MEDIA USE FOR MARKETING PUREBRED CATTLE

By

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A THESIS PRESENTED TO THE GRADUATE SCHOOL
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To my daddy, who believed the best gift one person could give another is an education

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The cattle industry is a large enterprise for American agriculture. Despite the significant number of jobs and revenue the beef industry has provided on an annual basis, the beef industry has not been immune to both natural and man-made problems, such as disease, drought, food safety concerns, and increased input costs. A majority of genetics today are derived from purebred cattle. Purebred cattle producers marketing costs are much higher than commercial marketing costs. This study examined what media producers were using, as well as the effectiveness. Diffusion of Innovations (Rogers, 2003) was used as a theoretical framework. The researcher used survey methodology to conduct this study and a questionnaire was created. This survey was distributed to 189 clients of Ranch House Designs, Inc.. Upon analyzing the results, it was found that producers are using basic components, web components, and photography the most. It was noted broadcast components were used the least. Basic components, web components, and photography were perceived as the most effective types of media. It was recommended by the researcher further research be conducted in this field of study. Particularly, qualitative research was suggested in order to understand why certain media are used and others are not.

CHAPTER 1
INTRODUCTION

The beef industry has been an important value-added enterprise in United States agriculture (Otto & Lawrence, 2000). Gross receipts from the sale of cattle in 2012 totaled $44 billion, accounting for 21% of all agricultural receipts and making the beef sector the largest single agricultural enterprise (National Cattlemen's Beef Association, 2012). The retail equivalent of the beef industry in 2011 was $79 billion, which has continued to rise with higher input costs occurring for producers (United States Department of Agriculture, 2011). Cattle have been produced in all 50 states in the United States, providing economic contributions to nearly every county in the nation, and serving as an economic driver in rural communities (Otto & Lawrence, 2000). The beef industry has also provided an immense number of job opportunities in various sectors, employing approximately 2 million people fulltime (Otto & Lawrence, 2000).

Despite the significant number of jobs and revenue the beef industry has provided on an annual basis, the beef industry has not been immune to both natural and man-made problems, such as disease, drought, food safety concerns, policy restrictions, and increased input costs (Mintert, 2012). Herd size has dramatically diminished throughout the industry, input costs have continued to increase, and some producers have chosen to leave production agriculture rather than rebuild their cattle herd (Freitag, 2013). In 2013 the total number of beef cattle in the United States was at its lowest point since 1952, and dramatic increases in input costs, such as feed, veterinary care, machinery, fuel, labor, and marketing have placed further economic strain on the beef industry (Freitag, 2013; Otto & Lawrence, 200). Freitag (2013) stated, "Long term challenges include changing weather patterns, the effect of developing technology on both farming and food, and significant shifts in the marketing landscape (para. 2)."

History of Cattle in the United States

Columbus brought cattle to the New World in 1493 on his second voyage (Gillespie, 1998). In the early 1600s, cattle were imported from Europe, and the cattle were used mainly for milk, butter, hides, and draft (USEPA, 2013). Cattle were sold locally or the cattle were driven to cities (Revzan, 1935). There was no refrigeration system to transport meat, so cattle were shipped live (Hurt, 2002). The shipping of corn-fed cattle was first reported in 1805, and the cattle were shipped from Ohio to Maryland. These cattle were fed on corn for four to six months, with the driving of the cattle lasting approximately six weeks (Revzan, 1935).

From 1800 to 1860, beef cattle were not particularly successful in the southern section of the United States given the onset of the Civil War. With this event, Florida exported and marketed cattle to the West Indies (Revzan, 1935). From 1870 to 1885, the development of the range cattle industry on the Great Plains altered the beef cattle industry greatly. Most cattle were moved to Texas, due to difficult calving conditions in the North (Revzan, 1935). Beginning in 1850, a small number of cattle from Texas were sold and marketed in New York, but not until years later was a movement begun to reach northern markets (Revzan, 1935).

Following the Civil War, dramatic changes to the cattle industry began to occur. During the Civil War, railroads were not finished, halting most transportation of cattle. The war caused a stop in railroad construction, putting a halt on the transportation of cattle and leading to a seven percent decrease in cattle numbers (United States Department of Agriculture, 1867). This decrease combined with wartime price inflation revived the movement of marketing Texas cattle to northern states. At the close of the war, New York City processed approximately 4.2 million cattle between the years of 1865 and 1880, or 281,566 head of cattle annually (Revzan, 1935). Texas was able to supply the demand for cattle. Although Texas was a confederate state, Texas was not a large base for military movements and was blockaded. With this, there were no

markets available other than New Orleans and Mobile, which were controlled by the Morgan Line of steamships (Revzan, 1935). Texas had no obstacles to prevent being known as "cow country," according to Revzan (1935).

By 1870, principal routes to the eastern markets had developed ranging from boat to train. With all of the major stockyards open, such as Chicago, Omaha, and Kansas City, consumers were able to buy cuts of meat and desired products more easily than before (Hurt, 2002). During this time direct marketing of cattle began to increase. Direct marketing as described by Revzan (1935) was "the sale to slaughterers at places other than public stockyard markets" (p.202). Eventually cattle were no longer shipped by railroad, due to technological advances, such as refrigeration, causing many stockyards to cease operation (Hurt, 2002).

Stockyard closures prompted a movement of strategic planning and marketing of quality cattle. A large majority of cattle sold in the United States have been feeder or slaughter cattle derived from commercial herds of cattle (United States Department of Agriculture, 2011). These cattle have generally been sold at an auction barn, where the producer receives market price for the cattle (Rawls & Lane, n.d.). Marketing of commercial cattle became known as a standard practice with the price based on general characteristics, including weight, age, hide color, and breed. Approximately 3% of these cattle have been purebred cattle, which have established the genetic standards that influence growth traits and qualities (Schmidt, 2007). Schmidt (2007) stated that purebred cattle are the genetic engineers of the beef cattle industry, adding a much larger value than cattle sold at an auction barn at a commodity price.

Marketing Purebred Cattle

Briggs (1949) defined a breed as "a group of animals that, as a result of breeding and selection, have certain distinguishable characteristics" (p. 52). Briggs (1949) further defined a purebred animal as "an individual both of whose parents are both registered in a Registry

Association"(p. 52). Briggs (1949) did not specifically speak of breed purity, and livestock history has concluded there are very few populations of "purebred cattle" (Wallace & Ritchie, 2006). Today's purebred cattle have simply been derived from combining various lineages of cattle (Wallace & Ritchie, 2006). Each Registry Association sets standard percentages for purebred animals, with a small amount of genetic material remaining from the base cowherds (Briggs, 1949).

Most seedstock bulls and heifers produced by purebred cattle breeders are sold to commercial cattlemen. Superior bulls and females that can create genetic improvement are sold to other purebred cattle breeders (Troxel, Jennings, Gadberry, Powell, Barham, Beck, 2006). Contrary to commercial practices, purebred cattle breeders do not market cattle through local auction barns. For large purebred cattle breeders, production sales are held to showcase the bulls and females produced. Small breeders may contribute to a consignment sale that includes cattle produced by several breeders who may not have enough cattle for a production sale (Cutrer, 2011). Both large and small scale cattle breeders can participate successfully in private treaty sales, which are transactions that occur as private negotiations between a buyer and seller (Cutrer, 2011). Although these transactions have traditionally taken place at the farm or ranch, these types of sales have been completed through technology such as websites or video auction (Cutrer, 2011).

Given the vast differences in commercial and purebred cattle, the marketing of each type of cattle is also different. Purebred cattle breeders have used specialized marketing techniques that have not been used in marketing commercial cattle (Troxel, et al., 2006). In marketing purebred cattle, the phenotypic qualities, which are the physical qualities (Gillespie, 1998), have served as a basis for value, along with pedigree, disposition, and performance records (Cutrer,

2011). Marketing costs for purebred cattle have often been ten times the per-animal cost of marketing commercial cattle at an auction barn (Troxel, et al., 2006). Many purebred cattle breeders have advertised regularly in magazines and breed publications, and have also utilized photography, graphic design, postage, and pre-sale and post-sale entertainment, including food and drinks (Troxel, et al., 2006).

Marketing purebred cattle has continued to be a strategic process. Marketing purebred cattle, as with any product, has been a science based on many factors, including consumer behavior, the economy, and social trends (Cutrer, 2011). Although print advertising has provided benefits to producers of purebred cattle, technology has allowed producers to utilize digital media to reach a larger target audience of buyers (Cutrer, 2011).

When accompanied by a website, social media outlet, or another digital media outlet, print advertisements have worked well (Cutrer, 2011). Printed advertisements have worked best to direct the readers to a website where the reader can obtain a greater amount of information regarding the farm or ranch (Cutrer, 2011). Cutrer (2011) stated, "Once thought to be a premium service in the agriculture industry, websites are now one of the most affordable options for producers to promote purebred cattle (p. 110)." Unlike print advertisements, digital media outlets, such as websites, offer unlimited updates, photographs, and no geographical barriers (Cutrer, 2011). When moving to online sales, breeders saved many sale-day costs and stress the cattle less (Cutrer, 2011).

A specific example of effective utilization was seen in a case study with V8 Ranch, a purebred Brahman and Shorthorn production ranch founded in 1944 in Wharton, Texas. V8 Ranch has had numerous international and national champion females and bulls (Williams, personal communication, April 19, 2013). This ranch found a mixture of print-based advertising,

web-based advertising and social media outlets achieved greater sale results than print-based advertising alone, which was used in previous years. When asked how each buyer heard about V8 Ranch, 70% of the new sale buyers were new clients who made initial contact through e-mail blasts and Facebook. While the ranch has still used print advertising, owner Jim Williams says he has "found the majority of new clients were made through contact on the Internet." The results of adding different media can be seen in Table 1-1 (McMahon-French, 2011).

