ANALYZING SOCIAL PRESENCE IN TWEETS

RELATED TO RAM TRUCKS' 2013 SUPER BOWL

XLVII COMMERCIAL "FARMER"

By

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The increased use of social media has contributed to research surrounding communication in these mediums. Specifically, the understanding of social presence, or users' perception and recognition of other participants in the medium, has developed. However, little research exists surrounding social presence in Twitter, especially as it relates to agricultural topics and conversations.

This study focused on tweets surrounding Ram Trucks' 2013 Super Bowl commercial, "God Made A Farmer." To support this research, this study examined the use of hashtags, unique users, network type, and classification of tweets in the sample.

Using social presence theory, tweets were classified using the Model and Template for Assessment of Social Presence, and analyzed both qualitatively and quantitatively.

The majority of tweets were affective, as users shared their opinions of the commercial. Interactive tweets were the second most common category, when users reply and retweet each other. A combination of affective and interactive tweets was the third most common category, followed by cohesive tweets, where users tag each other in direct tweets, and other category combinations. Through each of these interactions, social presence was established. However, social presence may have further developed with the presence of a mediator, or the establishment of a more structured conversation. This could be done through the use of designated hashtags, or encouraged interaction with other users.

Agriculturalists and communicators may use this information to improve their use of social media and computer-mediated platforms by developing effective messages and creating impactful interactions with the public.

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CHAPTER I

INTRODUCTION

When the Internet and World Wide Web were made accessible to billions of people

around the world, the means through which we communicate were forever changed (Pew

Research Center, 2014). With 87% of American adults using the Internet today, its widespread

use and availability has affected the daily life of nearly every American (Fox & Rainie, 2014). In

a 2014 study for the Pew Research Internet Project, Fox and Rainie (2014) stated that the

Internet impacts the way Americans "get, share and create news; the way they take care of their

health; the way they perform their jobs; the way they learn; the nature of their political activity;

their interactions with government; the style and scope of their communications with friends and

family; and the way they organize in communities" (para. 2).

The Internet may be accessed through computers and small personal devices like tablets

and smartphones, which are now used by 68% of American adults (Pew Internet Research,

2013). Through these smartphones and tablets, many people are using social media platforms to

communicate with family, friends, businesses, and even total strangers (Duggan & Smith, 2011).

Consistently increasing in public and organizational use, social media acts as a form of

communication, advertising, and information exchange (Busby et al., 2010). The most effective

social media campaigns take advantage of the Internet's viral capabilities, and are rapidly

responsive and personalized to customers (Busby et al., 2010). Leading platforms in this area

include Facebook, Twitter, Pinterest, and YouTube, all of which provide users with engaging

user-friendly platforms for interaction (Busby et al., 2010; Pew Research, 2013).

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Twitter, one of the less-popular but still researched social media platforms, allows users to interact in a microblogging format by sending 140-character messages and pictures to other users (Twitter, Inc., 2015; Pew Internet Research, 2013). Through this interactive format, users develop a level of social presence, or the feeling and acknowledgement of another entity in the medium (Biocca, Harmes, & Burgoon, 2003). This social presence is demonstrated within the tweets, or messages sent, and can be measured through a variety of methods (Biocca et al., 2003; Pritchett, Naile, & Murphrey, 2012; Rourke, Anderson, Garrison, & Archer, 2001).

Many companies and organizations integrate social media into their advertising and marketing campaigns to reach more quickly their target audiences and to reach effectively more potential customers (Busby et al., 2010). A 2010 study by Boston Consulting Group stated more than 90% of companies surveyed in the United States expected to spend more marketing money on Internet and social media engagements during the following three years (Busby et al., 2010). However, the authors noted the precise direction and allocation of these marketing efforts was unknown, due to the changing pace of Internet-related technology (Busby et al., 2010).

While Internet and social media marketing efforts are increasing, television advertising remains one of the only forms of traditional marketing for businesses to reach a mass-market audience of several million viewers (Busby et al., 2010). Currently, television producers are seeing a switch from standard television viewing on a TV set to Internet TV viewing (Busby et al., 2010) through websites such as Hulu.com and YouTube.com, which allow TV shows and videos to be shared on and intermixed with social media platforms. A recent television advertisement, and the subject of this study, utilized a mixture of traditional TV marketing and online viewing into one commercial (YouTube, 2013).

This research study focused on social presence in the integration of marketing and social media with a prominent example from Super Bowl XLVII. Chrysler Dodge's Ram Trucks division integrated an advertising opportunity and the social media video outlet YouTube with a 2013 Super Bowl commercial to increase sales and support the nonprofit National FFA Organization (Chrysler Group, LLC, 2013). The commercial first aired nationally during the fourth quarter of Super Bowl XLVII. The two-minute advertisement featured a slideshow of farming and ranching images with Paul Harvey's "So God Made A Farmer" speech from the 1978 National FFA convention playing simultaneously (Piller, 2013).

At the end of the commercial, Ram Trucks pledged to donate 10 cents to the National FFA Organization for every view of the video on YouTube, up to a total of $1 million (Chrysler Group, LLC, 2013). A cooperative project with the agricultural website Farms.com, the video yielded 4.6 million YouTube views within 24 hours (Piller, 2013) and reached the goal of $1 million less than one week after the original airtime (Chrysler Group, LLC, 2013). Additionally, the commercial had a higher number of related comments and posts on public Facebook and Twitter accounts than any other commercial, with more than 402,000 comments across platforms (Dumenco, 2013).

Through these comments on Twitter, users tweeted links and comments about the commercial to their followers, tagging each other, tweeting at each other, and sharing their opinions of the commercial (Piller, 2013; YouTube, 2013). Using these tweets, this study was conducted to understand the extent to which social presence existed within the messages. Social presence in several other topics on Twitter has been analyzed, including popular culture and politics (Chang & Iyer, 2012; Smith et al., 2014). However, limited research exists examining social presence in discussions related to agriculture. Thus, this study is one of the first to analyze

tweets about agriculture on Twitter, and is the only one to examine tweets in an unstructured, unmediated discussion format.

Statement of the Problem

The use of social media, specifically the microblogging platform Twitter, is increasing (Pew Internet Research, 2013), and as online and computer-mediated culture develops, the need to understand social presence theory in social media continues to grow (Lowenthal, 2010). Despite the growth, information about user interactions within Twitter is limited, especially as it is related to agricultural topics. If used strategically, Twitter may be a viable outlet of communication about agriculture (Allen et al., 2010). However, agricultural communicators have yet to gain a thorough understanding of how the public is communicating about agriculture within public social media platforms like Twitter, and how they can communicate with those audiences effectively and efficiently. Currently, no studies examining social presence in unmediated, unstructured Twitter conversations about agriculture exist.

Still, agriculture-related advertisers and marketers are taking advantage of the widespread use offered by Twitter and integrating it into their public relations and marketing campaigns (Kwon & Sung, 2011). An example of this came during the 2013 Super Bowl, when Ram Trucks presented their "Farmer" commercial, spurring more than 20,000 tweets in six hours.

By studying the dimensions of social presence in the tweets related to this commercial, researchers may better understand "the potential of emerging social media technologies, message formats, and strategies in realizing a citizenry capable of making agriculture-related informed decisions" (Doerfert, 2011, p. 8). Agriculturalists and practitioners may use this study to understand how social presence exists in agricultural conversations on Twitter, and apply the

knowledge to communicate and interact effectively with their intended audiences by creating the most effective types of messages and conversation structures.

Purpose of the Study

The purpose of this study was to describe the content of tweets and categories of social presence in tweets using the hashtags #GodMadeAFarmer and #SoGodMadeAFarmer, related to Ram Trucks' 2013 Super Bowl XLVII commercial "Farmer."

Research Objectives

The following objectives guided this study:

1. Describe the population of users and tweets containing the hashtags #GodMadeAFarmer and #SoGodMadeAFarmer related to Ram Trucks' "Farmer" commercial.

2. Use established social presence indicators to classify tweets related to Ram Trucks' "Farmer" commercial into one or more of Rourke et al.'s (2001) three social presence categories.

3. Describe new social presence indicators necessary to classify tweets related to Ram Trucks' "Farmer" commercial that were not included in Rourke et al.'s (2001) social presence indicators.

Scope of the Study

This study examined comprehensive archived tweets including the hashtags #GodMadeAFarmer and/or #SoGodMadeAFarmer that were sent following Ram Trucks' 2013 Super Bowl commercial, "Farmer" (Chrysler Group, LLC, 2013). Collected tweets were sent between the commercial's airtime on February 3, 2013, and 11:59 p.m. Central Standard Time

that night. Approximately 20% of tweets (2,652) sent during that time period were included in this study.

Significance of the Study

This study relates to Priority Area One of the 2011-2015 *National Research Agenda for the American Association for Agricultural Education*. This priority satisfies the idea of "Public and Policy Maker Understanding of Agriculture and Natural Resources" (Doerfert, 2011, p. 8). This priority area seeks to help the public understand agricultural processes and increase agricultural literacy among consumers by determining the potential of "emerging social media technologies, message formats, and strategies…" (Doerfert, 2011, p. 8).

The results from this study can be used by agricultural communicators to form a better understanding of the social presence indicators used by the general public within tweets related to agricultural commercials and advertisements, as well as those related to spontaneous, unmediated conversations. Through this understanding of public interactions, communicators can develop methods to communicate more effectively and relay information to the general public by using appropriate social presence indicators within their messages. Through improvements in understanding of public interactions and attitudes, the agricultural industry can become more effective in its communications with the general public, productively sharing and spreading information, and anticipating results of unplanned responses to certain events, such as the "Farmer" commercial.

Assumptions

This study was based on the following assumptions:

1. All Twitter users posting tweets with the hashtags #SoGodMadeAFarmer and #GodMadeAFarmer were posting in reference to Ram Trucks' "Farmer" commercial at the time they posted their tweets.

2. All coders understood the definitions of each social presence category and of the coding method.

Limitations of the Study

This study was subject to the following limitations:

1. Not all tweets related to the commercial were tagged as #SoGodMadeAFarmer or #GodMadeAFarmer, so not all tweets related to the commercial were considered.

2. Twitter was not the only social media source used by viewers to express thoughts toward this commercial.

3. Twitter's advanced search tool, used to collect tweets, did not collect every single tweet related to the established hashtags and search terms.

