ($M = 3.35$, $SD = 0.98$) were safe. Additionally, all 15-items were summated for a total food safety score. Respondents were in slight agreement that food was safe overall ($M = 3.58$, $SD = 0.67$).

Table 3

Perceptions of Individual Item Food Safety

Food Item	M (SD)
Vegetables and Fruits	
I believe frozen vegetables are safe	3.85 (0.76)
I believe frozen fruits are safe	3.83 (0.74)
I believe dried fruits are safe	3.74 (0.77)
I believe canned fruits are safe	3.67 (0.82)
I believe raw fruits are safe	3.64 (0.88)
I believe dried vegetables (i.e. sun dried tomatoes) are safe	3.62 (0.78)
I believe canned vegetables are safe	3.61 (0.86)
I believe raw vegetables are safe	3.57 (0.88)
Animal Products	
I believe milk is safe	3.66 (0.89)
I believe eggs are safe	3.66 (0.85)
I believe steak is safe	3.45 (0.95)
I believe chicken is safe	3.40 (0.93)
I believe pork chops are safe	3.35 (0.98)
I believe ground beef is safe	3.31 (0.96)
I believe sausage is safe	3.28 (1.00)

[1]Responses were categorized into the real limits standard of: 1.00 to 1.49 = *strongly disagree*, 1.50 to 2.49 = *disagree*, 2.50 to 3.49 = *neither agree nor disagree*, 3.50 to 4.49 = *agree*, and 4.50 to 5.00 = *strongly agree*

Objective 3: Compare respondents' perceived safety of fruits and vegetables and animal-products.

Using summated scales, a paired sample t-test was conducted comparing respondents' perceived safety of fruit and vegetable products and perceived safety of animal-products. A significant difference was found ($p = 0.00$, $t(509) = 8.83$) in respondents' concerns about the safety of fruit and vegetable products and the safety of animal products. Respondents were in higher agreement that fruit and vegetable products were safe ($M = 3.69$, $SD = 0.65$) than animal-

products ($M = 3.45$, $SD = 0.83$). In terms of the real limits standard, respondents agreed that fruit and vegetable products were safe, but neither agreed nor disagreed that animal-products were safe.

Conclusion

This study provided insight to Florida residents' concerns surrounding food production and preparation practices, residents' perceptions of the safety of individual food items, as well as the differences between their perceptions of the safety of fruit and vegetable products and animal-products.

When it comes to food production and preparation practices, respondents were "extremely worried" about genetically modified foods, antibiotic residues, pesticide residues, and growth hormones, all of which are considered conventional agricultural practices. According to Lockie (2006), the media often sensationalizes stories about conventional agriculture, and uses negative or scare frames when reporting information about these practices to the public. Respondents were also "extremely worried" about foods that were genetically engineered or genetically modified. The media often frames the use of these practices negatively, appealing to the moral and environmental implications of their use. Although respondents were more concerned about products that are genetically modified, many processed foods contain some form of genetically engineered or modified product, yet no foodborne illness outbreaks have been caused by these practices (CDC, 2014).

Respondents were "not worried" about organic and all-natural food products. These findings are supported by Lockie (2006), who found that organic and all-natural food products are often framed in a more positive light by the media, and although foodborne illness outbreaks have been traced to organic products, these outbreaks are not covered as heavily by the media.

Organic agriculture is often framed as newsworthy since it is the fastest growing agricultural sector, and is credited as being the future of the agricultural industry (Lockie, 2006).

Respondents were also "not worried" about the safety of food products prepared in the home. Of the nearly 48 million Americans who will get sick from foodborne illness this year, a majority of these cases will occur at home and go unreported (CDC, 2011). In fact, Americans are most at risk of contamination from bacteria and contracting a foodborne illness at home (CDC, 2011). However, when framing the principle causes of foodborne illness threats in the United States, the media places blame on food producers, food processors, and food retailers (Lockie, 2006). Consumers need to be more educated on the risks of foodborne illness contamination and informed of ways to safely prepare food in the home.

Respondents perceived that fruit and vegetable products were safer than animal-products. In reality, fruits and vegetables cause a majority of foodborne illness outbreaks in the United States, however many of these outbreaks occur at home and go unreported (CDC, 2014). Also, the media provides more in-depth coverage of animal-product foodborne illnesses, and frames animal-product foodborne illness outbreaks more negatively (Lockie, 2006).

Implications and Recommendations

Respondents were the most worried about practices associated with conventional agricultural production, including antibiotic use, growth hormones, pesticide use, and genetically modified foods. Often, the media readily identifies food safety with production practices (Cannon, 2014), placing blame on producers and conventional agricultural practices (Lockie, 2006). In order to educate consumers on production practices, agricultural communicators should also communicate openly to the public about production practices, providing them with information about the benefits of conventional agricultural practices, and any negative

consequences associated with the practices. By being open and transparent with communication, producers can build trust with consumers and change public perception of their practices (Rumble, 2013).

Respondents were not worried about food safety in the home, despite homes being the largest source of unreported foodborne illness outbreaks in the US (CDC, 2014). Proper pasteurization and cooking is the primary way to control zoonotic pathogens in meat, eggs, and dairy products (Medieros, Hillers, & Kendall, 2001). Since respondents also felt that animal-products were less safe than fruit and vegetable products, special attention should be given to educating the public on how to properly store, prepare, and cook animal products in the home. Agricultural communicators and government agencies should encourage the use of meat thermometers, discourage cross-contamination of utensils like knifes and forks, and inform consumers of visual signs that products are prepared properly. Agricultural communicators should also work with Extension agents to create food safety programming that will deliver clear, effective messages about food safety to clientele and the public. Although consumers perceived fruit and vegetable products as safe, a majority of foodborne illness outbreaks will be caused by fruit and vegetable products, often times as a result of improper handling, storage, cleaning, and preparation (CDC, 2014). Agricultural communicators and government agencies should encourage consumers to properly handle and wash their fruits and vegetables before consuming products at home. All organizations involved in the sale of food directly to consumers, such as commodity associations and grocery stores, should communicate with consumers about food safety hazards associated with individual products. Adding information about food safety hazards to a website, handing out pamphlets, or placing food safety cards next to products are all effective communication methods that can be used to reach consumers. Food

safety education is most likely to be effective if messages are directed toward a target audience, making grocery stores, point-of-sale locations, and websites an ideal target for this information (Medieros et al., 2001).

When working with the media during times of foodborne illness outbreaks, communicators in the food industry should have a well-developed crisis communication plan. How the media covers a foodborne illness can influence consumers' perceptions of a product (Charanza & Naile, 2011), and producers and production practices are often blamed for foodborne illness outbreaks (Lockie, 2006). By providing thorough information to the media, including information on what practices are used and the potential source for contamination, industry communicators can influence the information and frames used by the media.

Future research should focus on gaining a deeper understanding of consumers' perceptions of food safety. Research should seek to understand what causes consumers to be more confident in the safety of fruit and vegetable products, emphasizing what causes consumers' lack of confidence and seeing if consumers have had first-hand experience with foodborne illness outbreaks. Future research should also focus on understanding why consumers are less confident in the safety of animal-products, including questioning about why consumers felt animal-products were less safe and what caused their perceptions. One way this can be accomplished is through message testing with consumers during focus groups. Researchers should present consumers with information about foodborne illness outbreaks, with varied sources of contamination, organizations or producers at fault, and commodities, to better understand how consumers perceive different messages and frames surrounding food safety. Research can also focus on the media and their coverage of foodborne illness outbreaks. While research has been conducted on media coverage of specific foodborne illness outbreaks (Irlbeck,

Akers, Baker, Burris, & Brashears, 2014; Irlbeck, Jennings, Meyers, Gibson, & Chambers, 2013; Palmer, Irlbeck, Myers, & Chambers, 2013; Charanza & Naile, 2012), a comprehensive content analysis of foodborne illness outbreak coverage by the media can be conducted to better understand what types of illnesses and commodities receive the most attention and coverage. Researchers can also explore the types of information provided by the media, including the type of experts used for expert opinion, sensationalized headline usage, and amount of attention given to food processors versus grocery stores versus farms.

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A Fresh Brand Strategy: Evaluating Consumers' Strawberry Purchasing Intent and their

Attitude toward Florida Grown Strawberries

Abstract

Florida is the largest producer of Strawberries in the United States during the winter months. Recently, Florida has faced competition from strawberries imported from Mexico during peak season. Studies have shown that using state branding can help promote local produce. Branding can create perceived differences between identical items, as well as strong positive associations with the product. This study examined consumers' strawberry purchasing intent and attitudes toward Florida strawberries to aid agricultural communicators in creating effective communication and branding strategies. An online survey was distributed throughout Florida (*n* = 500). Results indicated that freshness and taste were the most important qualities of strawberries for purchasing decisions, and that Florida strawberries were viewed more positively than Mexico strawberries. When respondents were given the option between labels with and without a *Fresh From Florida* brand logo, the majority preferred to purchase the package labeled *Fresh from Florida*. People with a lower income were less likely to purchase state branded strawberries. Gender did not have an impact on purchasing state branded products, however there was an association between gender and the importance of taste, women identifying the quality as more important than men. Using the *Fresh from Florida* brand for Florida strawberries is a key recommendation from this study, along with using sensory words like taste and freshness when marketing strawberries. Also, developing outreach programs to inform lower- income families when food is in season will help promote the sale of local products. These recommendations could be expanded to other states and commodities.

Keywords: branding, strawberries, local, branding, imports, competition, locally grown

Introduction

The United States is the world's largest strawberry producer, accounting for 30% of the products sold globally (Boriss, Brunke, Kreith, & Morgan, 2012). In 2010, the United States grew more than one million metric tons of strawberries (Boriss et al., 2012). Known to be high in vitamin C, potassium, and fiber, strawberries are the fifth most preferred fresh fruit in the United States, and demand has continued to grow (Boriss et al., 2012). California has been the United States' largest producer of strawberries yielding more than two billion pounds of strawberries during the 2012 season (United States Department of Agriculture- Economic Research Service, 2013). The United States Department of Agriculture (USDA) reports Florida as the second highest strawberry producer in the United States growing around 200 million pounds of strawberries in 2012. Due to the warm climate, Florida's strawberry season occurs during winter months from December until April, during California's off-season (Boriss et al., 2012). Florida has been responsible for 100% of the fresh strawberry production in the United States during those winter months (Boriss et al., 2012). In 2009, Florida made around $313 million dollars selling more than 200 million pounds of strawberries on approximately 8,800 acres of land (Mossler, 2012). Ninety-five percent of Florida strawberry acreage has been located in two east central counties of the state (Mossler, 2012). Even though large volumes of product are being produced domestically, there has been a trend, over the past decade, of increasing numbers of imported strawberries (Wu, Guan, & Whidden, 2012).