Table 1-1. Marketing Costs for V8 Ranch

Breed Publication Advertising	$27,000
All Breed and Junior Publication Advertising	$9,000
Internet Advertising	$2,500
Social Media Networking	Free
Promotional Apparel	$5,000
Total Advertising Expense	$43,500
Gross Annual Sales	$950,000
Advertising Costs	4.5 % of sale gross

This information was collected through a case study performed with Ranch House Designs, Inc. and Julie McMahon-French Promotional Strategy in 2011. While this is only one example, this case study has provided the stage for understanding the importance of using digital media along with print-based advertising. It should be noted 4.5% is a high advertising cost, and producers typically use 2-3% of the gross sales to budget. Producers have had multiple reasons for using advertising, but the main reason has simply been to sell a product (Laermer & Prichinello, 2003). Aside from simply selling cattle, purebred cattle producers have had other reasons to utilize paid advertising, including creating a brand name, establishing presence in the market place, and building their reputation (Cutrer, 2011).

Problem Statement

The problem addressed by this study was the lack of purebred cattle producers' adoption and awareness of effective digital media use in marketing purebred cattle. Additionally, this research addressed the overall perceptions of digital media used in cattle marketing and the

factors that contributed to producer use of this technology. With potential profit at stake, producers need to understand the effective use of media outlets in the marketing and selling of purebred cattle.

Purpose of the Study

The purpose of this study was to examine the effectiveness of digital media for marketing purebred cattle. The following research objectives were used to guide this investigation:

1. To determine media used by purebred cattle producers to market purebred cattle.
2. To determine the effectiveness of media as perceived by cattle producers.
3. To determine a relationship between media usage and gross sales
4. To identify the producers' perceptions of barriers to using digital media to market purebred cattle.

Significance of the Study

The problem in this study addressed is significant because the study aids in the understanding of digital media usage in the marketing of purebred cattle. The lack of knowledge that producers may have can greatly alter the adoption of digital media when marketing cattle. This research is valuable and significant, as the research could allow purebred cattle producers to best identify the most effective method of marketing purebred cattle.

The results of this study could address issues that producers have had with using digital media in marketing purebred cattle. The current study attempted to collect information useful to stakeholder groups such as, the National Cattlemen's Beef Association, Livestock Marketing Association, as well as various breed organizations and state cattlemen associations. This study also attempted to lay the groundwork for analyzing which realm of digital media is most effective in marketing purebred cattle.

Additionally, this study aided in the advancement of the National Research Agenda for the American Association of Agricultural Education (Doerfert, 2011). This agenda provides research priority areas and initiatives for the years 2011-2015. The research priority this study addressed was Research Priority Two: New Technologies, Practices, and Products Adoption Decisions. These are interventions that enhance successful technology adoption.

Definition of Terms

This section operationally defines terms in the manner that they were used in the study.

BREEDER: Individual that raises and produces cattle (adapted from Briggs, 1949).

BUYER: This is the buyer of the cattle that are for sale (adapted from Cutrer, 2011).

BUYING MOTIVES: Any force causing the buyer to seek satisfaction (adapted from Cutrer, 2011).

COMMERICAL CATTLE. Any group of cattle that do not belong to a Registry Association (adapted from Briggs, 1949).

DIGITAL MEDIA: Digitized media (text, graphics, audio, video) that can be transmitted over the Internet or other outlets (adapted from Cutrer, 2011).

FACEBOOK: Social media website that allows users to create online profiles, and make connections by sharing various forms of media (adapted from Hoe, 2011).

FACEBOOK PAGE: Facebook term used for business that initiates a Facebook Page (adapted from Cutrer, 2011).

GROSS RECEIPTS: Gross receipts are the total amounts the organization received from all sources during its annual accounting period, without subtracting any costs or expenses (adapted from USDA, www.usda.gov)

INTERNET SALES AND VIDEO AUCTIONS: Sale animals are prepared ahead of time, and then posted online. The auction begins and ends at a designated time. Bidders must log into a secure bidding system and place bids via Internet (adapted from Cutrer, 2011).

MARKETING: Marketing is a strategic process that is carefully planned, implemented, and evaluated. Marketing is based on many factors including consumer behavior, the economy, and much more (adapted from Cutrer, 2011).

SEEDSTOCK: Animals, especially pedigreed livestock, maintained for breeding purposes (adapted from Cutrer, 2011).

SOCIAL MEDIA: A dedicated website or other application that allows users to communicate by posting information or photos (adapted from Cutrer, 2011).

STOCKYARD: The simplest marketing method where producers bring their cattle. The auction occurs at a scheduled time and is usually local (adapted from Cutrer, 2011).

Limitations

In an attempt to validate the credibility and generalizability of this study, limitations were explored. The lack of dependable Internet speed or access for both purebred cattle producers and buyers to dependable Internet is the first limitation encountered in this study. The lack of Internet or Internet speed between computers is a large factor in marketing purebred cattle (Cutrer, 2011). The sample that was surveyed may not represent views of cattle producers across the United States since this was a small sample. In this study, the data was self-reported. Self-reported dollar amounts are a limitation because it is possible that participants may not provide truthful, accurate dollar amounts, thus obtaining inaccurate results in the study.

Assumptions

There are two basic assumptions in which this study is designed. All purebred cattle producers surveyed are established producers who are clients of Ranch House Designs, Inc. When working with less established producers many variables could skew the gross sale number such as quality of cattle, customer base, and lack of reputability.

Secondly, participants in the study are truthful in completion of the survey instrument. Participants are also assumed to give honest responses regarding a sale gross and input cost. These figures may become skewed if producers are not honest when completing the survey instrument.

Chapter Summary

The purpose of this study was to examine how purebred cattle producers use digital media in marketing cattle. Purebred cattle have contributed genetics to both the feeder and slaughter cattle that make up the United States beef cattle industry. Traditional marketing of feeder and slaughter cattle has included auction barns however the marketing of purebred cattle is substantially different. Natural and man-made problems have presented an opportunity for purebred cattle breeders to strategically market quality cattle. The marketing costs of purebred cattle have often been ten times the per-animal marketing costs selling commercial cattle at an auction barn. The effective marketing of purebred cattle has included traditional print media, but incorporating the use of digital media has proven effective and profitable for producers. The problem addressed by this study was the lack of purebred cattle producers' adoption and awareness of effective digital media use in marketing purebred cattle. The data collected from this study will be useful in gaining a better understanding of the most effective types of digital media in marketing purebred cattle, as well as which factors aid in the diffusion of technology among purebred cattle breeders.

CHAPTER 2
REVIEW OF LITERATURE

The purpose of this study was to examine the effectiveness of digital media for marketing purebred cattle. The objectives of the study were 1) to determine media used by purebred cattle producers to market purebred cattle, 2) to determine the effectiveness of media as perceived by cattle producers, 3) to determine a relationship between media usage and gross sales, and 4) to identify the producers' perceptions of barriers to using digital media to market purebred cattle.

This chapter reviews the relevant literature and research relating to the understanding of digital media and the adoption of digital media for the purposes of marketing cattle. The literature begins with a comprehensive overview of the theoretical framework used to conduct this research and expands into a conceptual framework. With an understanding of both the theoretical base, as well as the previous research conducted, the gap in current knowledge and the need for new research became apparent. The results of this study could address issues that producers have had with using digital media in effectively marketing purebred cattle.

Theoretical Framework

The guiding theoretical framework for this study was Diffusion of Innovations (Rogers, 2003). The use of this theory has been documented in past media research, and established a framework to explore the adoption of digital media as a marketing tool by purebred cattle producers.

Diffusion of Innovations

"Diffusion is the process in which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in that the messages are concerned with new ideas" (Rogers, 2003, p. 5). Diffusion addresses

messages about new ideas, which involve a certain degree of uncertainty in regards to the adoption of new ideas (Rogers, 2003). “Getting a new idea adopted, even when it has obvious advantages, is very difficult. Many innovations require a lengthy period of many years from the time when they become available to the time when they are widely adopted” (Rogers, 2003, p. 1). Innovations differ in regards of adoption time, as the speed of diffusion is based upon many factors. “There is the obvious suggestion that the speed of diffusion is positively related to the competitiveness of the industry or market” (Warner, 1974, p. 5).

Elements of Diffusion

“The four main elements are the innovation, communication channels, time, and the social system” (Rogers, 2003, p. 11). Ideas, practices, or objects being seen as new to a specific individual or social system are known as innovations (Rogers, 2003). An innovation may also be new to an individual who may have known about the innovation for some time but never fully developed a favorable or unfavorable attitude toward the innovation. A common type of innovation is a new technology being introduced.

Types of digital media in livestock marketing, such as a website, online auction, or social media, have been considered a type of technology. Technology consists of two components: a hardware aspect and a software aspect (Rogers, 2003). The hardware component consists of the tangible representation of technology, while the software aspect consists of the information behind the technology (Rogers, 2003). Technological innovations have often been beneficial for adopters, but potential adopters have sometimes been reluctant to practice new innovations because of unknown effects (Rogers, 2003).

Communication refers to the way in which individuals communicate the innovation to others, whereas the channel is the method in which individuals use to deliver the message.

Communication channels allow messages regarding an innovation to pass from one individual to another individual (Rogers, 2003).

Rogers (2003) stated five characteristics of an innovation to explain its rate of adoption. “Innovations that are perceived by individuals as having greater relative advantage, compatibility, trialability, and observability and less complexity will be adopted more rapidly than other innovations” (Rogers, 2003, p. 16). Relative advantage refers to the extent of which an innovation has improved from the preceding innovation and can be measured economically, in terms of convenience, satisfaction or social status (Rogers, 2003). The rate of adoption increases with the level of relative advantage (Rogers, 2003).

