

PAST *DRIVE* SUBSCRIBERS' ATTITUDES AND USAGE
BEHAVIORS IN REGARD TO THE PUBLICATION'S
DIGITAL OUTLETS

By

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Abstract: The purpose of this study was to better understand self-reported attitudes and usage behaviors of past *DRIVE* magazine subscribers in regard to the publication's digital convergence, which occurred in early 2014. The population included former *DRIVE* subscribers ($N = 5,717$). From this a sample of 1,000 potential respondents was selected. Because *DRIVE* did not have emails archived for all subscribers, of the 1,000, 296 had correct emails the remaining 704 respondents were reduced to 693 after incorrect physical addresses were eliminated, thus bringing the total sample size to 933. A mixed-mode approach was used to contact respondents. Those with email addresses were contacted via email, and those with only physical addresses were contacted by postcard. The instrument was hosted online. One-hundred-fifty respondents completed the instrument in its entirety, making the response rate 17.2%. Quantitative data was collected from this descriptive study via an online instrument hosted through Qualtrics. The typical respondent is a 39-year-old male who earns \$100,000 or more annually as an agricultural producer/farmer. The typical respondent has high-speed Internet access at home, owns a smartphone, and most often uses the Internet for email and social networking. Results indicate respondents have not remained active with *DRIVE* since it discontinued its printed publication and they prefer to receive the publication in print rather than online. The majority of respondents also indicated they do not access *DRIVE*'s digital platforms, which include its website, mobile application, Facebook, Twitter and/or Instagram.

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CHAPTER I

INTRODUCTION

People are driven to and driven by the Internet (Fox & Rainie, 2014). The spread and adoption of the Internet has impacted many aspects of human behavior, including, but not limited to, the ways in which people interact with others, conduct business, and seek news and information (Fox & Rainie, 2014; Zickuhr & Smith, 2012).

Eighty-seven percent of American adults access the Internet, and 97 percent of young adults ages 18 to 29 use the Internet on a regular basis (Fox & Rainie, 2014). Sixty-eight percent of adults connect to the Internet through mobile devices, such as smartphones and tablets (Fox & Rainie, 2014). Therefore, it is no surprise many U.S. adults use the Internet to obtain news and keep up on current events (Rainie & Purcell, 2010).

Approximately half of American adults on Facebook and Twitter use the social networking sites to receive their news (Holcomb, Gottfried & Mitchell, 2013). In a more recent study that analyzed how residents in three different U.S. cities received their local news, the Pew Research Center found digital technology impacted news habits. The majority of residents in Denver, Colorado, in Sioux City, Iowa, and in Macon, Georgia, indicated they access at least one local news outlet digitally (Pew Research Center, 2015).

This increase in digital uses and adoptions among Americans has caused consumers to stray from printed publications (Ludovico, 2012). Additionally, the rising cost of periodical postage, decrease in print ad buys, and decrease in paid subscribers have caused publications to consider switching to digital (Ludovico, 2012). In 2006, after much discussion, postal rates increased for market-dominant types of mail; this included periodicals (U.S. Postal Service,

2010). This caused many periodicals in 2009 to only cover approximately 76 percent of their total costs (U.S. Postal Service, 2010). “The twin pressures of economic recession and the diversion of communications to electronic media have presented financial challenges to both the Postal Service and the newspaper and magazine industry” (U.S. Postal Service, p. 8).

Newsweek was a printed magazine that felt this pressure (Brown, 2012; Sassen, Matsa and Mitchell, 2013). In 2012, Newsweek editor Tina Brown officially announced the publication would switch to digital in 2013.

Bittersweet, I say. Bitter because I’d be lying if I didn’t confess to a bruised heart. I love print; always have, always will do. Sweet, because we are rising spiritedly to a challenge, not wringing our hands in impotent despair over the way modern life – and modern reading habits – have rendered our print edition unviable.” (Brown, para. 2)

Newsweek was not alone in its struggle to continue their printed publication; a 2012 study by Pew Research Center discovered five other well-known publications were experiencing difficulties (Sassen, Matsa & Mitchell, 2013). “Ad pages for the group fell by an average of 10.4% in 2012, about 25% greater than the 8.2% slide experienced by magazines over all” (Sassen, Matsa, Mitchell, para. 1).

Although this research has offered insight into the changes in mainstream magazines, little research on how agricultural publications are fairing in the digital age has been done. Agricultural publication readership studies have attempted to assess respondents’ feelings in regard to receiving information digitally, but these situations have been hypothetical (Allen, Naile, Vestal, Dozier, 2014; Telg & Barnes, 2012; Trissel, 2014; Turk, 2012). Responses varied based on the populations studied.

Online practices such as professional blogging and using social media to disseminate news and information have become more popular among agriculturalists (Moore, Meyers, Irlbeck & Burris, 2015; Shaw, Meyers, Irlbeck, Doerfert & Abrams, 2015).

When people consider agriculture and those involved in agricultural-related pursuits, they typically visualize an older demographic less likely to adopt and welcome digital technologies (Rhoades, 2004). However, recent research suggests those involved in agriculture, though they may not rank among early adopters, adapt to and use digital technology on a regular basis (Abrams & Sackmann, 2014; Allen, Naile, Vestal & Dozier, 2014; Turk, 2012).

In agricultural-related studies regarding technology use and adoption, the typical respondent has Internet access at his home, owns a smartphone, and is a member of a social networking site – in most cases Facebook (Bailey, 2011; Trissel, 2014; Turk, 2012). However, a disparity still exists between agriculturalists' technology adoption and their adoption of digital news. Most do not receive their news online; several studies have shown agriculturalists actually prefer printed publications to digital publications (Bailey, 2011; McCarthy, Beede & Edgecomb, 2008; Rhoades, 2004; Telg & Barnes, 2012). One study suggested digital news sources would be a good supplementation to printed media, rather than a replacement for the printed document (Gloy, Akridge & Whipker, 2000). Through studies to better understand agriculturalists' preferences toward print and online news sources, many sectors of the industry have been analyzed from horse owners to young Farm Bureau members and from agricultural college alumni to the professionals serving the agricultural publications industry (Rhoades & Aue, 2010; Telg & Barnes, 2012; Turk, 2012).

As society becomes more online-oriented, emphasis will occur on recognizing, understanding, and predicting the average user for specific online media sources (Turk, 2012). Also, as demographics of those involved in the agricultural industry evolve and change, research in regard to informational preferences will help to better predict the typical online news adopter (Bailey, 2011). This same research also will help agricultural publications determine whether or not adopting an online platform will better serve their audiences (Rhoades & Aue, 2010; Telg & Barnes, 2012). For survival reasons, an organization must understand audience preferences and attitudes toward new forms of media it may choose to implement or adopt, especially for

agricultural-related publications (McCarthy, Beede & Edgecomb, 2008; Rhoades & Aue, 2010; Telg & Barnes, 2012).

In their 2005 study, Elbert and Alston found Cooperative Extension Service educators across the U.S. noticed a digital divide among agricultural producers. More recent studies combat this, however, and suggest the once apparent digital divide has shrunk noticeably and rarely poses a problem in most connectivity cases (Brown & Kelsey, 2013; Guenther & Swan, 2011). Diekmann, Loibl, and Batte (2009) specifically state, “U.S. farmers have rapidly adopted emerging information and communication technologies over the last decade and have better access to information than ever before” (Diekmann, Loibl, Batte, p. 853).

In 2010, Jackie Lackey founded DRIVE with the vision of producing a livestock publication geared toward a younger audience (M. Drager, personal communications, March 3, 2015). Eventually, DRIVE evolved into a mission: “to recognize achievement, encourage personal development, and educate youth on the opportunities available in agriculture” (M. Drager, personal communication, March 3, 2015).

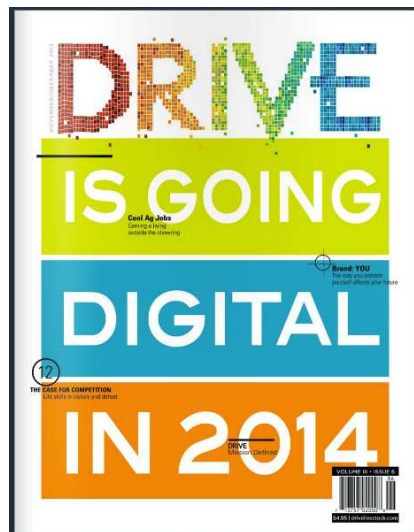


Figure 1. Cover of November/December 2013 *DRIVE* Issue.

DRIVE started as a printed publication and transitioned to digital in 2014. As a print periodical, the magazine was issued every two months. For \$20, subscribers received six printed publications per year (M. Drager, personal communication, March 3, 2015). Before converging to digital, *DRIVE* had 5,717 print subscribers. “*DRIVE*’s outreach aims to be relevant, trendy, and delivered through a means that its readers prefer” (M. Drager, personal communication, March 3, 2015). Today, the Texas-based company has approximately 60,000 online followers (M. Drager, personal communications, March 3, 2015). *DRIVE* uses various outlets, such as social media, to fulfill its mission and does not assess a subscription fee to access *DRIVE* information online (M. Drager, personal communication, March 3, 2015).

In December 2014, *DRIVE* announced its intention to merge its communications expertise and community with that of SureChamp, a company that produces nutritional supplements for livestock (*DRIVE*). “Sure Champ, in addition to providing premium animal nutrition products, is strongly invested in creating and supporting opportunities for youth involved in livestock programs. The merger will amplify their dedication to positive, educational initiatives” (*DRIVE*).

Statement of the Problem

Research in regard to audience preferences toward printed agricultural publications is abundant, but little research has been done on whether agriculturalists access information online once a periodical has converted to a completely digital format.

Purpose of the Study

The purpose of this study was to describe selected characteristics of past *DRIVE* subscribers. The study also sought to describe attitudes and behaviors of former subscribers toward the magazine’s digital platform since the discontinuation of the printed publication in 2014.

Objectives

The following research objectives were used to guide the study:

1. Describe selected characteristics of former *DRIVE* subscribers.
2. Describe former subscribers' self-reported levels of agreement with attitudinal statements regarding *DRIVE*'s digital media.
3. Describe how often digitally engaged former magazine subscribers access *DRIVE*'s digital media.

Significance of the Study

The rising popularity of digital news and the increased use of mobile and tablet devices to access news and information online will continually drive the need for research on audience preferences (Olmstead & Shearer, 2015). With rising postage costs and the decrease in the number of magazine ads purchased, publications face the decision of whether or not to convert to digital formats.

Agricultural communications researchers agree more research needs to be done on the perceptions and attitudes of agriculturalists toward online news and information (Bailey, 2011; Telg & Barnes, 2012; Turk, 2012). In her 2014 study, Trissel recommended further research in regard to online readership be conducted. Turk (2012) stated social media should be more heavily analyzed to determine how agriculturalists use it to obtain news. This study is significant in that it brings forth a population that has not yet been studied or considered. Little research has been done on audience attitudes and behaviors toward an agricultural publication that has converted to a digital-only media source. This could be in part because very few, if any, agricultural publications have decided to take the digital plunge.

The current research also aligns with the American Association for Agricultural Education (AAAE) National Research Agenda (Doerfert, 2011) Priority Number Two: "New technologies, practices, and products adoption decisions" (Doerfert, p. 8).

To achieve positive outcomes in current and future agriculture-related diffusion efforts, related research, education, and outreach activities must continually change to address the new challenges and opportunities brought about by rapidly advancing technologies; evolving consumer demands, needs, and behaviors; and the need to make positive contributions to environmental, human and animal health. (Doerfert, p. 8)

As agricultural publications feel the pressure to converge content to digital, research on agriculturalists' attitudes, usages, and adoption of online news and information will be valuable.

Scope of the Study

The scope of this study included 5,717 former subscribers to the printed *DRIVE* magazine.

Assumptions

This study was conducted under the following assumptions:

1. Respondents accurately and honestly reported their demographic information and digital media use.
3. Individual addresses were accurate and reached the intended population.
4. The attitudes and behaviors of respondents could be quantified using an online instrument.

Limitations

The following limitations were recognized for this study:

1. Because the instrument was offered only online, this study examined past subscribers who were able to obtain Internet access to complete the instrument.
2. The results of this study cannot be generalized to other online publications.
3. Respondents had to be 18 years of age or older to complete the instrument.

Definition of Terms

The following terms were defined or used in this study:

Digital Media – “Digitized content (text, graphics, audio, and video) that can be transmitted over Internet or computer networks” (“Digital Media,” 2015, para. 1).

Smartphone – “A cell that includes additional software functions (email or an Internet browser)” (“Smartphone,” 2015, para. 1).

Social Media – “Forms of electronic communication (as Web sites [sic] for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (as videos)” (“Social Media,” 2015, para. 1).

Twitter – “Free social networking microblogging service that allows registered members to broadcast short posts called *tweets*” (“Twitter,” para. 1).

Facebook – “A popular free social networking website that allows registered users to create profiles, upload photos and video, send messages and keep in touch with friends, family and colleagues” (“Facebook,” para. 1).

Instagram – “An online mobile photo-sharing, video-sharing and social networking service that enables its users to take pictures and videos, and share them on a variety of social networking platforms, such as Facebook, Twitter, Tumblr and Flickr” (“Instagram,” 2015, para. 1)

Digital Native – “Native speaks of the digital language of computers, video games and the Internet” (Prensky 2001, p.1); an individual who has grown up with digital technology.

Digital Immigrant – Refers to individuals who were not born during the era of digital technology and thus have to adopt new aspects of technology (Prensky, 2001).

Digital Fluency – Term used to describe the ease in which an individual can navigate the Internet based on a set of necessary digital skills (Deursen & Dijk, 2010).