The North American Free Trade Agreement (NAFTA) in 1993 caused an increase in imported vegetables and fruits into the United States (Tyson, Hochmuth, Lamb, Hochmuth, & Sweat, 2001). When this first occurred, Florida saw its 80% share in tomatoes drop to 40% in just two seasons (Tyson et al., 2001). The market was stabilized after a base price for tomatoes

was established, but international competition continued to come to United States grocery stores (Tyson et al., 2001). With strawberries in particular, the net trade has decreased dramatically from 120 million pounds in 2008 to 20 million pounds in 2011 (Wu et al., 2012). The United States has also increased imports from Mexico during Florida's strawberry season (Wu et al., 2012). The volume of imported strawberries from Mexico has reached close to 400 million pounds, almost twice the production volume of Florida (Wu et al., 2012). Sixty-two percent of the imported Mexico strawberries were marketed as fresh and were worth approximately $4.2 million dollars (Boriss et al., 2012).

Imported strawberries have typically only been sold in United States stores when domestic strawberries were out of season (Boriss et al., 2012). However, the dramatic increase in strawberries imported from Mexico has led to more competition for local farmers (Shope, 2013). In 2011, 36% of the imported product arrived between March and April while Florida strawberries were still in season (Boriss et al., 2012). Plant City, Florida is the "winter strawberry capital of the world" harvesting about 11,000 acres of strawberries a year (Florida Strawberry Growers Association, 2012). In early 2013, a supermarket chain began selling imported Mexico strawberries on shelves next to the locally grown Plant City strawberries. Executive director for the Florida Strawberry Growers Association said, "I understand what they are trying to do, but this is just insulting to our community that depends so much on our local crop, and that's the point I am trying to make, that this is just inappropriate" (Shope, 2013, para. 3). Unfortunately, Florida's market share has dropped due to Florida's increase in imports from Mexico (Ohlemeier, 2013). The recent rise in Mexico strawberries is due, in part, to their increase in strawberry acreage from 15,000 acres in 2000-2010 to about 21,000 acres in 2012 (Ohlemeier, 2013). The influx of imports caused more market competition, and Mexico farms

use of inexpensive labor led to heightened competition with the local producers (Ohlemeier, 2013; Boriss et al., 2012). Even though Florida strawberries are reported as being "fresher since they grow 2,000 miles closer" (Campbell, 2013, para. 6), there is valid threat from the imported Mexico strawberries due to the lowered price for consumers.

There is a need to better promote Florida grown strawberries considering the increase in imported strawberries has created direct competition with the local economy. Understanding consumers' attitudes toward a product is the first step for agricultural communicators to develop effective strategies to encourage the adoption and sale of Florida strawberries. These strategies are in accordance with priority two of the national research agenda, New Technologies, Practices, and Products Adoption Decisions (Doerfert, 2011). The purpose of this study was to determine consumers' strawberry purchasing intent and attitudes toward Florida grown strawberries to develop Florida strawberry communication and brand strategies.

Literature Review

Brands, often attached to consumer goods, represent more than a product itself and carry social meaning (Loken, Ahluwalia, & Houston, 2010). These social constructs add value to organizations and the consumer (Settle, 2012). Brands can be conceptualized and interpreted in various ways, including through positioning of the brand in consumers' minds, consumers' perceptions of added benefits to products, relationships with consumers, and consumers' opinions (de Chernatony, 2001). A brand represents value to the customer and reduces consumer perceptions of risk and uncertainty (Franzen & Moriarty, 2009; Kornberger, 2010). Implementing and maintaining successful brands requires understanding how the brand is communicated to consumers and how consumers respond to the brand (McEnally & de Chernatony, 1999).

Brand positioning is the process of creating a mental image for the consumer to establish brand identity and value (Kotler & Keller, 2006). To determine the brand position, marketers first must understand who the product's consumers are, who the main competitors are, similarities between the brand and competitors, as well as differences among them (Keller, 1998). Proper positioning relies heavily on the points of parity and points of difference being established (Kravetz, 1977). The points of differences are positive attributes consumers associate with a product which they believe would not be found in products sold by a competitor's brand (Barwise & Meehan, 2004). Perceived uniqueness of the brand is often what leads a consumer to make final purchasing decisions (Keller, 1998). Points of differences can relate to performance of the product as well as imagery associations (Keller, 1998). Points of parity differ because they describe attributes that are shared with other brands (Keller, 1998). Competitive points of parity demonstrate how a brand is "good enough" when comparing a particular benefit to competitors (Keller, 1998). Once consumers feel the product is adequate, they can make purchasing decisions based on perceived differences and benefits of the product (Keller, 2008).

Product strategy is a subset of branding where marketers choose both tangible and intangible benefits the product will offer (Keller, 2008). Perceived quality is the perception of overall superiority of a product (Keller, 1998). Quality can include performance, reliability, and features of the product (Garvin, 1985; Kotler, 2000). The perceived quality will often influence the behavior and attitudes consumers have toward a brand (Keller, 1998). Product branding has been used by states for decades to differentiate agricultural commodities by their quality attributes (Adelaja, Brumfield, & Lininger, 1990).

State branding for agricultural products exists in all 50 states (Onken & Bernard, 2010), and there are a number of studies that have researched the effectiveness of the brands (Jekanowski, Williamson, & Schiek, 2000; Adelaja et al., 1990; Gay, Rumble, & Lamm, 2014; Nganje, Hughner, & Lee, 2011; Settle & Rumble, 2014). A study conducted by Jekanowski et al. (2000) analyzed consumers' willingness to purchase local produce in Indiana. Branding was used to guide the study by saying that demand of a product was influenced by consumer preferences and perceptions, which could be influenced by advertisements (Jekanowski et al., 2000). A survey was distributed via telephone to around 500 Indiana residents to determine factors affecting their willingness to purchase local food (Jekanowski et al, 2000). The results showed that perception of quality and freshness scored higher for local food and was directly related to customers' intent to purchase (Jekanowski et al., 2000). Given the option, consumers were significantly more likely to purchase produce that was labeled as "local" compared to produce that was not (Jekanowski et al., 2000). Customer demographics had an effect on likelihood to purchase as well (Jekanowski et al., 2000). Females had a higher probability to purchase locally grown food than men and households with higher incomes were more susceptible to branding and less susceptible to price (Jekanowski et al., 2000). Overall recommendations made from this were to build strong state-brand images to promote the sale of local agricultural products (Jekanowski et al., 2000).

An analysis of tomatoes branded "Jersey Fresh" used the theoretical model of branding to explain how state branding would "differentiate their products on the basis of quality attributes" (Adelaja et al., 1990, p. 75). Supermarket interviews were used to determine consumers' perceptions of "Jersey Fresh" tomatoes compared to competitors (Adelaja et al., 1990). Results showed the New Jersey residents did have a bias toward the "Jersey Fresh" brand due to the high

quality attributes of the tomatoes and the fact they were grown locally (Adelaja et al., 1990). The discussion indicated that the positive reception of the state brand implies this type of promotion may result in an improved market share by the New Jersey tomatoes (Adelaja, 1990).

A study in Arizona examined consumers' willingness to pay premium prices for state branded spinach compared to unlabeled spinach (Nganje et al., 2011). Nganje et al. (2011) concluded that consumers were willing to pay more for state branded spinach due to a higher perception of safety associated with the product. Recommendations from the study were to differentiate products by using a state brand in order to provide consumer value to the produce (Nganje et al., 2011). Similarly, Gay et al. (2014) tested to see if consumers perceived the *Fresh from Florida* brand differently than simply identifying a product as local. The results between the two were similar, except for more trust being placed in the *Fresh from Florida* brand (Gay et al., 2014). Recommendations were consistent with other studies, encouraging producers to use a state brand to increase sales (Gay et al., 2014).

Settle and Rumble (2014) examined the perceptions consumers have toward Florida strawberries through the use of focus groups. Respondents said that they valued locally produced food because the produce had fewer miles to travel before reaching the grocery store (Settle & Rumble, 2014). A number of participants said that Florida strawberries were fresher than imports and were of a higher quality (Settle & Rumble, 2014). Taste and texture were extremely important attributes consumers looked at before making their strawberry purchasing decisions (Settle & Rumble, 2014). Some participants went as far as to say they would taste test the strawberries in the store before making a decision (Settle & Rumble, 2014). Price was also identified as a major factor impacting purchasing intent. Some people indicated that if one package were significantly cheaper than another, they would forfeit buying the local produce for

the more economic option (Settle & Rumble, 2014). Four different strawberry labels were shown to the participants, each one with a local, domestic, or state brand [State Brand] logo (Settle & Rumble, 2014). The majority of the participants said they would prefer to purchase strawberries with the [State Brand] logo because it was easier to see than the traditional way the growing location has been written on the labels (Settle & Rumble, 2014). Consumers in the study also said they did not know very many strawberry brands and that they paid more attention to the growing location (Settle & Rumble, 2014).

Developing a brand image to differentiate produce by where it was grown is a way to for states to create perceived product differences and create customer loyalty (Jekanowski et al., 2000). Branding products enable consumers to make purchasing decisions based not only on price, but on intangible quality attributes as well (Jekanowski, et al., 2000). Agricultural communicators could use this type of state branding to better promote produce like Florida strawberries.

Purpose and Objectives

The purpose of this study was to identify Florida consumers' strawberry purchasing intent and their attitudes toward Florida grown strawberries to develop more effective communication and brand strategies.

The objectives of this study were to:

1) Examine Florida consumers' purchasing intent for strawberries.

2) Compare Florida consumer attitudes toward Florida grown strawberries and Mexico grown strawberries.

3) Determine if income level impacts consumers' purchasing intent for Florida strawberries.

4) Determine if gender impacts consumers' purchasing intent for strawberries.

Methods

An online survey was used to collect data for this study. The population of interest was Florida consumers 18 years and older. The survey questions were guided by a previous qualitative study on consumer perceptions of Florida strawberries (Settle & Rumble, 2014). Importance of strawberry characteristics, in relation to purchasing intent, was measured by a 7-question Likert-type scale with labels: *not at all important*, *slightly important*, *fairly important*, *highly important*, and *extremely important*. The reliability for this construct was .72 using Cronbach's alpha. Values between .7 and .8 indicate good reliabilities (Field, 2013). Purchasing intent based on strawberry labels were determined by two different 2-question Likert-type scales. The first had the following scale: 1 = *strongly disagree*, 2= *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. The second scale had the labels: *never*, *rarely*, *sometimes*, *most of the time*, *always*. One other multiple-choice question was used to gather information about Florida consumers' purchasing intent. Attitudes toward Mexico and Florida strawberries were measured through two 9-question bipolar semantic differential scales. Cronbach's alpha was .82 for the Florida attitude construct and .83 for the Mexico attitude construct.