The consistency of an innovation with previously existing values, needs of potential adopters, or experiences have been measured. This measurement is known as compatibility and also aids in the rate of adoption (Rogers, 2003). The difficulty of using an innovation and difficulty understanding an innovation is known as complexity (Rogers, 2003). Easier innovations to understand and use are easier to adopt than more difficult innovations. Trialability refers to the ability to experiment with an innovation. Trialability allows individuals to test an innovation on a limited basis without committing to the innovation (Rogers, 2003). Lastly, observability refers to visible results of an innovation.

All four elements have been crucial in the understanding of adoption, but the idea of a social system has been a key element. The social system has a direct effect on the diffusion (Rogers, 2003). “A social system is defined as a set of interrelated units that are engaged in joint problem solving to accomplish a common goal,” (Rogers, 2003, p. 23). The social system can affect diffusion through the structure, roles of opinion leaders, and change agents (Rogers, 2003).

Both opinion leaders and change agents influence social system complexity. The opinion leaders provide information to the other members of the system.

Opinion leadership is earned when the leader has developed a technical competence of the innovation (Rogers, 2003). Opinion leaders are more exposed to communication channels and are more innovative. The opinion leaders' influence on the system is from the inside. Change agents, however, influence the system externally. "Diffusion is a kind of social change, defined as the process by which alteration occurs in the structure and function of a social system (Rogers, 2003, p. 6). The social system is structured formally and informally in order to provide regularity and stability (Rogers, 2003). A formal structure is well developed and involves hierarchies, while informal structures are made of interpersonal networks linking a system's members (Rogers, 2003). An informal social system existed among purebred livestock producers.

Adopter Categories

In regards to the innovation-decision process, individuals can be categorized into adopter categories. Rogers (2003) identified the adopter categories as 1) innovators, 2) early adopters, 3) early majority, 4) late majority, and 5) laggards. Individuals whose interests in new ideas lead them out of their social system to more broad social relationships are known as innovators (Rogers, 2003). Geographical limitations do not play a role in relationships among innovators, allowing a larger social network (Rogers, 2003). Innovators often have financial resources that allow them to try innovations with no consequences if the innovation fails (Rogers, 2003). A high degree of technical knowledge, the ability to cope with a high degree of uncertainty about an innovation, and respect by members of the social system are also prerequisites for innovators (Rogers, 2003). Local trials that can address trialability may also be provided by innovators to address skepticism of other potential adopters (Rogers, 2003). Although innovators assist within

the local social system, early adopters usually are more a part of the local social system (Rogers, 2003).

Differentiating from innovators, early adopters are more intertwined within the local social system (Rogers, 2003). Early adopters often provide guidance and advice regarding innovations to potential adopters (Rogers, 2003). Early adopters make informed decisions when adopting innovations. Careful decision making skills allow early adopters to be well respected in the social system (Rogers, 2003). "The early adopter decreases uncertainty about a new idea by adopting it, and then conveying a subjective evaluation of the innovation to near peers through interpersonal networks (Rogers, 2003, p. 283). Following early adopters, the early majority adopts innovations.

"The early majority adopts new ideas just before the average member of a system" (Rogers, 2003, p. 283). Individuals within the early majority have been interacting among their peers, but they do not necessarily hold positions of status, such as opinion leaders, within the social system (Rogers, 2003). The innovation-decision process for the early majority is longer than the innovation-decision process for the early adopter. Since the early majority is in the middle of the five-adopter categories, this category is imperative to understanding the diffusion process (Rogers, 2003). The late majority comprises the fourth adopter category, following the early majority.

According to Rogers (2003), late majority "adopt new ideas just after the average member of a system" (Rogers, 2003, p. 284). Late adopters choose to adopt an innovation for various reasons differing from those in earlier groups (Rogers, 2003). "Adoption may be both an economic necessity for the late majority and the result of increasing peer pressures (Rogers, 2003, p. 284). Unlike innovators, those individuals in the late majority usually lack financial

stability. For this reason, a large amount of uncertainty should be eliminated before adoption (Rogers, 2003).

The final group in the adopter category is that of laggards. Laggards often have traditional values on which their decisions are based (Rogers, 2003). Suspicion often accompanies the presentation of innovations.

Previous Research

The conventional auction method of marketing has been used to market cattle until recently (Gillespie, Basarir, & Schupp, 2004). A multitude of marketing alternatives has been made available to producers, including video auctions, private treaty sales, use of strategic alliances, and Internet marketing (Gillespie, Basarir, & Schupp, 2004**)**. Conventional auctions have provided producers with a central location where multiple buyers could bid on cattle.

In a study among producers, 91% used conventional auctions for marketing some cattle (Gillespie, Basarir, & Schupp, 2004). A portion of this figure consisted of producers who used conventional auction for only calves, cull breeding stock, or other animals (Gillespie, Basarir, & Schupp, 2004). Video auctions were used by only 3% of the population. Although only 3% of the population used video auctions, a majority of the producers owning more than 100 head of cattle primarily used video auctions (Gillespie, Basarir, & Schupp, 2004). This particular finding illustrated the importance of size in the ability to effectively benefit from a digital marketing practice (Gillespie, Bassarir, & Schupp, 2004). The research also found that the probability of 100% purebred producers utilizing conventional auctions was 0.0475 less than that of a 100% commercial producer (Gillespie, Bassarir, & Schupp, 2004). Producers who held a college degree, had more animals, a higher percentage of purebred cattle with higher weaning weights, with more diversified operations, or consulted more often with a county extension agent were more likely than commercial producers to use one or more alternative marketing methods

(Gillespie, Bassarir, & Schupp, 2004). Results found that older producers were more traditional in marketing practices, most likely because of years of marketing through traditional outlets (Gillespie, Bassarir, & Schupp, 2004). These findings also suggested that new, younger cattle producers entering the industry would have a greater use of alternative marketing arrangements, such as digital media (Gillespie, Bassarir, & Schupp, 2004). It was suggested that educational programs that inform producers of the benefits and costs of alternative marketing programs would be highly beneficial in the diffusion process, as contact with cattle producers revealed that many were either unaware or knew very little regarding alternative marketing practices (Gillespie, Bassarir, & Schupp, 2004). The availability of the Internet for producers was not reviewed in this study, but this plays an important role in the decision to use alternative marketing methods (Gillespie, 2009).

Previous research provided by a Pew Research Center (2012) found that 81% of adults in the United States have access to the Internet. A USDA (2011) study found that 62% of United States farms have been equipped with Internet access, which showed a gap within the United States Internet average compared to United States rural Internet usage (White, 2013). A recent study of Oklahoma beef cattle producers indicated that 100% of 47 beef cattle producers surveyed had Internet access at either their home, their cattle operation, or on a smart-phone (Gillespie, 2009). In an era of increasing technology, the Internet has rapidly created a new standard for communication (Gillespie, 2009).

Internet marketing has been used to a limited degree by only cow-calf operators in the cattle industry (Gillespie, Basarir, & Schupp, 2004). Multiple aspects of digital media have been included in Internet marketing, such as digital photographs and videos. Advantages of Internet marketing have been numerous, including a larger number of buyers bidding on the cattle,

premium prices due to specificity of traits, and lower commission fees (Gillespie, Basarir, & Schupp, 2004). A portion of Internet marketing involves social media use by producers and buyers. Social media use has often created brand salience for the producer marketing cattle (Gillespie, 2009).

A study conducted by Gillespie (2009) explored United States beef producers' use and perceptions of social media as a communication tool. This study was conducted using descriptive survey methodology. The study found that United States beef producers communicate through social media and place significant value on social media as a communication tool (Gillespie, 2009). Producers valued this method of communication because of the relationships that were created with other producers and allied industry groups. Gillespie (2009) suggested that observability has played a large role in the adoption of social media among producers, and that producers are more likely to adopt in the future, if they are given more opportunities to see other producers using social media.

A quantitative study conducted by Graber (2011) sought to understand Texas agriculture producers' use of social media and traditional media. Graber (2011) found that older audiences of Texas agricultural producers preferred more traditional forms of communication to social media. This was largely due to the lack of use of social media, as only 24% of Graber's (2011) sample used some type of social media. Graber (2011) discussed the future of social media through Rogers' (2003) model, in which the future adoption of social media among Texas agricultural producers was explored. A majority of respondents said that social media would not be used in their future, however 26% respondents answered maybe, and 10% of the respondents answered yes when speaking of social media use in their future (Graber, 2011).

Those in the agriculture industry have utilized Facebook and other various social media outlets (Graybill, 2010). Graybill (2010) conducted a qualitative study that explored the use of Facebook as a communication tool by those who have been involved in agriculture. Graybill (2010) concluded that Facebook could be used as an effective communication tool for the promotion of agriculture-related products. The results also showed that those involved in agriculture were not limited to only one form of social media, but were often active on other social media platforms (Graybill, 2010). The use of a variety of social media outlets has drawn an audience in multiple ways (Graybill, 2010).

A qualitative study examining the use of social media in agriculture found that some producers prefer to use digital media for marketing and sharing information. A participant indicated that their family's ranch had a website used for marketing and general information for the public (Telg & Barnes, 2011). This study also provided information regarding the adoption of technology through generational differences. One participant indicated that some of the older generations have not actually adopted the Internet or e-mail, and some of them have only recently adopted the cell phone (Telg & Barnes, 2011). The use of digital media, such as websites, social media, and videos are a great way to bring people to a producer's farm without physically bringing them to the farm (Telg & Barnes, 2011). This method has been important in marketing cattle, allowing cattle to be sold without geographical limitations. Members of the focus groups also stressed the importance of providing information over a variety of communication channels to meet the needs and preferences of members (Telg & Barnes, 2011). Ultimately, social media should be used in conjunction with existing communication channels (Telg & Barnes, 2011).