4. Twitter's 140-character limit per tweet affects the way social presence is expressed in this medium.

Definition of Terms

The following definitions will be used for this study:

Computer-mediated communication: synchronous or asynchronous electronic mail, computer conferencing by which senders encode in text messages that are relayed from senders' computers to receivers (Walther, 1992).

Direct tweet: involves tagging another user in a tweet, using the "@" symbol followed by a username anywhere in the body of the tweet, also called a mention (Huberman et al., 2008; Twitter, Inc., 2015)

Face-to-face communications: physical, in-person communication, and contains the richest level of social presence and highest level of intimacy utilizing physical, visual and non-verbal cues (Short, Williams, & Christie, 1976; Walther, 1992).

Twitter: an information network made up of 140 or fewer character messages called tweets from all over the world (Twitter, Inc., 2015).

Tweet: a message posted via Twitter containing 140 characters or fewer (Twitter, Inc., 2015).

Retweet: a tweet by another user, forwarded by someone else and is often used to spread news or share valuable findings on Twitter (Twitter, Inc., 2015).

Hashtag: noted as the # symbol, used to mark keywords or topics in a tweet, and was created organically by Twitter users as a way to categorize messages (Twitter, Inc., 2015).

Emojis: a small digital image or icon used to express an idea, emotion, etc., in electronic communication (Google, 2015).

Emoticons: a string of keyboard characters that, when viewed sideways (or in some other orientation), can be seen to suggest a face expressing a particular emotion. An emoticon often is used in an email message or newsgroup posting as a comment on the text that accompanies it (Danesi & Berger, 2008).

Username: must be unique and contain fewer than 15 characters in Twitter, used to identify Twitter users for replies and mentions and may be called a Twitter handle (Twitter, Inc., 2015).

Social presence: the awareness of another entity in an interaction and the consequent appreciation of an interpersonal relationship between oneself and that entity (Short et al., 1976); specifically related to CMC, it is the degree of feeling, perception, and reaction to another intellectual entity in the CMC environment (Tu & McIsaac, 2002).

CHAPTER II

REVIEW OF LITERATURE

History of the Internet

During the 1960s, the primary concepts of the Internet began to develop. Beginning with a set of memos, J.C.R. Licklider at MIT described a "globally interconnected set of computers through which everyone could quickly access data and programs from any site" (Leiner et al., 1997, p. 102-103). In 1968, Licklider said: "In a few years, men will be able to communicate more efficiently through a machine than face to face" (Licklider & Taylor, 1968, p. 21). Today, this concept has come to life in the form of the World Wide Web, a component of the Internet (Leiner et al., 1997). According to Leiner et al. (1997), in 1965, researchers in California and Massachusetts were able to connect two different computers though a low-speed dial-up telephone line. From this initial network, researchers found the need to advance the speed and ability of each computer to offer more data to the other. This included the idea of connecting multiple networks into one larger system, instead of just one computer to another (Leiner et al., 1997). By the mid-1970s, computer networks began developing wherever demand and funding was found, such as government agencies and academic communities (Leiner et al., 1997).

Licklider and Taylor (1968) believed that upon entering a technological age, we would be able to interact with "the richness of living information," not just in the passive way of books and libraries, but as "active participants in an ongoing process, bringing something to it through our interaction with it" (Licklider & Taylor, 1968, p. 21). This active engagement can be seen within

applications such as email (Leiner et al., 1997) and, more recently, in social media (Curtis, 2013; Vesnic-alugevic, 2013).

Electronic mail, known today as email, was introduced in 1972 as a basic "send-and-read software," which quickly grew in popularity to become the most popular computer application available (Leiner et al., 1997, p. 103). This first application has supported the commercialization of the Internet, involving "not only development of competitive, private network services, but commercial products implementing Internet technology" (Leiner et al., 1997, p. 12). Since this time, the Internet has opened up to the general public as an open network, where users can view the programming documents and create their own, contributing to the greater network (Leiner et al., 1997).

Computer-mediated Communication

As nearly 78% of adult Americans use the Internet today (IWS, 2012), its widespread use has allowed many daily interactions to occur through CMC (Herring, 2005). CMC is the interaction between two individuals through a computer-based medium. These interactions typically comprise text-based messages and can change format, depending on the medium (Herring, 2005). Herring (2005) stated that CMC varies "according to the technologies on which it is based, and according to its contexts of use" (p. 111-112).

Messages can be sent within CMC in "a short sequence of 'bits' flowing through the network from one multi-access computer to another" (Licklider & Taylor, 1968, p. 33). These messages then will be received, read, and interpreted by the receiver, at which point the receiver may respond (Herring, 2005).

Social Networking Sites and Twitter

Social networking sites are Web-based CMC services that allow users to create public or private profiles (Boyd & Ellison, 2008). These profiles often contain personal photos, locations, interests, and other relevant information (Boyd & Ellison, 2008). According to Boyd & Ellison (2008), most social networking sites support the maintenance of pre-existing social networks that have developed initially in face-to-face settings. Other social networking sites are created to connect strangers over a common interest, religion, race, language, or other unifying aspect (Boyd & Ellison, 2008). However, the main similarity between all SNS is that users can view each other's social networks and connections, sometimes called "friends," "fans," or "contacts" (Boyd & Ellison, 2008). Users can further view and explore the profiles and activities of those connections, as well as others within the system (Boyd & Ellison, 2008). These connections can interact with each other through private messages or public messages known as "comments" and "replies" (Boyd & Ellison, 2008).

The first form of profile-based social media, SixDegrees.com, was established in 1997 and allowed users to "create profiles and list friends" (Boyd & Ellison, 2008; Curtis, 2013). Since then, the use of social networking sites in the U.S. and around the world has continued to grow steadily, as more than 73% of online adults use some form of social networking sites (Duggan & Smith, 2013), compared to only 59% in 2011 (Pew Internet Research, 2013). Popular SNS, or social media sites, include Facebook, used by 71% of online adults; Instagram, used by 17% of online adults; Pinterest, used by 21% of online adults; and LinkedIn, used by 22% of online adults (Duggan & Smith, 2013). Established in 2006, Twitter is another rapidly growing SNS that is used by 18% of online adults and 24% of teens (ages 12-17) (Duggan & Smith, 2013; Madden et al., 2013).

The use of social networks within the last decade has become increasingly widespread. Huberman, Romero, and Wu (2008) stated: "Many people, including scholars, advertisers and political activists, see online social networks as an opportunity to study the propagation of ideas, the formation of social bonds and viral marketing, among others" (p. 8).

Twitter is a form of social networking site used for microblogging, or blog messages with short space or size constraints for discussing personal activities (Merriam Webster Online, n.d.). As of 2013, about 76% of Twitter's 241 million "monthly active users" access the platform from their mobile smartphones (Pew Internet Research, 2013). Because it is accessible in more than 33 different languages, 77% of all Twitter accounts are based outside of the U.S. (Twitter, Inc., 2015).

Upon joining Twitter, users must create a unique Twitter "handle" or username through which they identify themselves. They also may post a profile picture and small piece of information including location and personal interests (Twitter, Inc., 2015). From that point, users may "follow" other users, so that they can view the tweets they post and all of the information they share (Twitter, Inc., 2015). Users also can create "lists" of friends, categorizing them into groups based on their relationships with users or common interests (Chang, 2010).

According to Twitter, Inc. (2015), approximately 500 million tweets are sent per day. A tweet is a microblog message limited to 140 characters, which can include a Web link, a picture or picture set, video, and a number of emoticons (Twitter, Inc., 2015). Through these tweets, Twitter gives users the opportunities to "create and share ideas and information instantly" (Twitter, Inc., 2015, pg. 2). Within each tweet, users may post direct tweets by tagging another user in them, or indirect tweets, without the inclusion of another user (Huberman et al., 2008).

By using direct tweets, users can hold conversations with each other in a flowing stream of tweets. Approximately 25% of all tweets are direct tweets (Huberman et al., 2008).

Further research by Huberman et al. (2008) within Twitter showed a direct positive correlation between the number of tweets that a user posts and their number of followers. In turn, "users who receive attention from many people will post more often than users who receive little attention" (Huberman et al., 2008, p. 5). Additionally, users with more friends will reach a greater number of people with each post, generating a more widespread footprint within the Twitter world (Huberman et al., 2008). However, just because two users follow each other does not mean that they interact with one another. Huberman et al. (2008) determined the number of users that an individual follows is usually significantly higher than the number of users who follow them in return.

Hashtags

On Twitter, tweets are categorized and searchable by hashtags, identified as a "#" symbol, followed by a word, phrase, or acronym related to the general topic within the tweet (Chang & Iyer, 2012; Twitter, Inc., 2015). Through the use of hashtags, users can search for related information and form community groups through which they can connect and converse with other users (Chang & Iyer, 2012).

These online communities are interactive and often consist of "geographically separated members, sometimes grouped in small clusters and sometimes working individually" (Licklider & Taylor, 1968, p. 37). These communities are based around common interests and support extensive numbers of individuals, large amounts of information, and complex connected networks (Chang & Iyer, 2012).

The most popular hashtags at any given moment in time will appear in the "trending topics" sidebar of a user's Twitter homepage, allowing users to identify what the most relevant information on Twitter is at that time (Twitter, Inc., 2015). Trending hashtags are determined on Twitter by an algorithm, identifying what topics are popular at a given moment (Twitter, Inc., 2015). However, it is against Twitter policies to abuse trending topics by using them to gain attention in search or repeatedly tweeting a hashtag without adding value to the conversation in an attempt to get a topic trending (Twitter, 2015). Though not all users utilize hashtags in their tweets, it can be a helpful method of quickly connecting with other users and creating a community of Twitter users (Chang, 2010).

Hashtags can be both social and professional. Social tweets primarily are created by individuals and connect users over common topics and ideas. Professional hashtags are typically used for "broadcasting or communication purposes to send out the latest news and announcements" (Chang & Iyer, 2012, p. 255). These hashtags often will revolve around a specific product, thus adding value to the product-related information on Twitter (Chang & Iyer, 2012).

According to Chang (2010), hashtags can be very useful for conferences and events, where users attending the event can find and connect with each other by searching for other users' tweets that include the common hashtag.

In regard to research, hashtags provide an organized method of gathering and sorting information for communication professionals and researchers (Chang & Iyer, 2012). The Twitter hashtag applications can "turn Twitter into a research and archive tool," especially when needed to provide advanced searches, analytics, and content organization, and presentation (Chang & Iyer, 2012, p. 253).