A panel of experts reviewed the survey before distribution to account for content and face validity. The panel included an assistant professor in the Department of Agricultural Education and Communication (AEC) at the University of Florida (UF), an associate professor in the AEC department at UF, and the director of the Florida Strawberry Growers Association. Appropriate edits were made after initial data was recorded before the survey was launched.

An online public opinion research company was hired to recruit the sample of respondents using non-probability sampling. This sampling method is often used by public opinion researchers (Baker et al., 2013). Non-probability sampling has been proven through literature to be comparable to, if not better than, traditional probability samples (Twyman, 2008; Vavreck & Rivers, 2008). Quota sampling was used to reduce limitations and the amount of bias typically associated with non-probability sampling (Baker et al., 2013). Respondents were matched for sex, race/ethnicity, and age to the 2010 Florida Census to increase the generalizability of the sample. The population of interest for this study was Florida residents 18 years of age and older who purchased strawberries. It became evident that the quotas being requested did not necessarily reflect strawberry purchasers, and the sample had to be adjusted. The quota of white, middle-aged women had to be increased to collect the appropriate data.

The survey instrument was distributed to 1,812 respondents in the state of Florida and completed by 500 respondents ($n = 500$) who met the adjusted quota and were strawberry purchasers. The demographics of the respondents can be seen in Table 1. The majority of respondents were female ($n = 310$, 62%) and white ($n = 425$, 85%). More than half ($n = 290$, 58%) received an annual income below $50,000 and a little less than half ($n = 230$, 46%) were between the ages of 30 and 49.

Table 1

Demographics of Respondents ($n = 500$)

Characteristic	*n*	%
Sex		
Female	310	62
Male	190	38
Hispanic Ethnicity	59	10
Race		
American Indian or Alaskan Native	19	2
Black or African American	45	9
Asian or Pacific Islander	25	5

White	425	85
Other	10	2
Income		
Less than $30,000	155	31
$30,000-$39,999	75	15
$40,000-$49,999	60	12
$50,000-$59,999	50	10
$60,000-$69,999	40	8
$70,000-$79,999	40	8
$80,000-$89,999	15	3
$90,000-$99,999	25	5
more than $100,000	40	8
Age		
18-29	85	17
30-39	100	20
40-49	130	26
50-59	95	19
60+	90	18

Data analysis was done using SPSS ® 21.0. Objective 1 was analyzed using descriptive statistics. Paired t-tests were used to compare attitudes toward Florida and Mexico strawberries as described in objective 2. Objective 3 used a Pearson's chi-square test to determine if there was an association between consumers' income level and their purchasing intent for Florida strawberries. The income levels reported in Table 1 had to be collapsed for better distribution. The collapsed annual income levels were as follows: less than $30,000 ($n = 155$, 31%), $30,000 to $49,999 ($n = 135$, 27%), $50,000 to $79,999 ($n = 139$, 26%), and more than $80,000 ($n = 80$, 16%). Chi-square tests were also used to determine if there was an association between gender and purchasing intent for strawberries to satisfy the fourth, and final, objective.

Results

Objective 1: Examine Florida consumers' purchasing intent for strawberries.

To examine consumers' purchasing intent for strawberries, questions asked what strawberry characteristics consumers valued as most important while making purchasing

decisions, consumers' use of strawberry label information, along with consumers' preference for different packaging labels.

Respondents were asked to rate how important different strawberry attributes were when making purchasing decisions (Table 2). The majority of respondents identified taste (70%, $n = 349$) and freshness (73%, $n = 365$) as "extremely important." Consumers indicated the strawberry season and nutrition were highly or extremely important (74%, $n = 357$ and 71%, $n = 370$ respectively).

Table 2

Characteristics consumers believe to be important when purchasing strawberries

Characteristic	Not at all Important		Slightly Important		Fairly Important		Highly Important		Extremely Important	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Convenience	42	8	77	16	185	37	116	23	80	16
Taste	2	0	0	0	13	3	136	27	349	70
Nutrition	10	2	31	6	89	18	181	36	189	38
Price	13	3	29	6	154	31	170	34	134	27
Support Local Farmers	32	6	56	11	134	27	152	30	126	25
In Season	15	3	31	6	97	19	189	38	168	34
Freshness	1	0	1	0	18	4	115	23	365	73

Table 3 shows the strawberry purchasing intent of the respondents in regard to using packaging labels. A little over half of the respondents (55%, $n = 272$) said that they looked on strawberry packages most of the time or always to find the growing location of the strawberries. However, only 37% ($n = 186$) of consumers said that they most of the time or always make their final purchasing decision based off of the growing location.

Table 3

Florida consumers' strawberry purchasing intent

Characteristic	Never		Rarely		Sometimes		Most of the Time		Always	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
I look on the label to see where strawberries are grown.	35	7	58	12	135	27	163	33	109	22
I make my purchase based on where the label says the strawberries are grown.	56	11	106	21	152	30	117	23	69	14

Respondents were asked further questions about their use of strawberry package labels when purchasing strawberries. The scale used for this construct was, *strongly disagree* = 1, *disagree* = 2, *neither agree nor disagree* = 3, *agree* = 4, and *strongly agree* = 5. When respondents were asked if they could easily locate the growing location of the strawberries on the label, the majority agreed that they could (M = 3.74). Another question asked if the consumers were loyal to specific strawberry brands. The respondents tended to neither agree nor disagree with the statement (M = 2.76).

The survey also showed two identical images of a strawberry package with the same label indicating the product came from Plant City, Florida. The only difference was one package contained the *Fresh from Florida* logo on the label while the other package did not. Before respondents were exposed to the two images, they were told to imagine they were in a supermarket and to take no more than 10 seconds to decide which package they would chose.

The majority of the respondents chose the package labeled *Fresh from Florida* (76%, *n* = 381) and only 23% (*n* = 116) chose the package without the logo on it.

Objective 2: Compare Florida consumer attitudes toward Florida grown strawberries and Mexico grown strawberries.

A semantic differential scale was used to measure attitudes toward Florida and Mexico strawberries; negative adjectives were assigned a 1 and positive adjectives were assigned a 5. For Florida strawberries, respondents had an overall positive attitude measurement of 4.43. The attitudes toward Mexico strawberries were more neutral with a mean of 3.14. The difference in the means was 1.15 and was significant at an alpha level 0.05.

Table 4 shows respondents individual attitudes toward Florida grown strawberries and Mexico grown strawberries; adjectives marked with a "1" were reverse coded. There were significant differences in every individual attitude toward Florida and Mexico strawberries (*p* < 0.01. The largest differences were associated with Florida strawberries being safer (*mean difference* = 1.69) and fresher (*mean difference* = 1.69) than the Mexico strawberries. The smallest difference in attitude occurred when respondents were asked if they thought the strawberries came from large or small farms. Consumers believed Florida strawberries came from slightly smaller farm than Mexico strawberries but that both products came from relatively large farms.

Table 4

Consumer attitudes toward Florida and Mexico strawberries

Attitude	Florida		Mexico		*Mean Difference*
	M	*SD*	*M*	*SD*	
Unsafe: safe	4.61	0.69	2.93	1.04	1.69*
Not fresh: fresh [1]	4.68	0.64	2.99	1.09	1.69*
Low quality: high quality [1]	4.49	0.76	3.00	1.02	1.49*
Inconvenient: convenient [1]	4.53	0.74	3.19	1.13	1.34*

Dirty: clean	4.33	0.85	3.03	1.00	1.29*
Unsweet: sweet [1]	4.47	0.75	3.48	1.02	0.99*
Not nutritious: nutritious [1]	4.57	0.66	3.68	1.00	0.89*
Not affordable: affordable [1]	4.10	0.91	3.46	0.94	0.64*
Comes from large farms: comes from small farms	2.89	1.10	2.59	1.08	0.29*

1 = negative adjective and 5 = positive adjective
[1] indicates the answers were reverse coded
* indicates significance at $p < 0.01$

Objective 3: Determine if income level impacts consumers' purchasing intent for Florida strawberries.

Pearson Chi-Square tests were run to determine if respondents' income level was associated with their strawberry purchasing intent. Table 5 shows that there was a significant association between income levels when respondents were asked if they would prefer the strawberry package with the *Fresh from Florida* logo or without the logo ($\chi^2 = 15.83$). The results showed that 31% ($n = 48$) of respondents with an annual income below $30,000 chose the package *without* the *Fresh from Florida* logo compared to only 11% ($n = 9$) of respondents with an annual income above $80,000.

Table 5

Association between income level and label choice

Annual Income	Label without *Fresh from Florida*		Label with *Fresh from Florida*		Pearson Chi-Square Value
	n	%	*n*	%	
Less than $30,000	48	31	104	68	15.83*
$30,000-$49,999	25	19	109	81	
$50,000-$79,999	34	26	97	74	

$80,000 or more	9	11	71	88

Table 6 shows that there was a significant association between income level and the frequency purchasing decisions were made based off of the growing location of the strawberries (χ^2 = 12.69). Respondents earning less than $30,000 annually reported that 43% (*n* = 65) of the time they *did not* make their purchasing decision based on the growing location of the strawberries. Respondents in the upper middle class and upper class income brackets were about half as likely to not make their purchases based on the growing location (27%, *n* = 35 and 25%, *n* = 20 respectively). Additionally, the upper class was about 10% more likely to make their purchasing decision based on the growing location (42%, *n* = 34) than the lower income class (33%, *n* = 50). No other associations were found between income and strawberry purchasing intent.

Table 6

Association between income level and response to "I make my purchase based off of where the label says strawberries are grown"

Annual Income	Never/Rarely		Sometimes		Most of the Time/ Always		Pearson Chi-Square Value
	n	%	*n*	%	*n*	%	
Less than $30,000	65	43	38	25	50	33	12.69*
$30,000-$49,999	42	31	39	29	53	40	
$50,000-$79,999	35	27	48	36	49	37	
$80,000 or more	20	25	27	33	34	42	

* indicates significance at *p* < 0.05

Objective 4: Determine if gender impacts consumers' purchasing intent for strawberries.

There were limited associations between gender and strawberry purchasing intent. Table 7 shows the importance of strawberry characteristics to respondents when making purchasing decisions. The only significant association identified was between gender and taste ($\chi^2 = 8.73$). While the majority of men found taste to be highly or extremely important (94%, $n = 179$), women nearly unanimously (99%, $n = 206$) identified this characteristic as highly/extremely important. No other associations were found between gender and purchasing intent, which included label usage, and label preference.