Remaining productive has required producers to stay updated with technological advances and information accessibility (Maddox et al., 2003). Although a large number of producers have had access to technologies, the adoption of these technologies has been slow (Smith, Paul, Goe, & Kenny, 2004). As producers follow the stages of Rogers' (2003) innovation-decision process, they will need positive reinforcement. This positive reinforcement should come through observability, suggesting progress within the adoption process (Rogers, 2003). Along with observability, producers must also be satisfied with the content being provided and ease of use (Katz et al., 1974). In order to increase the amount of producers using digital media in marketing cattle, "more attention will have to given to educating agriculturists to become more competent and confident in using the new technological sources…" (Riesenberg & Gor, 1989, p.13). Although producers have been shown to be adopting digital media at a slower rate than general audiences, a need has arisen to find out how cattle producers best reach core audiences when marketing purebred cattle.

Summary

In summary, Rogers' (2003) Diffusion of Innovations theory was used. This theory, along with the evidence that supports the inclusion of these theories in this study's theoretical framework, provided a strong foundation on which this study was formed. Chapter two provided recent literature and research addressing the conceptual model and the use of digital media in agriculture and marketing.

The lack of research on the practice of marketing purebred cattle through digital media has been evident. However, this study's findings, which surveyed the adoption and use of digital media in marketing purebred cattle, will contribute to the knowledge base and provide a starting point for more research in this area.

CHAPTER 3
METHODOLOGY

Chapter 3 discusses the methodology used to conduct the study. In Chapter 3 the researcher will discuss the research perspective and specific methods used to measure the adoption of digital media for marketing purebred cattle. Included herein are the research design, a description of the population and sample, instrumentation, the approval of the study by the University of Florida Institutional Review Board, and a description of data collection and analysis process.

Research Perspective

This study was empirical in nature, investigating the adoption of media by producers for marketing purebred cattle. Essentially, this study sought to quantitatively describe a phenomenon. With this, more information should be gained and sound findings should be provided, leading to more research regarding the same phenomenon in the future. The researcher described a phenomenon deductively and was removed from personal interactions with participants in this study, therefore a quantitative approach seemed most appropriate for this study. These are defining features of quantitative approaches to research (Ary, Jacobs, & Sorenson, 2010).

Research Design

This research used a descriptive survey methodology to determine the adoption of digital media in the marketing of purebred cattle. Descriptive studies ask questions regarding variables, but do not manipulate variables (Ary et al., 2010). Best (1970) ultimately described descriptive research by saying:

> It is concerned with conditions or relationships that exist; practices that prevail; beliefs, points of view, or attributes or relationships that are held; processes that are going on, effects that are being felt; or trends that are developing (p. 116).

Descriptive research methodology was chosen for this particular study in order to analyze the adoption of digital media in the marketing of purebred cattle and the relationships between various attributes of the producers as they relate to communication preferences and the use of digital media.

The survey was constructed according to Dillman, Smyth and Christian (2009) and was distributed in an electronically formatted questionnaire to participants in the study. The questionnaires were distributed via e-mail. Electronic survey methods have the potential to bring efficiencies to the design and management of self-administered questionnaires, such as "nearly complete elimination of paper, postage, mail out, and data entry costs" (Dillman, et al., 2009, p. 352). The use of electronic surveys also eliminates geographical barriers for researchers in conducting national surveys (Dillman et al., 2009).

One concern with conducting surveys electronically is included access to the Internet and variation in transmission capabilities based on telecommunication infrastructure (Dillman et al., 2009). Although this has been a concern, Internet skills and access to Internet have been increasing (Schonlau et al., 2002).

Four main types of errors inherent in survey research studies, including coverage error, sampling error, non-response error, and measurement error (Dillman et al., 2009). In this study, non-response error and measurement error were addressed. Non-response error occurs when the researcher does not receive responses from all participants in the sample (Dillman et al., 2009). Procedures recommended in the Tailored Design Method were used in this study to address non-response error (Dillman et al., 2009). The researcher also interviewed a small sample to determine if a possible bias or difference existed among the non-respondents. Measurement error, which can stem from the wording of questions, respondent's behavior, or survey mode

effects, was reduced by the use of a pilot test distributed to a panel of experts prior to final survey distribution (Dillman et al., 2009).

Population and Sampling Procedures

This study used a simple random sample drawn from a population. The target population was composed of purebred cattle producers who: (a) had been producing cattle for one year or more, and (b) belonged to Ranch House Designs, Inc. website listerv in 2013. Ranch House Designs, Inc. has been described as a full service graphic design and web design agency located in Wharton, Texas, serving thousands of clients internationally. The agency operated both print and web divisions and reaches approximately 18,000 livestock producers with their email blasts (Ranch House Designs, Inc., 2013). For this study, producers who were involved exclusively in feedlot operations, exclusively commercial cattlemen, or those without a valid e-mail address were excluded from the population. A simple random sample of the population was selected by Ranch House Designs, Inc. using a random n^{th} selection. Ranch House Designs, Inc. conducted the random sampling procedure in-house to protect their list of clients.

Instrumentation

A researcher-designed questionnaire was created to address the objectives of this study (Appendix B). The instrument was reviewed by a panel of experts to ensure validity, and a pilot study was conducted with industry professionals, establishing reliability of the questionnaire.

The survey responses for both the pilot study and full research study were collected through an e-mail questionnaire designed following the Dillman Tailored Design Method (2009). Data were exported to SPSS for data analysis.

Questionnaire Design

The use of visual elements and color was limited. The questionnaire was introduced with an inviting welcome screen, followed by a question applicable to all respondents (Dillman,

2007). Trust was established by using Ranch House Designs, Inc. to distribute the questionnaire, as Ranch House Designs, Inc. has established credibility among purebred cattle producers, especially clients. (Dillman, 2007). Rachel Cutrer, owner of Ranch House Designs, Inc. sent the initial email to clients. Qualtrics was used to distribute the survey online.

Validity

A panel of experts reviewed the instrument in order to ensure face and content validity. The panel included four faculty members from the College of Agricultural and Life Sciences at the University of Florida; ten industry experts from purebred breed associations, including the American Angus Association, American Simmental Association, American Hereford Association, and the American Shorthorn Association; and two educational professionals outside of the purebred cattle industry. Panel members suggested improvements to the researcher after reviewing the instrument. Revisions were made to the questionnaire in order to ensure validity.

Reliability

Reliability was also tested, as the measurements must be both valid and reliable. Following the establishment of face and content validity, a pilot test was used to estimate instrument reliability. The pilot study panel included 16 members of the executive boards of multiple breed associations. This panel was selected because of their similarity to the target population.

Institutional Review Board

The first step in this process was to gain approval through the University of Florida Institutional Review Board (ARB-02). Federal regulations and the University of Florida policy require approval of all research studies involving human subjects before investigators can begin research. The University of Florida Office of Research and the Institutional Review Board (IRB) conduct this review to protect the welfare and rights of human subjects involved in either

behavioral or biomedical research. In compliance with this policy, this study was reviewed by University of Florida's Institutional Review Board and received approval (Protocol #2013-U-1067) on September 18, 2013 (Appendix A).

Data Collection

Survey responses were collected according to the principles of the Dillman Tailored Design Method (2009). Following the pilot test, contact information was obtained from Ranch House Designs, Inc. According to Dillman's Tailored Design Method, it is suggested that distributing the questionnaire through a system of five contacts is recommended. These five notices include a pre-notice letter, a questionnaire, a thank-you letter, a follow up questionnaire, and a final contact (Dillman, 2009). The timeline for completing web-based surveys is shorter than the timing for traditional mail surveys. The survey was e-mailed three separate times with a pre-notice letter and a final contact. The members of the study received a pre-notification email from the Ranch House Designs, Inc., on October 2, 2013, explaining the purpose of the study. The first e-mail was sent on October 9, 2013, with two reminder e-mails following on October 16, 2013 and October 23, 2013. The final e-mail was sent October 30, 2013. Multiple reminder e-mails were sent in order to encourage participation. The study was closed on November 3, 2013.

Concluding the survey, 63 of the 189 participants responded to the survey, which resulted in a response rate of 33%.

Data Analysis

Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics, including mean, median, and mode, were used in the analysis for this study. Correlations were also used to describe relationships in this study.

Summary

The study described was empirical in nature, investigating the adoption of digital media by producers and buyers for marketing purebred cattle. Essentially, the study sought to quantitatively describe the process of marketing purebred cattle. This research used descriptive survey methodology. The survey was conducted according to Dillman, Smyth, and Christian (2009) and was distributed in an electronically formatted questionnaire to participants in the study. This questionnaire was distributed via e-mail. The study used a simple random sample drawn from a population of purebred cattle producers. The target population was composed of purebred cattle producers who: (a) had been producing cattle for one year or more, and (b) belonged to Ranch House Designs, Inc. web listerv in 2012. A simple random sample was chosen from the population of producers. This sample was chosen by Ranch House Designs, Inc. A panel of experts reviewed the instrument in order to ensure face and content validity. Reliability was also tested, as measurements must be both valid and reliable. Survey responses were collected according to the principles of the Dillman Tailored Design Method. Quantitative data were analyzed using SPSS. Descriptive statistics were used in the analysis for this study.

CHAPTER 4
RESULTS

Chapter 1 described the history of marketing cattle, with a particular focus on the usage of different types of methods for marketing purebred cattle. Additionally, the first chapter provided a background for studying the lack of understanding regarding the use of digital media in marketing purebred cattle. Chapter 1 identified the following objectives to aid in guiding the study: 1) to determine media used by purebred cattle producers to market purebred cattle, 2) to determine effectiveness of media as perceived by cattle producers, 3) to determine a relationship between media usage and gross sales, and 4) to identify the producers' perceptions of barriers to using digital media to market purebred cattle. Further, chapter 1 explained the importance of the study and identified its purpose. The chapter concluded by defining key terms and stating the assumptions and limitations of the study.