CHAPTER II

REVIEW OF LITERATURE

This chapter provides an overview on printed publications in the digital age and gives an overview of factors playing into current digital divides. Also discussed are agriculturalists' preferences toward print and online media; new communications technologies and mobile technology; and a review of the uses and gratifications theory, knowledge gap theory, and the diffusion of innovations theory as applied to this study.

Print in the Digital Age

Increases in postage rates and production costs plus decreases in circulation and advertisement buys have left magazine publications to consider options outside of print (McIlroy, 2015). In 2013, 82 percent of Americans reported accessing news from a desktop or laptop computer and 54 percent said they got news from a mobile device (Pew Research Center, 2014). This same year, the social networking site Twitter claimed 200 million users posting more than 400 million tweets per day (Franklin, 2014). This media consumption behavior has seen dramatic increases over the years (Mitchell, 2015; Pew Research Center, 2014). Americans are turning to outlets like social media, blogs, online news forums and websites to fulfill informational needs (Curran, 2010; Mitchell, 2015). Pew Research's 2015 State of The News Media reports nearly half of web-using adults receive news about politics and government via Facebook (Mitchell, 2015). These online trends, coupled with more advertising dollars being put toward the web, have led to a number of printed periodical closures (Curran, 2010). Notable publications like *Rolling Stone*, *The New Yorker*, *New York Magazine*, and *Wired* offer their magazines in print as well as

in digital formats (Mitchell, 2015). In 2014, *Rolling Stone*, *New York* and *the New Yorker* saw increases in digital magazine sales (Mitchell, 2015). 2014 marked a seven-year decline in magazine circulation. Newsstand sales for magazines also fell 14 percent (Mitchell, 2015).

Moreover, current costs to produce and disseminate a printed publication have risen. In 2007, following a postage rate increase, printed publications were paying 20 to 30 percent more for postage (Lloyd, 2007). Publications were left to consider converging to digital formats (Lloyd, 2007). Following the recession, newspapers like the *Christian Science Monitor* and the *Seattle Times* closed their doors in 2008 and 2009 (Curran, 2010). In 2008, it was estimated that one out of five journalists working for a newspaper in 2001 was now no longer working for a newspaper (Curran, 2010). More recently, in early 2015 the U.S. Postal Service enacted a 1.9 percent postal rate increase (Rondon, 2015). Continued rate increases are due in part to inflation and the USPS's need to offset costs and eliminate debts (U.S. Postal Service, 2010). However, to distribute rates more fairly, it is anticipated that rate classes based on a periodical's weight and circulation will appear in the upcoming year (Rondon, 2015).

In addition to increased production costs, the migration of advertisement toward the web also has caused concern (Curran, 2010). Nearly \$51 billion was spent on digital ads in 2014 (Olmstead & Lu, 2015). Digital ad buys are up 18 percent from last year's 43.1 billion (Olmstead & Lu, 2015). Though Google still holds the majority of digital ad revenue, Facebook saw an increase in the amount of advertising dollars spent on the platform in 2014 (Olmstead & Lu, 2015). Consumer magazines have seen ad pages drop (Matsa, 2013). Ad pages in *Time*, *The Economist*, *The Atlantic*, *The Week* and *The New Yorker* magazines decreased 18 percent in early 2013 (Matsa, 2013). In the case of *Newsweek*, which discontinued its printed publication at the end of 2012, ad pages decreased 60 percent from 2002 to 2012 (Matsa, 2013). "Ad pages are considered a more reliable indicator of the financial health of a magazine than ad dollars because the dollar figures are based on rate card pricing that often does not reflect what an advertiser pays" (Matsa, 2013). However, these figures do not represent a magazine's digital advertising

revenue, which has seen increases during the past few years (Olmstead & Lu, 2015; Matsa, 2013; Olmstead & Lu, 2015). Some magazines saw iPad ad units (rough equivalent to print ad pages) increase 25 percent in 2013 (Matsa, 2013).

Also threatening to printed publications is the emergence and adoption of mobile devices, which have made news consumption on the go increasingly popular (Franklin, 2014; Westlund, 2015). Approximately 6 billion people worldwide now have access to network connections via mobile devices (Franklin, 2014). In January 2015, digital news outlets saw more unique visits from mobile devices than from desktop computers (Olmstead & Shearer, 2015). Not only is mobile news consumption intruding on print, but in some cases, it has also surpassed online news consumption via desktop computers (Westlund, 2015). Digital natives, or those who are still developing adulthood news consumption habits, are especially receptive to mobile news (Chan-Olmstead, Rim & Zerba; 2013).

However, studies suggest many Americans still prefer print to digital (Berner, 2014; Monroe, 2015; Poyner, 2011). During a study that analyzed various women's magazines, respondents noted having a better overall experience with the printed version (Monroe, 2015). Ease of use, developing a sensory connection, having a tangible item to physically hold, and anticipation in regard to the receiving the publication in the mail were all listed as reasons for preferring print to digital (Monroe, 2015). Print publications also allow an antidote to consumers' connectivity overload (Berner, 2014). Recognizable, well-branded, magazines fair better in the digital environment than other printed publications (Ripp, 2014). "Eighty-seven percent of consumers interested in reading magazines on a digital device also consume that same brand in print purchased either at retail or via a subscription" (Ripp, 2014). Poyner argues that print holds preciousness and that "digital delivery can't offer the satisfaction and pleasure of information embodied in matter, made tangible and solid" (Poyner, 2011).

Furthermore, magazines are expanding beyond their print version to offer content digitally. In a report by Magazine Media 360, publications that participate in the industry

organization saw a dramatic increase in social media attention during the second quarter of 2015 (Magazine Media 360, 2015). National Geographic has more than 79 million combined followers on Instagram, Facebook, Twitter, Google + and Pinterest (Magazine Media 360, 2015). Magazines that hold Instagram accounts have seen the greatest increase in follower numbers; Facebook closely followed (Magazine Media 360, 2015). Some fear, however, that by providing content via multiple platforms the magazine industry is further segmenting its audience (Berner, 2014).

Digital Divide

Initially, the digital divide focused on computer owners versus non-owners and Internet users versus non-Internet users; since then, Internet access and use has grown rapidly and globally (Brake, 2014). Today, discussions regarding the digital divide focus more on the manner and extent to which digital technologies are used (Brake, 2014). Olphert and Damodaran (2012) suggest “digital divides exist where people do not have a) access to appropriate equipment (connectivity) b) appropriate skills and capabilities, and c) motivation from the pull of compelling functionality and content” (p. 2). Demographics, such as age, socioeconomic class, and education also play a role in current digital divides (Brake, 2014; Deursen, Dijk & Peters, 2011; Loges & Jung, 2001; Schradie, 2011).

According to research, basic Internet and devices with Internet capabilities play a role in one’s online mobility. Brake (2014) lists high-speed Internet access, mobile phone ownership, and physical location as factors that affect Internet accessibility. Users who connect to Internet via a broadband connection are more likely to share and create content online, thus making them more comfortable with Web 2.0 capabilities (Brake, 2014). Research suggests those who have to travel to a library to access a computer or travel to a public place to access high-speed Wi-Fi are less likely to remain digitally engaged (Schradie, 2011). Smartphone ownership has helped alleviate some of these Internet connectivity issues (Park & Lee, 2015). Smartphone ownership

also plays a role in one's digital engagement (Park & Lee, 2015). The introduction of the smartphone has created interesting dynamics in the digital divide debate. Studies suggest the technology has helped bridge the gap between digital divide inequalities that used to exist, such as a person's socioeconomic status (Park & Lee, 2015). Active smartphone users adopt new digital technologies at a faster rate than less active or non-smartphone owners (Park & Lee, 2015). With its increasing popularity, researchers anticipate the occurrence of a smartphone digital divide, in which non-smartphone owners might find themselves more limited in terms of their ability to access information and applications (Park & Lee, 2015).

However, more concerning than whether one has easy access to the Internet is whether one has the necessary skills to navigate the Internet (Deursen, Dijk & Peters, 2011). Studies suggest the digital divide has shifted from Internet access to differences in digital skills (Deursen & Dijk, 2010; Olphert & Damodaran, 2012;).

The binary classification of access in terms of physical access (having a computer and an Internet connection or not) is considered to have been superseded and replaced by a divide that is supposed to concentrate on a large number of more complex variables and relations. A more refined understanding of the digital divide has developed ... One of the most important factors in these conceptualizations is the differential possession of digital skills. Changes in society demand new skills, especially those related to the Internet as one of the most important means of communication in contemporary society. (Deursen & Dijk, p. 126)

Deursen et al. (2011) go on to explain Internet skills are not equally distributed among society and factors like age, gender, education, Internet experience and amount of Internet use affect skill levels. Deursen and Dijk (2010) label these skills as a) operational skills (concepts that illustrate basic skills in using Internet technology), b) formal Internet skills (skills related to navigating the hypermedia environment), c) information Internet skills (actions users use to accomplish informational needs), and d) strategic Internet skills (skills necessary to properly use the Internet

as a tool to reach a specific goal). Age and level of education are both significant factors when it comes to assessing Internet skills (Deursen & Dijk, 2010). Younger respondents performed operational and formal skills better than older respondents (Deursen & Dijk, 2010). Older adults also are more likely to discontinue using the Internet because of the complexity of the technologies (Olphert & Damodaran, 2012). Respondents who obtained a higher level of education performed better in regard to all Internet skills (Deursen & Dijk, 2010).

Medium-related internet skills	
Operational internet skills	<p><i>Operating an internet browser:</i></p> <ul style="list-style-type: none"> Opening websites by entering the URL in the browser's location bar; Navigating forward and backward between pages using the browser buttons; Saving files on the hard disk; Opening various common file formats (e.g., PDFs); Bookmarking websites. <p><i>Operating internet-based search engines:</i></p> <ul style="list-style-type: none"> Entering keywords in the proper field; Executing the search operation; Opening search results in the search result lists. <p><i>Operating internet-based forms:</i></p> <ul style="list-style-type: none"> Using the different types of fields and buttons; Submitting a form.
Formal internet skills	<p><i>Navigating on the internet, by:</i></p> <ul style="list-style-type: none"> Using hyperlinks embedded in different formats such as texts, images, or menus. <p><i>Maintaining a sense of location while navigating on the internet, meaning:</i></p> <ul style="list-style-type: none"> Not becoming disoriented when navigating within a website; Not becoming disoriented when navigating between websites; Not becoming disoriented when opening and browsing through search results.
Content-related internet skills	
Information internet skills	<p><i>Locating required information by:</i></p> <ul style="list-style-type: none"> Choosing a website or a search system to seek information; Defining search options or queries; Selecting information (on websites or in search results); Evaluating information sources.
Strategic internet skills	<p><i>Taking advantage of the internet by:</i></p> <ul style="list-style-type: none"> Developing an orientation toward a particular goal; Taking the right action to reach this goal; Making the right decision to reach this goal; Gaining the benefits resulting from this goal.

Figure 2. Deursen and Dijk's (2010) Explanation of Internet-Related Skills.

Selected demographics also play a role in the current digital divide (Deursen et al., 2011). Age, gender, education, socioeconomic class, Internet experience, and hours spent online have been linked to one's digital fluency (Deursen et al., 2011; Schradie, 2011). Age and level of education obtained were the strongest predictors of one's digital skills (Deursen et al., 2011). Education level and social class play a large role in determining whether or not an individual contributes to online content creation (Schradie, 2011). Schradie (2011) also suggests more content is being created by the affluent is causing an online content production divide, in which case the less fortunate and less educated are falling increasingly behind. Privileged content creators are shaping the online discussions, politics, and prioritization of issues (Brake, 2014).

One of the factors that may be exacerbating digital divides is that content relevant to disadvantaged groups is less likely to be provided online than content aimed at more wealthy and educated groups, and this may in turn discourage the disadvantaged from going online. (Brake, p. 604)

Studies suggest an individual's digital fluency is related to whether he or she is a digital immigrant or a digital native (Wang, Meyers & Sundaram, 2013). "Digital immigrants are those who learnt [sic] to use computers at some stage during their adult life. Whereas digital natives are assumed to be inherently technology savvy, digital immigrants are usually assumed to have some difficulty with information technology" (Wang et al. pg. 1). Digital natives are more fluid at navigating social media sites like Twitter (Metallo & Agrifoglio, 2015). It has also been noted that digital natives' use of communication technologies, like social networking sites, stem from social pressure (Metallo & Agrifoglio, 2015). If digital natives are not current on social networking trends, they feel more separated from their colleagues (Metallo & Agrifoglio, 2015). Williams, Crittenden, Keo and McCarty's (2012) research in regard to digital natives' social media use is consistent with this assumption. Ninety-six percent of respondents indicated they were on social media (Williams et al., 2012). The most commonly used sites were Facebook and

Twitter (Williams et al., 2012). Digital natives also learn and process information differently than digital immigrants (Autry & Berge, 2011).

However, Wang et al. (2013) discovered the effects of age on the digital divide are not as straight forward. In the matter of age, recent digital divide studies show older adults are online (Wang et al., 2013). “The underlying assumption that there is a big disparity between digital natives (who are assumed to be inherently fluent in IT technology) and digital immigrants in their use of technology is false” (Wang et al., p. 416). The issue no longer stems from an access divide, but more a skills divide (Com et al., 2013). Younger generations perform better on Internet operational and formal skills (Deursen & Dijk, 2010). Younger Internet users are more technologically savvy in that they are better at navigating computer applications and maneuvering operating systems (Brake, 2014). Younger generations are also more apt to apply formal skills toward achieving an online goal, meaning they are better at applying operational skills to solve problems or fulfill needs online (Brake, 2014). Wang et al. (2013) argue psychological, organizational and social factors contribute more to digital fluency. In a study that compared smartphone addiction among young adults and older adults, researchers found both generations, despite the age gap, were highly dependent on smartphone technology (Ahn & Jung, 2014).