Table 7

Association between gender and the importance of attributes when consumers purchase strawberries

Characteristic	Not at all Important/ Slightly Important				Fairly Important				Highly Important/ Extremely Important				Chi-Square Value
	Male		Female		Male		Female		Male		Female		
	n	%	n	%	n	%	n	%	n	%	n	%	
Convenience	39	20	80	26	73	38	112	36	78	41	118	38	1.82
Taste	1	1	1	1	10	5	3	1	179	94	206	99	8.73*
Nutrition	16	8	25	8	43	23	46	15	131	69	239	77	5.10
Price	18	10	24	8	59	31	95	31	113	60	191	62	0.52
Support Local Farmers	38	20	50	16	54	28	80	26	98	52	180	58	1.20
In Season	18	10	28	9	45	24	52	17	127	67	230	74	3.82
Freshness	1	1	1	0	10	5	8	3	179	94	301	97	2.58

* indicates significance at $p < 0.05$

Conclusions

Since original quotas used for this study had to be altered from the beginning, it can be concluded that the "average" Floridian is not necessarily purchasing strawberries on a regular

basis. Instead, it appears that white females, between the ages of 30 and 50 were the primary strawberry shoppers in this population.

The most important characteristics consumers looked at when making their strawberry purchasing decisions were the freshness and taste of the fruit. This supports previous research by Adelaja et al. (1990) as well as Settle and Rumble (2014). Additionally, nutrition and if the strawberries were in season were important characteristics to consumers buying strawberries.

Over half of respondents said that they looked at the strawberries' label for the growing location most, if not all, of the time. However, less people actually made their purchases based off of the growing location. This may be because even though people wanted to purchase local food, if another product looked like a higher quality or was cheaper, they might pick that option instead (Settle & Rumble, 2014). Consumers also reported that they could easily find the growing location of the strawberries on the products' labels, which was interesting since previous studies indicated people did not always know where the strawberries had come from (Settle & Rumble, 2014). Respondents said they were not loyal to specific strawberry brand names, and other factors, like growing location, were more important.

When respondents were asked if they would prefer to purchase strawberries labeled *Fresh from Florida* or identical strawberries without the logo, an overwhelming majority chose to purchase the package labeled *Fresh from Florida*. These results supported similar research (Adelaja, et al., 1990; Settle & Rumble, 2014; Gay et al., 2014; Nganje et al., 2011) indicating that the state agriculture brand was trusted more, and associated with high quality products, which were produced locally.

Overall, consumers had a much more positive attitude toward strawberries grown in Florida than strawberries grown in Mexico. The biggest difference in attitudes was the safety

associated with the two location origins. Freshness accounted for the second biggest difference. Consumers likely realized that local strawberries did not have to travel as many food miles before they reach the supermarket shelves (Settle & Rumble, 2014).

Income level was found to be associated with purchasing intent identified by consumers. When given the choice between one strawberry package using the *Fresh from Florida* logo and another package without the logo, there was a higher percent of lower income respondents selecting the label without *Fresh from Florida*. This reflects previous research and is likely because higher income consumers were more likely to take notice of the brand and not be as impacted by price (Jekanowski, et al., 2000). Similarly, lower income respondents said they rarely purchased strawberries based off of where the label says they were grown. These results reflect previous findings that lower income families may not have felt they could afford the locally-grown food, perceiving it to be more expensive (Jekanowski, et al., 2000). Interestingly, there were no associations between income level and brand loyalty. Even though these results, contradict literature suggesting that higher income individuals are more susceptible to branding (Jekanowski, et al., 2000), there may not be a prominent strawberry brand for consumers to associate with. Overall, the relation between income and strawberry purchasing intent supports the literature that people who make more money or more likely to purchase locally grown food (Jekanowski et al., 2000).

Men and women had very similar purchasing intent in regards to label usage. There was one factor of importance that was found to be closely associated between the genders though, with nearly all women citing taste as the most important attribute when purchasing strawberries.

Recommendations

The respondents' selection of the *Fresh from Florida* labeled package indicated that the brand represented the positive perceptions consumer had toward Florida strawberries (Franzen & Moriarty, 2009). Agricultural communicators need to capitalize on this knowledge by using the *Fresh from Florida* logo on strawberry packages to reinforce the positive attitudes toward local strawberries that consumers already have, and highlight the presence of characteristics respondents think to be important. Emphasizing freshness, quality, and taste will reinforce the consumers' belief that Florida strawberries are superior to Mexico strawberries, strengthening the brand's position (Kotler & Keller, 2006) and creating a perceived difference between otherwise identical products (Barwise & Meehan, 2004). These results could be expanded to other commodities both in Florida and in other states. Consumers will likely have similar preferences to purchase locally and have already created positive associations with their state's products being fresher and of higher quality.

Additionally, women should be targeted for more specific Florida strawberry marketing campaigns since they are the primary consumers. Taste was identified as the most important factor when making strawberry purchasing decisions among women. Communicators could shape promotional messages around the flavor and taste of strawberries. Messages should focus on using descriptors and adjectives emphasizing flavor. Cooking demonstrations at local supermarkets, fairs, or community events would be other ways to interact with women consumers. Using the backside of labels on clear strawberry packages to deliver strawberry recipes is another example of how to tailor strawberry promotion to women.

This research indicated that people in lower income households either do not care about purchasing local food or do not realize it can be an affordable option. Assuming the latter to be true, agricultural communicators should work alongside producers to help support or develop

programs to get local food to lower income families. Extension services could also be used to help educate lower income consumers about when local food is in season and typically sold at a lower price.

Future studies on Florida strawberries could be conducted along the east coast of the United States. Since Florida is the primary producer of strawberries during winter months (Boriss et al., 2012), how non-Florida consumers view the Florida strawberries will be important as well. Similarly, communicators should determine if use of the *Fresh from Florida* brand would resonate as strongly with people outside of the state. This study could also be replicated in other states experiencing competition from imports with their local products. Additional message research using different frames about freshness, taste, seasonality, and safety of strawberries and other commodities should be examined, leading to more effective communication and brand strategies.

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Use and Trust of Media Options by Extension Personnel

Abstract

Because of the importance of internal audiences for a brand's success, Extension personnel were surveyed for their use and trust of traditional and social media. The internal stakeholders included agents, specialists, and board members at four meeting in a Midwestern state. Two were in rural areas, and two were in urban areas. Participants reported higher levels of use and trust for traditional media than for social media. Websites were used the most, while print newspapers were trusted the most. Among social media, Facebook was used the most, while smartphones were trusted the most. Twitter was used and trusted the least among all options. There was a greater amount of disparity between trust and use of traditional media than there was for social media. Disparity was most apparent for print newspapers, which were trusted the most but were fifth highest in use. In open-ended responses, participants indicated a need for an improved website, as well as improved external communications, expanding programming, and improving support for local Extension offices. Recommendations for future research included further exploring any differences between urban and rural Extension personnel, explore if a causal relationship exists between use and trust for media use, explore why there was more disparity for use and trust of traditional media than social media, and expand the scope of the study to include multiple states. Recommendations for the Extension service included improving external communications, seeking ways to increase use and trust of social media, and ensuring Extension keeps producing quality work for clientele.

Keywords: Extension, branding, internal audiences, media use, trust

Introduction & Literature Review

Extension & Branding

Extension began with the Smith-Lever Act of 1914, with the purpose of turning research into more effective agricultural practices, though the scope of Extension has expanded in the past century to serve the general public (Campbell, 1998; Comer, Campbell, Edwards, & Hillison, 2006). As with any organization that has been around for a century, there is always a need to revisit the core of the organization, including understanding how internal members are communicating.

A concept that has emerged related to Extension is branding. A brand consists of interrelated components of organizational decisions and the public's reactions (Franzen & Moriarty, 2009). Over the past 30 years, a variety of articles have discussed concepts explicitly and implicitly related to the brand of Extension, including leadership of the organization, engagement of Extension personnel, reinventing how Extension reaches external audiences, disparity between internal and external views of Extension, and promoting shared identity among Extension personnel (Bloir & King, 2010; Boldt, 1988; Buchanan, 1986a, 1986b; King & Boehlje, 2000; Verma & Burns, 1995; Warner & Christenson, 1983).

While branding in Extension is a relatively new concept for research, at least in explicit terms, many of the Extension arms of land-grant universities have tried to differentiate themselves with distinct brand names that set them apart from the rest of their universities, such as Texas A&M University's AgriLife Extension Service, University of Florida's Solutions for Your Life, and Louisiana State University's AgCenter (Abrams, Meyers, Irani, & Baker, 2010). Also, branding has been mentioned in

Extension at least as early as 1998, when Maddy and Kealy discussed the use of private-sector strategies in Extension, with branding being a way to more effectively reach target audiences.

While external audiences are often the focus of communication and branding efforts, internal audiences are also important, and focus has been increasing on internal components of branding (Corley, Cochran, & Comstock, 2000). The external brand of the organization builds off of the base an effective internal brand provides (de Chernatony, 2001). Internal communication and brand training are key factors for employees to successfully represent a brand (Punjaisri, Evanchitzky, & Wilson, 2009; Punjaisri & Wilson, 2007).

While explicitly addressing branding may be relatively new in Extension, increased attention is occurring. Despite the importance of the internal brand for an organization like Extension, research into the branding of research has typically dealt with the external brand of the organization (Abrams et al., 2010; Irani, Ruth, Telg, & Lundy, 2006; Telg, Irani, Hurst, & Kistler, 2007). The internal aspect is important because employee perceptions affect the success of an organization (Harter, Schmidt, Asplund, Killham, & Agrawal, 2010), so it is imperative to understand the perceptions of Extension's personnel to improve the organization's success. The focus points of this paper are the use and trust of media.

Extension Communication

Extension is constantly adapting to change and re-educating audiences (Bloir & King, 2010). There are six major areas of Extension work: 4-H youth development, agriculture, leadership development, natural resources, family and consumer sciences,

and community and economic development (NIFA, 2014). As technology advances and becomes more readily available, Extension is starting feel the pressure of competition. The public is willing to pay companies for immediate information that relates specifically to their problems (King & Boehlije, 2000).

Pictures, words, and lyrics served as the first media. Media ensured that the encoder did not have to be present for the message to be interpreted by the receiver of the message (Cullen, 2013). As time has evolved, the definition of a medium has changed to "a particular form or system of communication (such as newspapers, radio, or television)" (Medium, n.d.). Media will continue to evolve as social media becomes more dominant in our communication system.

It is important for Extension professionals to stay up-to-date with computer skills. Computers are a tool used both in and out of the workplace to interact with Extension audiences. In order for Extension professionals to have a larger online presence, they will need, "a lot of training and simple to follow cheat sheets," along with evaluation tools (O'Neill, Zumwait, & Bechman, 2011, p.5). Extension personnel recognize the challenges and opportunities that growing technologies present. More than half of the respondents to an online questionnaire mailed to Extension employees said that computer skills and keeping up-to-date on technology are very important. Respondents also listed resistance to change and reaching all of Extension's audience as areas of concern (Havercamp, Christiansen, & Mitchell, 2003).