Structures of Twitter Conversation Networks

As Twitter users reply to and mention each other in tweets, their interactions form complex but identifiable networks (Smith, Rainie, Himelboim, & Shneiderman, 2014). These structures differ depending on the topic and who is sharing the information (Smith et al., 2014). A study conducted by researchers at the Pew Internet Research Center examined the social structure and shape of specific Twitter networks, and found six prominent network types (Smith et al., 2014).

The first of these networks is the polarized crowd, where two large, dense groups discuss a common topic but have little connection between them (Smith et al., 2014). This network often can be found in polarized political discussions where groups are not arguing with each other, but ignoring each other, as they discuss separate opinions on the same topic (Smith et al., 2014).

The next network is the tight crowd, in which a group of connected people interact with few outlying participants (Smith et al., 2014). Conferences, professional topics, or hobby groups discussing a common topic take this network form. In this form, mutual support and information can be shared among participants (Smith et al., 2014).

Brand clusters are another network form, where many disconnected participants are discussing the same topic (Smith et al., 2014). Here, participants are tweeting about a subject, but do not tweet at each other. This can be found when talking about a celebrity product endorsement or other well-known product. Although few participants connect with each other, participants are still sharing information with the greater Twitter network (Smith et al., 2014).

The next form of network comprises community clusters, in which "popular topics may develop multiple smaller groups" (Smith et al., 2014, p. 3). Each of these smaller groups contains its own leader and shares different sources of information. For example, global news stories

attract coverage from multiple news outlets and form medium-sized clusters around each news outlet. The sources may each represent a differing opinion or relevancy to the subject (Smith et al., 2014).

Broadcast network types are created when many individual people repeat what prominent news and media organizations tweet. These individuals may sometimes form smaller groups to further discuss the topics. These news sources represent powerful agenda setters and conversation starters, and can include celebrities or prominent individuals (Smith et al., 2014).

The final form of network is the support network and often is found when companies attempt to "resolve and manage customer issues around their products and services" (Smith et al., 2014, p. 4) These networks are highly useful for companies to receive and respond to customer feedback and advice while maintaining relationships with their customers (Smith et al., 2014).

These networks are important to understand, as they indicate the roles social media plays in society's interactions (Smith et al., 2014). Organizations can utilize this research to understand how their programs fit into the Twitter world and how they can improve their performance and presence within the social media outlet (Smith et al., 2014).

Involvement of Agriculture in Twitter

As the number and variety of topics on Twitter increases, discussions surrounding agricultural issues have become more common (Fichette, 2014; Looker, 2013). Farmers, ranchers, and a variety of agriculturalists are taking to social media to share their knowledge and viewpoints with mass audiences. Several channels exist on YouTube and other social media networks through which producers can exhibit production practices (Fichette, 2014), and, in

return, opponents of large-scale production agriculture share their opinions and viewpoints on topics such as GMO crop production (Looker, 2013).

Several agricultural organizations are active on Twitter, engaging in open dialogue and discussion with their followers inside and outside of the agricultural industry (AgChat Foundation, 2014; USFRA, 2014). One such organization is the AgChat Foundation, which sponsors weekly moderated conversations on Twitter denoted by the hashtag #AgChat (AgChat Foundation, 2014). A large agriculture-related Twitter community, #AgChat's mission statement relays its overall message: "Empowering farmers and ranchers to connect communities through social media platforms" (AgChat Foundation, 2014, p.1). #AgChat encourages participants to share viewpoints and ideas about issues impacting agriculture, such as sustainability, water, communications, and more (AgChat Foundation, 2014, p. 2). Each #AgChat conversation begins with a 15-minute networking period where participants introduce themselves and make initial connections with other users. The discussion begins when a moderator begins asking participants open-ended questions related to a variety of agricultural topics. #AgChat also hosts a "sister chat," named #FoodChat, for individuals to discuss food-related topics (AgChat Foundation, 2014).

Additionally, the hashtag #Farm365 is being used on Twitter by anti-animal agriculture groups, farmers, and ranchers alike to hold an ongoing, unmediated discussion about agricultural production practices. Through this conversation, participants share opinions, tips, pictures, and more (Twitter, Inc., 2015).

Guidelines for best practices have been suggested by Allen, Abrams, Meyers, and Shultz (2010). Allen et al. (2010) suggest that agricultural communicators should not just orchestrate conversation, but actively engage in it. Communicators should hold engaging conversations with

their followers and treat them as active participants in an ongoing conversation about agriculture. Through the strategic use of Twitter, it can be used as a tool "that shapes communication strategies and ultimately, how agriculture operates to remain a viable and publicly valued industry (Allen et al., 2010). However, further research is needed to measure the impact of Twitter as a means of communication about agriculture (Allen et al., 2010).

Defining Social Presence

Before the development of modern technologies and CMC, social presence initially was described as the awareness of another entity in an interaction and the consequent appreciation of an interpersonal relationship between oneself and that entity in face-to-face or telecommunication interactions (Short et al., 1976). Social presence is the most fundamental perception that occurs in person-to-person communication, regardless of the medium of interaction (Short et al., 1976). The occurrence of social presence often is considered a quality of the medium through which the message is being conveyed, and thus, different media reflect different levels of social presence (Short et al., 1976).

CMC has become such a large part of daily life throughout much of the world, the concept and study of social presence largely has been directed toward CMC interactions (Gunawardena & Zittle, 1997; Tu & McIsaac, 2002). With the development and widespread use of CMC, Tu and McIsaac (2002) redefined social presence as "the degree of feeling, perception and reaction to another intellectual entity in the CMC environment" (p. 140), and identified that it is a "vital element influencing online interaction" (p. 146).

When evaluating the content of a message, the ability of the medium to present that message also must be considered (Walther, 1992). The media richness theory has been associated with social presence theory as it relates to the medium (Walther, 1992). The media

richness theory is defined as the ability of information to change understanding within a time interval (Walther, 1992). Media that allows messages to be understood and clarified quickly are considered rich media, whereas lean media requires a longer period of time to relay and decode. Initially, face-to-face communication was considered to be the richest form of interaction, while CMC was the leanest (Walther, 1992). The richness of a medium helps to determine its effectiveness (Daft & Lengel, 1986).

Despite these established ties of social presence and media richness, Dennis (1998) stated that with the development of CMC, the media richness theory is nearly obsolete. The theory originally was applied to "old media," such as letters and memos, which possessed fewer cues and levels of feedback than today's "new media," which include emails and instant messaging. Dennis (1998) stated that the new media are rich enough to enable effective communication and warrant attention to feedback and social presence cues within the media, not just "richness." Additionally, Biocca et al. (2003) suggested that subjects consider their overall experiences when discussing social presence, rather than just the opportunities or limitations of the medium.

A recent study was conducted to understand the relationship between social presence categories and user satisfaction in #AgChat and #GardenChat conversations (Pritchett et al., 2012). #GardenChat is another mediated agriculture-related conversation for the discussion of gardening (Pritchett et al., 2012). Tweets posted under these hashtags during one of the scheduled conversations were analyzed. The researcher then surveyed the participants to understand their level of satisfaction and engagement within the discussions (Pritchett et al., 2012).

Pritchett et al. (2012) utilized Rourke et al.'s Model and Template for Assessment of Social Presence (2001). Respondents to the survey strongly agreed CMC allows relationships to

be established based upon sharing and exchanging information, and felt they had made connections with other users around the country (Pritchett et al., 2012). However, they were not concerned with developing and maintaining these relationships so much as they believed these relationships were simply based around the common topics of agriculture and gardening (Pritchett et al., 2012). Additionally, users were not afraid to communicate with other users unfamiliar to them within the #AgChat and #GardenChat conversations. Users from both #AgChat and #GardenChat believed a social presence in the regard that they are communicating with other people (Pritchett et al., 2012).

A similar study was conducted on the unmediated #FoodD Twitter conversations (Schweer, 2011). The Food Dialogues, hashtagged as #FoodD, was a town-hall style meeting held in various locations throughout the United States (USFRA, 2014). This meeting encompassed a live-stream video conversation among a panel of experts and members of the public as well as an interactive Twitter conversation through which distance viewers could tweet questions and comments to the panel of experts. The #FoodD hashtag was predetermined, and participants were made aware of it and encouraged to use it in tweets related to the conversation (USFRA, 2014). The Food Dialogues, sponsored by the U.S. Farmers and Ranchers Alliance, offers a variety of different resources on the main website for users to retrieve agricultural information (USFRA, 2014). The organization encourages farmers to share agricultural stories to help inform the public about the agricultural processes involved in food and fiber products. In turn, the public is encouraged to ask questions of the involved farmers and ranchers (USFRA, 2014).

The #FoodD study used the Model and Template for Assessment of Social Presence (Rourke et al., 2001) to measure social presence. The study found the interactive category of

social presence to be the most prominent within the conversations, as the majority of tweets were replies to other tweets, sharing information, and asking questions (Schweer, 2011). Cohesive tweets were the second most common, followed by affective (Schweer, 2011). Following the Rourke et al. (2001) model for measuring social presence, the study also suggested the #FoodD conversations "were more pragmatic than personal" (Schweer, 2011, p. 36).

These two examples focus on mediated and unmediated Twitter conversations related to agriculture. However, no studies exist to discuss the social presence categories present in a spontaneous Twitter event related to agriculture.

Aspects and Dimensions of Social Presence

Two aspects of social presence, intimacy and immediacy, are applicable to both face-to-face and CMC, and were developed by Argyle and Dean (1965) and Wiener and Mehrabian (1968), respectively. These aspects later were used to develop tools to measure social presence in studies by Short et al. (1976) and Gunawardena and Zittle (1997). Though not originally intended for CMC, these aspects have been applied to modern studies of online social presence (Gunawardena & Zittle, 1997). Additionally, three dimensions of social presence were developed by Tu (2000) for more accurate measurement.

Intimacy

The concept of intimacy in communication initially was introduced by Argyle and Dean (1965) and was described as the nonverbal cues portrayed when an actor sends a message. These nonverbal cues include tone of voice, eye movement, eye contact, body language, facial expression, and laughter (Argyle & Dean, 1965). These nonverbal cues alter the level of intimacy in an interaction, contribute to levels of social presence within the overall message, and could transform the actual meaning of a message (Argyle & Dean, 1965). The concept of

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intimacy was used again by Short et al. (1976) in a study where participants in an interaction were asked to rank their perceptions of intimacy among five bipolar factors.