Gender as it pertains to the digital divide, like age, might not be as clear-cut (Deursen et al., 2011). In survey research, men displayed more web-based knowledge than women. Research conducted by Deursen et al. (2011), however, opposes this, as they discovered no significant relationship existed between gender and operational, formal, information, and strategic Internet skills (Deursen et al., 2011).

Agriculturalists’ Informational Preferences

Much research on how individuals involved in the agricultural industry receive information has been conducted. Many studies suggest agriculturalists use several different sources to receive information, such as veterinarians, extension, land-grant universities,

agricultural publications, agricultural radio, television, and online news (Allen, Naile, Vestal & Dozier 2014; Bailey, 2011; Diekmann, Loibl & Batte, 2009; Franke-Dvorak, Kelsey & Royer, 2010; Gloy, Akridge & Whipker, 2000; McCarthy, Beede & Edgecomb, 2008;).

Traditional Informational Sources

Agriculturalists, traditionally, have been more likely to access news and information through verbal communication with veterinarians, extension agents, other producers, trusted printed publications, television, and radio (Diekmann et al., 2009; McCarthy et al., 2008; Riley, Cartmell & Naile, 2012). After analyzing 25 different informational sources, Diekmann et al. (2009) found farmers' favorite source was printed media; Internet was listed as their least favorite. The authors noted factors influencing the farmers' opinions: years in farming, off-farm employment, use of technology, use of private consultants, and Internet use (Diekmann et al., 2009).

A study that analyzed Kansas feedlot managers' preferred methods of receiving information about animal-health-related issues, found 69% of respondents would consult a veterinarian or nutritionist first to obtain information (Riley et al., 2012). When asked to indicate in which format they preferred to receive this information, 61.9% of respondents indicated email, suggesting agriculturalists, somewhere in the information-obtaining process, are using and adapting to digital technologies (Riley et al., 2012).

Allen et al. (2014) discovered similar results while studying Texas and Southwestern Cattle Raisers Association (TSCRA) members' preferred sources of animal health information. Respondents' most sought after sources of information were local veterinarians followed by livestock associations (Allen et al., 2014). Internet was ranked as the third most preferred outlet for receiving animal health information, followed closely by magazines (Allen et al., 2014). However, in regard to perceived reliability and trustworthiness, TSCRA members ranked Internet

behind local or consulting veterinarians, livestock associations, county extension offices, other livestock producers, and state land-grant institutions (Allen et al., 2014).

Gloy et al. (2000) suggested crop, livestock-specific, and general farm magazines are preferred sources for information among U.S. farmers who make more than \$100,000 in annual revenue. Despite nearly half of respondents using the Internet for other purposes, results indicated general farm magazines were accessed most often for news and information (Gloy et al., 2000). Respondents ranked extension/universities, local dealer sales and technical people, and other farmers closely behind agricultural publications in terms of perceived usefulness (Gloy et al., 2000). Factors affecting informational preferences in the study included age, education, farm size, type of commodities produced by a farming enterprise, and which buying segment the operation occupied (Gloy et al., 2000).

A study that examined subscribers to the Michigan Dairy Review magazine, after investigating respondents' attitudes toward receiving informational e-blasts, discovered respondents wanted information offered in both print and digital formats (McCarthy et al., 2008). "It appears that the Internet might be a compliment rather than a substitute for traditional information sources, or an indicator of producers who find traditional information sources useful" (Gloy et al., p. 258).

Bailey (2011) found 24- to 32-year-old Ohio agriculturalists displayed similar qualities to older generations in that their most valued informational source was face-to-face communication with farmers. Respondents also indicated they would not be willing to switch to electronic versions of currently used magazines (Bailey, 2011). Reasons listed were "wanting something to hold," "reading on a screen is inconvenient," and "not as easily accessible as a printed copy of publication" (Bailey, p. 101).

Trissel (2014) discovered similar hesitation from Interscholastic Equestrian Association (IEA) members in regard to receiving an electronic version of the *Take The Reins* magazine.

Respondents indicated they preferred to receive a hardcopy of the magazine instead of viewing it via the Internet (Trissel, 2014).

Agriculturalists' Use of Online News and Information

Despite Diekmann et al. discovering during their 2009 study that farmers preferred printed media to digital, they still noted as agriculturalists diversify and their needs for information increase, these preferences are subject to change. To echo this, while providing insight into both the past and present trends of agricultural communications, Irani and Doerfert (2013) expressed the need for the discipline to grow and transition with the industry's changing needs.

As our nation transitioned from its agrarian roots through the Industrial age to today's information-based economy, our audiences, their needs, and the channels used to meet those needs have also changed. Within the academy, academic programs in agricultural journalism have given way to 'comprehensive' agricultural communications programs that cover strategic communications, new and social media, public relations and marketing in addition to writing, editing and production of mass media. (Irani & Doerfert, p. 8)

In some of the aforementioned studies, though not their first informational source preference, respondents indicated they were not opposed to receiving or accessing news and information online. When Allen et al. (2014) analyzed how TSCRA members received animal-health information, the Internet ranked above many other traditional news sources, such as magazines, USDA, local agricultural retailers, television news, radio news, daily newspaper, and high school agricultural science teachers (Allen et al., 2014). In Bailey's (2011) study of young Ohio agriculturalists, half of respondents, despite preferring face-to-face communication, agreed they would switch from traditional printed media to electronic formats.

While trying to better understand Web 2.0 uses of Midwestern wheat producers in Colorado, Kansas, Nebraska, Oklahoma, and Texas, Brown and Kelsey (2013) found 76% of respondents went online to not only communicate but also to find information about agricultural-related topics. More than half of these respondents were more than 51 years old (Brown & Kelsey, 2013). Despite surveying an older demographic, 78% responded they had been using the Internet for almost 10 years (Brown & Kelsey, 2013).

A 2012 study surveyed digitally engaged American Quarter Horse Association (AQHA) stakeholders and found respondents learned about the equine industry primarily through digital media (Turk, 2012). This study also concluded members were interested in accessing industry news via mobile application if AQHA were to develop one (Turk, 2012).

Online News and Information Adoption

Prensky (2001) hits upon the digital divide in his discussion of digital immigrants versus digital natives. A digital immigrant is someone who has had to learn a new “language” and adapt to a digital environment (Prensky, 2001). In stark contrast, a digital native has spent his or her entire life surrounded by digital technology, such as computer games, email, instant messaging, and social media (Prensky, 2001).

Nguyen and Western (2007) studied socio-structural factors that influenced adoption of news and information among Australians. After a national survey of 4,270 Australians, they discovered “more Internet accessibility, more traditional news and information usage and privileged socio-economic profiles were strong predictors of online news and information adoption/use” (Nguyen & Western, p. 168). More than half of respondents used the Internet for news and information; 27% did so frequently (Nguyen & Western, 2007). Due to cultural and social similarities, this research can be applied outside of Australia to other developed countries (Nguyen & Western, 2007).

During a study that analyzed young adults mobile news adoption, Chan-Olmsted, Rim and Zerba (2013) found perceived relative advantage of new technology, utility and ease of use, and preference and use of different news media were the strongest predictors when determining whether college students had adopted mobile news. Perceived advantage of mobile technology also played a significant role in determining the length of time respondents accessed mobile news (Chan-Olmsted et al., 2013). The research also discovered the amount of news and the number of platforms they accessed news from had a positive correlation to mobile news adoption (Chan-Olmsted et al., 2013).

Agriculturalists' Use of New Communications Technologies

Studies show agriculturalists are adopting new communications technologies (Brown & Kelsey, 2013; Graybill-Leonard, Meyers, Doerfert & Irlbeck, 2011; Guenther & Swan, 2011; Nordby, 2014; Telg & Barnes, 2012; White, Meyers, Doerfert & Irlbeck, 2014).

Social Media

Whether it is to communicate with friends and family, gather information, keep up-to-date with the news, or promote their businesses, agriculturalists use social media (Abrams & Sackmann, 2014; Telg & Barnes, 2012; White et al., 2014).

Shaw et al. (2015) discovered agriculturalists with an average age of 39 were using Facebook for both personal and business purposes. Although websites were listed as the most common online resource for both personal and business uses, a significant correlation existed between personal and business use of social media sites like Facebook, Google+, Twitter, and blogging platforms (Shaw et al., 2015). If a respondent was using a social media site for personal use, he or she was likely using the resource for business purposes, as well (Shaw et al., 2015).

After surveying Florida Farm Bureau Young Farmers and Ranchers on informational preferences, Telg and Barnes (2012) discovered members thought Florida Farm Bureau should

use social media and other Internet-based communication technologies to reach its young constituents. These members agreed the association should develop a stronger Web presence to make information more accessible to both internal and external audiences (Telg & Barnes, 2012). Findings from two focus groups suggested Google and Facebook were the most often accessed websites among participants (Telg & Barnes, 2012). Three of 11 participants indicated using social media to promote agriculture (Telg & Barnes, 2012). Participants in the study ranged from 18 to 35 years of age and were all directly involved in production agriculture (Telg & Barnes, 2012).

Agriculturalists also turn to social media, specifically Facebook, to facilitate communications about agricultural-related movements (Graybill-Leonard et al., 2011). Abrams and Sackmann (2014) discovered operations with more “likes” on their Facebook pages had more revenue. In a study that analyzed different Facebook group discussions about agricultural movements, Graybill-Leonard et al. (2011) discovered group facilitators often had some form of personal experience or emotional stake in the causes they were discussing. Aside from Facebook, participants also were using other tools like Twitter, YouTube, blogs, websites and podcasts to promote their cause (Graybill-Leonard et al., 2011). Participants in the study were directly or indirectly involved in agriculture, were college graduates or were in the process of completing a bachelor’s degree, had created their Facebook groups within the last two years, and were Facebook page administrators (Graybill-Leonard et al., 2011).

Twitter is becoming a platform where farmers can join agricultural-related conversations (Cline, 2009). A study that analyzed @AgChat, @FollowFarmer and @TruffleMedia Twitter followers, found 56% of respondents posted agricultural-related information to Twitter several times per day (Cline, 2009).

Another social media tool being used by agriculturalists is blogs (Moore et al., 2015). In a study that analyzed how different agricultural commodity groups were using blogging platforms, Moore et al. (2015) found participants were implementing the online communications tool to

reach traditional and new audience segments. Some organizations represented in the study had established their blogs as early as 2006 (Moore et al., 2015).

Though studies suggest younger generations have a greater tendency to adopt new communication technologies like social media (Nguyen & Western, 2007; Prensky, 2001; Telg & Barnes, 2012), a study that compared potato farmers' technology use to that of University of Idaho students found little difference (Guenthner & Swan, 2011). "Farmers may be receptive to communication by email, websites, Facebook, MySpace, text messaging, YouTube, and other electronic means of communication. These technologies are not only for young people" (Guenthner & Swan, p. 8).

Mobile Technology

Sixty-four percent of American adults now own a smartphone, which is up 35% from spring of 2011 (Smith, 2015). Smartphones now assist users with everyday tasks (Smith, 2015).

A majority of smartphone owners use their phone to follow along with breaking news, and to share and be informed about happenings in their local community; smartphones also help users navigate the world around them, from turn-by-turn driving directions to assistance with public transit. This is especially true for younger users. (Smith, p. 1)

The use of mobile applications increased by 115% in 2013 (Fox, 2014). Messaging and social applications saw the greatest increase, followed closely by utilities and productivity applications (Fox, 2014). Americans consume digital news from their mobile phones more often than from their desktop computers (Olmstead & Shearer, 2015). Almost all news entities evaluated (Yahoo-ABC News, CNN Network, NBC News Digital, CBS News, USA Today sites, etc.) were being accessed more often from mobile devices rather than desktop computers (Olmstead & Shearer, 2015). In some cases, such as BuzzFeed's, news outlets had twice the number of users accessing its platform from a mobile device as compared to a desktop (Olmstead & Shearer, 2015). This study also took into account news outlets' mobile applications.

How do these findings apply to agriculturalists adoption and use of mobile technologies?

Despite that agricultural applications and software have been developed for smartphones and tablets, little research has been conducted to better understand how agriculturalists use mobile technology (Roberts & McIntosh, 2012).

Case studies in regard to mobile application uses during livestock exhibitions have been conducted (Davis & Rice, 2014; Nordby, 2014). One researcher looked at the impact delivering real-time tweets to competitors' mobile phones had on ensuring exhibitors were prepared and ready for their classes during the Minnesota State Fair (Norby, 2014). Results indicated that the Twitter application aided in making sure the show ran smoothly (Norby, 2014). Exhibitors' parents also indicated they were likely to use the application again in subsequent years (Norby, 2014). In a similar study, Davis and Rice (2014) discovered using the ShoWorks mobile application during the Lake County Fair greatly increased staff and volunteer efficiency and organization ability. The mobile application was designed to allow volunteer clerks to input class placings and scores in a more efficient manner (Davis & Rice, 2014).

Turk (2012) asked digitally engaged AQHA members if they would benefit from the association developing a mobile application. Most respondents indicated they would access a mobile application if it included relevant industry-related news (Turk, 2012). A study conducted in Australia found agriculturalists use mobile devices most often for accessing email, checking the weather, and searching grain marketing information (Roberts & McIntosh, 2012).