Trust of Media

Audiences are more likely to apply information that comes from a highly credible source the audience deems trustworthy. Credibility, similarity, and evidence are three

trust factors that help sources send messages to their audience. "Credibility is not a commodity message sources possess. Rather it is the perception of trustworthiness and expertise that sources are able to engender in a target audience" (Baldwin, Perry, & Moffitt, 2004, p.141). Similarity, by background or experiences, between the message sender and recipient enable trust (Baldwin et al., 2004). Message recipients expect credible sources to provide information that is similar to the recipient's beliefs (Sternthal, Phillips, & Dholakia, 1978).

A study of rural Internet usage found that a lack of trust keeps rural people from forming online relationships. Meeting new people over the Internet is deemed not safe by rural social media users (Gilbert, Karahalios, & Sandvig, 2008). Information seekers are not always in close proximity to their local Extension agent. This could make it difficult to form a trusting relationship with Extension professionals through online media. Another pivotal difference in urban and rural social media is the reach each network has. Rural networks do not have as much reach as urban networks do, making it difficult for Extension professionals to reach rural customers (Gilbert et al., 2008).

Farmers rely on Extension professionals to provide information they can trust, as well as verify information that farmers find (Franz, Piercy, Donaldson, Westbrook, & Richard, 2010). Farmers trust personal interaction through conversation or demonstration with Extension professionals. Learning by doing is how 99% of farmers in the states of Louisiana, Tennessee, and Virginia prefer to learn. These farmers also requested a larger online presence of Extension professionals. Farmers' reliance on Extension professionals for trusted information further underlies the importance of understanding the perceptions

of Extension professionals to improve the organization's success as an information source.

Traditional Media

Traditional media has included television, radio, and print publications. Traditional media's definition has grown to include websites. Internet users constitute 74% of the urban communities and 70% of rural communities (Rainie, 2010). This increased online community has led to changes in the other traditional media outlets.

Print newspapers have seen a steady decline for the past 15 years, giving way to online papers (Santhanam et al. 2012). The oldest segment of the population (i.e., 65 and older) remains the mostly likely to read print newspapers (Santhanam et al. 2012). For national and international news, 2008 was the first time that Internet surpassed newspapers as the number one source of information (Pew Research Center, 2008).

Commercial radio broadcasting really took off in the 1920s, but local stations have slowly disappeared since then, with bigger stations broadcasting over a larger area (Kovarik, 2011). Over the years, many radio stations started broadcasting their programs online. Even though many AM/FM stations are streaming their content online, online listeners are more likely to listen to online-only stations (Santhanam et al. 2013). Similarly, local television has also been declining in viewership (Santhanam et al. 2013). Despite this drop, local TV stations have been increasing in use of their online content to help recoup lost audience members.

Many believe that traditional forms of media are being phased out as new technology, such as social media, becomes more available. This argument, though, is countered by the results of past changes in the media landscape. "Sometimes new media

don't so much cannibalize old media as repurpose them – it was only when television came along that radio became a medium for playing records, for example" (Cullen 2013, p. 3). Age and subject matter play a large role in which medium information seekers will use (Rosenstiel, Mitchell, Purcell, & Raine, 2011).

Social Media

Social media is an inexpensive, self-explanatory tool that can reach a wide and diverse audience. Social media includes Twitter, Facebook, Pinterest, blogs, YouTube, LinkedIn, Instagram, and Flickr, among others. In more operational terms, social media are media whose "content has been created by its audience" (Comm, 2009, p. 2).

Surveys of Idaho potato farmers showed that they are familiar with nearly all forms of social media, even if they do not use them (Guenthner & Swan, 2011). Accessed by computer and mobile technology, social media is almost always available. Facebook is the most widely used and recognized form of social media for Extension professionals, likely because it is the largest social networking site (Doyle & Briggeman, 2014; Pew Research Internet Project, 2014). Data gathered in an online survey from 45 Extension professionals of the eXtension Financial Security for All (FSA) Community of Practice (CoP) showed 42% accessed Facebook "almost daily." Twitter and YouTube usage was well below Facebook for daily use at 7% and 5%, respectively. Survey respondents reported using social media to post news releases, financial columns, fact sheets, articles, video links, research findings, newsletters, announcements, pictures from events, summaries of legislative changes on personal finance, links to eXtension and America Saves, original how-to videos on YouTube, organization meeting minutes, and quick tips (O'Neill et al., 2011, p.4).

Blogs used to be predominantly used by teenagers. Teenagers' usage dropped to 14% in 2010. The decline in blogging by teenagers coincided with an increase in blogging by adults. In 2009, 11% of Internet users age 30 and older maintained a personal blog. Among this population, the percentage is split evenly between gender, race, and education level (Lenhart et al., 2010). Blogs can be a valuable tool for Extension professionals to create relationships with their followers. The biggest benefit of blogging is the wide variety formats available and the ability to reach a large audience. Challenges for blogs produced by Extension professionals include a fluctuating rate of visits to the page and the preference for traditional methods of communication (Jones, Kaminski, Christians, & Hoffman, 2011).

Over the past 100 years, Extension and communication technology have both evolved. For Extension to ensure future success, the organization needs to ensure that it is adapting with the evolution of communication technology, which continues to change how the public receives information. A key component in this adaptation will be employees. Understanding employees' perceptions of different communication media is integral to understanding how the organization will be able to adapt long-term.

Purpose and Objectives

The purpose of this study was to determine how Extension's internal audience members communicate. This includes assessing any disparities between use and trust of media. The following objectives guided this study:

RO1: Determine how internal audiences use and trust social media.

RO2: Determine how internal audiences use and trust traditional media.

RO3: Determine how internal audiences believe the organization can improve

communication efforts.

Methods

In order to determine how Extension's internal audiences prefer to communicate,

a quantitative survey with two open-response qualitative questions was utilized with one

state Extension program in the Midwest. A convenience sample was used at four internal

audience meetings across the state. Internal audiences included Extension board

members, agents, and specialists. Two meetings were in rural areas and two meetings

were in urban areas of the state to provide a better representation of Extension in the

state. Two hundred and thirty-two participants took the survey: 72 in rural area 1, 45 in

rural area 2, 57 in urban area 1, 58 in urban area 2.

Basic descriptive statistics including means, frequencies, and standard deviations

were calculated. A MANOVA was conducted on all variables to determine if there were

significant differences based on locations. The results showed a Wilks' Lamda of .745,

which indicated the researchers could move on to look at significance. However, the

results were not statistically significant at the $p < .05$ level. Although there was no

significant difference when all variables were analyzed, the researchers moved forward

with a one-way between-groups ANOVA to further explore the effect location had on

participants' ratings of their use and trust of media as individual variables. In order to

determine differences in trust and use by location, a paired samples t-test was conducted

after. For the open-ended questions, qualitative content analysis was used to derive

themes from the data (Fraenkel, Wallen, & Hyun, 2015).

<div align="center">**Results**</div>

RO1: Determine how internal audiences use and trust social media

In order to assess this research objective, internal audiences were asked a series of questions related to their use and trust of social media. A paired samples t-test was conducted to evaluate statistical differences between respondents' use and trust of media. There were statistically significant differences between use ($M = 2.33$) and trust ($M = 2.19$) of YouTube, use ($M = 3.23$) and ($M = 2.26$) trust of Facebook, and use ($M = 3.01$) and ($M = 2.51$) trust of smartphones. Facebook was used the most by participants, but smartphones were the most trusted, though trust was still low relative to the scale participants responded to. Twitter was the least used and least trusted. Full results are in Table 1.

Table 1

Use and trust of social media for all locations (n = 232)

	Use		Trust	
Medium	*M*	*SD*	*M*	*SD*
Twitter	1.38	1.08	1.24	1.26
Facebook*	3.23	1.73	2.26	1.34
Smartphone*	3.01	1.65	2.51	1.47
Blog	1.94	1.23	1.96	1.43
YouTube*	2.33	1.16	2.19	1.24

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* $p < .05$ for difference between use and trust

In order to determine differences in trust and use by location, a paired samples t-test was conducted after splitting the data by location. There were no statistically significant differences between the use and trust of media at the urban locations. At rural area 1, there were statistically significant differences between use ($M = 3.69$) and trust ($M = 2.42$) of Facebook, and use ($M = 3.11$) and trust ($M = 2.49$) of smartphones. At rural location 2, there were statistically significant differences for the use ($M = 3.04$) and trust ($M = 2.40$) of Facebook. With the exception of urban area 1, Facebook was used the most by all locations. Smart phones were trusted the most at all locations, though Facebook tied as the most trusted for urban area 2. Twitter was used the least and trusted the least at all locations. Full results can be seen in Tables 2, 3, 4, and 5.

Table 2

Use and trust of social media in rural area 1 (n = 72)

Medium	Use[a]		Trust[b]	
	M	*SD*	*M*	*SD*
Twitter	1.33	1.02	1.06	1.17
Facebook*	3.69	1.56	2.42	1.24
Smartphone*	3.11	1.73	2.49	1.53
Blog	2.10	1.26	2.06	1.47
YouTube	2.35	1.08	2.22	1.21

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* $p < .05$ for difference between use and trust

Table 3

Use and trust of social media in rural area 2 (n = 45)

Medium	Use[a]		Trust[b]	
	M	*SD*	*M*	*SD*
Twitter	1.33	1.11	1.44	1.56
Facebook*	3.04	1.88	2.40	1.44
Smartphone	2.96	1.51	2.71	1.33
Blog	1.73	1.34	1.82	1.48
YouTube	2.47	1.39	2.27	1.42

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* *p* < .05 for difference between use and trust

Table 4

Use and trust of social media in urban area 1 (n = 57)

Medium	Use[a]		Trust[b]	
	M	*SD*	*M*	*SD*
Twitter	1.40	1.03	1.33	1.20
Facebook	2.81	1.73	1.89	1.36
Smartphone	3.02	1.56	2.58	1.36
Blog	1.86	1.19	1.89	1.39
YouTube	2.39	1.08	2.21	1.11

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* *p* < .05 for difference between use and trust

Table 5

Use and trust of social media in urban area 2 (n = 58)

Medium	Use[a]		Trust[b]	
	M	*SD*	*M*	*SD*
Twitter	1.47	1.17	1.22	1.14
Facebook	3.21	1.73	2.33	1.34
Smartphone	2.91	1.77	2.33	1.59
Blog	1.98	1.13	2.02	1.41
YouTube	2.16	1.14	2.09	1.25

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* $p < .05$ for difference between use and trust

RO2: Determine how internal audiences use and trust traditional media

In order to assess this research objective, participants were asked to rate their use and trust of traditional media on a five-point scale. A paired samples t-test was conducted to evaluate statistical differences between respondents' use and trust of media (Table 6). There were statistically significant differences between use (*M* = 2.13) and trust (*M* = 2.36) of online newspapers, use (*M* = 4.17) and trust (*M* = 3.18) of websites, use (*M* = 3.67) and (*M* = 3.22) trust of radio, and use (*M* = 3.63) and trust (*M* = 2.90) of television. Websites were used the most often, but print newspapers were trusted the most. Online newspapers were used and trusted the least.