By considering these categories, researchers demonstrated that face-to-face interactions portrayed a higher level of intimacy, whereas text-based interactions were less intimate (Short et al., 1976). However, later studies (Gunawardena & Zittle, 1997) regarding social presence in CMC have shown that actors "enhanced their socio-emotional experience by using emoticons to express missing nonverbal cues in written form" (Gunawardena & Zittle, 1997, p. 23). When actors utilized emoticons to substitute for the lack of nonverbal cues, a level of intimacy that would not otherwise exist was created (Gunawardena & Zittle, 1997).

Immediacy

Initially explained by Wiener and Mehrabian (1968), the concept of immediacy is defined as "the relationship between the speaker and the objects he communicates about, the addressee of his communication, or the communication itself" (Wiener & Mehrabian, 1968, p. 3). Immediacy is the level of closeness between two individuals discussed in a message. It is achieved by using inclusive words like "we," "ours," and "us" (Wiener & Mehrabian, 1968). Using the word "we" in this statement increased the level of immediacy and drew tighter bonds between the subjects. By creating a direct interaction and closeness between two subjects, the level of immediacy increases, thus affecting the level of social presence (Wiener & Mehrabian, 1968).

Dimensions of Social Presence in Computer-mediated Communication

In later research, Tu (2000) presented three dimensions of social presence related to computer-mediated and online communications, all of which affected the level of social presence within an interaction. These dimensions included social context, online communication, and interactivity in the environment (Tu, 2000). The social context dimension includes factors of

privacy and topics of discussion. Often, levels of social presence decline as privacy levels of the medium decrease (Tu, 2000). The dimension of online communication considers the application and attributes of online language. For example, a users' ability to read and type can hinder their ability to communicate online (Tu, 2000). The third dimension, interactivity, includes the ways and extent to which users engage in online interactions. This dimension can include factors of synchronous and asynchronous communication, ultimately affecting the level of social presence in the interaction (Tu, 2000).

Measuring Social Presence

As social presence is a broad and intangible concept, methods and models of measuring social presence are equally widespread (Gunawardena & Zittle, 1997; Short et al., 1976; Tu & McIsaac, 2002). According to Tu and McIsaac (2002), "the degree of social presence is based on the characteristics of the medium and the user's perception." Short et al. (1976) measured social presence through bipolar factors of social/unsociable, personal/impersonal, sensitive/insensitive and warm/cold. These factors focused on the level of "intimacy" between actors in a medium (Short et al., 1976). The mediums studied included voice messages, letters, and other forms of communication (Short et al., 1976) used more widely before the increased availability of computers (Tu & McIsaac, 2002). Overtime, these bipolar factors have been changed and adapted to fit current methods of communications, and incorporate factors affecting CMC mediums (Tu & McIsaac, 2002). To evaluate levels of social presence, qualitative, quantitative, and mixed-method research has been conducted (Garrison, Anderson, & Archer, 1999; Gunawardena & Zittle, 1997; Rourke et al., 2001; Short et al., 1976; Tu & McIsaac, 2002).

An early tool for measuring social presence in CMC is the social presence scale created by Gunawardena and Zittle (1997). This scale uses a five-point Likert scale on 14-question

survey for respondents to place their impressions of social presence from interactions in a CMC environment. This model focused on the "immediacy" factor of social presence to gauge participants' impressions of an online conference. Gunawardena and Zittle (1997) combined this scale with the bipolar factors from Short et al.'s (1976) bipolar factors of "intimacy" to determine the overall level of social presence (Gunawardena & Zittle, 1997; Short et al., 1976).

One variation on the social presence measurement scale was a conceptual model created by Garrison, Anderson, and Archer (1999). This scale placed messages into individual indices of social presence: emotional expression, open expression, and group cohesion. These factors each contribute to the overall social presence of an interaction and can dictate user participation and satisfaction (Garrison et al., 1999).

The Model and Template for Assessment of Social Presence, another model for measuring social presence, was created by Rourke et al. (2001). This model is displayed in Table 1. Based on Garrison et al.'s (1999) original three indices for social presence, combined with additional communications literature, Rourke et al. (2001) used their method for measuring social presence in online graduate-level courses. This model classifies individual messages into three categories: affective, interactive, and cohesive. Within each of these categories, messages are further coded into distinct indicators. Quantitative methods then can be used to measure the number of interactions that fall under each indicator, and measurements can be made (Rourke et al., 2001).

Table 1
Model and template for assessment of social presence

Category	Indicators	Definition	Example
Affective	Expression of emotions	Conventional expressions of emotion, or unconventional expressions of emotion, includes repetitious punctuation, conspicuous capitalization, emoticons.	"I just can't stand it when …!!!!" "ANYBODY OUT THERE!"
	Use of humor	Teasing, cajoling, irony, understatements, sarcasm.	The banana crop in Edmonton is looking good this year.
	Self-disclosure	Presents details of life outside of class, or expresses vulnerability	"Where I work, this is what we do …" "I just don't understand this question"
Interactive	Continuing a thread	Using reply feature of software, rather than starting a new thread.	Software dependent, e.g., "Subject: Re" or "Branch from"
	Quoting from others' messages	Using software features to quote others entire message or cutting and pasting selections of others' messages.	Software dependent e.g., "Martha writes:" or text prefaced by less-than symbol <.
	Referring explicitly to others' messages	Direct references to contents of others' posts.	"In your message, you talked about Moore's distinction between…"
	Asking questions	Students ask questions of other students or the moderator.	"Anyone else had experience with WEBCT?"
	Complimenting, expressing appreciation	Complimenting others or contents of others' messages.	"I really like your interpretation of the reading"
	Expressing agreement	Expressing agreement with others or content of others' messages.	"I was thinking the same thing. You really hit the nail on the head."
Cohesive	Vocatives	Addressing or referring to participants by name.	"I think John made a good point." "John, what do you think?"
	Addresses or refers to the group using inclusive pronouns	Addresses the group as we, us, our, group.	"Our textbook refers to…" "I think we veered off track…"
	Phatics, salutations	Communication that serves a purely social function; greetings, closures.	"Hi all" "That's it for now" "We're having the most beautiful weather here"

Source: Rourke et al., 2001

This table has been used in recent studies by Schweer (2011) and Pritchett et al. (2012) for measuring social presence quantitatively and qualitatively.

Additionally, the qualitative and mixed-method approaches can be used to analyze messages, as researchers evaluate the tone of each message and the overall conversation to determine the degree to which social presence exists (Tu & McIsaac, 2002).

Lowenthal (2010) made a point in saying that early research in social presence focused on proving that CMC was impersonal and ineffective at sharing more than just data and simple information. Recent research, however, supports a high degree of social presence in CMC, "focusing less on the medium and more on people," to explain that online mediums can be "personal and social" (Lowenthal, 2010, p. 126).

Social Presence in Computer-mediated Communication

Original social presence models for CMC were used to measure user satisfaction in online higher-education courses (Gunawardena & Zittle, 1997; Lowenthal, 2010; Rourke et al., 2001; Tu & McIsaac, 2002). Though early studies of online courses determined that CMC learning is nearly ineffective (Short et al., 1976), the more recent studies have found the opposite. Through these studies, researchers consistently found that despite the absence of classic social cues described by Short et al. (1976), users still can be satisfied with the interactions and relationships that develop between participants. Social presence is a strong indicator of user satisfaction, and thus, as the level of social presence increases, so does overall user satisfaction (Schweer, 2011). Through the creation of informal relationships, users begin to feel a sense of community (Gunawardena & Zittle, 1997).

As online learning grows in popularity, research supports the existence of social presence in these mediums (Swan, 2003). Swan (2003) found teachers who interacted with students and

gave positive reinforcement to those demonstrating immediacy and intimacy in the discussions led to greater social presence and student satisfaction within the course. When users and students interacted with each other, they were more likely to create these bonds and form a community, thus encouraging further interaction (Swan, 2003). Higher levels of interaction led to greater user satisfaction within the medium (Swan, 2003).

In a study of online conferencing interactions in a graduate-level collegiate course, Gunawardena and Zittle (1997) found that student perceptions of social presence were dependent upon the levels of social presence created by the instructors and moderators within the CMC medium. The more that moderators implemented engaging factors, such as interactivity, the greater the level of social presence and overall student satisfaction (Gunawardena & Zittle, 1997). These factors were considered by Gunawardena and Zittle (1997) to have more impact on social presence than the medium of communication itself (Gunawardena & Zittle, 1997). However, when the interface of a medium is easy-to-use, participants will be more willing and able to contribute to the community and overall social presence (Wei et al., 2012).

Recent studies unrelated to online learning have examined social presence in structured and unstructured conversations through the micro-blogging social media outlet Twitter (Pritchett et al., 2012; Schweer, 2011). Pritchett et al. (2012) analyzed structured conversations in which a moderator was present to direct discussion topics and engage participants. Results showed that the presence of a moderator allowed users to be more continuously engaged with the conversation, as the moderator could encourage comments, questions, and interactions among members of the group. Additionally, social presence was created effectively within the conversations (Pritchett et al., 2012).

In Schweer's (2011) study of un-moderated #FoodD conversations, both quantitative and qualitative measurements were taken. Despite the absence of a moderator, results indicated a degree of social presence was still created between users, who acted as individual moderators, created informal relationships with each other, and effectively created a social presence within the discussion (Schweer, 2011).

Tu & McIsaac (2002) found that privacy levels within the medium could influence user satisfaction. One-to-one communications, such as email, are a more personal form of communication where privacy levels are much higher and users are more willing to divulge personal information (Tu & McIsaac, 2002). Users considered many-to-many communications, such as open online classrooms and bulletin boards, to be much less private. Users found it more risky to divulge personal and emotional information in these less private mediums (Tu & McIsaac, 2002). However, they did not believe that sharing any personal information in a less private medium would affect them negatively (Tu & McIsaac, 2002).

Mobile social presence recently has begun to emerge as a field of study. Tu, McIsaac, Sujo-Montes, and Armfield (2012) stated that the medium of mobile technology offers "wider and more diversified social interactions" (p. 13). From an education standpoint, the researchers encouraged teachers to incorporate a mobile technology aspect into their courses, as it can encourage learners to become more engaged and create a mobile network complementary to the learning environment. According to Tu et al. (2012), mobile social presence generates a context-richer type of interaction and communication than traditional CMC communication mediums do.