Theoretical Frameworks

Uses and Gratifications, Knowledge Gap, and Diffusion of Innovations

The Uses and Gratifications, Knowledge Gap and Diffusion of Innovations theories were all considered while shaping this research. The Uses and Gratifications theory applies to this study because it helps better understand the ways in which audiences seek out and consume news

and information. Also of interest to the researcher was the likelihood of knowledge gaps appearing among the population and what different news consumption behaviors or demographics might lead to knowledge gaps. Finally, Diffusions of Innovations was considered because it provided insight into the adoption process of online media.

Uses and Gratifications Theory

The uses and gratification theory (UGT) is based around the concept people seek media to fulfill certain needs (Katz, Blumler & Gurevitch, 1974). The type of media a person seeks or is exposed to determines how well their needs are gratified or met (Katz et al., 1974). “The approach simply represents an attempt to explain something of the way in which individuals use communications, among other resources in their environment, to satisfy their needs and to achieve their goals” (Katz et al., p. 510).

The uses and gratification theory helps explain why users access specific media to obtain information (Katz et al., 1974; Rosengren, 1974). New applications of the uses and gratification theory also help better understand users’ attitudes and preferences toward media as it pertains to the print vs. digital debate (Bailey, 2011).

Katz et al. (1974) suggested individual audience members have the ability to recognize and report interests and motives associated with media consumption. Rosengren (1974) outlined some of these interests and motives. After posing the question, “who uses which media, under what circumstances, for what reasons and with what effect” (p. 269), Rosengren (1974) lists psychological needs, safety needs, belongingness and love needs, esteem needs, and a need for self-actualization as reasons why a person seeks certain media. He also states within society different individuals occupy different needs, values, and motives (Rosengren, 1974). Because of these different social-structures, different individuals turn to different media to fulfill different needs (Rosengren, 1974).

Uses and Gratification Theory Revisited

Since its inception in the 1970s, the uses and gratification theory has been revisited and revised after computer-mediated communication (CMC) hit the scene. Since communications went digital, new gratifications have been met and discovered via CMC (Nellis, 2004). Socialization, maintaining relationships, playing games, and receiving emotional support have been discovered as gratifications obtained through CMC (Nellis, 2004). With it, digital technology brought forth even more gratifications, specifically associated with the processes of going online and obtaining information, e.g. navigating images online, clicking a headline on webpage, subscribing to instant notifications, etc. (Nellis, 2004). While determining whether users needs were met after visiting a website, Eighmey and McCord (1998) discovered personal involvement and continuing relationship were two important dimensions in the digital age.

T. F. Stafford, M. R. Stafford and Schkade (2004) sought to better understand some of these gratifications associated with uses of the Internet. They found process and content gratifications as well as social gratifications were key factors when determining how or why a person used the Internet (T.F. Stafford et al., 2004).

Content gratifications concern the messages carried by the medium, and the process gratifications concern actual use of the medium itself. By analogy, Internet users may be motivated by enjoyment of the usage processes of random browsing and site navigation, while users of specific Internet sites might be motivated by the desire for specific site-related informational content. (T. F. Stafford et al., p. 267)

Social gratifications of the Internet arise from social environments developed through CMC (T. F. Stafford et al., 2004). The researchers anticipated this specific gratification would be highly relevant in the future as consumers begin to turn to the Internet for more inherent needs (T. F. Stafford et al., 2004).

The uses and gratification theory continues to conform to needs discovered in the 21st century, specifically, understanding audience experiences associated with digital media (Ruggiero, 2009). With the delivery of the Internet, great numbers of psychological and social contexts can be applied to the uses and gratification theory (Ruggiero, 2009).

In 2010, LaRose and Eastin attempted to marry the social cognitive theory (SCT) with the uses and gratification theory. They organized anticipated outcomes around six incentives for human behavior: novel sensory, social, status, monetary, enjoyable activity, and self-reactive incentives. They suggested new variables obtained through SCT help further explain college students' uses and gratifications of the Internet (LaRose & Eastin, 2010).

Uses and gratifications can be understood in socio-cognitive terms. Where uses and gratification researchers have explored gratifications, SCT proposes expected outcomes and where uses and gratification researchers posit needs, SCT proposes behavioral incentives. Expected positive outcomes of Internet exposure should cause further exposure. (LaRose & Eastin, p. 360)

Knowledge Gap Theory

How information gets obtained, disseminated and accessed by individuals of certain demographics and regions is of interest to those who study knowledge gaps (Donahue, Tichenor & Olien 1975; Tichenor, Donahue & Olien, 1970;). The knowledge gap theory and its application to how media gets consumed have been studied much throughout communications' research history (Donahue et al., 1975; Eastin, Cicchirillo & Mabry, 2015). Because the media environment is constantly evolving, mass media outlets like newspaper, radio, television, magazines, and Internet resources have been studied using the knowledge gap theory (Eastin et al., 2014; Cacciatore, 2014; Wei, 2009). Tichenor et al. (1970) described the knowledge gap hypothesis as

1. Acquisition of knowledge of a heavily publicized topic will proceed at a faster rate among better educated [sic] persons than among those with less education; and
2. At a

given point in time, there should be a higher correlation between acquisition of knowledge and education for topics highly publicized in the media than for topics less highly publicized. (Tichenor et al., p. 163)

As discussed previously in the digital divide section of this literature review, Donahue et al. (1975) attributes social power to knowledge. Where a deprivation of knowledge exists is also a deprivation of social power. Individuals with higher levels of education are expected to have greater access to or have more interest in accessing media in the pursuit of information (Donahue et al., 1975). Thus, gaps in knowledge between those of different socio-economic statuses increases (Donahue et al., 1975). Eastin et al. (2015) take this a step further and conclude that access and/or exposure to information is no longer a predictor of knowledge gaps. Gaps in knowledge are more reliant on which informational media different groups access (Eastin et al., 2015). The media environment has become segmented; where individuals go to obtain information plays a role in knowledge gaps (Eastin et al., 2015). Eastin et al. (2015) discovered that individuals of different ethnicities (African, Hispanic and Caucasian) accessed informational media differently. For example, Hispanics were more likely to list newspapers as a useful source of information than were Caucasians (Eastin et al., 2015).

Donahue, Tichenor and Olien (1975) list four variables as the main reasons behind the knowledge gap phenomenon: a) the nature of the issue and whether or not it engages concern; b) level of social conflict the issue holds; c) structure of the community concerned with the issue; d) the pattern of the media coverage including frequency, repetitiveness or redundancy of themes. These variables are expansions of previous knowledge gap research conducted by Donahue et al. (1970). In an earlier study, communication skills, amount of stored information, selective exposure, acceptance, retention of information, and the nature of the mass media system of were listed as contributing factors to existing knowledge gaps (Tichenor et al., 1970).

In the 21st century, the knowledge gap theory can be applied to many situations. Wei (2009) discovered bloggers with higher levels of education were more likely to discuss political

issues in their personal blogs; however, lesser educated individuals kept blogs that were more like personal journals of experiences, thoughts, and ideas. Therefore, public policy is more likely to resemble the beliefs and desires of the higher educated public (Wei, 2009). In direct conflict with this research, in the case of the general public's knowledge of nanotechnology, education was not as much of a knowledge gap factor as was age (Cacciatore, Scheufele , & Corley, 2014). Younger respondents were more aware of nanotechnology than were older respondents (Cacciatore et al., 2014). It was also discovered the medium used to access scientific media also made a difference (Cacciatore et al., 2014). Respondents who accessed scientific media through television and Internet were more familiar with nanotechnology than those who used newspapers to learn about science (Cacciatore et al., 2014).

Diffusion of Innovations

Roger's Diffusion of Innovations describes the processes and the decisions individuals go through before deciding to adopt a new technology (Rogers, 2003). Four main elements appear in Roger's Diffusion of Innovations equation: innovation, communication channels, time, and social system (Sahin, 2006). All four of these elements are considered when an individual decides to adopt or to reject an innovation (Sahin, 2006).

Innovation refers to the item, idea or practice that is perceived as new and thus is being considered for adoption (Rogers, 2003; Sahin, 2006). An innovation can have various characteristics that lead to its adoption or rejection, including relative advantage (positive outcome associated with innovation adoption), compatibility (innovation fits a need), complexity (level of difficulty associated with innovation), trialability (ability to try the innovation before adopting), and observability (can results be perceived by others) (Rogers, 2003; Sahin, 2006). Rogers (2003) discovered relative advantage of an innovation was the strongest predictor of whether or not the innovation was adopted. These factors, along with several others discussed later, play a role in whether or not an innovation gets adopted or at what rate the adoption occurs

(Sahin, 2006). For example, demographics associated with higher social class rankings were the greatest determinant of whether respondents in a developing country adopted mobile phone technology (Rice & Pearce, 2015). Education, employment, relative economic condition, and Internet access at home were significantly correlated to adoption of the technology (Rice & Pearce, 2015).

The second element in the adoption process is communication channels (Rogers, 2003; Sahin, 2006; Wejnert, 2002). “Timing of adoption typically depends on the interaction of social units in a process of communication” (Wejnert, 2002; p. 306). Communication can stem from mass media or interpersonal channels (Sahin, 2006). Sources use these communication channels to discuss an innovation (Sahin, 2006). Wejnert (2002) concluded social relations within small, well-connected, interpersonal groups greatly determines the rate at which an innovation gets adopted. As the rate of adoption within a close knit social group increases, the pressures of conformity amount in greater adoption penetration (Wejnert, 2002).

Time is also an important factor in the adoption process (Sahin, 2006). Rogers (2003) argues the measurement of time brings forth an important variable because every step in the adoption process contains some form of time dimension. For example, time is a key element in the following processes, innovation decisions, adopter categorizations, and rate of adoptions (Sahin, 2006). Knowledge, persuasion, decision, implementation, and confirmation are the five steps Rogers (2003) describes in the decision-making process. Each one contains some sort of timeline and/or sensitivity to time (Rogers, 2003; Sahin, 2006). Adopter categorizations are based on where an individual falls along the rate of adoption timeline. (Sahin, 2006; Rogers, 2003). There five different adopter categories: innovators, early adopters, early majority, late majority and laggards (Rogers, 2003; Sahin, 2006).

The final element in the diffusion of innovation process is social structure (Rogers, 2003). The type of social system an individual is involved in can directly affect the adoption of an innovation (Wejnert, 2002). Various structures of a social system can affect the innovativeness of

the group (Rogers, 2003; Wejnert, 2002). Geographical location, demographics, status within social groups, communication mediums, and cultural and political circumstances all affect the rate of adoption within a social structure (Wejnert, 2002). In a study that examined different levels of news sharing on social media, Ma, Lee and Goh (2014) discovered individuals in strong-tie networks are more likely to share news stories on social media. Ma et al. (2014) define tie strength within a network as “the level of intensity of the social relationship, or degree of overlap between two individuals’ scopes of friendship” (Ma et al., p. 603). Strong-tie networks are more likely to share opinions on social media and thus they have greater influence when it comes to determining what news is most important (Ma et al., 2014).

CHAPTER III

METHODOLOGY

This chapter explains the methods used in this study. Sections include the Oklahoma State University Institutional Review Board approval, research design, instrumentation, validity, reliability, population, sampling, data collection, and data analysis.

Institutional Review Board

Approval of all research related to human subjects requires approval by the Oklahoma State University Office of University Research Services and the Institutional Review Board (IRB). To protect the welfare of human subjects involved in biomedical and behavioral research, this step must occur before an investigation takes place. Stamped approval of research-related materials was received from the OSU IRB on November 20, 2014. The application number assigned to this study was AG-14-48 (see Appendix A).

Research Design

This descriptive study was conducted through a survey research design and distributed via Dillman, Smyth and Christian's (2014) recommendations for mixed-mode survey implementation. The instrument was only offered online, but due to insufficient email addresses available to the researcher, two different points of contact were used to reach potential respondents: mailed postcard and email.

Instrumentation

A web-based instrument designed by the researcher and hosted through Qualtrics.com was used to collect data for the study (see Appendix B). The instrument consisted of 29 questions in four sections: demographics, digital connectivity and uses, attitudes toward *DRIVE* going digital, and behaviors in regard to *DRIVE*'s online platforms. However, depending upon their responses to certain questions, not all respondents received all 29 questions. Skip logic, which allows the researcher to send respondents to a future point in the online instrument or straight to the end of the survey, was used in the online instrument (Qualtrics, 2014) to prevent respondents from receiving questions about social media platforms they did not use, for example, or to exclude those under the age of 18.

Demographic questions included (a) age, (b) sex, (c) state of primary residence, (d) highest level of education completed, (e) whether education was in an agriculture-related field, (f) annual income, (g) primary occupation, (h) involvement in the livestock industry, (i) specie(s) of livestock with which respondent was most involved, and (j) 4-H and FFA membership.

Questions regarding respondents' digital connectivity and digital use were asked to determine whether respondents were accessing the Internet on a regular basis and from what types of devices. Information was collected concerning (a) respondents' home Internet access, (b) type of home Internet connection, if applicable, (c) location respondents most often accessed Internet, (d) frequency they accessed Internet, (e) smartphone ownership, (f) device most often used to access Internet, (g) activity for which they most often accessed the Internet, and (h) social media sites in which they were involved.

To determine past *DRIVE* subscribers attitudes toward the magazine's online platforms, respondents received seven statements and were asked to choose their level of agreement with each (see Appendix B). Responses were anchored as (a) *strongly agree*, (b) *agree*, (c) *somewhat agree*, (d) *somewhat disagree*, (e) *disagree*, and (f) *strongly disagree*.