Table 6

Use and trust of traditional media for all locations (n = 232)

Medium	Use[a]		Trust[b]	
	M	*SD*	*M*	*SD*
Newspaper Print	3.17	1.36	3.31	0.10
Newspaper Online*	2.13	1.41	2.36	1.58
Website*	4.17	1.20	3.18	1.09
Radio*	3.67	1.36	3.22	1.10
Television*	3.63	1.43	2.90	1.08

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* $p < .05$ for difference between use and trust

In order to determine differences in trust and use by location, a paired samples t-test was conducted after splitting the data by location. At the rural location 1 (Table 7), there were statistically significant differences between use ($M = 4.28$) and trust ($M = 3.18$) of websites, use ($M = 3.85$) and trust ($M = 3.24$) of radio, use ($M = 3.54$) and trust ($M = 2.78$) of television. At the rural location 2 (Table 8), there were statistically significant differences between for the use ($M = 2.20$) and trust ($M = 2.69$) of online newspapers, and between use ($M = 4.13$) and trust ($M = 3.36$) for websites. There were statistically significant differences between use ($M = 2.39$) and trust ($M = 2.35$) of online newspapers at urban location 1 (Table 9). There was also a statistically significant difference urban location 2 (Table 10) between use ($M = 2.34$) and trust ($M = 2.55$) for online newspapers, as well as between use ($M = 3.38$) and trust ($M = 2.91$) for radio. Websites were used the most and at all locations. Print newspapers were trusted the most

at rural area 1 and urban area 2. Radio was trusted the most at rural area 2 and urban area 1. Online newspapers were used and trusted the least at all locations.

Table 7

Use and trust of traditional media for rural location 1 (n = 72)

| | Use[a] | | Trust[b] | |
Medium	*M*	*SD*	*M*	*SD*
Newspaper Print	3.21	1.24	3.35	0.94
Newspaper Online*	1.71	1.26	2.00	1.69
Website*	4.28	1.19	3.18	1.14
Radio*	3.85	1.32	3.24	1.16
Television*	3.54	1.53	2.78	1.20

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* *p* < .05 for difference between use and trust

Table 8

Use and trust of traditional media at rural location 2 (n = 45)

Medium	Use[a]		Trust[b]	
	M	SD	M	SD
Newspaper Print	3.36	1.32	3.51	0.87
Newspaper Online*	2.20	1.42	2.69	1.60
Website*	4.13	1.27	3.36	0.98
Radio*	3.67	1.35	3.58	0.84
Television	3.60	1.56	3.13	0.89

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* $p < .05$ for difference between use and trust

Table 9

Use and trust of traditional media at urban location 1 (n = 57)

Medium	Use[a]		Trust[b]	
	M	SD	M	SD
Newspaper Print	2.93	1.39	3.11	1.05
Newspaper Online*	2.39	1.42	2.35	1.43
Website	4.23	1.02	3.12	1.04
Radio	3.75	1.24	3.23	0.95
Television	3.74	1.23	2.93	1.07

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* $p < .05$ for difference between use and trust

Table 10

Use and trust of traditional media at urban area 2 (n = 58)

Medium	Use[a]		Trust[b]	
	M	*SD*	*M*	*SD*
Newspaper Print	3.22	1.49	3.33	1.10
Newspaper Online*	2.34	1.48	2.55	1.52
Website	4.02	1.34	3.09	1.16
Radio*	3.38	1.52	2.91	1.26
Television	3.64	1.40	2.83	1.08

[a]Use Scale: 1 = Don't Use; 5 = Use Daily
[b]Trust Scale: 1 = Don't Trust; 5 = Trust Completely
* *p* < .05 for difference between use and trust

RO3: Determine how internal audiences believe the organization can improve communication efforts

In order to assess this research objective, participants were asked an open-ended question about how the Extension agency could improve communication. Not all participants answered the question, but the most common responses are included in Table 11. The major themes that emerged from participants' responses were the website needing improvement, needing to improve external communications, needing to expand/improve reach and programming, needing to improve support of local offices, and needing to maintain quality work. A minor theme that emerged relevant to branding was that 4-H families were not connecting 4-H with the university or the Extension.

Table 11

Internal audiences suggestions for improved communication

Theme	Examples of phrases used	*n*
Website needs improvement	– Website should be easier to find things – Organize publications on website better – Build an attractive and informative website – Make website easier to navigate	41
Needs to improve external communication	– Educate our commissioners on benefits – Tools and information to tell the extension story and value to government officials – Keep in contact-through radio newspaper, texts	23
Needs to expand/improve reach and programming.	– More variety of programming – Teach me how to get more people to attend programs – Relevant programming – Expand programs and activities	17
Needs to better support the needs of local offices.	– Let the county agents do their job in their counties: less bureaucracy, paperwork, reports, and state work – Be more supportive to employees – Support local more – More state-level specialist support, updated publications and broader topic options –some areas simply have NO current resources/literature due to cuts at the state offices	14
Needs to maintain its quality work	– Keep up the hard work and continue to answer/provide relevant information – Keep moving forward with the present vision and enthusiasm – Continue relevant programming	13

Conclusions

Traditional media were used and trusted more by the participants in this study

than social media. Websites were used the most, which fits the trend of increasing online

media the past 20 years. Among social media, Facebook and smartphones were used the most, which is in line with Facebook being the largest social network (Pew Research Internet Project, 2014) and smartphone use growing in the U.S. (Smith, 2013). Twitter was used the least for social media, while online newspapers were used the least for traditional media.

Looking at trust in particular, no media were more than marginally trusted by participants. Print newspapers, radio, and websites were trusted the most, though. Participants had low trust in online media, with the exception of websites. Participants had an especially low amount of trust for Twitter. The low trust for most Internet-based media matches the findings of Gilbert et al. (2008).

There were trends of note between use and trust. In terms of relative rank between media options, use and trust matched more closely for social media (e.g., Twitter was used the least and trusted the least) than they did for traditional media (e.g., newspapers had higher trust but lower use). There is the potential that familiarity was the cause for varying levels of trust. With traditional media, older media (i.e., newspapers) were trusted more than newer media options (e.g., websites), with television being the exception to the trend, though the nature of this study cannot determine why television would be the exception. With social media, it has been documented in the past that there is a link between use and positive perceptions of social media being used in education (Settle et al., 2012), so it is possible this relationship is occurring for Extension personnel as well.

One of the mismatches between trust and use that occurred was for print newspapers. While print newspapers were trusted the most, they were fifth in total use,

though this matches the decline of print newspapers readership nationally (Santhanam et al., 2013). In fact, both newspaper categories were trusted more than they were used, which was not the case for all other media options addressed in this study.

In the open-ended response, many participants expressed the viewpoint of wanting Extension to continue quality work. The open-ended responses also indicated that there is room for growth and improvements for the external communications of the brand. It is important to keep both of these findings in mind because the external components of the Extension brand will depend on the internal components of the organization doing quality work that ensures the credibility of the organization (Wæraas, 2008, 2010). Without successful internal components, the external brand cannot be successful (de Chernatony, 2001). There is also the caveat that a need for more state-level support was indicated by participants to ensure the success of local offices of Extension in the state.

Recommendations

There are four recommendations for future research to further understand occurrences from this study. The first recommendation is to further explore the differences between urban and rural Extension personnel in their perceptions of media options. There are differences in media use for rural and urban audiences (Gilbert et al., 2008), so it is important to understand how this impacts Extension's communications. In particular, there was less disparity between use and trust of media with the urban location participants than there was with the rural area participants. The second recommendation is to explore if there is a causal relationship between trust and use of media for Extension personnel. In particular, there appeared to be a link between use of social media and trust

of social media. If one affects the other, this could help lead to increased use of social media by Extension personnel, which is important given the increasing prevalence of social media. On a related note, while trust and use were relatively similar for social media, this was not the case for traditional media. This leads to the third recommendation to understand why there was more disparity between use and trust of for traditional media than there was for social media. The possibility exists that this was due to familiarity with traditional media, but future research needs to determine the reason the disparity occurred. The final recommendation is to study use and trust of media by Extension personnel on a larger scale. This study was limited in its scope, so expanding to other states would be advantageous for understanding the variables addressed in this study.

There are three recommendations for the Extension service of this state. The first is to improve external communications, including the website. This was indicated as a primary need in the open-ended responses provided by participants. The second recommendation is to seek out ways to increase use and trust of social media by Extension personnel. Social media typically have lower costs associated with their use than traditional media, and information on social media has the potential to spread quickly through a global network, which is not always the case for traditional media, especially local traditional media outlets. The final recommendation is to keep conducting quality Extension work, as was indicated by the open-ended responses. Previous work has shown that credibility of the brand will stem largely from the organization doing quality work, and a lack of credibility will negate any positive external branding and communication efforts of Extension in the state (Wæraas, 2008, 2010).

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Researching for the Future: An Exploratory Study of Undergraduate Research Experiences as Viewed Through the Experiential Learning Theory

Research Paper

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Abstract

Undergraduate research is a common component of agricultural communications programs across the nation. Students draw upon their constructed experiences with research to assign the level of personal significance in their own lives and future career aspirations. This qualitative exploratory analysis investigated the experiences of four undergraduate students majoring in agricultural communications at a Mid-Western Land Grant University as they completed an on-campus undergraduate research class or experience. Participants identified research had a positive impact on the field of agricultural communications, but only the students who participated in a small, self-guided research class had a positive viewpoint towards research. All participants identified undergraduate research projects as beneficial and mentioned a desire to be recognized for their work by presenting at small-scale, on-campus research events. This study was guided by the experiential learning theory and recommends research mentors provide a positive emotional experience throughout the research process in order to allow students to construct positive associations and meanings to research.

Key Words: Undergraduate Research, Experiential Learning Theory, Qualitative, Agricultural Communications

Researching for the Future: An Exploratory Study of Undergraduate Research Experiences as Viewed Through the Experiential Learning Theory

Introduction

Undergraduate research experience (URE) is defined as "an inquiry or investigation conducted by an undergraduate that makes an original intellectual or creative contribution to the discipline" (NSF, 2003, p. 9). URE has many benefits such as increasing retention and promoting innovations ("CUR At-a-Glance | Fact Sheet | Council on Undergraduate Research," 2011). Undergraduate research can better prepare students for work in the industry (Brew, 2013).

Benefits of UREs

One apprehension faculty may have about implementing UREs within their department is the lack of resources (time, funding, and availability of dedicated students); however, the benefits far outweigh the costs of research projects (Lei & Chuang, 2009). Such benefits include enhancing the undergraduate experience, helping students focus on achieving sought after goals (Sabatini, 1997), increased levels of knowledge acquisition, and an increase in the perception that research can be a positive and relevant experience (Willis, 2013).