Businesses also are capitalizing on the emergence of mobile social presence, as they develop marketing campaigns tailored specifically for mobile users (Busby et al., 2010). The use of mobile advertising is far more prevalent in Asia than in North America and Europe, although

mobile advertising companies are working actively to create effective, media-rich mobile advertisements (Busby et al., 2010).

Absence of Social Presence in Computer-mediated Communication

Due to the lack of nonverbal elements, CMC is extremely low in social presence, as compared to face-to-face communications (Short et al., 1976). Despite the number of studies supporting social presence in CMC, some state that valid social presence cannot develop in these contexts (Sproull & Kiesler, 1992). This inability to transmit information through facial expression, eye movement, dress, and nonverbal and vocal cues (Short et al., 1976), also known as "social context cues," can withhold information regarding actors status and spatial context, which could be vital information to the interaction and overall message (Sproull & Kiesler, 1992). It is argued that these cues are critical to the creation of social presence in communication, and without them, social presence becomes difficult to develop (Short et al., 1976).

Additionally, the absence of these social context cues can lead to an increase in uninhibited communication, or "flaming," where actors make foul statements or say things they may not have in face-to-face interactions (Sproull & Kiesler, 1992). However, this can be mediated with the availability of synchronous and asynchronous CMC (Walther & Burgoon, 1992). In synchronous CMC, messages are transferred in real-time. In asynchronous communications, messages can be drafted and contemplated, giving users the opportunity for self-presentation and thoughtful impressions, which ultimately could present a different message than synchronous statements would (Walther & Burgoon, 1992). When utilizing asynchronous information, users may reconsider their "flaming" comments before sending them (Walther & Burgoon, 1992).

Walther (1992) argued that despite the absence of social context cues, CMC still can prove a valuable form of communication for quick, timely interactions that are focused on simple function, such as data transfer. Though CMC will never replace face-to-face communication, it has become more popular for social exchanges than ever before, as it optimizes a user's self-image and enhances certain interactions (Tu & McIsaac, 2002; Walther, 1992). Liu (2002) agreed that CMC can be used not just for "task-oriented" communications, but also for "socio-emotional" communications, and can be equally satisfying to users as task-oriented interactions.

CHAPTER III

METHODOLOGY

Chapter Overview

Social presence originally was defined as the acknowledgement and appreciation of another user within a medium of communication (Short et al., 1976). As Internet and computer use become widespread, the description of social presence was revised for application to CMC and social media, where it is an important part of online interactions (Tu & McIsaac, 2002). Although the use of social presence has been studied in CMC interactions related to specific topics, its application to discussions of agriculture is limited. With increased use of social media, agricultural communicators recognize the need to expand research in this area (Pritchett et al., 2012; Schweer, 2011). Further research will provide practitioners with an understanding of social presence categories used in CMC, so they may apply them effectively to their own communications and interactions.

This study examines social presence in discussions of agricultural topics on Twitter. Tweets containing the hashtags #GodMadeAFarmer and #SoGodMadeAFarmer in relation to the Ram Trucks' "Farmer" commercial were collected and analyzed using the Model and Template for Assessment of Social Presence (Rourke et al., 2001). This chapter will focus on the research data, population, and sample for the study, as well as the research design and methods of analysis of the data.

Institutional Review Board

Approval from the Institutional Review Board at Oklahoma State University was not required for this study, as the study did not involve the use of physical human subjects. Data gathered were available publicly from Twitter.com and accessible through Internet access.

Research Design

This study used quantitative and qualitative content analysis to analyze the data and achieve the purpose and objectives of the study. Quantitative analysis was conducted using Microsoft Excel to determine descriptive statistics of the data. Qualitative content analysis was used to analyze the contents of the data. Content analysis is a "research technique for making replicable and valid inferences from data to their context" (Krippendorff, 1989, p. 403). The most appropriate data for content analysis include verbal discourse, written documents, and visual representations, where mass media has been the most common source (Krippendorff, 1989).

All tweets from the data were classified into one or more of three social presence categories from the Model and Template for the Assessment of Social Presence, defined by Rourke et al. (2001) and found in Table 1. The first of these categories was affective, where messages contained expressions of emotion, humor, and self-disclosure. The second category was interactive and included messages that continued a thread, quoted from and referred to others' messages, asked questions, complimented, and expressed appreciation or agreement. The third category was cohesive, where messages addressed other participants by name, referred to the whole group using inclusive pronouns, and included salutations (Rourke et al., 2001).

Population and Sample

The population of this study included all tweets related to Ram Trucks' commercial "Farmer" from the 2013 Super Bowl XLVII using the hashtags #SoGodMadeAFarmer and #GodMadeAFarmer, sent between the first tweet sent after the commercial played during the fourth quarter of the Super Bowl XLVII and 11:59 p.m. Central Standard Time on Sunday, February 3, 2013.

A total of 8,536 tweets using the #GodMadeAFarmer hashtag and 4,717 tweets using the #SoGodMadeAFarmer hashtag were sent, for a combined total of 13,253 tweets. Due to the large number of tweets in the population, 20% of tweets from each hashtag were drawn as a sample for analysis. Therefore, the sample size for the #GodMadeAFarmer hashtag was 1,708 and the sample size for the #SoGodMadeAFarmer hashtag was 944, for a total of 2,652 tweets analyzed. Sampled tweets were drawn through a random sample software program. All of the archived tweets were available publicly at the time of data collection, meaning the users who sent the tweets had a publicly accessible and viewable profile. Twitter saves tweets in its database, archiving indefinitely and allowing public access to every public tweet sent through history.

Data Collection

To gather all tweets related to the "Farmer" commercial, Twitter's advanced search tool was used to search for all tweets that included the #GodMadeAFarmer and #SoGodMadeAFarmer hashtags. Twitter's advanced search tool allows users to tailor search results to specific date ranges, usernames, hashtags, and more, to make it easier to find specific tweets (Twitter, Inc., 2015). The hashtags were used as the main search tool for this data due to their convenience of use in "blending both communication and organization" in the research process (Chang & Iyer, 2012, p. 253). Time stamps on tweets were used to determine what time

the tweets were sent. Tweets were recorded from the time that the commercial played on Sunday, February 3, 2013, through 11:59 p.m. Central Standard Time on Sunday, February 3, 2013.

The #GodMadeAFarmer hashtag was used to collect archived tweets because it became one of the top-10 most tweeted hashtags during the Super Bowl (Post game analysis…, 2013). The #SoGodMadeAFarmer hashtag was used because it is a slight variation on the initial hashtag and contained the phrase "So God Made A Farmer" verbatim from Paul Harvey's speech played during the commercial (Piller, 2013). According to several of the tweets included in the sample, such as "@Jared_Jimmy11: #Godmadeafarmer and #PaulHarvey is trending like crazy. Best commercial of #SuperBowl47 #Dodge #Ram" and "@smsimmons23: Glad to see that #godmadeafarmer is trending. Best commercial ever," the hashtag was trending shortly after the commercial aired, meaning it became one of the most popular hashtags being used at that moment in time (Twitter Inc., 2015).

Tweets were downloaded and saved in two PDF documents; one for each of the hashtags used. From these PDF documents, each individual tweet was copied and pasted into one of two Microsoft Excel spreadsheets. One spreadsheet contained all tweets using the #GodMadeAFarmer hashtag, and the second contained all tweets using the #SoGodMadeAFarmer hashtag. Within each spreadsheet, a column was set for each of the following titles: Random Sample Number, Twitter Number, Timestamp, Twitter Username, tweet, Affective Category, Interactive Category, and Cohesive Category. All other information was removed, including action links attached to each tweet like "Retweet" and "Reply." Next, filters were used to eliminate duplicate tweets. Retweets were not considered duplicates and were included in the data set because in the downloadable PDF format retweets are not explicitly indicated.

When the tweets were pulled using Twitter's advanced search tool, they each contained an assigned number based on the time they were sent, with "1" being the first tweet sent using that hashtag. After formatting and organizing tweets, samples of the population were measured and retrieved to more efficiently analyze the large volume of tweets. These samples were selected through random sampling. Tipton (2013) stated that the goal of a sample is to "select the sample so that it is like a 'miniature' of a well-defined population." Its use reduced variability and increased the normalcy of the sample as a reflection of the entire population of tweets (Tipton, 2013).

The original numbers assigned to the tweets by Twitter were used to pull 20% of the population of tweets using the #GodMadeAFarmer hashtag and 20% of the tweets using the #SoGodMadeAFarmer hashtag. Using the number randomizing software, each of the chosen random tweets was assigned a new number, which was then identified in its appropriate column in the corresponding spreadsheet. Through this method, a tweet could be traced in accordance to its randomized number, as well as its number originally assigned by Twitter's advanced search tool.

Data Analysis

A mixed-method approach using quantitative and qualitative data analysis was used for this study. Although individual tweets using the specific hashtags #SoGodMadeAFarmer and #GodMadeAFarmer were collected, it is recognized that this is an aggregated method of retrieving messages based on specific terms and phrases, and could result in the inclusion of some tweets unrelated to the commercial (Aiello et al., 2013). However, these tweets still were included in the data, as it is ultimately unknown if the sender of the tweet intended for it to relate to the commercial or not.

Each individual tweet from the random sample first was analyzed qualitatively to determine which social presence category indicators were present in the message. The tweets were displayed in a Microsoft Excel spreadsheet, where each message was shown in a row on the left of the document. Following that message in subsequent columns were blank cells for marking the category or categories of the tweet. For each appropriate category, a value of "x" was marked in the blank cell to the right-hand side of the message. Each message may have fallen into more than one category of social presence (Rourke et al., 2001).

Tweets were organized in the aforementioned Microsoft Excel spreadsheets based on the time that they were sent. Then, Research Randomizer software was used to generate a random number list, or random sample, based on the sample sizes previously discussed. The random number list allowed the researcher to determine which tweets would become part of the sample, and would be analyzed. These tweets were placed into a new spreadsheet, which was further utilized by coders for the qualitative portion of the study. Once sample groups were determined, two coders qualitatively coded each tweet and the data were analyzed quantitatively.

Before analyzing the whole sample of tweets, 10% of the tweets from each of the #GodMadeAFarmer and #SoGodMadeAFarmer samples were pulled to ensure dependability and reliability. Both of these smaller samples were independently categorized into one or more of the three categories of social presence by two coders, which included the researcher of the study.

Initially, three coders were used for analysis. However, one coder and their corresponding data tweets were removed from the study, as that coder was unable to complete the coding process.