To determine specific usage behaviors of *DRIVE*'s online outlet by past subscribers, respondents were asked how frequently they accessed each of *DRIVE*'s digital platforms: (a) www.DRIVELivestock.com, (b) *DRIVE*'s Facebook page, (c) *DRIVE*'s Twitter, (d) *DRIVE*'s Instagram, and (e) the *DRIVE* mobile application. Respondents answered using the following anchors: (a) *never*, (b) *less than once a month*, (c) *once a month*, (d) *two to three times per month*, (e) *once a week*, (f) *two to three times per week*, (g) *daily*, and (h) *several times a day*. A six-point scale was selected because this allowed the researcher to record respondents' attitudes accurately and not overwhelm them with response options (Jacoby & Matell, 1971). "Six-point scales, mainly reflect direction of response and are only minimally influenced by intensity of response" (Jacoby & Matell, 1971, p. 671). The number of scaled items does not affect the validity or the reliability of an instrument; therefore, a six-point scale was used (Jacoby & Matell, 1971).

Validity

Creswell (2012) defines validity as "the development of sound evidence to demonstrate that the test interpretation (of scores about the concept or construct that the test is assumed to measure) matches its proposed use" (p. 159). In basic terms, validity is used to show whether or not the research measured what it should have.

A panel of experts was used to determine face and content validity of the instrument prior to its distribution to potential respondents. Experts included two *DRIVE* employees and three university faculty members. Two of the faculty members were agricultural communications professors, and the third was an agricultural education professor. These panel members were selected because of their expertise in research design methods and their experiences within the livestock industry and related publications.

Upon completion of the review, edits to the instrument were sent to and discussed with the researcher. Based upon the panels' suggestions, the researcher and faculty chair made edits to the instrument in Qualtrics.com.

Reliability

Reliability means having test scores that are consistent (Creswell, 2012). Scores should be nearly the same when administering an instrument at multiple points in time (Creswell, 2012). Several factors can deter an instrument from being reliable; Creswell (2012) describes these as “questions on instruments that are ambiguous and unclear, procedures of test administration that vary and are not standardized, and participants that become fatigued, nervous, misinterpret questions or guess” (p. 159).

Once the instrument was reviewed for validity, a pilot study was conducted to determine the instrument’s reliability. The pilot study took place November 11, 2014. The invite was distributed to a group of 100 past subscribers randomly selected from the portion of the population for which the *DRIVE* had maintained email records ($n = 296$). The group was contacted via email, and the pilot consisted of the first 20 respondents. Pilot study data was used to determine a Cronbach’s alpha coefficient. “Alpha coefficient ranges in value from zero to 1 and may be used to describe the reliability of factors extracted from dichotomous (that is, questions with two possible answers) and/or multi-point formatted questionnaires or scales” (Santos, 1999, p. 1). Acceptable coefficients are 0.7 or above (Santos, 1999). Only scaled items were used to calculate the coefficient. The Cronbach’s alpha coefficient for the pilot study was 0.91.

Population and Sample

The study’s population included former subscribers for whom *DRIVE* had contact information ($N = 5,717$). Based on Krejcie and Morgan’s (1970) recommendation for a representative sample from this population size, the researcher selected past *DRIVE* subscribers ($n = 1,000$) at random from the study’s population to oversample in hopes of receiving approximately 360 respondents for a representative sample.

Data Collection

Of the 1,000 subscribers in the sample, the researcher had email addresses for 296. Physical addresses for the remaining 704 potential respondents were sent to the Oklahoma State University Mail Services to be scrubbed to remove inaccurate addresses prior to mailing. Due to inexact records provided by *DRIVE*, the cleaned mailing list contained 637 physical addresses, which reduced the accessible sample ($n = 933$).

Because those without email addresses were kept in the sample, the researcher employed a mixed-mode approach. More specifically, Dillman, Smyth and Christian's (2014) recommendations for mixed-mode instruments and survey implementation was used. Dillman, Smyth and Christian (2014) state, "mixed-mode surveys are used to improve coverage when a single mode cannot adequately cover the population of interest, or when contact information is not available for the desired mode of data collection" (p. 401).

Potential respondents who received postcard invitations were assigned an identification number so the researcher could track who had completed the instrument. Respondents who completed the survey were removed from the mailing list and received no further correspondence. Per Dillman, Smyth and Christian's (2014) recommendation for mailed contact, postcard invitations were sent based on the following schedule: seven days following the initial postcard invitation, a "thank you" reminder postcard was sent (See Appendix H). Two weeks after the first thank you reminder was mailed, a second reminder postcard was sent to potential respondents (See Appendix I). The third and final reminder was mailed 10 days following the second reminder (see Appendix I). All postcards contained a link to the Qualtrics.com instrument.

Participants invited to complete the instrument via email were tracked based on their email address, which they could provide at the end of the survey to be entered into a drawing for a *DRIVE* apparel package. Those who provided their email addresses were no longer contacted. The following guidelines were followed for distributing the instrument via email: three days

following the initial email invitation (see Appendix C), a reminder email was sent (see Appendix D). Six days after the first reminder email was sent, a second reminder was emailed to non-responders (see Appendix E). Twenty days after the second reminder, a third reminder was emailed (see Appendix F). The fourth and final reminder was emailed six days after the third reminder (Dillman, Smyth & Christian, 2014) (see Appendix G). Email invitations contained a link to complete the instrument via Qualtrics.com.

Of the accessible sample ($n = 933$), 28 respondents indicated they were under 18 and were removed from the study. Twenty-six more potential respondents never received the survey due to improper email and mail addresses, thus bringing the accessible sample to 881. One hundred and fifty-two respondents accessed the instrument; 150 respondents completed the instrument in its entirety. Pilot study responses ($n = 22$) were added to the sample after a t-test indicated no significant statistical differences, which brought the final response rate to 17.25% ($f = 152$).

Data Analysis

Quantitative data was collected from this descriptive study and analyzed using IBM SPSS Statistics for Macintosh. Means and standard deviations were calculated for age and the usefulness of information posted to *DRIVE*'s digital platforms. Frequencies and percentages were calculated for other data.

Potential nonresponse issues were addressed by comparing early respondents to late respondents. Lindner and Wingenbach (2002) recommend screening for potential nonresponse errors when a study's response rate is less than 85 percent. "Due diligence in addressing nonresponse error is a necessary component of reporting quality-laden research and is something all current and future social scientists in Extension must pay attention to if they want their efforts

to be viewed as scholarly” (Lindner & Wingenbach, 2002, p.1). The between-subjects comparison of early to late responders divided equally into the two groups, showed no statistical significance in either age ($p = 0.0692$) or sex ($p = 0.736$).

CHAPTER IV

FINDINGS

This chapter presents the findings obtained from this study. Results will be discussed as they relate to research objectives described in Chapter I.

Findings Related to Objective One

Objective one was designed to describe selected characteristics of former magazine subscribers. Respondents were asked to indicate their age; their sex; the state in which they currently reside; their highest level of education, plus whether or not this degree was agriculture-related; their reported annual income; their primary occupation; their involvement in the livestock industry and the specie(s) of livestock with which they were most involved; whether they were a member of 4-H or FFA; how often they access the Internet and from where; whether they own a smartphone; activities for which they most often access the Internet; and their usage of Web 2.0 capabilities, such as social networking.

Ages of respondents ($f = 152$) ranged from 18 to 80 years old. The average age was 39.9 years old. Seventy-nine (51.97%) respondents indicated they were male, and 46.71% ($f = 71$) reported they were female. Two respondents did not indicate their sex (1.32%).

Twenty-four states were listed as current states of residence among respondents, with one respondent indicating he or she did not reside within the United States. Of the states represented, most respondents were located in Texas ($f = 45$), Kansas ($f = 12$), Indiana ($f = 11$) and Illinois ($f = 11$) (see Table 1).

Table 1. *Current Residence of Respondents (n = 152)*

<i>State</i>	<i>f</i>	<i>%</i>
Texas	45	29.61
Kansas	12	7.89
Illinois	11	7.24
Indiana	11	7.24
Ohio	8	5.26
Missouri	7	4.61
Iowa	6	3.94
North Carolina	6	3.94
California	4	2.63
Michigan	4	2.63
Oklahoma	4	2.63
Pennsylvania	4	2.63
Wisconsin	4	2.63
Colorado	3	1.97
Minnesota	3	1.97
New Mexico	3	1.97
Tennessee	3	1.97
Delaware	2	1.32
Georgia	2	1.32
Mississippi	2	1.32
South Carolina	2	1.32
Arkansas	1	0.66
Nebraska	1	0.66
Oregon	1	0.66
Do not reside in U.S.	1	0.66
No Response	2	1.32

When asked their highest level of education completed, 30.26% of respondents ($f = 46$) indicated they had received a four-year college degree; 22.37% ($f = 34$) received their master's degree; and 20.39% ($f = 31$) indicated they had completed "some college." Respondents also were asked if the highest degree they earned was agriculture-related. 70.39% ($f = 107$) responded yes (see Table 2).

Table 2. *Formal Education of Respondents (n = 152)*

	<i>f</i>	%
Highest level of Education Completed		
4-year College Degree	46	30.26
Master's Degree	34	22.37
Some College	31	20.39
2-year College Degree	21	13.82
High school/GED	14	9.21
Doctoral Degree	3	1.97
Less than High School	1	0.66
Professional Degree	1	0.66
No Response	1	0.66
Highest Degree Earned Agriculture-related		
Yes	107	70.39
No	43	28.29
No Response	2	1.32

Respondents were asked to select which range was most applicable to their reported annual income. Forty-one respondents (26.97%) indicated they earned \$100,000 or more; 24 respondents (15.79%) indicated they preferred not to respond or did not report an annual income; 18 indicated they made between \$40,000 and \$49,999 per year (11.8%); and 17 indicated a reported annual income of \$50,000 to \$59,999 (11.14%) (see Table 3).

Table 3. *Respondents' Reported Annual Income (n = 152)*

	<i>f</i>	%
\$100,000 or more	41	26.97
Prefer not to respond/Do not report an annual income	24	15.79
\$40,000 - \$49,999	18	11.84
\$50,000 - \$59,999	17	11.18
Below \$20,000	10	6.58
\$70,000 - \$79,999	10	6.58
\$60,000 - \$69,999	9	5.92
\$80,000 - \$89,999	7	4.61
\$30,000 - \$39,999	7	4.61
\$90,000 - \$99,000	4	2.63
\$20,000 - \$29,999	3	1.97
No Response	2	1.32

Respondents reported their primary occupations via textual input. Of 152 responses, the following were the most frequently listed: Agricultural Producer/Farmer ($f = 21$; 13.82%); Agricultural Sales ($f = 13$; 8.55%); Agricultural Instructor/Teacher ($f = 11$; 7.24%); Extension Agent/Educator ($f = 7$; 4.61%); and Student ($f = 7$; 4.61%). For a full list of responses, see Appendix J.

Respondents were asked to indicate all areas of involvement in the livestock industry and the species of livestock with which they or their children were most involved (see Table 4).

Table 4. *Respondents' Primary Involvement in Livestock Industry (n = 152)*

	<i>f</i>	%
Breeder	103	67.76
Exhibitor's Parent	54	35.53
Exhibitor	49	32.24
Other	41	26.97
Public School Educator	17	11.18
Extension Educator	10	6.58

Note. Percentages for primary involvement in the livestock industry will not add to 100 because participants could select more than one answer and were allowed to input their own responses.

Respondents were allowed the opportunity to input text for the “other” selection. The most frequent inputs for “other” for primary involvement in the livestock industry were 4-H Leader, Exhibitor’s Grandparent, Mentor, Producer, Board Member/Director, Livestock Judging, Feed Sales, Consultant, Grew up on a Farm, and Trader. For a full list of responses to primary involvement in the livestock industry, see Appendix K. Llamas, Poultry, and Rabbits were listed as other species by respondents. Tables 5 lists the most frequent responses.

Table 5. *Primary Livestock Species of Respondents (n = 152)*

	<i>f</i>	%
Swine	92	60.53
Cattle	91	59.87
Sheep	64	42.11
Goats	58	38.16
Horses	25	16.45
Other	4	2.63
I am not directly involved with any livestock	3	1.97

Note. Percentages for primary species will not add to 100 because participants could select more than one answer and were allowed to input their own responses.

Respondents were asked if they were or had ever been a member of 4-H and/or FFA. One-hundred-twenty respondents (78.95%) answered yes to being a member of 4-H and 29 (19.08%) responded no. When asked if they were or are a member of FFA, 73.03% ($f = 111$) responded yes and 23.03% ($f = 35$) answered no. Seventy-nine respondents were or are members of both organizations (51.97%) (see Table 6).

Table 6. *Respondents' Previous or Current 4-H and/or FFA Membership (n = 152)*

	<i>f</i>	%
4-H		
Yes	120	78.95
No	29	19.08
No Response	3	1.97
FFA		
Yes	111	73.03
No	35	23.03
No Response	6	3.95

When asked to indicate whether they had Internet access at home, 145 respondents answered yes (95.39%), three respondents answered no (1.97%) and four did not respond (2.63%). Of the 149 who received the question regarding what type of connection they had at home, 50.34% ($f = 73$) indicated they have a wireless Internet connection, 30.34% ($f = 44$) have a broadband connection, 8.97% ($f = 13$) connect via satellite, 8.28% ($f = 12$) connect using a hot spot, 3 respondents indicated they use a dial-up connection (2.07%) (see Table 7).

Table 7. *Respondents' Internet Connectivity at Home (n = 145)*

	<i>f</i>	%
Type of Connection		
Wireless	73	50.34
Broadband (DSL, Cable)	44	30.34
Satellite	13	8.97
Hot Spot	12	8.28
Dial-up	3	2.07

When asked where and how often they accessed the Internet, 61.49% ($f = 91$; $n = 148$) of respondents most often accessed the Internet from home and 30.41% ($f = 45$; $n = 148$) from their office/place of employment; 76.35% ($f = 113$; $n = 148$) of respondents indicated they access the Internet multiple times a day, followed by 21.62% ($f = 32$; $n = 148$) who indicated they access the Internet daily. For a complete list of responses, see Table 8.