Chapter 2 presented an overview of the theoretical foundations and the conceptual framework in which this study was built. The theory supporting this study was Diffusion of Innovations (Rogers, 2003). Diffusion provides an explanation for the diffusion of a particular innovation through a particular system. This explanation includes descriptions of the innovation rates of adoption and a description of adopter categories. This chapter also discussed previous findings regarding conventional marketing and Internet marketing. Overall, the literature presented in the chapter did not reveal any previous studies that measured the use of digital media in marketing purebred cattle, thus further establishing the need for this study.

Chapter 3 outlined the methodology used in order to answer the research questions in which the study was founded. Moreover, this chapter addressed research design, population, instrument design, and data collection procedures. The purpose of this quantitative study was to examine the usage and effectiveness of digital media in marketing purebred cattle.

This chapter presents the findings of the study beginning with a description of the population as well as the findings of each of the objectives. The population of this study consisted of clients of Ranch House Designs, Inc. At the conclusion of the data collection procedures, outlined in chapter 3, 63 of the 189 (33.3%) clients responded. Although web surveys are much like traditional surveys, the delivery is different. A mail survey is delivered to the participant, but a web survey generally asks participants to go and get the survey themselves, via website. For those not familiar with technology, this can make participants feel uncomfortable (Dillman, 2009). This may have contributed to a low response rate.

Demographics

Demographics were collected in the questionnaire and are provided in order to characterize the responses of the study. These demographics included age, gender, education level, and head of cattle owned. The results are represented in tables.

Gender and Age

Of the 63 respondents, 63% (n = 40) were male, and 37% (n = 23) were female. Of the 62 respondents who reported age, 11% (n = 7) reported being 20-24 years old; 27% (n = 17) being 25-34 years old; 27% (n = 17) being 35-44 years old; 16% (n = 10) being 45-54 years old; 11% (n = 7) being 55 to 64 years old; and, 7% (n = 4) being 65 years old or older. (Table 4-1, 4-2).

Education

Of 62 respondents, 3% (n = 2) described their highest level of education to be high school graduate or GED recipient; 8% (n = 5) had some college education but did not receive a degree; 13% (n = 8) indicated their highest level of education was an associate’s degree; 42% (n = 26) received a bachelor's degree; 29% (n = 18) received a master's degree; and 5% (n = 3) reported having a doctoral degree. (Table 4-3).

Head of Cattle Owned

Additionally, 13% (*n* = 8) of the respondents reported to have owned less than 25 head of cattle; 15% (*n* = 9) owned 25-50 head of cattle; 21% (*n* = 13) owned 51-100 head of cattle; 29% (*n* = 18) owned 101-200 head of cattle; 10% (*n* = 6) owned 201-300 head of cattle; 7% (*n* = 4) owned 301-499 head of cattle; and, 5% (*n* = 3) owned 500 or more head of cattle. (Table 4-4).

Years Involved with Cattle Operation

After evaluating answers of 60 respondents, 11% (*n* = 7) had been involved with the operation for 1-5 years; 10% (*n* = 6) had been involved for 6-10 years; 32% (*n* = 20) had been involved for 11-20 years; and, 44% (*n* = 27) had been involved for more than 20 years. (Table 4-5).

Objective One: To determine the media used by purebred cattle producers to market purebred cattle

The questionnaire contained six items regarding the media used by purebred cattle producers to market purebred cattle. Clients of Ranch House Designs, Inc. were asked which media was used to market were their purebred cattle. This objective was measured by categorizing basic components, outdoor components, web components, print components, broadcast components, and other media components. Respondents were given the option to select 1) currently using, 2) am interested in using, or 3) not interested. The frequencies (*f)* and percentages (%) are identified in tables.

Basic Components

Basic components consisted of colors, name, logo, and a tagline. The use of a name was most prevalent as 92.1% (*n* = 58) of respondents reported current use. When asked about the use of color, 87.3% (*n* = 55) of respondents were currently using colors. Results indicate 85.7% (*n* = 54) of respondents were currently using a logo. Results show 36.5% (*n* = 23) of respondents were currently using a tagline. (Table 4-6).

Outdoor Components

Outdoor components consisted of farm signs, billboards, pedigree signs, promotional displays, and show animal exhibition. The use of farm signs was most prevalent with 69.8% (*n*=46) of respondents currently using farm signs. Results show 66.7% (*n* = 42) were currently using show animal exhibition, and 15.9% (*n* = 10) were not interested in using show animal exhibition. Pedigree signs were currently being used by 61.9% (*n* = 39) of the respondents. Promotional displays were currently being used by 46% (*n* = 29) of respondents. Results indicated 55.6% (*n* = 35) of respondents were not interested in using billboards. (Table 4-7).

Web Components

Web components consisted of blogs, email blasts, email address, website, web banner advertising, web links, and social media. A large percentage of respondents used some type of digital media. Results show 90.5% (*n* = 57) of respondents were currently using a website. An email address was currently being used by 84.1% (*n* = 53) of respondents. Social media was currently being used by 68.3% (*n* = 43) of respondents. Web links were currently being used by 55.6% (*n* = 35) of respondents, and 30.2% (*n* = 19) of respondents would like to use web links. Results show 54% (*n* = 34) of respondents were currently using email blasts. Results indicated 38.1% (*n* = 24) of respondents would like to use web banner advertising, and web banner advertising was currently being used by 34.9% (*n* = 22) of respondents. The use of blogs was low in comparison to other media represented by web. Results indicated 44.4% (*n* = 28) of respondents were not interested in using blogs, 30.2% (*n* = 19) would like to use blogs, and 11.1% (*n* = 7) of respondents were currently using blogs. (Table 4-8).

Print Component

Print components consisted of brochures, business cards, catalogs, letterhead/envelopes, magazines/newsletters, and postcards. Business cards were the most popular print materials, as

79% of respondents (*n* = 49) were currently using business cards. Magazines and newsletters were currently being used by 75.8% of respondents (*n* = 47). Results indicated 54.8 %(*n* = 34) of respondents were currently using catalogs. Letterheads and envelopes were currently being used by 45.2% of respondents (*n* = 28). Results showed 35.5% (n = 22) of respondents were currently using brochures. Results indicated 30.6% (*n* = 19) of respondents were not interested in using postcards, 29% (*n* = 18) would like to use postcards, and postcards were currently being used by 22.6% (*n* = 14). (Table 4-9).

Broadcast Component

Broadcast components consisted of Internet broadcast, radio broadcast, and television broadcast. Broadcast was used the least of all components evaluated in this study. Results indicated 41.9% (*n* = 26) of respondents were not interested in using Internet broadcasts and 30.6% (*n* = 19) of respondents were currently using Internet broadcasts. Results indicated 66.1% (*n* = 46) of respondents were not interested in using radio broadcasts. Results indicated 66.1% (*n* = 41) of respondents were not interested in using television broadcasts. (Table 4-10).

Other Components

Other components consisted of apparel, photography, promotional items, and sponsorships. Photography was the most widely used component classified as other with 84.1% (*n* = 53) of respondents currently using photography. Results illustrated 63.5% (*n* = 40) of respondents were currently using apparel. Sponsorships were currently being used by 50.8% (*n* = 32) of respondents. Results showed promotional items to be the least used component of the other category as only 41.3%(*n* = 26) of respondents were currently using promotional items. (Table 4-11).

Objective Two: Determine the effectiveness of media as perceived by cattle producers

In order to assess the effectiveness of media as perceived by cattle producers, respondents were asked to describe how each type of media had impacted the promotion of their purebred cattle. The six categories assessed included basic, outdoor, print, web, broadcast, and other. Each of these constructs had a range possibility between one and four. Respondents could select 1) had a large impact on promoting my cattle; 2) had a minimal impact on promoting my cattle; 3) had no impact on promoting my cattle; or 4) do not use. The frequencies (*f)* and percentages (%) are identified in tables.

Of the basic components, the use of a name had the most benefit for producers, as 69.8% (n = 44) of the respondents reported the use of a name had a large impact on the promotion of their operation. Respondents perceived a tagline to have the least impact with only 14.3% (n = 9) of the respondents reporting the use of a tagline had a large impact on the promotion of their cattle. (Table 4-12).

When using outdoor components, the results indicate producers perceived the exhibition of show animals to be the most effective. Of the respondents, 50.8%(n = 32) reported the exhibition of show animals had a large impact on the promotion of their cattle. Of the respondents, 4.8% (n = 3) reported the usage of billboards had a large impact on the promotion of their cattle. (Table 4-13).

When using web components, the results indicate producers perceived the usage of a website to be the most effective in promoting their cattle. Of the respondents, 66.7% (n = 42) selected the usage of a website had a large impact on the promotion of their cattle operation. The use of social media also appeared to be effective as perceived by producers. Results indicated 46% (n = 29) reported the usage of social media had a large impact on their cattle operation. Blogs proved to be least effective. (Table 4-14).

The results indicated producers perceived the usage of printed magazines or newspapers to be the most effective in promoting their cattle when using print. Of the respondents, 54.8% (*n* = 34) reported the usage of magazine or newspaper print materials had a large impact on the promotion of their cattle operation. The effectiveness of catalog usage was also perceived high among producers. Of the respondents, 48.4% (*n* = 30) reported the usage of catalogs had a large impact on the promotion of their cattle operation. Overall, producers perceived the use of catalogs and/or magazines or newspapers to be more effective than the use of brochures, letterheads/envelopes, or postcards when using print. (Table 4-15).