Hunter (2005) states there is a correlation between conducting research and an increased level of confidence in students' ability to think critically and conduct research. The biggest boost to student confidence was taking part in research that was relevant and beneficial to their field. In creating research that can positively impact their field, students gain an increased clarity in career direction, specifically towards employment in research fields (Hunter, 2005). When undergraduates create meaningful research they develop an increased feeling of community and sense of belonging within their department and academic field (Howitt, 2010).

In addition to being a hands-on approach that is a proven way to learn science by

engaging in UREs, students also experience a transformational shift in learning styles. The higher level of independence a student experiences in their research experience, the more they learn (Nadelson, 2010). Furthermore, students exhibit a transition from a dependence on their advisors, to becoming true researchers and autonomous problem solvers (Rauckhorst, Czaja, & Magolda, 2001).

Faculty Role

Benefits resulting from UREs could not be possible without the direction of a supervisor, whose role is critical (Russell, 2007) and is the largest factor determining the success and satisfaction with the student's URE (Howitt, 2010). Students generally enjoy the opportunity to work with an advisor in a one-on-one setting because such experiences develop a heightened community and collegial relationship with their advisors or mentors (Seymour et al., 2012).

The interactions and direction of the supervisor guides not only the students' expectations of the experience but also their satisfaction with the program. As such, students prefer supervisors that make them feel prioritized, are organized, and trustworthy (Howitt, 2010). Supervisors must realize a large part of the success of the student experience hinges on defining clear expectations and clearly defining precise and obtainable goals (Howitt, 2010). Although faculty and students agree the research topic itself and its ability to positively impact the field is of high importance, faculty have a more positive perception of URE than students do (Dahl, 2013).

Since so much hinges on the effectiveness of the supervisors and expectations held by the student, it is important to note there is a disconnect between what the supervisors and students feel are the most important aspects of research. Therefore, understanding the expectations of

both parties has implications into the perceived learning and enjoyment of the experience (Kardash, 2000).

Experiential Learning Theory

Kolb and Kolb (2005) define learning through the Experiential Learning Theory (ELT) as "the process whereby knowledge is created through the transformation of experience" (p. 194). The ELT includes six propositions: 1) Learning is not an outcome but a process, and therefore feedback should focus on the student's learning process and effectiveness of their efforts; 2) Relearning and restructuring student beliefs about topics in order to test assumptions with new ideas is a primary factor in learning; 3) the process of learners adjusting to conflict and resolving such conflict drives the learning process; 4) learning cannot be limited to the increase in knowledge but must also include 5) the interactions between the learner and the environment to which the understanding occurred; 6) learning is viewed from a constructivist viewpoint and includes the process of creating knowledge and learning through a dialectical process facilitated by conversation (Kolb & Kolb, 2005).

Experience plays a central role in the perceived outcomes of the learning process, and that experience is what differentiates ELT (Kolb, Byoatzis, & Mainemelis, 1999). The ELT places specific emphasis on the process and educational experience of the learner, because such experiences, negative or positive, can be the key determinant of achieving the educational objectives of the learning activity and thus influences the student's perception of obtained knowledge (Kolb & Kolb, 2005). A student who finds difficulty assimilating into a learning group or has a negative experience will construct negative associations with that experience, thereby altering the perception of that event. Therefore, teachers and professors must consider the social environment and quality of relationships that help foster the learning atmosphere in

addition to the educational objectives. Student experiences and value of research experiences can be enhanced through creating an atmosphere and environment that promotes positive experiences of learning (Kolb & Kolb, 2005).

Kolb and Kolb (2005) describe learning as a continuous process that is demonstrated in a conceptual model that involves two factors: 1) the preferred approach or learning style to a task; and 2) the emotional response to the learning process. Figure 1 offers a model to further clarify the ELT's process in student learning.

Figure 1
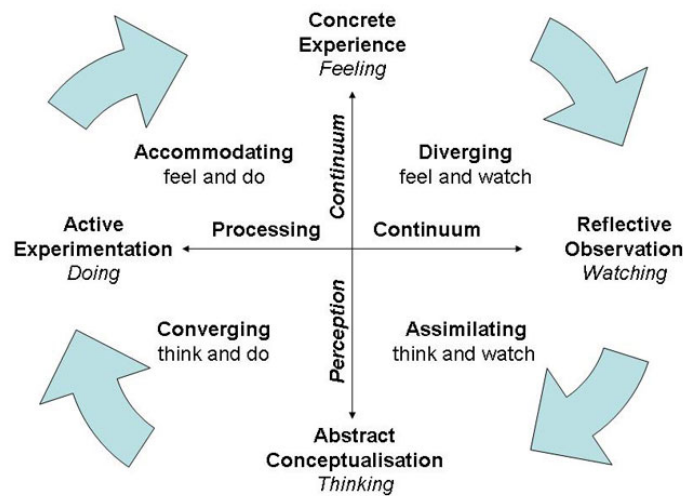
Purpose and Objectives

Although many studies have been conducted on undergraduate research, the body of literature is concentrated on the hard sciences (engineering, chemistry, biology, and physics) and neglects social sciences, specifically the field of agricultural communications. The purpose of this study was to explore the experiences of undergraduate students enrolled in a classroom-based research class and those enrolled in an autonomously structured-research course and

observe how each of these experiences shape students' knowledge and attitudes towards research.

Methodology

A qualitative approach was deemed appropriate for this study because qualitative research seeks to gain an in-depth and complete understanding of a topic (Creswell, 2007) that persist outside of the researcher's paradigm (Williams & Heikes, 1993). Qualitative research is inclined to utilize purposive sampling measures where participants are selected based upon specific criterion (LeCompte & Priessle, 1993). The data collection method was in-depth interviews with participants. An interview at its core is an interaction between two people (Leegard, Keegan, & Ward, 2003). The interview technique of data collection will make participants more apt to divulge information, yielding in-depth and rich data (Creswell, 2014).

Prior to the study, the research team established criterion for participant selection that would draw from two research classes taken by agricultural communication students. Class A is an agricultural communications research class with low student-to-teacher ratios that focuses heavily on the process and experience of research. Although two instructors within the department teach Class A, to eliminate any instructional bias, only students from one professor were included in the study. Class B is taught in the school of journalism and is a traditional lecture-based class with a high student-to-teacher ratio. Students in Class B experience mass communications research through class lectures and a group research project. Half (n=2) of the participants were selected from Class A and half (n=2) were selected from Class B. Since a history bias could also generate a variance in responses and limit transferability of this study, an attempt was made to include students who had completed the class within one calendar year. Gender is an additional bias because although advisors show no bias in rating gender, male

students tend to rate their research abilities significantly higher and view a higher increase in abilities than their female counterparts (Kardash, 2000). In light of this potential bias, students were matched by gender according to enrollment. These two criterion resulted in all female participants which closely resembles the gender breakdown of the program.

Students with higher grade point averages (GPA's) could place an increased emphasis on research than students with a lower GPA. Students with higher GPA's might have an increased desire to obtain a graduate or professional degree and hold research in higher esteem than students with lower GPA's. Once students from Class B were sampled to match the history and gender of the Class A students, GPA was used to further hone the selection. Students were first matched based upon the grade they received in their research course with the rational that students who received a higher grade in the course would have differing opinions of students who received lower merits. Students were further culled based upon the closest GPA match. No effort to match students by race was conducted since ethnic identity bears no statistical difference in rating of experience, intentions toward graduate school, and satisfaction with the quality of supervision (Lopatto, 2004). The aforementioned selection criteria yielded a field of eight possible participants of which four agreed to participate in the study.

An undergraduate was used to recruit participants into this study and conduct the interviews because students would not feel threatened by a peer and could possibly give dishonest answers if interviewed by researchers who were employees of the department. A twelve-question interview guide that included additional prompts was agreed upon by a panel of experts. Prior to the interview starting, participants signed consent forms and were given a confidentiality agreement. A summary of the students is listed in Table 1.

Table 1

Characteristics of Participants

Name	Class / Status	Participant Description
Anna	A Senior	Anna is a member of the University Honors program and is required to conduct a research project as part of this program. Her advisor recommended the class as a way to fulfill that research credit. She expected to work closely with the advisor and have a rigorous workload. She had a specific idea regarding what she wanted to research and presented her research poster at two different events. Anna plans on getting her law degree.
Bethany	A Junior	Bethany was encouraged to take the class by her advisor and her employer who also worked on campus. She describes herself as self-driven and expected a rigorous workload. She expected hands-on research and close supervision from the advisor. Bethany had a specific idea regarding what she wanted to research and presented her research poster at a College of Agriculture event.
Cassandra	B Senior	Cassandra took the class because it is a required course to graduate. She took a modified 8-week class over the summer to "get it out of the way". She expected a small level of feedback from her professor. Cassandra did not conduct an individual or group research project but was exposed to research through classroom lectures.
Diana	B Senior	Diana took the class because it met a graduation requirement She expected it to be a rigorous course with ample contact and feedback from the professor. She conducted a group-research project but did not present her work.

Participants were debriefed immediately after the interviews which were recorded and transcribed. NVivo 10 was used to facilitate categorizing responses into codes and categories in order to generate appropriate themes using Glaser's constant comparative method. IRB approval was obtained for this study.

Coding participant responses generated two themes that helped answer the guiding question of this study: 1) Although all students believed research impacts agricultural communications, students with self-directed, hands-on research projects had a greater appreciation for and understanding of research; 2) Students desired recognition for research projects that can be achieved through presenting their work.

Theme 1: Although all students believed research impacts agricultural communications, students with self-directed, hands-on research projects had a greater appreciation for and understanding of research

Topics are important

When students were asked to describe their research project, three out of four students started describing their level of interest in the topic and how that influenced their motivation and satisfaction with the class. One student, Cassandra, did not complete a research project due to the shortened summer schedule. Diana, who did not value the experience and was enrolled in the traditional research class, stated:

> We picked a random topic which I think ours ended up being Puma vs. Adidas shoes and what influenced people to buy one or the other. That's what we ended up with. One of the guys was into soccer, so that was it. [I would have valued the experience] if I would have gotten to do an interesting research project. I think if it's interesting and, if I had something interesting to do research on something that was going to matter to somebody, I think it would be great.

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While Diana's experience with a less-than-desirable research topic elicited a negative response, Anna and Bethany, who were both enrolled in Class A, spoke highly of the freedom to research what they wanted. Although Bethany had to change her research project mid-course due to issues beyond her control, she talked positively about her topic, saying:

> You don't have a professor telling you what to go learn about, that's your choice. You are given the opportunity to learn about what you want to learn about and that doesn't happen very often.

Unlike the other students in the study, Anna had previous experience with research through her work with the University Honors Program. Anna mentioned her passion for a specific topic that guided her research and how the topic was a positive attribute of Class A.