Statistics were calculated using Microsoft Excel to determine frequencies, rates, averages, totals, and percentages for each sample. Statistical analysis then determined which

tweets were coded differently by the two coders. At this time, the coders came to a consensus, or agreement, over how those differing tweets should be coded. Consensus allowed all tweets to be coded with consistency and reinforced dependability of the data and results.

When both coders had completed coding the samples, they met again and re-evaluated the coded tweets to come to consensus. The consensus process allowed coders to examine the tweets that had been coded differently by at least one coder and agree upon which category the tweet should be coded as. To categorize the collected tweets, the coders used Rourke et al.'s (2001) Model and Template for Assessment of Social Presence, shown in Table 1. This model was developed for the assessment of verbal interactions in a face-to-face classroom as well as studies of CMC interactions (Pritchett et al., 2012; Schweer, 2011).

This content-analysis model was used to classify messages into one or more of three established categories of social presence: affective, interactive, or cohesive. Affective category message indicators contained expressions of emotion, use of humor, self-disclosure, and emoticons. Interactive category messages referred to the presence of another person by continuing a thread or previous conversation, quoting from others' messages, referred explicitly to others' messages, questions, and compliments and expressions of appreciation and agreement. Cohesive message indicators referred to or addressed specific individuals by name, or to the group using inclusive pronouns such as "we," "us," or "our," and greetings or salutations (Rourke et al., 2001). A single tweet may include multiple indicators from different categories, qualifying it into more than one category of social presence. Two coders reviewed each tweet and designated it into at least one of the categories of social presence.

After completing this coding process, a final statistical analysis of the data was conducted using Microsoft Excel to draw descriptive statistics, including the most common categories of social presence utilized in the tweets and how those categories were used.

CHAPTER IV

FINDINGS

Chapter Overview

The changing digital landscape has supported the popularity of social media over the last two decades (Pew Research Center, 2014; Smith et al., 2014). Twitter, in particular, has garnered millions of international users (Twitter, Inc., 2015). Social presence begins to develop as users interact and communicate with one another in Twitter and other CMC platforms (Tu, 2000). Numerous studies have been devoted to understanding social presence in various types of CMC, especially in discussions related to politics and popular culture (Smith et al., 2014). Social presence in discussions related to agriculture, however, has limited support (Pritchett et al., 2012; Schweer, 2011). Understanding how the public communicates about agriculture and uses social presence will allow agricultural communicators to effectively reach and interact with their audiences (Pritchett et al., 2012; Schweer, 2011).

The findings and discussion for this research are based on quantitative and qualitative data collection. The purpose of the study was to determine the types of social presence used in a sample of tweets related to Ram Trucks' "Farmer" commercial.

Tweets collected for the population were sent immediately after the commercial aired during Super Bowl XLVII until 11:59 p.m. that night. Tweets were collected using Twitter's advanced search tool, gathering tweets containing the hashtags #GodMadeAFarmer or #SoGodMadeAFarmer. A total population of 13,253 tweets was collected. Due to the large number of tweets sent and collected during that time frame, a sample of tweets from each

hashtag were collected for analysis. This sample size totaled 2,652 tweets. Tweets were analyzed using Rourke et al.'s (2001) Model and Template for Assessment of Social Presence.

Findings Related to Research Objective 1

The first research objective was to describe the population of Twitter users who sent tweets using the hashtag #GodMadeAFarmer and #SoGodMadeAFarmer after Ram Trucks' 2013 "Farmer" Super Bowl XLVII commercial.

After removing duplicate names, 2,594 unique users contributed tweets to the sample. A maximum of 58 users, or 2.23% of users, sent more than one tweet in the sample. Additionally, 429 tweets were direct tweets, meaning they contained tags of other users in the messages. These direct tweets were 16.18% of all tweets in the sample.

Within this population of tweets, 507 unique hashtags were used. These unique hashtags were used in 1,315, or 49.59%, of the tweets, and do not include the #GodMadeAFarmer and #SoGodMadeAFarmer tweets used for the data search. The 10 most popular hashtags and their frequencies are presented in Table 2. The rate is measured as the percentage of tweets that used the respective unique hashtag out of the total sample size of tweets using unique hashtags (1,315 unique hashtags).

Table 2

Frequency of 10 Most Popular Unique Hashtags in Sample of Tweets Related to "Farmer" (1,315 hashtags)

Hashtag	f	Rate (%)
#dodge	154	11.71%
#superbowl	92	7.00%
#paulharvey	67	5.10%
#ram	55	4.18%
#sb47	38	2.89%
#dodgeram	32	2.43%
#ffa	31	2.36%
#superbowl47	30	2.28%
#brandbowl	20	1.52%
#superbowlads	16	1.22%

The 10 most popular unique hashtags were used in 535 tweets, or 40.68% of all tweets containing unique hashtags. The number of tweets containing unique hashtags comprises 49.58% of all tweets in the sample.

Findings Related to Research Objective 2

The second research objective was to classify the tweets related to Ram Trucks' "Farmer" commercial into one of Rourke et al.'s (2001) three social presence categories, found in Table 1. To classify these tweets, each tweet was marked with the indicators it included, and the researcher recorded the number of times each indicator appeared throughout the data sample. Each of the three established social presence categories were found within the sample of tweets ($n = 2,652$).

Affective indicators ($f = 1,885$) were the most common type of indicator found throughout the data sample, followed by interactive ($f = 939$) indicators and cohesive ($f = 237$) indicators. The frequency of these indicators is described in Table 3. Note that the presence of an

indicator in a tweet does not cause the researcher to label the entire tweet as such because each

tweet may contain more than one indicator.

Table 3
Frequencies of social presence indicators used in data sample (3,061 indicators)

Social presence indicator	f	Rate (%)
Affective	1,885	61.58%
Interactive	939	30.68%
Cohesive	237	7.74%

Note. The frequencies of these indicators do not represent the frequencies of tweets in the sample, only the frequencies of each indicator.

A total of 3,061 indicators were present in the sample of tweets ($n = 2,652$). More than

60% of the indicators were affective.

After determining the frequency of indicators throughout the sample, tweets were

determined to be one of the following types, based on the indicators they possessed: affective;

interactive; cohesive; affective and interactive; affective and cohesive; interactive and cohesive;

or affective, interactive, and cohesive. As stated, a tweet can contain one or more social presence

indicator (Rourke et al., 2001), allowing it to be categorized as a mixed type of tweet. Affective

tweets were most common, followed by interactive tweets and cohesive tweets, respectively.

These totals are shown in Table 4.

Table 4

Frequencies of social presence categories in tweets (2,652 tweets)

Social presence category	Frequency	Rate (%)
Affective	1,524	57.47%
Interactive	650	24.51%
Cohesive	84	3.17%
Affective and Interactive	241	9.09%
Affective and Cohesive	105	3.96%
Interactive and Cohesive	33	1.24%
Affective, Interactive and Cohesive	15	0.57%

Examples of tweets containing each of these indicators, or combinations of indicators, are further described in the following sections.

Affective Indicators

Tweets containing affective indicators were found to be the most common type of tweet throughout the sample. A total of 1,885 affective indicators were recorded throughout the sample, with 1,524 tweets coded as solely affective tweets. This accounts for 57.47% of the data. Tweets with affective indicators included "expressions of emotion, use of humor, self-disclosure and emotions" (Rourke et al., 2001, Table 1). An example of an affective tweet was, "@Derek_Johnson16: I'm a Ford guy but I have a lot of respect for Dodge now. #GodMadeAFarmer."

Interactive Indicators

Tweets with interactive indicators were the second most common type of tweet. Interactive messages "refer to the presence of another person by continuing a thread or previous conversation, quoting from others' messages, referring explicitly to others' messages, questions and compliments and expressions of appreciation and agreement" (Rourke et al., 2001, Table 1). These tweets made up 24.51% of the total sample of tweets. There were 939 interactive indicators recorded throughout the sample. A total of 650 tweets were recorded as interactive. An example of an interactive tweet was, "@mytngenes: Agree! RT @galtsgirl: Best damned commercial of the night. #GodMadeAFarmer," or "@lindseyboyle16: #GodMadeAFarmer."

Cohesive Indicators

Tweets with cohesive indicators were the least common of the three social presence categories in the population. Message indicators for cohesive tweets "refer to or address specific individuals by name, or to the group using inclusive pronouns such as 'we,' 'us,' our 'our,' and

greetings or salutations" (Rourke et al., 2001, Table 1). There were 237 cohesive indicators noted throughout the sample, and a total of 84 cohesive tweets. These tweets made up 3.17% of the sample. An example of a cohesive tweet was: "@theGAcowgirl: yall help me get the #GodMadeAFarmer commercial spread around!"

Tweets containing more than one indicator

Affective and interactive.

A category combination of affective and interactive tweets were the third most common type of tweet. There were 241 tweets containing both affective and interactive indicators, making up 9.09% of the sample. An example of a tweet containing indicators for both of these categories was, "@wifarmgirl: Thank you #dodge for making the best super bowl commercial. #thetruth #Godmadeafarmer."

Affective and cohesive.

Affective and cohesive tweets contain both affective and cohesive indicators. There were 105 tweets containing both affective and cohesive indicators, or 3.96% of the tweets. The tweet "@pj8seconds: What @RamTrucks did tonight during the Superbowl for the hardworking #agriculture community was huge. #GodMadeAFarmer #Farm" was an example of a tweet containing both indicators.

Interactive and cohesive.

Interactive and cohesive tweets contain both social presence indicators. There were 33 tweets containing both interactive and cohesive indicators, or 1.24% of the sample. An example of a tweet containing these two indicators was, "@garlandpollard: @kjwebb50 @davidlimbaugh Paul Harvey. Good day! #superbowl #godmadeafarmer #dodge #abcradio #abc #Chrysler."

Affective, interactive, and cohesive.

Fifteen tweets, or 0.57% of the sample, contained all three indicators of social presence. The tweet, "@jaxmom97: @todayshow Favorite: #Dodge Ram truck commercial #GodMadeaFarmer Worst: the gross GoDaddy commercial. #SuperBowl" and the tweet "@roadchicks: #godmadeafarmer @ffaboys from a former Texas FFA state officer (CountryChick), I love that ag was celebrated during the #SuperBowl! #dodge," are examples containing all three social presence indicators.