Of all categories of media, producers perceived the usage of broadcasting to be the least effective in promoting their cattle. Of the respondents, 27% (*n* = 17) producers perceived the usage of Internet broadcasting had a large impact on the promotion of their cattle. Radio broadcasting had far less users. Of the respondents, 14.3% (*n* = 9) perceived radio broadcasting to have no impact on the promotion of their cattle. Television broadcasting was similar to radio broadcasting. Of the respondents, 14.3% (*n* = 9) of respondents reported television broadcasting to have no impact on the promotion of their cattle operation. (Table 4-16).

Producers perceived the use of professional photography to have the largest impact on the promotion of their cattle operation when using other components. Of the respondents, 69.8% (*n* = 44) indicated the use of professional photography had a large impact on the promotion of their cattle operation. The use of apparel, promotional items, and sponsorships were noted to have a positive impact on the promotion. (Table 4-17).

Objective Three" Compare which types of media are most effective in the marketing of purebred cattle

Once the effectiveness of digital media as perceived by producers was determined, the relationship between media and gross sales was determined. Pearson Correlation coefficients

were computed to reveal if any correlations existed between the types of media used and the annual sale gross. The data was recoded to represent if purebred producers were using the media. The data was recoded to 1 if used and a 2 if not or would like to use. Producers were given a choice to choose the sales gross most representative of their operation. Responses were dispersed, which showed an accurate representation of producers. For the year 2012, results indicated 11% (n = 6) chose under $10,000; 18% ($n$ = 10) of respondents chose $10,001-$20,000; 11%(n = 6) chose $50,000-$75,000; 11% (n = 6) chose $101,000-$150,000; and 13% (n = 7) chose more than $500,001 in gross sales. For the year 2013, results indicated 13% (n = 7) of respondents chose $10,001-$20,000; 11% (n = 6) chose $20,001-$30,000; 16%(n = 9) chose $50,000-$75,000; 11% (n = 6) chose $101,000-$150,000; and 16% (n = 9) chose more than $500,001 in gross sales. The magnitudes of the correlations are presented using correlation magnitudes presented by Miller (1994). (Table 4-18, 4-19).

Results indicated a significant negative correlation between broadcast media and gross sales in both 2012 (r = -.512, $p > 0.01$) and 2013 (r = -.518, $p > 0.01$). This negative correlation indicated as the use of broadcasting increased, gross sales decreased and vice versa. (Table 4-20, 4-21).

Results indicated a negative correlation between other media and gross sales in both 2012 (r = -.293, $p > 0.05$) and 2013 (r = -.293, $p > 0.05$). This negative correlation indicated as the use of other media increased, gross sales decreased and vice versa.

Objective Four: Identify the producers' perceptions of barriers to using digital media for marketing purebred cattle

This objective sought to gain a better understanding of barriers preventing producers from using digital media to market purebred cattle. First, it was imperative to learn if producers had Internet access at their home or cattle operation. A majority of respondents (n = 62, 98%)

stated Internet was accessible at either their home or cattle operation. Next, respondents were asked if they owned a smart phone. A majority (*n* =58, 94%) responded yes. If respondents owned a smart phone, a question was presented regarding how their cell phone was used. Cell phones were used by 45.2% (*n* = 28) of respondents to access social media, 64.5% (*n* = 40) of respondents chose to access the Internet, 62.9% (*n* = 39) chose to access e-mail, 67.7% (*n* = 42) chose to send/receive text messages, 71% (*n* = 44) chose to send receive phone calls, 35.5% (*n* = 22) chose to view online cattle sales, and 21% (*n* = 13) chose other. Respondents were allowed to enter text if "other" was selected. Weather, maps, and Facetime were common answers when other was chosen. One respondent stated "I have a problem with no cell service at my home or my ranch, so I cannot fully utilize my smart phone." Although the technology is available, perhaps people do not live in an area for the product to work optimally.

Lastly, respondents were asked an open-ended question as to why digital media was not being used by producers more often. Eight respondents described the barriers to using social media for marketing purebred cattle. Five respondents referenced a lack of knowledge and experience. One respondent stated, “I am not comfortable with the technology, nor do I have the training to use it.” Other respondents said developmental stages in their purebred cattle operation did not warrant the use of digital media. In example, one respondent stated, “We just have not developed to that point yet.” Respondents also seemed to be interested in seeing results of how cost effective using new methods of marketing would be. A respondent stated “I never really gave it much thought, I guess it is possible if dollars and cents make sense.”

Summary

This chapter presented the findings of the study. Findings were organized and presented by the following objectives:

1. To determine the media used by purebred cattle producers to market purebred cattle.

2. To determine the effectiveness of media as perceived by cattle producers.

3. To compare which types of media are most effective in the marketing of purebred cattle determined by gross sales.

4. To identify the producers' perceptions of barriers to using digital media for marketing purebred cattle.

Chapter 5 will summarize the study and discusses the conclusions, implications, and recommendations of this study.

Table 4-1. Gender of Participants

Gender	*f*	%
Male	40	63.0
Female	23	37.0

Note: Self-reported age of study participants (*n*=63)

Table 4-2. Ages of Participants

Age	*f*	%
20-24	7	11.3
25-34	17	27.4
35-44	17	27.4
44-54	10	16.1
55-64	7	11.3
65 or Over	4	6.5

Note: Self-reported age of study participants (*n*=62)

Table 4-3. Education Level of Participants

Education Level	*f*	%
High School/GED	2	3.2
Some College	5	8.1
Associate's Degree	8	12.9
Bachelor's Degree	26	41.9
Master's Degree	18	29.0
Doctoral Degree	3	4.8

Note: Self-reported education level of study participants (*n*=62)

Table 4-4. Head of Cattle Owned

Head of Cattle Owned	*f*	%
Less than 25	8	12.9
25-50	9	14.5
51-100	13	21.0
101-200	18	29.0
201-300	6	9.7
301-499	4	6.5
500-999	1	1.6
1000 or more	2	3.3

Note: Self-reported number of cattle owned (*n*=61)

Table 4-5. Number of Years Involved with Operation

Number of Years	*f*	%
1-5	7	11.3
6-10	6	9.7
11-20	20	32.3
More than 20	27	43.5

Note: Self-reported years involved (*n*=60)

Table 4-6. Use of Basic Components

Basic Component	*f*	%
Name		
I am using	58	92.1
I would like to use	2	3.2
I am not interested in using	0	0.0
Color		
I am using	55	87.3
I would like to use	4	6.3
I am not interested in using	2	3.2
Logo		
I am using	54	85.7
I would like to use	7	11.1
I am not interested in using	0	0.0
Tagline		
I am using	23	36.5
I would like to use	19	30.2
I am not interested in using	9	14.3

Table 4-7. Outdoor Components

Outdoor Component	*f*	%
Farm Signs		
I am using	46	69.8
I would like to use	14	22.2
I am not interested in using	2	3.2
Show Animal Exhibition		
I am using	42	66.7
I would like to use	4	6.3
I am not interested in using	10	15.9
Pedigree Signs		
I am using	39	61.9
I would like to use	8	12.7
I am not interested in using	10	15.9
Promotional Displays		
I am using	29	46.0
I would like to use	17	27.0
I am not interested in using	10	15.9
Billboards		
I am using	5	7.9
I would like to use	9	14.3
I am not interested in using	35	55.6

Table 4-8. Web Components

Web Component	*f*	%
Website		
I am using	57	90.5
I would like to use	5	7.9
I am not interested in using	0	0.0
Email Address		
I am using	53	84.1
I would like to use	6	9.5
I am not interested in using	1	1.6
Social Media		
I am using	43	68.3
I would like to use	7	11.1
I am not interested in using	7	11.1
Web Links		
I am using	35	55.6
I would like to use	19	30.2
I am not interested in using	6	9.5
Email Blasts		
I am using	34	54.0
I would like to use	16	25.4
I am not interested in using	9	14.3
Web Banner Advertising		
I am using	22	34.9
I would like to use	24	38.1
I am not interested in using	11	17.5
Blogs		
I am using	7	11.1
I would like to use	19	30.2
I am not interested in using	28	44.4

Table 4-9. Print Components

Print Component	*f*	%
Business Cards		
I am using	49	79.0
I would like to use	7	11.3
I am not interested in using	4	6.5
Magazine/Newspaper		
I am using	47	75.8
I would like to use	7	11.3
I am not interested in using	6	9.7
Catalogs		
I am using	34	54.8
I would like to use	11	17.7
I am not interested in using	11	17.7
Letterhead/Envelopes		
I am using	28	45.2
I would like to use	12	19.4
I am not interested in using	14	22.6
Brochures		
I am using	22	35.5
I would like to use	13	21.0
I am not interested in using	19	30.6
Postcards		
I am using	14	22.6
I would like to use	18	29.0
I am not interested in using	19	30.6

Table 4-10. Broadcast Components

Broadcast Component	*f*	%
Internet		
I am using	19	30.6
I would like to use	10	16.1
I am not interested in using	26	41.9
Radio		
I am using	9	14.5
I would like to use	3	4.8
I am not interested in using	46	66.1
Television		
I am using	4	6.5
I would like to use	5	8.1
I am not interested in using	41	66.1

Table 4-11. Other Components

Other Component	*f*	%
Photography		
I am using	53	84.1
I would like to use	4	6.3
I am not interested in using	2	2.3
Apparel		
I am using	40	63.5
I would like to use	12	19.0
I am not interested in using	6	9.5
Sponsorships		
I am using	32	50.8
I would like to use	10	15.9
I am not interested in using	12	19.0
Promotional Items		
I am using	26	41.3
I would like to use	18	28.6
I am not interested in using	9	14.3