> I knew I wanted to do something with crisis communications, and I love the milk company that I did my project with. I feel like you have to have an idea for your project planned when you come into the class. A common misconception is that you can just take the class like any other regular class. I feel like you have to kind of already know what you want to do with your project and like kind of already have a direction that you want to go with.

Cassandra was enrolled in an accelerated summer research class, and although she did not express negativity towards not conducting a project, she did have an expectation of completing one.

> I thought we were going to do a specific project. But he explained that since it was a summer course, we couldn't… we didn't have the time and it was a small group of people, so we didn't have a lot to work with in terms of doing a project. So, it was different than I thought it was going to be.

Knowledge and appreciation of research

Students who completed the self-directed course also seemed to have a fuller and deeper understanding of the research process and satisfaction. Since the purpose of such research classes is to help students gain an understanding of research methods, students were asked to tell the interviewer what they knew about research. The literature review process was a point of emphasis for Anna and Bethany, although Cassandra also mentioned the need for secondary research.

Regarding the literature review, Anna said "You're going to set your objectives and then you're going to do your background research of your literature review to figure out like what has already been accomplished or what has already been said and done about the topic." Bethany gave additional clarification to the literature review process:

> You also want to do a literary assessment. You want to search all the different aspects of your topic that could be included in your research to figure out what's already been done. So one, you don't repeat and two, you can see what is and isn't working so you can see…kinda map out your methods for your research.

Cassandra did not conduct a research project but mentioned the process of a literature review in her response, saying "You have to look at studies that have already been done and what their outcome was, and you would compare your study outcome to theirs and see if it is consistent". Although Diana took the same class and the same teacher as Cassandra, she did have a research project with a topic and group that she expressed dissatisfaction for. Diana stated "I don't know much about research." When asked what she knew about the process of a literature review she responded, "Not much".

Students also recognized, to a varying degree, the need for designing a methodology of a study. Diana stated "I know we learned about different methods, but I don't really know what they were or what they do for me. I learned analyzing data is important and conclusions are also important." Anna alluded to methods of research, saying:

There is quantitative and qualitative research…Once you have your topic, then you have to figure out like what your research question is going to be. In terms of setting your objectives, and then your objectives determine where your projects going to go from there. You're going to look and set your goals and you're going to figure out exactly how you're going to answer your research questions that you've set after you look what else…what else has already been done. Then you need to figure out your data and methods in terms of human subject forms…you have to get approval in terms of all that kinds of stuff. After all that is completed, that's when you finally collect your data. Then you start analyzing your data depending if you have qualitative or quantitative analysis depends on if you're working with numbers of working themes and code books. You're going to analyze your data and then set your conclusions and figure out what you've learned from your study.

Although Cassandra did not conduct a research project. Her responses were more isolated to the realm of choosing appropriate sampling measures, saying:

 Pick a target audience…specific questions or topics you want to know from and come from an unbiased point of view. Random selection is important, but it's not random, you cannot call it random. A good sample pool of people is needed to get a correct analysis, so choose your audience specifically. For example, you might want to target producers,

but you might need to figure out if you want to target producers in Kansas, and is it just

farmers or is it ranchers, or both.

Bethany's study utilized a survey in her URE and her responses indicated an importance

in testing the validity and reliability of the research instrument.

You would want to draft a survey, if you wanted to survey and you want to figure out if

you're thinking qualitative or quantitative or mixed methods that will help you draft your

survey. Run test surveys before you actually get your real survey out there and you want

to see what would be the best group or way to run your survey.

None of the students interviewed were prompted to answer questions about data analysis

or transferability and generalizability. However, all students mentioned some level of analysis in

their responses. Diana mentioned "I learned analyzing data is important. Conclusions are also

important and sometimes difficult especially when you have different groups of people."

Cassandra gained some experience with quantitative data analysis, saying:

We learned how to put data into a spreadsheet and divide it up into answers, or you

know, how to break it down so it is easier to read. You have to say why we did it, whom

we were trying to teach, and what the outcome was. The whole process. I can say I

learned a lot from this class.

Anna also mentioned data analysis and the importance of drawing conclusions,

implications, and recommendations for future research. While finalizing her response to her

knowledge of research prompt, Anna discussed the importance of analysis:

You're going to analyze your data and then set your conclusions and figure out what

you've learned from your study. The last part is just figuring out like what implications

that has for the future and what implications that has for the industry as a whole. The last

thing you do is write some recommendations or some things that if someone else were to copy your study how would you change or improve it to make sure that research is continuing to move forward. Then you present it. I've learned a lot in this class.

Bethany included the need to expand upon research. "You need to analyze your data and make conclusions of your data in comparison to the research that you've done. You want to analyze your whole research project…How does it relate to previous research? How to expand on the research?"

Although students varied in their degree of satisfaction from their class and the level of cognitive knowledge gained through their studies, they agreed research has a positive impact on the agricultural communications field. However, the level of impact research has on the individual varies between the students of the two classes.

Research positively impacts the field but personal impacts may vary

In regards to the impact research has on the agricultural communications profession, Diana (Class B), says "It obviously adds knowledge and perspective to different areas in agricultural communications. I think it's really important, and I think if it's done right it is very helpful and beneficial." Anna (Class A) and Bethany (Class A) both mentioned research helps communication with the industry. Anna stated "Each study has implications of some sort whether that be… a more detailed crisis communications plan or understanding that local businesses have an easier time communicating with the media. Each study has an implication that can be used in the future. Bethany's response indicated research allows producers to better communicate, and said "They [producers] may not be able to communicate…Agricultural scientists and producers don't know how to communicate to the rest of the world…there's a break in communication… [research] would break down barriers."

Participants also constructed various meanings of research based upon their research class and projects. Although all students were required to take the research class, they did not have to participate in an individual research project. Anna and Bethany both had an interest in a research topic prior to their class and had a positive experience with research. Anna plans on attending graduate school in the near future, and when asked about how research impacts students, she stated "It depends on what career field the student is going into. If they want to do any type of schooling or graduate school after, I feel like it's a really good experience." Bethany also mentioned a possibility of graduate school afterwards, saying "I feel like I want to do more research in the future. I would consider doing more research if I get my master's degree too". However, Cassandra (Class B) and Diana both have more neutral to negative viewpoints of conducting research and how it impacts their lives. Cassandra said "I don't think [conducting URE's] impacts my viewpoints on research a lot", while Diana said "It made me want to never, ever do research again in my life."

Theme 2: Students desire recognition for research projects that can be achieved through presenting their work

One common theme that developed was the desire for receiving recognition for the hard work associated with a research project and how presenting posters can offer such recognition. Class A requires students to present their research in a form of a poster while Class B does not. Diana, who took Class B stated "I think it makes you more comfortable. You can present something that you learned and you can learn from it, other people learn from it. It's important. I would have benefited from it." Cassandra also took Class B, and mentioned "undergraduate students don't have the platform to share their work, graduate students do. If you work hard enough on something you'd want to share it…You'd want others to see how hard you worked."

Students who presented undergraduate research had similar attitudes. Anna mentioned "presenting my poster…has been a really cool experience... If you didn't present your research no one but you and your adviser would even know that it was completed." Bethany gave further praise for the necessity of undergraduate presentations, stating "At first I didn't because I didn't want to. I was timid. I think it's really important. It gives them experience, helps them understand the process and get confidence."

In regards to a place or an event to present research, participants preferred a smaller, more intimate setting that is on campus for their first research presentations because they can be intimidating. Anna stated "I think it would be cool to have a university-wide fair as well as a college-wide one…So I think it's cool to have one across the university and one for the college." "Definitely on campus", Anna said. She continued, "You're connecting to other researchers; so you're networking and connecting with professors. I really liked that events were really small and not too big of a deal. There wasn't a lot of people there, so it made me less nervous." Cassandra also mentioned presenting research on campus in a casual, non-intimidating setting, saying "Maybe during Open House, you know, set up a table where they can present things. If it was, you know, in the union or something, where people were walking by and they can share it just kind of as people were walking through and were interested."

Conclusions and Discussions

Participants who were allowed to select a topic of interest to research maintained more positive views towards research. Students who were enrolled in Class A appeared to have a deeper level of cognitive understanding and appreciation of the research process. Anna and Bethany's narrative is consistent with Willis' (2013) findings stating that students who have

deeply personal and independent research experiences foster a greater understanding of such methods and often attach a higher meaning to the process.

One of the biggest connections to past research comes from the confidence the students described they acquired through this experience, particularly in presenting research. This is congruent with the findings of Hunter (2005), which stated student confidence is boosted when students take part in research that is relevant and beneficial to their field. Students of Class A were allowed to pursue research topics that held personal meaning and interest. This finding could also draw upon and add to Kolb and Kolb's (2005) model of the ELT which states learning includes an emotional and pedagogical component. Students who investigated topics that carried significant personal meaning or attachment would enter the learning experience along a positive emotional continuum, thereby preemptively associating the research experience through a positive lens. Anna and Bethany drew upon their positive emotional experiences to construct a positive and relevant meaning towards research. Diana's experience contrasts both students of Class A, and her negative experience parallels Kolb and Kolb's (2005) findings that students with difficult experiences will construct negative associations towards that experience. Cassandra remained neutral towards research, possibly because she had no personal experience to draw upon when constructing a meaning towards research.

Implications and Recommendations

This study offers implications for faculty and staff that have research appointments and teach undergraduate research courses. Every effort should be made to offer clear expectations to the students and offer a positive research environment full of opportunities for dialogue. By facilitating a positive experience for undergraduates, faculty members will allow students to view learning and processing through a positive emotional continuum that will help construct

positive associations towards research. Students' perceptions of experiences could have been influenced by the difference of Class A being taught in the College of Agriculture and being specific to the students' major. Therefore, students were likely more interested in the experience.

Participants had a considerable time commitment to their research projects and desire opportunities to showcase their work beyond a paper submitted to their professor. Therefore, students should be encouraged to present their research in small-scale, on-campus events in order to gain recognition for their work. By receiving sought-after recognition, their experience will be further validated which could in turn move the students towards a positive emotional response to the experience. Such positive emotional shifts could also validate the research process as a whole and thereby allow the student to construct positive viewpoints towards the research process. This research supports offering experiential learning experiences to agricultural communications students through URE's.

Further research should be conducted to identify how the emotional experience of undergraduate researchers defines the research process and the relevancy of such research to the individual student and their career aspirations. Additionally, research should be conducted to identify how undergraduate research classes can be structured to maximize the learning experience along both emotional and pedagogical continuums based upon Kolb's model (Figure 1).

Limitations and Delimitations

Although every effort was made to match student history between Class A and Class B, the students of Class A had completed their research class in the previous semester while one of the students of Class B completed it two semesters ago. A potential history bias could arise, especially in regards to knowledge of research. Secondly, one student from Class A had already

had some experience with conducting research. Her attitudes and experiences regarding research

in agricultural communications could have been influenced by situations and phenomenon

outside the timeframe or focus of this study.

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