Table 8. *Respondents' Internet Usage (n = 148)*

	<i>f</i>	%
Most Frequent Location Used for Accessing Internet		
Home	91	61.48
Office/Place of Employment	45	30.41
School	10	6.76
Other	2	1.35
Frequency of Internet Access		
Multiple times a day	113	76.35
Daily	32	21.62
Once a week	2	1.35
2 – 3 times a week	1	0.68

One hundred thirty-nine respondents (93.92%; $n = 148$) indicated they owned a smartphone, and nine (6.08%; $n = 148$) did not.

Respondents were asked what type of device they used most often to access email, social media, and Internet search engines. Seventy respondents (48.61%; $n = 144$) indicated they used a smartphone to access email most often. Ninety-four (72.31%; $n = 130$) use a smartphone for accessing social media. A desktop computer was selected as the most frequently used device for using Internet search engines (34.25%; $f = 50$; $n = 146$) (see Table 9).

Table 9. *Devices Used for Internet Access*

	Email ($n = 144$)		Social Media ($n = 130$)		Search Engines ($n = 146$)	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Smartphone (iPhone, Android, Blackberry, etc.)	70	48.61	94	72.31	44	30.14
Desktop Computer	42	29.17	15	11.54	50	34.25
Laptop Computer	27	18.75	10	7.69	45	30.82
Tablet/iPad	5	3.47	11	8.46	7	4.79

Note. Modes are in boldface.

Respondents were asked for which type of activity they most often access the Internet. Sixty-one respondents (40.50%) indicated they access the Internet most often for email purposes, and 47 respondents (31.97%) indicated they access the Internet most often for social networking (see Table 10). Under the “other” option, respondents who submitted their own text said they most often accessed the Internet for “all of the above, several times per day,” “business,” “futures markets and market news,” and “online sales and livestock information.” Two respondents indicated they used it most often for “work” purposes. For a full list of responses, see Appendix L.

Table 10. *Activities for Which Respondents Most Often Access the Internet (n = 147)*

	<i>f</i>	%
Email	61	41.50
Social networking (Facebook, Twitter, YouTube, etc.)	47	31.97
Research	17	11.56
Surfing the web	10	6.80
Checking the news	6	4.08
Other	6	4.08

Respondents were asked in which social media platforms they had accounts (see Table 11). From the following options, respondents were instructed to select all that applied: Facebook, Twitter, Instagram, YouTube, Pinterest, LinkedIn and/or other. Under the “other” option, respondents were allowed to input their own responses. See Appendix M for a full list of these responses. One-hundred-seventy-seven respondents (76.97%) had Facebook accounts; 72 (47.37%) indicated they had Pinterest, 64 (42.11%) had LinkedIn, and 62 had Twitter (40.79%).

Table 11. *Respondents’ Social Media Involvement (n = 152)*

	<i>f</i>	%
Facebook	117	76.97
Pinterest	72	47.36
LinkedIn	64	42.11
Twitter	62	40.79
YouTube	59	38.82
Instagram	56	36.84
Other		
Google +	2	1.32
Snapchat	2	1.32
None of the above	2	1.32
Tumblr	1	0.66
Blog	1	0.66

Note. Percentages for social media involvement will not add to 100 because participants could select more than one answer and were allowed to input their own responses.

Findings as Related to Objective Two

The following questions were designed to better understand past *DRIVE* subscribers' attitudes toward the magazine's new digital initiatives. Using a six-point scale, respondents who had indicated they had Internet access and were members of social media platforms were asked to indicate their usage of *DRIVE*'s digital outlets.

Forty-three respondents (29.25%; $n = 147$) strongly agreed they have not remained active with the publication online since it discontinued its printed edition. Fifty-one (34.93%; $n = 146$) respondents disagreed strongly with the statement, "I prefer following *DRIVE* online rather than receiving the printed publication. When asked whether or not respondents found information posted to *DRIVE*'s various digital platforms useful, 56 respondents (38.10%; $n = 147$) reported they had never been to the *DRIVE* website; of the 139 respondents who indicated they owned a smartphone, 59.56% ($f = 81$; $n = 136$) reported they had never used the *DRIVE* mobile application. Of the 117 respondents who indicated they had a Facebook account, 29.30% ($f = 34$; $n = 116$) reported they did not follow the *DRIVE* Facebook page. Of the 62 respondents who indicated they had a Twitter account, 50.00% ($f = 31$; $n = 62$) indicated they did not follow *DRIVE* on Twitter. Of the 56 respondents who indicated they had an Instagram account, 48.21% ($f = 27$; $n = 56$) reported they did not follow *DRIVE* on Instagram. Answers indicating they had never visited *DRIVE*'s digital outlets were made available to respondents because researcher had no way of accessing whether they had visited any of the sites.

Of respondents who indicated they had visited the *DRIVE* website, 39.56% ($f = 36$; $n = 91$) find information on the site useful. Of respondents who indicated they had visited the *DRIVE* mobile application, 45.45% ($f = 25$; $n = 55$) find information on the application useful. Of respondents who indicated they follow *DRIVE* on Facebook, 47.56% ($f = 39$; $n = 82$) find information on the page useful. Of respondents who indicated they follow *DRIVE* on Twitter, 48.39% ($f = 15$; $n = 31$) find *DRIVE*'s Tweets useful. Of respondents who indicated they follow

DRIVE on Instagram, 55.17% ($f=16$; $n = 29$) find *DRIVE*'s Instagram photos entertaining. See Table 12 for a full list of frequencies.

Findings as Related to Objective Three

For those who found *DRIVE*'s online platforms useful, the researcher wanted to develop a better understanding of how often they were visiting *DRIVE*'s online platforms. Objective three was designed to determine respondents' usage behaviors in regard to how often they visit *DRIVE*'s digital platforms. Respondents were given eight different time-interval options to select from, then asked a series of questions in regard to how often they visited each of *DRIVE*'s digital efforts.

Sixty-seven respondents (46.52%; $n = 144$) indicated they never visited the *DRIVE* website. Seventy (48.95%; $n = 143$) reported they never visited the *DRIVE* Facebook page. One-hundred-thirteen respondents (80.14%; $n = 141$) indicated they never accessed *DRIVE*'s Twitter. One-hundred-ten respondents (78.01%; $n = 141$) reported they never accessed the *DRIVE* Instagram account, and 109 (76.76%; $n = 142$) never visited the *DRIVE* mobile application. Of respondents who indicated they do visit *DRIVE*'s online platforms, the majority indicated they access *DRIVE*'s website, Facebook, Twitter and mobile application less than once a month (see Table 13).

Table 12. Respondents' Self-Reported Agreement with Statements Related to DRIVE's Digital Efforts

Statements	Level of Agreement													
	Strongly Agree		Agree		Somewhat Agree		Somewhat Disagree		Disagree		Strongly Disagree		Never visited	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Since DRIVE discontinued its printed publication, I have remained highly involved with the organization. (n = 147)	2	1.36	8	5.44	31	21.08	22	14.97	41	27.89	43	29.25	n/a	n/a
I prefer following drive online, rather than receiving the printed DRIVE publication. (n = 146)	5	3.42	8	5.48	18	12.33	24	16.44	40	27.40	51	34.93	n/a	n/a
I find information posted to the DRIVE website useful. (n = 147)	10	6.80	36	24.49	23	15.65	8	5.44	8	5.44	6	4.08	56	38.10
I find information on the DRIVE mobile application useful.(n = 136)	5	3.68	25	18.38	13	9.56	4	2.94	4	2.94	4	2.94	81	59.56
I find DRIVE's Facebook posts useful. (n = 116)	7	6.03	39	33.62	20	17.24	6	5.17	7	6.03	3	2.59	34	29.31
I find DRIVE's Twitter Posts useful. (n = 62)	4	6.45	15	24.19	7	11.29	2	3.23	2	3.23	1	1.61	31	50.00
I find DRIVE's Instagram posts entertaining. (n = 56)	6	10.71	16	28.57	4	7.14	1	1.79	1	1.79	1	1.79	27	48.21

Note. Mode in boldface.

Table 13. *Frequency in Which Former Subscribers Access DRIVE'S DIGITAL PLATFORM*

DRIVE's Digital Platforms	Frequency of Visits															
	Never		Less than once a month		Once a month		2-3 times per month		Once a week		2-3 times per week		Daily		Several times a day	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
DRIVELivestock.com (<i>n</i> = 144)	67	46.53	40	27.78	17	11.81	11	7.64	5	3.47	3	2.08	1	0.70	0	0.00
DRIVE's Facebook page (<i>n</i> = 143)	70	48.95	25	17.48	10	6.99	20	13.99	8	5.59	5	3.47	4	2.80	1	0.70
DRIVE's Twitter account (<i>n</i> = 141)	113	80.14	8	5.67	8	5.67	6	4.26	2	1.42	3	2.13	0	0.00	1	0.71
DRIVE's Instagram account (<i>n</i> = 141)	110	78.01	7	4.96	4	2.84	8	5.67	6	4.26	3	2.13	3	2.13	0	0.00
DRIVE's mobile phone application (<i>n</i> = 142)	109	76.76	15	10.56	7	4.93	3	2.11	6	4.23	2	1.41	0	0.00	0	0.00

CHAPTER V

CONCLUSIONS, RECOMMENDATIONS, & DISCUSSION

This chapter provides conclusions based upon the researcher's findings plus offers recommendations for practice, recommendations for researchers, and any further related discussion as it pertains to the study.

Conclusions for Objective One

Objective one was to describe selected characteristics of former *DRIVE* subscribers.

Demographically, the typical respondent for this study is a 39-year-old male from Texas, Kansas, Illinois, or Indiana whose involvement in the livestock industry is as a breeder and with swine and/or cattle. The typical respondent was a member of both 4-H and FFA and has earned a bachelor's degree or higher in an agriculture-related discipline.

In terms of Internet connectivity, the typical respondent accesses Internet multiple times each day from home through a wireless or broadband connection. His access is for email or social networking purposes. This supports Brown and Kelsey's (2013) finding computer usage is no longer a barrier for agriculturalists' Web 2.0 technology adoption. Deursen, Dijk and Peters (2011) also concluded individuals who have obtained higher levels of education and live in a more comfortable socioeconomic class have greater access to digital technology. Furthermore, these characteristics are also linked to one's digital fluency online (Deursen et al., 2011).

Facebook was the most popular social media platform of the respondents, which supports several studies' findings agriculturalists are on social media sites (Guenther & Swan, 2011) and is consistent with Abrams et al. (2015) discovery that agriculturalists, averaging 39 years of age, use Facebook for personal and business purposes. Guenther and Swan (2011) also discovered agriculturalists were using social networking sites to facilitate communication. They concluded social networking platforms were no longer just for "younger" people (Guenther & Swan, 2011).

The typical respondent owns a smartphone and most often uses this device to access email and social media. This supports Fox's (2014) smartphone statistic about messaging and social applications seeing the greatest increase in usage in 2013. This is also consistent with Smith's (2015) discovery 64% of American adults now own a smartphone. However, respondents indicated the desktop computer was the most used device for accessing search engines. Accessibility to the Internet was not an issue among respondents in this study. The digital divide debate cannot be applied to this research in terms of connectivity issues, but digital fluency could have played a role in why respondents did not access *DRIVE*'s digital platforms. Deursen and Dijk (2010) correlated digital fluency to a set of digital skills one must possess to fully operate and understand the Internet. These skills include operational skills, formal Internet skills, information Internet skills and strategic Internet skills. Digital fluency will be addressed further in the recommendations section.

Conclusions for Objective Two

Objective two sought to describe former subscribers' self-reported levels of agreement with attitudinal statements regarding *DRIVE*'s digital media. Respondents have not remained active with the publication since the discontinuation of its printed magazine. This is consistent with Monroe's (2015) finding that subscribers have a better overall experience with print. Poyner (2011) argued that print holds an advantage over digital in that it is a tangible object that

consumers can hold and enjoy. Respondents do not prefer to follow *DRIVE* online but would rather receive the printed publication. Of respondents who indicated they have an Instagram account, they do follow the publication on Instagram. This conflicts with Mitchell's findings (2015) suggesting Americans are turning more to social media, blogs, and websites for news and information.

In regard to online content, however, of respondents who are digitally engaged with the publication, they disagree information posted to *DRIVE*'s website, Facebook, Twitter and mobile application is useful. However, respondents who follow *DRIVE*'s Instagram perceive the magazine's posts as entertaining. The uses and gratification theory suggests users seek informational sources based upon their perceived usefulness to that particular individual (Katz et al., 1974). These agreement ratings could be reflective of a demographic that obtains gratifications from online sources. Eighmey and McCord (1995) suggest respondents are most attracted to information formats that are personalized and entertaining. This could be another reason why a small number of respondents were in agreement with perceived usefulness of the online platforms; they have vested time in seeking out *DRIVE* online and are fulfilling more personalized and entertaining needs.

Conclusions for Objective Three

Objective 3 sought to describe how often digitally engaged former magazine subscribers access *DRIVE*'s digital media. While the average respondent has visited the *DRIVE* website, he does not visit it on a regular basis. Respondents who are on social media or own a smartphone rarely or never access *DRIVE*'s Facebook, Instagram, Twitter or mobile application. This is consistent with Trissel's (2014) findings that suggest magazine subscribers do not want to receive agricultural-related information online. Furthermore, Diekmann et al. (2009) suggests print media is still the most preferred source of information for farmers. Similar to this, respondents in

Diekmann, Loibl and Batte's (2009) study listed Internet as their least favorite source of information and print as their favorite.