Findings Related to Research Objective 3

Research objective three was to determine any new social presence indicators necessary to classify tweets related to Ram Trucks' "Farmer" commercial that were not included in Rourke et al.'s (2001) social presence categories. There were 284 tweets that contained only one of the hashtags #GodMadeAFarmer or #SoGodMadeAFarmer and did not have any other expressions of emotion, humor, or communications with other users. These made up 10.71% of the tweets. In this study, these tweets were categorized as interactive tweets. This category was used for classification under the assumption that users were "expressing agreement" and "continuing from another's thread" (Rourke et al., 2001) by using exactly the same hashtag as other users before them had. However, these tweets did make up more than one-tenth of all tweets in the study. Creating a separate social presence category for this type of tweet would alter the final results of the study, changing the frequency and ratio of interactive tweets.

CHAPTER V

CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

Chapter Overview

With the growth of Internet-based social communications, a body of research is being grown to understand the relationships developed through those communications, and more specifically, the theory of social presence (Rourke et al., 2001). The majority of these studies focus on subjects like online education (Swan, 2003; Tu, 2000; Tu & McIsaac, 2002) and conversations surrounding politics and popular culture (Smith et al., 2014). Communications about agricultural topics do exist, but research examining these interactions is limited, especially when considering social presence (Schweer, 2011; Pritchett et al., 2012). To improve research, education, and professional communications, further research must be conducted to understand how social media users use social presence in agricultural communications (Pritchett et al., 2012; Schweer, 2011).

In this study, a sample of tweets using the hashtags #GodMadeAFarmer and #SoGodMadeAFarmer that were sent after Ram Trucks' "Farmer" commercial were collected for analysis using the Model and Template for Assessment of Social Presence by Rourke et al. (2001). Data were analyzed both qualitative and quantitatively. A population of 13,253 tweets was collected, with a sample size of 2,652 tweets.

Results showed 1,524 (57.47%) of tweets were categorized as affective, 650 (24.51%) were interactive, and 84 (3.17%) were cohesive. Affective and interactive tweets totaled 241

(9.09%), affective and cohesive tweets totaled 105 (3.96%), interactive and cohesive tweets totaled 33 (1.24%), and 15 tweets (0.57%) fell into all three categories of social presence.

Conclusions Related to Research Objective One

The first objective for this study was to describe the population of Twitter users sending tweets containing the hashtags #GodMadeAFarmer and #SoGodMadeAFarmer.

The data sample included 429 direct tweets, or 16.18% of the total sample of tweets. Direct tweets are sent when users tag or mention other users in their message by including the "@" symbol, followed by the users' Twitter handle or username (Huberman, Romero & Wu, 2008). This action signifies that users recognize and attempt to engage with others' presence in the Twitter platform and fulfills indicators from the cohesive category of social presence (Rourke et al., 2001). By developing that direct connection, users deepen the level of social presence in the conversation. Additionally, they draw other users into the #GodMadeAFarmer and #SoGodMadeAFarmer conversation, making those users part of the created community.

The portion of direct tweets is slightly lower than that suggested by Huberman et al. (2008), who determined that approximately 25% of all tweets are direct tweets. The difference between the Twitter network standard shared by Huberman et al. (2008) and this data sample suggests other types of social presence are stronger in the sample and that direct tweets were not the most popular way to develop social presence in the conversation about the "Farmer" commercial.

Throughout the sample, a number of unique hashtags also were used, other than #GodMadeAFarmer and #SoGodMadeAFarmer that were used to archive the tweets. On Twitter, users often include hashtags in their tweets to make their messages searchable and easily categorized (Chang & Iyer, 2012). The hashtags also can make a tweet part of a larger

conversation, where all users include a specific hashtag in their tweets so they easily can find other individuals in the same conversation (Chang, 2010). Hashtag use effectively creates small communities based around common interests and can support relationships among individuals who are separated in time and space (Chang & Iyer, 2012). In addition to the two archived hashtags (#GodMadeAFarmer and #SoGodMadeAFarmer), Twitter users included 1,315 unique hashtags in the sample of tweets. These hashtags included words that were directly related to the commercial under discussion, such as #dodge, #superbowl, #paulharvey, and #ram.

Chang and Iyer (2012) suggested users may use unique hashtags for a variety of reasons. One of these may be for self-communication, acting as a memory cue when an individual wants to track a certain trend or activity they have participated in. Users also may use hashtags to facilitate public search and self-promotion (Chang & Iyer, 2012). This suggests users use the hashtags to be part of a greater conversation or community, hoping other individuals will see them use the hashtag and involve them in further conversation (Chang & Iyer, 2012).

This study did not include a survey to ask participants why they used or created unique hashtags. It may be assumed that these users hope to achieve the aforementioned goal of attracting attention from other users to involve them in further conversation (Chang & Iyer, 2012). A survey of these individuals would offer more depth to the study, and a greater understanding of social presence.

Twitter Network Formation

The sample of this population shows that 2,594 unique users Tweeted messages using the specified hashtags. Therefore, up to 58 users tweeted more than once using the same hashtags. However, this is only 2.19% of all tweets, indicating that the vast majority of users sent only one

tweet and did not converse using the hashtags beyond that initial tweet. These results suggest the data can be supported by the brand cluster network formation (Smith et al., 2014).

Smith et al. (2014) developed six network types that seem to classify a majority of conversational topics on Twitter. In the brand cluster network formation, tweets are sent about brands or specific products using keywords and hashtags (Smith et al., 2014). Participants in this network type use the same hashtags and share their ideas with the greater Twitter network, but they often do not connect with each other directly.

Additionally, the number of direct tweets in this data was more than 16%, indicating that users were interacting and including each other in the conversation. However, that leaves at least 83% of the tweets sent without reciprocation. Though there are no statistics to directly support the level of participation necessary for a conversation to be classified as a brand cluster network, the descriptions provided by Smith et al. (2014) suggest this would be the most appropriate classification of Twitter network for the #GodMadeAFarmer and #SoGodMadeAFarmer conversation.

Conclusions Related to Research Objective Two

Research objective two was to classify the #GodMadeAFarmer and #SoGodMadeAFarmer tweets into one or more of Rourke et al.'s (2001) social presence categories which are affective, interactive, and cohesive.

Nearly 60% of tweets were classified into the affective category of social presence, meaning the tweets contained expressions of emotion, use of humor, and self-disclosure. Users contributed to the development of social presence by exposing emotions and promoting a sense of openness with other participants (Rourke et al., 2001). Computer-based communications provide an opportunity for users to develop social presence through affective messages, as they

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did in this conversation, through the use of emoticons, such as a smile (:), (:, :-), etc.) or a heart

(<3) (Gunawardena & Zittle, 1997). These types of tweets also increased the feeling of intimacy

in the interactions, another aspect of social presence (Gunawardena & Zittle, 1997).

Interactive tweets were the second most common categories of social presence.

Interactive tweets represented retweets as well as questions, direct references to others' posts,

and continuations of previous threads (Rourke et al., 2001). Twitter offers a user-friendly

medium for this type of social presence, as the platform allows users to easily retweet, reply to,

and favorite tweets sent by other users (Twitter, Inc., 2015). This convenience supports the

development of social presence in the medium. A category combination of affective and

interactive tweets was the third most common type of tweet, which maintains consistentcy with

the conclusions related to both affective and interactive tweets, the first and second most

common categories, discussed above.

Cohesive tweets were the fourth most common category of tweet, when the tweeter

addresses the group as a whole, using words like "we" or "our," and contains greetings and

closures (Rourke et al., 2001). Tweets that address or refer to other participants by name are

categorized as cohesive (Rourke et al., 2001). There were 429 instances where other users were

tagged within a tweet, signifying a retweet or that the user sending the tweet was encouraging

others to participate and engage in a conversation with them. This direct interaction presents a

strong example of social presence in the medium, as users acknowledge the presence of other

users and encourage them to be participants in the conversation.

Though Rourke et al. (2001) suggested affective categories of social presence may be

more difficult to portray in online environments, they are prominent in this situation. This may

be because Rourke et al.'s (2001) studies, among others, looked at CMC interactions in an online

classroom environment, where users were prompted to interact with one another directly in loosely structured formats. In an unstructured conversation, such as that based around the #GodMadeAFarmer and #SoGodMadeAFarmer hashtags, users may be less likely to interact with one another and create interactive and cohesive tweets because they are not prompted to do so. They still, however, wanted to contribute their thoughts and be heard on Twitter, thus increasing the proportion of affective tweets. However, the presence of a moderator or further structure and direction for use of the hashtags could have encouraged more interactive activity.

Additionally, personal privacy may have had an influence on the results. Tu and McIsaac (2002) suggested users have been more likely to disclose personal information and opinions about themselves in a private CMC environment, like an online classroom or private discussion board. Despite the results of this study indicating the development of social presence in the medium, the tweets were available publicly to anyone on the Internet. Had the same study been conducted over tweets shared in a private environment, there could be an increase in the number of affective tweets as users disclose personal thoughts and information. Or, the ratio of interactive tweets could increase if users are less shy about reacting to directly each other's statements. Cohesive categories also may be more common if users call each other by name and refer to the entire group within a message or thread of messages. As Tu and McIsaac (2002) explain, the development of social presence may vary within different environments.

These conclusions are supported by Pritchett et al.'s (2012) and Schweer's (2011) findings regarding structured Twitter conversations. Conclusions suggest Twitter conversations occurring in a structured environment, where the discussion was scheduled and pre-organized, were more likely to be interactive. Studies of both mediated and unmediated conversations show

interactive messages to be the most prominent, followed by cohesive, and then affective (Pritchett et al., 2012; Schweer, 2011).

The conclusions for this objective also support those of the first objective, discussing the sample's classification into Smith et al.'s (2014) brand cluster Twitter network. In this network, tweets are sent as information into the greater Twitter network, but limited interaction exists among participants. In examining the indicators of the social presence categories, affective messages are made up of personal expressions and do not require the involvement of other users. Because affective message indicators made up the majority of all indicators, and affective tweets were the most common, it may be concluded that limited interaction between users occurred and the results support the brand cluster network, as described in the first objective.

Conclusions Related to Research Objective Three

The third objective was to determine any new social presence indicators that may exist within the population or suggested alterations to Rourke et al.'s (2001) model and template. Though each of the tweets in the sample got classified into one of the three social presence categories of affective, interactive, and cohesive by the coders, two Twitter features warrant further attention.