Table 4-12. Perceptions of Basic Components

Basic Component	*f*	%
Colors		
Had a large impact	16	25.4
Had a minimal impact	31	49.2
Had no impact	3	4.8
Do not use	4	6.3
Name		
Had a large impact	44	69.8
Had a minimal impact	9	14.3
Had no impact	1	1.6
Do not use	1	1.6
Logo		
Had a large impact	32	50.8
Had a minimal impact	16	25.4
Had no impact	2	3.2
Do not use	3	4.8
Tagline		
Had a large impact	9	14.3
Had a minimal impact	14	22.2
Had no impact	5	7.9
Do not use	17	27.0

Table 4-13. Perceptions of Outdoor Components

Outdoor Component	*f*	%
Farm Signs		
Had a large impact	24	38.1
Had a minimal impact	17	27.0
Had no impact	4	6.3
Do not use	7	11.1
Billboards		
Had a large impact	3	4.8
Had a minimal impact	2	3.2
Had no impact	10	15.9
Do not use	32	50.8
Pedigree Signs		
Had a large impact	23	36.5
Had a minimal impact	13	20.6
Had no impact	6	9.5
Do not use	9	14.3
Promotional Displays		
Had a large impact	21	33.3
Had a minimal impact	8	12.7
Had no impact	5	7.9
Do not use	18	28.6
Show Animal Exhibition		
Had a large impact	32	50.8
Had a minimal impact	11	17.5
Had no impact	5	7.9
Do not use	7	11.1

Table 4-14. Perceptions of Web Components

Web Component	*f*	%
Blogs		
Had a large impact	7	11.1
Had a minimal impact	1	1.6
Had no impact	7	11.1
Do not use	33	52.4
Email Blasts		
Had a large impact	18	28.6
Had a minimal impact	16	25.4
Had no impact	6	9.5
Do not use	13	20.6
Email Address		
Had a large impact	26	41.3
Had a minimal impact	24	38.1
Had no impact	3	4.8
Do not use	2	3.2
Website		
Had a large impact	42	66.7
Had a minimal impact	11	17.5
Had no impact	2	3.2
Do not use	0	0.0
Web Banner Advertising		
Had a large impact	13	20.6
Had a minimal impact	9	14.3
Had no impact	6	9.5
Do not use	22	34.9
Web Links		
Had a large impact	14	22.2
Had a minimal impact	22	34.9
Had no impact	3	4.8
Do not use	13	20.6
Social Media		
Had a large impact	29	46.0
Had a minimal impact	10	15.9
Had no impact	1	1.6
Do not use	13	20.6

Table 4-15. Print Components

Print Component	*f*	%
Brochures		
Had a large impact	12	19.4
Had a minimal impact	11	17.7
Had no impact	5	8.1
Do not use	25	40.3
Business Cards		
Had a large impact	20	32.3
Had a minimal impact	26	41.9
Had no impact	6	9.7
Do not use	3	4.8
Catalogs		
Had a large impact	30	48.4
Had a minimal impact	6	9.7
Had no impact	4	6.5
Do not use	16	25.8
Letterhead/Envelopes		
Had a large impact	11	17.7
Had a minimal impact	13	21.0
Had no impact	10	16.1
Do not use	18	29.0
Magazine/Newspaper		
Had a large impact	34	54.8
Had a minimal impact	11	17.7
Had no impact	3	4.8
Do not use	10	16.1
Postcards		
Had a large impact	10	16.1
Had a minimal impact	6	9.7
Had no impact	6	9.7
Do not use	27	43.5

Table 4-16. Broadcast Components

Broadcast Component	*f*	%
Internet		
Had a large impact	17	27.0
Had a minimal impact	4	6.3
Had no impact	6	9.5
Do not use	25	39.7
Radio		
Had a large impact	5	7.9
Had a minimal impact	5	7.9
Had no impact	9	14.3
Do not use	34	54.0
Television		
Had a large impact	4	6.3
Had a minimal impact	3	4.8
Had no impact	9	14.3
Do not use	37	58.7

Table 4-17. Other Components

Other Component	*f*	%
Apparel		
Had a large impact	19	30.2
Had a minimal impact	19	30.2
Had no impact	5	7.9
Do not use	11	17.5
Photography		
Had a large impact	44	69.8
Had a minimal impact	9	14.3
Had no impact	2	3.2
Do not use	3	4.8
Promotional Items		
Had a large impact	16	25.4
Had a minimal impact	11	17.5
Had no impact	6	9.5
Do not use	22	34.9
Sponsorships		
Had a large impact	14	22.2
Had a minimal impact	14	22.2
Had no impact	8	12.7
Do not use	20	31.7

Table 4-18. Media Use related to Gross Sales, 2012

Gross Sales	*f*	%
Under 10,000	6	11.0
10,001-20,000	10	18.0
20,0001-30,000	4	7.0
30,001-50,000	4	7.0
50,000-75,000	6	11.0
75,001-100,000	1	2.0
101,000-150,000	6	11.0
150,001-175,000	4	7.0
175,001-200,000	0	0.0
200,001-300,000	2	4.0
301,000-400,000	3	5.0
401,000-500,000	3	5.0
More than 500,001	7	13.0

Note: Self-reported gross sales of study participants (n=56)

Table 4-19. Media Use related to Gross Sales, 2013

Gross Sales	*f*	%
Under 10,000	5	9.0
10,001-20,000	7	13.0
20,0001-30,000	6	11.0
30,001-50,000	2	4.0
50,000-75,000	9	16.0
75,001-100,000	1	2.0
101,000-150,000	6	11.0
150,001-175,000	2	4.0
175,001-200,000	1	2.0
200,001-300,000	3	5.0
301,000-400,000	3	5.0
401,000-500,000	1	2.0
More than 500,001	9	16.0

Note: Self-reported gross sales of study participants (n=55)

Table 4-20. Media Use and Gross Sale Correlation, 2012

Component	*r*	*p*
Basic	-.203	.140
Outdoor	-.098	.483
Web	-.138	.313
Print	-.234	.085
Broadcast	-.512	.000**
Other	-.293	.031*

Note: * p < .05, ** p < .01

Table 4-21. Media Use and Gross Sale Correlation, 2013

Component	*r*	*p*
Basic	-.197	.140
Outdoor	-.176	.483
Web	-.151	.313
Print	-.243	.085
Broadcast	-.518	.000**
Other	-.293	.031*

Note: * p <.05, ** p <.01

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

This chapter summarizes the study and discusses the conclusions, implications, and recommendations drawn from this particular study. The first section of this chapter provided an overview of the study, including the purpose and specific objectives, methodologies, and findings. The remainder of the chapter discussed the conclusions, implications, and recommendations.

The problem addressed by this study was the lack of purebred cattle producers' adoption and awareness of effective media use in marketing purebred cattle. A review of the literature showed no previous scholarly research in this subject matter.

The purpose of this study was to examine the media for marketing purebred cattle. In addition, this study sought to gain an understanding of the types of media producers are using to market purebred cattle. This study also described the population of the producers who are clients of Ranch House Designs, Inc. in terms of gender, age, education levels, and head of cattle owned. A survey was distributed online to determine this information. The following research objectives were used to guide this study: 1) determine media used by purebred cattle producers to market purebred cattle, 2) determine effectiveness of media as perceived by cattle producers, 3) determine relationship between media usage and gross sales, and 4) to identify the producers' perceptions of barriers to using digital media to market purebred cattle.

The survey instrument was researcher-developed, reviewed by a panel of experts for face and content validity, and pilot tested to establish acceptable reliability scores. In this study, the population was defined as all clients of Ranch House Designs, Inc. who have purebred cattle operations (n =189). Responses were obtained from 63 of the 189 Ranch House Designs, Inc. clients, for an overall response rate of 33.3%.

Summary of Findings

Objective 1

Objective 1 sought to determine the media used by purebred cattle producers to market purebred cattle. The respondents were asked to select which types of media were being used to promote their purebred cattle operation. These six categories included basic, outdoor, print, web, broadcast, and other. Results indicated basic components were being used most, meaning respondents realized the importance of branding their operation. Most respondents were using a name and a logo. This indicates respondents realized this was the first and most important step in marketing their purebred cattle. Photography was highly used by respondents, showing the importance of quality images to promote purebred livestock. Often these images are used with other media such as print catalogs or websites. Most individuals who have adopted the use of photography are also using other forms of media. Broadcast media was used the least by Ranch House Designs, Inc. clients. Ranch House Designs, Inc. did not offer broadcast media at the time the survey was administered. Clients may not want to outsource to other marketing companies, or may believe broadcast media is not needed if it is not being offered. To some, broadcast media was considered a premium service, which may have slowed the rate of adoption as described by Rogers (2003). Producers may have believed a premium service was too advanced for the size and scale of the cattle operation.

Objective 2

The second objective focused on determining the perceptions of effectiveness of media by purebred cattle producers. Overall, effectiveness for each media type was measured individually assessing six mediums involved in marketing purebred cattle. The six categories included basic, outdoor, print, web, broadcast, and other. Respondents could select a value on a

Likert type scale. The values ranged from one to four, with one being "had a large impact on promoting my cattle," and four being "do not use."

Basic

Basic components consisted of colors, name, logo, and tagline. Similarly to objective 1, basic components appeared to be the most effective as perceived by producers. Of the basic components, the use of a name had the most benefit for producers. Again, this echoes the importance of creating brand awareness. Producers realized how important this was, and included the basic components that make a brand. Respondents perceived taglines to have the least impact. Again, respondents may have believed a tagline was for larger operations, or may not have known exactly what “tagline” referred to.

Outdoor

Outdoor components consisted of farm signs, billboards, pedigree signs, promotional displays, and show animal exhibition. Producers perceived the exhibition of show animals to be the most effective in promoting their cattle. Respondents realized the importance of show animal exhibition, as this is their chance to display the operation’s product to both potential buyers and other producers. When showing animals, incorporating other outdoor components such as signage is also important. Producers realized this, as many chose the use of farm signs or stall signs were effective in promoting their purebred operation. Producers had a low usage of billboards and thought billboards were not effective. Billboards are used for roadways, so many producers may not think they need this level of advertising or their operation is too small to use billboards. Farm signs and billboards are closely related, so those producers using farm signs may have decided using one form of signage was enough.