This discrepancy could also be brought about because of a digital divide. Individuals sometimes feel pressured into joining social networking sites because their colleagues and peers are using these sites to communicate (Metallo & Agrifoglio, 2015). However, if respondents do not possess the necessary digital skills needed to navigate such sites, they might be less inclined to visit and use them often (Deursen & Dijk, 2010). Studies also suggest that agriculturalists value face-to-face communication, greatly (McCarthy, Beede & Edgecomb, 2008; Riley, Cartmell & Naile, 2012). Traditionally, agriculturalists are more likely to consult their local veterinarian, extension agent, or fellow producers for news and information (Diekmann et al., 2009).

Recommendations

Former *DRIVE* subscribers have not remained active with the magazine since the publication became digital only. Therefore, agricultural publications should survey subscribers to assess their attitudes and feelings in regard to the magazine before deciding to offer a digital-only publication, allowing their subscribers and stakeholders an opportunity to voice opinions on the matter. Publications should consider all cost analyses associated with the switch to digital to determine whether or not the cut in costs is worth the potential loss in readership.

Agricultural publications should look at supplementing digital content with a less timely printed piece. Bi-annual publications can serve as a way to keep print-preferred stakeholders content. A deeper look into what types of content digitally engaged former subscribers find most useful also would benefit the publication and its editors.

Furthermore, *DRIVE* should consider looking into supplementing online content with a less timely printed magazine. Simple postcards detailing where former subscribers can find *DRIVE* online might also be beneficial. Focus groups with former subscribers could provide

DRIVE with insights into why subscribers are not accessing the publication online, even though former *DRIVE* subscribers are online accessing email, social media, and search engines via high-speed Internet connections; a webinar about how to best use *DRIVE*'s online platforms could help with outreach and engagement.

If the decision to switch content to a digital format is unavoidable, publications should conduct surveys or focus groups to see how subscribers are accessing online news and information. For example, determine what types of content are subscribers engaged with and sharing on social media (Facebook, Twitter and Instagram). Most all respondents in this study were engaging in activities online, publications should look deeper into these activities and determine the best channels to reach stakeholders.

Further research on past subscribers' attitudes and perceptions toward *DRIVE* going digital should be conducted. Several pieces to the digital-engagement puzzle were not answered by this research; for example, focus groups could allow researchers a better understanding of past subscribers emotions and opinions in regard to *DRIVE*'s digital switch. A deeper look into how these respondents are engaging with other forms of online content would be another important piece in better understanding agriculturalists online informational preferences. Also of importance is *DRIVE*'s perceived usefulness as compared to competing publications still in circulation via print.

Similar publications that have made or are considering the digital switch should be studied. As the costs to print and disseminate mailed publications rise, other agricultural magazines might find themselves in the same situation as *DRIVE*. Continued research on understanding how agriculturalists access news and information online will help progress the agricultural communications discipline.

Additionally, further research on attitudes and preferences of those who have remained digitally engaged with the magazine should be considered. A deeper look into preferred digital content, website functions, and types of social media posts that digitally engaged users prefer

could benefit for *DRIVE* and other publications. Further questioning about how individuals use each digital platform (social media, mobile applications, etc.) could provide further insight into the digital vs. print debate. Also, with the emerging mobile trends, a deeper analysis of the *DRIVE* mobile application and those who access it should be conducted. This analysis should include perceived usefulness of the application and whether any of its functions contribute to specific user gratifications.

Digital skills outlined in Deursen and Dijk's (2010) digital divide study should also be considered. Agricultural communication researchers should consider studies that better describe which digital skills agriculturalists possess or lack. This could shed important light on whether or not a digital fluency divide is keeping agriculturalists from engaging in online news and information consumption and sharing.

Continued research on informational needs of those involved in the livestock industry should be performed, specifically those not directly involved in production agriculture or whose primary occupation is not farming. Future researchers should consider inserting a function or going the extra steps to ensure those under the age of 18 can complete instruments. Per Prensky's (2001) digital native vs. digital immigrant discussion, respondents under 18 years of age could lend interesting results in regard to digital preferences.

The manner in which respondents were contacted about completing the study's questionnaire also generated interesting results. Potential respondents who were invited to complete the online questionnaire via a mailed postcard made up the majority of responses. Ninety-four study respondents had been contacted via postcards and 58 had been invited via email. Dillman et al. (2014) suggests that a mixed-mode approach to distributing a questionnaire could lead to more responses and thus a better response rate. This same approach should be considered in future research.

Discussion

The typical respondent for this study is a well-educated male who accesses the Internet multiple times a day from home via a wireless Internet connection. Despite this being like the typical adopter in Nguyen and Western's (2007) study of socio-structural correlates to online news and information adoption, the typical respondent in this study was not accessing *DRIVE* online and preferred the printed *DRIVE* publication. This could be attributed to the common theme that agriculturalists prefer print and personal communications to digital for obtaining agriculture-related information (Allen et al., 2014; Diekmann et al., 2009; McCarthy et al., 2008). However, this goes against Ruggiero's (2009) suggestion if a person contains a vested interest in a matter, he will seek news and information that pertains to that subject on a deeper level, i.e. obtain information from several different sources. Despite the typical respondent being a livestock breeder, a past member of both 4-H and FFA, and a college graduate in an agricultural-related field, past subscribers were no longer following *DRIVE* for information relative to their industry. Since *DRIVE* discontinued its print publication, former subscribers have not remained active with the publication online.

Respondents own smartphones, which were listed as the most popular device for accessing email and social media ranking above tablets, laptops and desktop computers. Yet, the typical respondent never visited the *DRIVE* mobile application. This goes against Norby's (2014) results that suggested junior livestock exhibitors' parents were using and accessing mobile applications relevant to livestock exhibitions. These results also conflict with Olmstead and Shearer's (2015) findings that most Americans access news via their mobile phones more often than from their desktop computers.

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APPENDIXES

APPENDIX A

IRB APPROVAL FORM

Oklahoma State University Institutional Review Board

Date: Wednesday, November 19, 2014
IRB Application No AG1448
Proposal Title: Attitudes and Perceptions of DRIVE Livestock Magazine Subscribers toward Digital Platform
Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 11/18/2017

Principal Investigator(s):
Meg Drake Shelly Sitton
920 S Murphy St Apt 18202 435 Ag Hall
Stillwater, OK 74074 Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

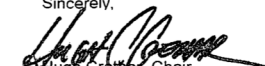
The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Cordell North (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,



Hugh Crother, Chair
Institutional Review Board

APPENDIX B
QUESTIONNAIRE

🔒 This survey is currently LOCKED to prevent invalidation of collected responses! Please [unlock](#) your survey to make changes.

DRIVE Magazine study Block Options

Q1
Thank you for agreeing to share information about your digital engagement with DRIVE.

Q2
What is your age?

If What is your age? Is Less Than 18, Then Skip To End of Survey

Q3
What is your sex?
 Male
 Female
 Prefer not to respond

Q4
In which state do you currently reside?

Q5
What is the highest level of education you have completed?
 Less than High School
 High School / GED
 Some College
 2-year College Degree
 4-year College Degree
 Master's Degree
 Doctoral Degree
 Professional Degree (such as a law degree)

Q6
Regarding your highest degree earned, was your major area of study related to agriculture?
 Yes
 No

Q7



What is your annual income range?

- Below \$20,000
- \$20,000 - \$29,999
- \$30,000 - \$39,999
- \$40,000 - \$49,999
- \$50,000 - \$59,999
- \$60,000 - \$69,999
- \$70,000 - \$79,999
- \$80,000 - \$89,999
- \$90,000 - \$99,999
- \$100,000 or more
- Prefer not to respond/Do not report an annual income

Q8



What do you consider your primary occupation?

Q9



Which best describes your involvement in the livestock industry? Please select all that apply.

- Extension Educator
- Public School Educator
- Exhibitor's parent
- Breeder
- Exhibitor
- Other

Q10



With what species of livestock are you or your child involved? Please select all that apply.

- Cattle
- Swine
- Sheep
- Goats
- Horses
- Other
- I'm not directly involved with any livestock

Q11



Are you or were you a member of 4-H?

- Yes
- No

Q12



Are you or were you a member of FFA?

- Yes
- No

Q13



Do you have Internet access at your home?



- Yes
- No

Q14



Display This Question:

IF Do you have Internet access at your home? Yes Is Selected

Please indicate the type of connection.

- Dial-up
- Wireless
- Hot-spot
- Broadband (DSL, Cable)
- Satellite

Q15



Where do you most often access the Internet?

- Home
- Public Library
- School
- Office/place of employment
- Other
- I do not access the Internet



If I do not access the Internet is Selected, Then Skip To End of Survey

Q16



How often do you access the Internet?

- Less than once a month
- Once a month
- 2-3 times a month
- Once a week
- 2-3 times a week
- Daily
- Multiple times a day

Q17



Do you own a smart phone? (i.e. Blackberry, iPhone, Android)

- Yes
- No

Q18



From which type of device do you most often access the following? Select one for each item.

	Smart Phone (iPhone, Android, Blackberry, etc.)	Tablet / iPad	Desktop Computer	Laptop Computer
Email	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social Media (Facebook, Twitter, YouTube, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search Engines (Google, Bing, Yahoo, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q19



For what type of activity do you most often access the internet?



- Social Networking (Facebook, Twitter, YouTube, etc.)
- Email
- Research
- Surfing the Web
- Checking the news
- Other

Q20



I have accounts for: (Please select all that apply)

- Facebook
- Twitter
- Instagram
- YouTube
- Pinterest
- LinkedIn
- Other

Q21



In January of 2013, DRIVE discontinued its bi-monthly printed publication. Since then, the magazine has revamped its website and relied on social media accounts to stay in touch with its audience. For the next few questions, rate your agreement with the following statements.

Q22



Since DRIVE discontinued its printed publication, I have remained highly involved with the organization (for example, follow social media posts, check the website on a regular basis or read the blogs).

- Strongly Agree
- Agree
- Somewhat Agree
- Somewhat Disagree
- Disagree
- Strongly Disagree

Q23



I prefer following DRIVE online rather than receiving the printed DRIVE publication.

- Strongly Agree
- Agree
- Somewhat Agree
- Somewhat Disagree
- Disagree
- Strongly Disagree

Q24



I find information posted to the DRIVE website useful.

- Strongly Agree
- Agree
- Somewhat Agree
- Somewhat Disagree
- Disagree
- Strongly Disagree
- Have never been to the DRIVE website.

Q25



Display This Question:

if Do you own a smart phone? (i.e. Blackberry, iPhone, Android) **Yes** is Selected

I find information on the DRIVE mobile application useful.

- Strongly Agree
- Agree
- Somewhat Agree
- Somewhat Disagree
- Disagree
- Strongly Disagree
- Have never used the mobile application.

Q26



Display This Question:

I have accounts for: (Please select all that apply) **Facebook** is Selected

I find DRIVE's Facebook posts useful.

- Strongly Agree
- Agree
- Somewhat Agree
- Somewhat Disagree
- Disagree
- Strongly Disagree
- Do not follow DRIVE on Facebook.

Q27



Display This Question:

I have accounts for: (Please select all that apply) **Twitter** is Selected

I find DRIVE's Twitter posts useful.

- Strongly Agree
- Agree
- Somewhat Agree
- Somewhat Disagree
- Disagree
- Strongly Disagree
- Do not follow DRIVE on Twitter.

Q28



Display This Question:

I have accounts for: (Please select all that apply) **Instagram** is Selected

I find DRIVE's Instagram posts entertaining.

- Strongly Agree
- Agree
- Somewhat Agree
- Somewhat Disagree
- Disagree
- Strongly Disagree
- Do not follow DRIVE on Instagram.

Q29



Select how often you visit/access the following DRIVE accounts.

	Never	Less than once a month	Once a month	2 - 3 times per month	Once a week	2 - 3 times per week	Daily	Several times a day
Drivesstock.com	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DRIVE's Facebook Page	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DRIVE's Twitter account	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DRIVE's Instagram account	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DRIVE's mobile phone application	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX C

FIRST EMAIL INVITATION

FIRST EMAIL INVITATION

To: DRIVE Subscribers
Subject: Oklahoma State University graduate student research study

Dear DRIVE Subscriber:

I am writing to ask for your help with a graduate student research study regarding attitudes and perceptions of digitally engaged DRIVE subscribers.

You are part of a random sample of past magazine subscribers that has been chosen to complete a brief questionnaire about DRIVE Livestock's new online format. A goal of this survey is to understand how past subscribers are receiving DRIVE's digital platforms. Upon completion of the survey, you will be entered in a DRIVE apparel package giveaway, awarded to three lucky respondents.

You will be able to access the survey one time from your computer. You must be 18 years or older to complete this survey.

To begin the survey, simply click the following link or copy and paste to your browser.

[Survey Link]

Once finished, you will be asked to provide your email. This is merely for tracking purposes so once you have completed the survey you will no longer be contacted.

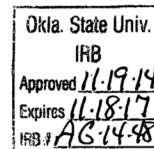
This survey is confidential. Your participation is completely voluntary. Should you have questions or comments, please contact Meg Drake at megd@okstate.edu or Dr. Shelly Sitton at shelly.sitton@okstate.edu.

If you wish to opt out of this study, email Meg Drake at megd@okstate.edu.

Your immediate response is greatly appreciated.

Many Thanks,

Meg Drake
Graduate Student
Department of Agricultural Education, Communications and Leadership
Oklahoma State University



APPENDIX D

REMINDER EMAIL #1

REMINDER EMAIL #1

To: DRIVE Subscriber
Subject: Voice your opinion about DRIVE going digital

Dear DRIVE Subscriber:

Earlier this week, we sent an email requesting your participation in a graduate student research study designed to understand magazine subscribers' attitudes toward DRIVE's new digital platforms. By participating in this survey, you have also entered yourself in a chance to win a DRIVE apparel package, which will be awarded to three lucky respondents.