The first feature is the classification of hashtags used in the sample. The coders coded hashtags into appropriate categories depending upon what they said. For example, a hashtag containing an expression of emotion, like "#ilovemyfarmer" was coded as affective. However, 284 tweets from the sample contained only the hashtag #GodMadeAFarmer or #SoGodMadeAFarmer, with no other words, texts, or symbols. These hashtags were classified as interactive messages, with the assumption that users were attempting to become involved in the community developed by the hashtags by continuing the thread of messages. But, because these

tweets represent 10.71% of the sample, they may warrant a separate indicator or category of social presence in the future.

The Model and Template for Assessment of Social Presence (Rourke et al., 2001) initially was created for analysis of social presence in an online learning environment, where hashtags were not being used in any way. Therefore, it is understandable no suggested categorization for hashtags exists. However, because hashtags are such a prominent form of communication and community development within social media, especially Twitter (Chang & Iyer, 2012), it may be useful to develop a social presence indicator for the classification of hashtags. Classifying hashtags, or at least those when used alone, could contribute another level of social presence to the existing categories.

The second feature covers the concept of retweets in Twitter. Retweets signal the acknowledgement of another user in the medium and can support social presence in Twitter. In this study, retweets were not considered duplicates and were treated as regular tweets. Again, because Rourke et al.'s (2001) model was created for online classroom use, it does not include indicators supportive of Twitter's retweet feature. But, retweets are the re-statement of another individual's message. As Schweer (2011) recognized, retweets could lie in the interactive category, due to indicators of "continuing a thread," "quoting from others' messages," and "referring explicitly to others' messages." To reduce coding overlap, it is agreed that "improved definitions should be created to account for this feature" (Schweer, 2011).

Recommendations

Recommendations for future research

A few recommendations will help develop the existing research base and support the development of CMC. Primarily, further research into social presence theory should be

conducted. As research has demonstrated, the rise in popularity of social media also has supported the development of social presence within those social media platforms (Biocca et al., 2003). Despite the variety of social media outlets, Lowenthal (2010) believes social presence must continue to be studied using multiple and mixed methods to understand how it changes in different contexts.

In addition to the study of social presence theory, further research must examine CMC related to agriculture. Though expansive research is conducted by organizations like the Pew Research Center to understand how individuals utilize social media platforms (Smith et al., 2014), these studies examine interactions surrounding topics like pop culture and politics. Little research exists around discussions of agriculture in these mediums. Through further research into this topic, agriculturalists and communicators in the industry may better understand how to communicate effectively with the public through social media (Pritchett et al., 2012; Schweer, 2011). The studies may use data from communications surrounding advertisements, as this study examines, as well as food and agricultural products, and agriculture-related news and journalistic articles, among other subjects.

The population from this study may be used in future research through qualitative content analysis. In doing so, future researchers may examine the tone of messages; determine prevalent topics, ideas or themes; and seek to understand exactly what Twitter users were saying in these tweets, and not just how they were interacting. Researchers may examine methodology used by Pritchett et al. (2012) and Schweer (2011), who also conducted a content analysis in tweets from an agriculture-related discussion.

Future studies also may analyze sentiment in Tweets from discussions of agricultural topics. AdAge and BlueFin Labs determined sentiment surrounding social media commentary

about the "Farmer" commercial for 45 minutes after it aired, stating 51% of the messages were neutral, 38% were positive, and 11% were negative (Dumenco, 2013). A similar study would be appropriate for other agricultural discussions. Sentistrength software, available free of charge for academic use, is appropriate for determining sentiment in tweets because "it is designed for short informal text with abbreviations and slang" (Thelwall, Buckley, & Paltoglou, 2011, p. 411). The software's algorithm determines a positive or negative sentiment score related to the content within a sample of short text-based messages using a database of keywords with corresponding positive and negative scores. Further, the degree of polarity of that sentiment may be determined also. Understanding sentiment will determine whether Twitter users feel positively or negatively about a topic, and give insight to why certain events resonate with the population (Thelwall et al., 2011).

Finally, future researchers also may consider conducting a similar study analyzing social presence in tweets related to other commercials sent during a similar timeframe or event, like the Super Bowl. The results may be compared to this study to determine if users discussed commercials differently. Additionally, sentiment could be considered as a factor to compare the commercials as well. As previously discussed, software like Sentistrength allows for this type of analysis (Thelwall et al., 2011).

Recommendations related to the research process

One challenge arose during the coding process, when one coder was unable to complete the coding assignment. The initial data analysis plan was to use three coders for coding tweets. Due to unforeseen circumstance, the third coder was unable to fulfill their responsibilities at the end of the analysis process. Therefore, that coder's data was removed from the analysis and calculations. The coder also was not involved in the final consensus meeting. Because of this

change that occurred after the coding process began, some coding results may be different than if three coders completed the analysis. It is recognized that this may alter the reliability of the results and findings. To avoid similar issues in the future, researchers should allow adequate time for the research process to occur.

In case a coder is not able to fulfill his or her duties, there will be more time for re-coding from a new coder. Additionally, researchers may plan to hire one surplus coder, who may be available as a replacement. If this coder is equally involved as the other coders, they will be able to fulfill their duties as a replacement and ensure the coding process is consistent and reliable.

One aspect of the coding process that may also be beneficial in future studies was the use and maintenance of Twitter's identification numbers for each tweet. When data is searched using Twitter's advanced search tool, Twitter displays the tweets and corresponding information on a Web page. On this page, each tweet is assigned an identification number. These assigned numbers were maintained along with the username and body of the tweet throughout the research process. If an issue or question arose about the content of a tweet during the coding process, that original identification number was used as a reference. This allowed for seamless transitions and cross-referencing between documents containing tweets and related information. It made the coding processes less chaotic. In future research involving archived tweets, maintaining this identification number also may support an efficient coding process.

Recommendations for practice

Professions within the agricultural industry will benefit from further research focused on understanding effective ways to communicate with the public in CMC. Interactions like tags, retweets, and replies can contribute to the development of social presence within the medium (Tu & McIsaac, 2002). In understanding which of these actions encourage the most interaction

between users and contribute the most to social presence, agricultural practitioners may implement better communication practices. More so, best practice guidelines may be outlined for practitioners to follow and reference for their use in social media.

Additionally, practitioners also may benefit from understanding network formations within social platforms, like Twitter. As discussed in the literature review, Pew Research Center (Smith et al., 2014) released a study that examined the networks created through users' social interactions and determined six prominent network types had developed. The researchers encouraged communicators and other professionals to use the research to predict how information will be shared and spread within Twitter (Smith et al., 2014). However, the networks studied surrounded political discussions. Therefore, future research may determine if these types of networks are also applicable to agricultural discussions, or if another form of network may be developed and analyzed. Research gathered from studies related to social presence and communication in agriculture may be applied to several areas in the agricultural industry.

When conducting events or campaigns related to agriculture in the future, agricultural communicators should consider encouraging participants to tweet their thoughts, responses, or inquires using a predesignated hashtag. The hashtag should be unique and identifiable to the event or campaign. Encouraging users to include a predetermined hashtag in their tweets related to the discussion will make it easier for practitioners and researchers to search and sort related tweets for analysis, as hashtags are searchable in Twitter (Chang & Iyer, 2012).

Furthermore, agricultural communicators should act as moderators, or create structure within discussions related to agriculture, by proposing prompts or encouraging users to interact directly with one another, as discussed by Pritchett et al. (2012) and Schweer (2011).

Implications

Studies have been conducted to understand the development of social presence in a variety of computer-mediated environments, like online classrooms and Twitter discussions (Gunawardena & Zittle, 1997; Lowenthal, 2010; Pritchett et al., 2012). However, limited research has studied social presence in discussions related to more specific topics, like agriculture (Pritchett et al., 2012; Schweer, 2011). This study examined a sample of tweets related to Ram Trucks' "Farmer" commercial and sought to understand how social presence exists in the related Twitter discussion. Conclusions show social presence was developed in the medium and contributed to the discussion as users expressed their personal thoughts about the commercial but didn't interact extensively with each other.

In this study, users developed social presence through a variety of message indicators, as well as hashtags. Users in this study contributed to a large number of unique hashtags, which likely were used to facilitate self-promotion in search (Chang & Iyer, 2012). This suggests users sought attention and interaction with other users in the medium. However, only 16% of the tweets in the sample were direct, or included a tag of another user. Additionally, a majority of the tweets were coded as affective, containing signs of emotion and self-disclosure (Rourke et al., 2001). Fewer tweets were interactive and cohesive, where users are communicating directly with each other and encouraging each other to participate in the discussion (Rourke et al., 2001). Therefore, users may have wanted to disclose personal thoughts or feelings but were not interested in garnering direct responses from other users in the medium.

Previous studies suggest that hashtags can lead to searchable conversations and the development of communities of users within Twitter (Chang & Iyer, 2012; Smith et al., 2014). However, the commercial, which was the topic of discussion, did not contain a designated hashtag, and the discussion was unplanned and unmediated. However, previous studies show that

regardless of whether the discussion is structured or unstructured, social presence still may be developed effectively (Pritchett et al., 2012). The previous studies that examined planned and mediated agricultural discussions on Twitter show increased interactive and cohesive tweets. This indicates users were interacting directly with each other, calling each other by name, or tagging each other (Pritchett et al., 2012; Schweer, 2011). Though all types of messages indicate the development of social presence, different prompts will yield different types of social presence in the medium.

Practitioners like Ram Trucks may apply these findings to their marketing and advertising plans. For example, if a marketing team wishes to implement a campaign using social media outlets like Twitter to connect with their audience, they may consider creating a designated hashtag for the campaign and encouraging users to include it every time they tweet about the product or brand, facilitating more purposeful and searchable messages (Chang & Iyer, 2012).

If these marketers wish to create a conversation and receive feedback from their audiences, they should act as a mediator, encouraging individuals to communicate with the brand as well as each other. Should the marketing team want a conversation containing more affective messages of self-disclosure and emotion, but less interaction between users, they need only to introduce a prompt or statement that plays on emotion or opinion. These different applications may help practitioners relay messages to their audiences effectively and possibly lead to the desired conversion.

Conducting further studies to understand social presence in agriculture-related discussions on Twitter, and using best practices, like those suggested by Allen et al. (2010), may help create effective marketing campaigns with desired results.

Finally, the study contributes to the priority areas for the agricultural education and communications, set forth by Doerfert (2011). The priorities seek to communicate effectively with the general public through technological mediums and have that public express an understanding of agricultural topics and issues. It is the goal of this study, along with future research, to help develop marketing campaigns that will support the agricultural industry and form valuable connections with the general public.

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