We hope that by providing you with this link to complete the survey online, we've made it as accessible to you, as a respondent, as possible.

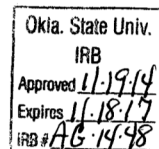
[Survey Link]

This survey is confidential. Your participation is completely voluntary. Should you have questions or comments, please contact Meg Drake at megd@okstate.edu or Dr. Shelly Sitton at shelly.sitton@okstate.edu.

If you wish to opt out of this study, email Meg Drake at megd@okstate.edu.

Sincerely,

Meg Drake
Graduate Student
Department of Agricultural Education, Communications and Leadership
Oklahoma State University



APPENDIX E

REMINDER EMAIL #2

Reminder Email #2

To: DRIVE Subscriber
Subject: How do you feel about DRIVE going digital?

Dear DRIVE Subscriber:

We recently sent you an email asking you to complete a survey regarding DRIVE subscribers' attitudes and perceptions toward the magazine going digital.

If you have not answered the questionnaire yet, we urge you to do so. It should only take about 15 minutes to complete.

To access the survey, visit the following link:

[Survey Link]

This survey is confidential. Your participation is completely voluntary. Should you have questions or comments, please contact Meg Drake at megd@okstate.edu or Dr. Shelly Sitton at shelly.sitton@okstate.edu.

If you wish to opt out of the study, email Meg Drake at megd@okstate.edu.

Sincerely,

Meg Drake
Graduate Student
Department of Agricultural Education, Communications and Leadership
Oklahoma State University



APPENDIX F

REMINDER EMAIL #3

Reminder Email #3

To: DRIVE Subscriber

Subject: Help OSU Student Understand Magazine Subscribers' Attitudes

Dear DRIVE Subscriber:

In [month], we contacted you asking for your help with a graduate student research study designed to better understand DRIVE subscribers' attitudes toward the magazine's new digital platform. We are writing you again in hopes that you will complete this 15-minute questionnaire. Upon completion, you will also be entered in a _____ giveaway.

[Survey Link]

This survey is confidential. Your participation is completely voluntary. Should you have questions or comments, please contact Meg Drake at megd@okstate.edu or Dr. Shelly Sitton at shelly.sitton@okstate.edu.

If you wish to opt out of this study, email megd@okstate.edu.

Sincerely,

Meg Drake
Graduate Student
Department of Agricultural Education, Communications and Leadership
Oklahoma State University

Okla. State Univ.
IRB
Approved 11.19.14
Expires 11.18.17
IRB # AG-14-48

APPENDIX G

FINAL EMAIL REMINDER

Final Email Reminder

To: DRIVE Subscriber

Subject: Last chance to complete research questionnaire and be entered to win!

Dear DRIVE Subscriber:

We are writing to follow up on the message we sent last week regarding your participation in a graduate student research study designed to understand magazine subscribers' attitudes and perceptions. Your participation in this study helps us better comprehend how the magazine's push to go digital has in turn affected its readers.

Completing this questionnaire will enter you in a chance to win _____. You must be 18 years or older to participate.

Click the following link to access the survey:

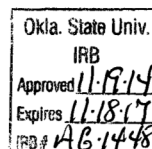
[Survey Link]

This survey is confidential. Your participation is completely voluntary. Should you have questions or comments, please contact Meg Drake at megd@okstate.edu or Dr. Shelly Sitton at shelly.sitton@okstate.edu.

If you wish to opt out of this study, email Meg Drake at megd@okstate.edu.

Sincerely,

Meg Drake
Graduate Student
Department of Agricultural Education, Communications and Leadership
Oklahoma State University



APPENDIX H

FIRST AND SECOND POSTCARD CONTACT

Dear former **DRIVE** Subscriber:

As part of a random sample of past magazine subscribers, you have been chosen to complete a brief questionnaire about DRIVE's new digital platforms. Upon completion of this survey, you will be entered in a DRIVE apparel package giveaway, which will be awarded to three lucky respondents.

You are allowed access to the survey one time from your computer. To begin, simply type the following URL into your web browser.

<http://tinyurl.com/DRIVEresearch>

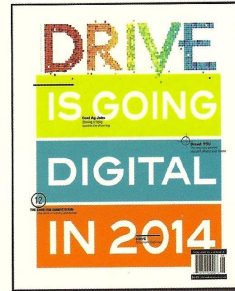
Once finished you will be asked to enter this four-digit code:

This access code is for tracking purposes only. Once you have completed the survey, you will no longer be contacted.

Should you have questions or comments, please contact Meg Drake at megd@okstate.edu or Dr. Shelly Peper Sitton at shelly.sitton@okstate.edu.

Your help is greatly appreciated!

Meg Drake
Master of Science Student
Agricultural Education, Communications and Leadership
Oklahoma State University



Dear former **DRIVE** Subscriber:

Last week, we sent a postcard notifying you of a graduate research study regarding past DRIVE subscribers' attitudes toward the magazine's digital platforms. As a gesture of appreciation for your participation, you will be entered in a chance to win a DRIVE apparel package giveaway, which will be awarded to three lucky respondents.

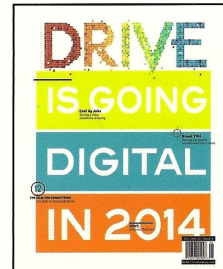
If you or someone in your household has already completed the survey, we thank you! We hope by providing this link to type into your web browser, we have made it as accessible to you as possible.

<http://tinyurl.com/DRIVEresearch>

Upon completion of the survey, you will be asked to enter this four-digit code. This code is only for tracking purposes. Once you complete the survey, you will no longer be contacted.

Should you have questions or comments, please contact Meg Drake at megd@okstate.edu or Dr. Shelly Sitton at shelly.sitton@okstate.edu. If you wish to opt out of the study, email megd@okstate.edu.

Sincerely,
Meg Drake
Graduate Student
Department of Agricultural Education, Communications and Leadership
Oklahoma State University



APPENDIX I

THIRD AND FOURTH POSTCARD CONTACT

Dear former **DRIVE** Subscriber:

We've mailed you a series of postcards to request your participation in a graduate student research study. The study is designed to better understand DRIVE subscribers' attitudes toward the magazine's digital platforms. If you complete the survey, you will have a chance to win one of three DRIVE apparel packages!

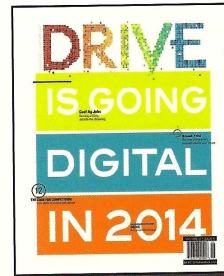
Records indicate you have yet to complete the survey. We hope by providing you with this link to type into your web browser, we have made the survey as accessible as possible.

<http://tinyurl.com/DRIVEresearch>

Upon completion of the survey, you will be asked to enter this four-digit access code. This code is for tracking purposes. Once the survey has been completed, you will no longer be contacted.

Should you have questions or comments, please contact Meg Drake at megd@okstate.edu or Dr. Shelly Sitton at shelly.sitton@okstate.edu. If you wish to opt out of this study, email megd@okstate.edu.

Sincerely,
Meg Drake
Graduate Student
Department of Agricultural Education, Communications and Leadership
Oklahoma State University



Dear former **DRIVE** Subscriber:

In recent weeks, we have asked you, as part of a random sample of past DRIVE subscribers, to complete a questionnaire regarding your interactions with DRIVE's new digital platforms. We hope to begin summarizing results within the upcoming weeks and hope all questionnaires will be completed by then. Upon completion of the questionnaire, you will be entered in a DRIVE apparel package giveaway, which will be awarded to three lucky participants.

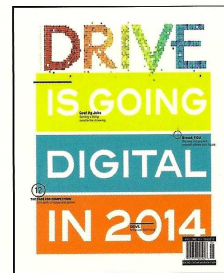
We hope that by providing you with this link to type into your web browser, we have made the survey as accessible as possible.

<http://tinyurl.com/DRIVEresearch>

Once the questionnaire is completed, you will be asked to enter this four-digit code. This code will be used for tracking purposes only.

Should you have questions or comments, please contact Meg Drake at megd@okstate.edu or Dr. Shelly Sitton at shelly.sitton@okstate.edu. If you wish to opt out of this study, email megd@okstate.edu.

Sincerely,
Meg Drake
Graduate Student
Department of Agricultural Education, Communications and Leadership
Oklahoma State University



APPENDIX J

OPEN ENDED RESPONSES FOR QUESTIONS

Account Manager
Accountant
Advertising Sales
Advocating for Rural Agriculture
Ag Economist
Ag Lender
Ag Marketing and Process Risk Management
Ag Sales
Ag Science Teacher
Ag Teacher
Agricultural Education Instructor
Agricultural Sales
Agriculture Association Management
Agriculture Education Instructor
Agriculture Sales/Office Manager
Agriculture Science Teacher
Animal Health Sales
Animal Nutritionist
Boar Stud Semen Analysis
Bookkeeper
Bookkeeper
Business Owner
Carpentry
Cattle Producer and Livestock Nutrition Sales
Client Relations
CNA
College Student
College Student and Farmer
Conservation Technician
Consulting Nutritionist
County Agent
County Extension Agent
Dairy Farmer
Dealer Channel Sales Representative for Syngenta
DVM
Economic Development
Educational Tutoring and Substituting
Elevator Manager
Extension Agent
Extension Agent
Extension Education
Extension Educator
Extension Youth Livestock
Factory Manager
Farm and Ranch
Farm Hand
Farmer
Farmer/Rancher
Farming

Farming
Feedlot Operator/Farmer
Field Rep for Meat Company
Finance
Food Production Quality Assurance
Full time Student
General Manager
Graphic Designer
Health Management Executive
Homemaker, bookkeeper, business co-owner
Housewife
Housewife/Ranch Owner
Insurance
Lending
Livestock Marketing
Livestock Sales
Management
Manager
Marketing
Mechanical Construction
Office Manager
Oilfield
Oilfield Management
Operating Engineer
Owner
Pharmacist
Physical therapist Assistant
Pig Farmer
Pig Farmer
Producer of Grain and Livestock
Public Relations
Public Relations/Marketing
Public School Administrator
Quality Assurance at a Meat Processing Facility
Raise and Buy/Sell Show Lambs
Raise cattle
Raising livestock
Rancher
Rancher
Ranching
Renewable Energy Specialist
Retail feed store owner
Retire
Retire
Retired and now ranching
Retired but was a county extension director/livestock agent, now full time shepherd
Rtire
Safety
Sales
Sales and marketing

Sale rep
School administration
Secondary school principal
Self-employed
Self-employed, small business owner
Selling show cattle
Showing pigs
Stay at home mom
Store manager at co-op, sell fertilizer and feed
Student
Student
Student
Student and flock manager
SVP Digital Media
Swine Farmer
Teacher
Teacher
Territory Sales Manager for Feed Company
Transportation manager
Truck driver
Veterinary technician

APPENDIX K

OPEN ENDED RESPONSES FOR INVOLVEMENT
IN LIVESTOCK INDUSTRY

4-H Leader
4-H Leader – 35 years – Ag Advisory for local FFA/ag program
4-H Leader, Judge
4H project leader and show parent
Assist with other families and exhibitors with the entire process of exhibiting livestock
Board member of stock show
Club leader
Collegiate Judger
Consultant
Executive Director
Exhibitor grandparent
Exhibitor's parent in the past
Exhibitors grandparent
Exhibitor's grandparents and maintain livestock
Feed sales
Feed sales, put on clinics and host shows
Feed sales/grain
Feed salesman
Feedyard consultant
Former agricultural educator, FFA advisor
Grew up on a farm – remain interested in insuring its future
Judge's wife; livestock judging team coaches wife, exhibitor family member
Junior board director, Past breed queen
Mentor to many children
Parent of stock show kids
Past exhibitor parent, current board member of county stock show
Producer
Producer of grain and fiber
Retired Exhibitor's parent
Trader

APPENDIX L

OPEN ENDED RESPONSES FOR WHAT TYPE OF
ACTIVITY RESPONDENTS MOST OFTEN
ACCESS THE INTERNET

All of the above, several times a day

Business

Futures markets and market news

Online sales and Livestock info.

Work

Work

APPENDIX M

OPEN ENDED RESPONSES FOR SOCIAL
NETWORKING ACCOUNTS

Google plus
Google +, tumblr, Blog
None
None of the Above
Snapchat
Snapchat

VITA

Meg Elizabeth Drake

Candidate for the Degree of

Master of Science

Thesis: PAST *DRIVE* SUBSCRIBERS' ATTITUDES AND USAGE BEHAVIORS IN REGARD TO THE PUBLICATION'S DIGITAL OUTLETS

Major Field: Agricultural Communications

Biographical:

Education:

Graduated from Winfield High School, Winfield, Kansas, in May 2008.

Attended Blinn Junior College, Brenham, Texas, from August 2008 to May 2010.

Completed the requirements for the Bachelor of Science in Agricultural Communications and Journalism at Kansas State University, Manhattan, Kansas in 2013.

Completed the requirements for the Master of Science in Agricultural Communications at Oklahoma State University, Stillwater, Oklahoma in December 2015.

Experience:

Employed as an Oklahoma State University graduate teaching assistant for the College of Agricultural Sciences and Natural Resources from August 2013 to December 2014 in Stillwater, Oklahoma.

Served as RIDE Television, Inc. intern from May 2014 to August 2014 in Fort Worth, Texas.

Worked part-time as RIDE Television, Inc. Corporate Communications Specialist from August 2014 to December 2014 in Stillwater, Oklahoma.

Professional Memberships:

Agricultural Education, Communication, and Leadership Graduate Program Student Government Association