Web

Web components consisted of blog, email blasts, email address, website, web banner advertising, web links, and social media. Producers perceived the usage of a website to be the most effective in promoting their cattle. A majority of respondents selected the usage of a website had a large impact on the promotion of their cattle operation. Producers realized the importance of having a central location for their information. A website should be one of the first components producers use, since a website ultimately serves as a destination for most other advertising calls to action (Cutrer, 2011). Websites also provide a centralized presence for all online advertising, including social media. Echoing is, the use of social media also appeared to be effective as perceived by producers. Many producers who believed their website had a large impact also believed social media was effective, hence using the two together. Producers perceived the least use and least effectiveness of blogs. Blogs are fairly new to the purebred industry, and are very simple to use. Some producers use blogs to show day-to-day life on the farm, but many producers do not have time for a blog. Blogs must be updated constantly, and are usually updated by the producer as opposed to a professional.

Print

Print components consisted of brochures, business cards, catalogs, letterhead/envelopes, magazine/newspaper, and postcards. Producers perceived the usage of printed magazines or newspapers to be the most effective in promoting their cattle. Magazine and newspaper advertising were perceived to have a large impact on promoting purebred cattle. Prior to upcoming shows or sales, producers can put in advertisement in a variety of magazines. Some producers may even put a congratulatory advertisement after a show or sale. This may be thought of as a traditional method, but younger producers also found this category of print to be effective. The use of sale catalogs was also thought to have a large impact on the promotion of cattle

operations. Sale catalogs often eliminate geographical barriers and allow prospective buyers to have the information about each lot in front of them. Catalogs are standalone pieces, often eliminating competition that would be found in magazines (Cutrer, 2011). Overall, producers perceived the use of catalogs and/or magazines or newspapers to be more effective than the use of brochures, letterheads/envelopes, or postcards.

Broadcast

Broadcast components consisted of Internet broadcasts, radio broadcasts, and television broadcasts. Of all categories of media, broadcasting had the least use and producers perceived the usage of broadcasting to be the least effective in promoting their cattle. Overall, the amount of usage is low compared to other types of media. In regards to the low amount of usage for Internet and television broadcasting, this may be due to a low adoption rate among users, which can be contributed to lack of knowledge, accessibility, or costs. Ranch House Designs, Inc. also did not offer broadcast options at the time of the survey. This may attribute to the low adoption rate.

Other

The other media category was composed of apparel, photography, promotional items, and sponsorships. Producers perceived the use of professional photography to have the largest impact on the promotion of their cattle operation. Although professional photography can be expensive, bad photos of cattle cost the producer much more. The photographs are used to attract potential buyers. Photographs lacking certain attributes can cost producers buyers. The perception of effectiveness may attribute to the high adoption rate. The use of apparel, promotional items, and sponsorships were used much less than professional photography, but were noted to have a positive impact on the promotion.

Objective 3

This objective sought to determine which types of media were most effective in marketing purebred cattle. Once the effectiveness of various types of media by producers was determined, the correlation of media usage and gross sales was determined. Seven categories were used in this correlation including basic, outdoor, web, print, broadcast, and other. Each category was correlated with the sale gross from 2012 and 2013. Of these categories, the use of outdoor advertising, which included farm signs, billboards, pedigree signs, promotional displays, and show animal exhibition, had the most beneficial correlation with gross sales in both years. Show animal exhibition contributed largely to this correlation. The use of web closely follows. Although neither of the relationships is significant in statistical terms, these do seem to have the largest positive impact. In both years, the use of broadcast had a significant negative correlation in both the 2012 and 2013 sale gross values. From this, it is evident when sales increase, the use of broadcasting decreases and visa versa. The low adoption rate or cost associated with broadcasting may contribute to these values. Ranch House Designs, Inc. did not offer broadcasting at the time of the survey, which may have also contributed to the negative correlations.

Objective 4

The final objective in the study sought to identify producers' perceptions of barriers to using digital media for marketing purebred cattle. In order to analyze producers' perceptions of barriers, an open-ended question was presented. Producers seem to have access to the technology and industry professionals to use advanced marketing techniques, however some producers felt their operation was not to the level of using these marketing techniques. For producers who do feel the need for marketing methods, a lack of knowledge was presented. Another common

factor seemed to be cost. Respondents also suggested if a return on sales were probable, they would consider using digital media in their operation.

Discussion and Implications

There has been no scholarly research done examining the use of media in marketing purebred cattle. This study sought to understand the most effective methods to market purebred cattle. Understanding the types of media being used and which of these media types is most effective can assist producers in the industry, breed organizations, and communications professionals.

Factors Impacting Diffusion

Those users currently using media to promote their purebred cattle operation have most likely passed through the implementation and confirmation stages of the innovation-decision process. A large attribute having an effect on the rate of adoption is observability (Rogers, 2003). If later adopters have an opportunity to observe notable purebred cattle producers using digital media as a method of marketing, they too may implement digital media usage. There were certain media used mostly by large-scale producers. The reason some producers were not adopting certain media was due to size of operation. Large breeders may have been observed using these methods, so smaller producers may believe this media is not suitable for their operation.

In order to assess the use of media, it is important to analyze producers who are not using media. Overall, lack of interest, lack of knowledge, and lack of time seem to be factors preventing producers from adopting digital media to market their cattle. Although the direct cost of Internet use is low, the indirect costs can vary. The time involved in learning a new technology can be significant, and producers often have prior time commitments (Smith et al.,

2004). These individuals are in the late majority, "adopting new ideas just after the average members of a system" (Rogers, 2003, p. 284). Producers needed to see using media was worth their time and effort before the conscious effort was made to adopt new technologies.

Educational Opportunities

Although there were a significant amount of respondents using digital media along with traditional media, there were respondents who were not using both. Traditionally, print is used as an avenue to digital sources. Those individuals not using digital media largely contributed their reasoning to lack of knowledge. Educational programs informing producers of the benefits and costs of alternative marketing programs would be highly beneficial in the diffusion process, as producers are either unaware or know very little regarding alternative marketing methods (Gillespie, Bassarir, & Schupp, 2004). Communications professionals such as Ranch House Designs, Inc. have offered educational workshops for producers to attend. Although attendance has been significant, these have occurred in Colorado, Oklahoma, and Texas. This may pose geographical barriers for producers in other areas of the country. A need for workshops in other states could be assessed to see if producers across the country are interested in learning which media to use to market purebred cattle.

National Research Agenda

The previous conclusions, discussion, and implications can all be linked back to the American Association for Agricultural Education National Research Agenda 2011-2015 (Doerfert, 2011). Specifically this study aids in the following research priority area (RPA):

RPA 2: New technologies, practices, and products adoption decisions

- Agriculturists, rural landowners, homeowners, and consumers will embrace new technologies, practices, and products derived through agricultural and natural resource research.

Recommendations

Recommendations for future research and practice are provided as a result of assessing the use and effectiveness of digital media in the marketing of purebred cattle.

Recommendations for Practice

- Purebred cattle producers should communicate with a communications professional or extension agent to determine which media platforms should be used to promote their operations.
- Classes and workshops need to be offered by communications professionals, extension agents, or breed associations to assist purebred producers in learning to use different platforms, especially digital media.
- Involve extension agents in classes and workshops to assist producers with marketing strategies and usage of various platforms.
- Provide example marketing plans or case studies of very successful cattle operations.

Recommendations for Future Research

- Research should be done to see why some platforms of media are chosen over others among producers.
- Research should be done to determine which platforms of media work best together.
- Research should be done to determine which media work best for various sizes of operations.
- Research should be done to determine the source of knowledge for producers regarding media use in marketing.
- A qualitative study assessing the quality of media being used should be conducted. Content analysis should be used to determine the quality of media used.
- Research should be done to determine knowledge of different platforms of media in order to assess if lack of knowledge is the contributing factor to lower usage of some forms of media.
- Research should be conducted to determine what type of social media is being used to promote purebred cattle.
- A qualitative study should be done be done to assess quality of product being sold, along with a brand audit type study of producers.

- A study should be done to show a comparison of marketing purebred cattle versus other types of livestock.
- A study should be done regarding brand recognition among purebred cattle producers.

Summary

Chapter 5 began by reviewing the purpose and objectives of this study. Then summaries of findings for each of the four objectives were provided. Next, conclusions were drawn from data presented in Chapter 4. These conclusions were discussed and compared to previous literature. Additionally, Chapter 5 demonstrated how the conclusions helped to advance the National Research Agenda for American Association for Agricultural Education. Finally, recommendations for practice and future research were offered.

APPENDIX A
INSTITUTIONAL REVIEW BOARD APPROVAL

Effectiveness of Digital Media for Marketing Purebred Cattle

Purpose of the research study:

The purpose of this study is to collect information from cattle producers regarding the utilization of digital media in purebred livestock operations.

What you will be asked to do in the study:

You will be asked to participate in a survey, where you will be asked a series of questions regarding the current marketing strategy of your purebred cattle operation.

Time required:

20 minutes

Risks and Benefits:

There are no risks associated with this study. There are no direct benefits to you for participating in the study.

Compensation:

You will not be compensated for your participation.

Confidentiality:

Your identity will be kept confidential to the extent provided by law. Your name will not be connected with your responses nor be used in any report.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at anytime without consequence.

Agreement:

I have read the procedure described above. By clicking yes, I voluntarily agree to participate in the procedure and I have received a copy of this description.

APPENDIX B
SURVEY COMPLETION REQUESTS

Pre-Survey E-Mail

Dear Ranch House Designs, Inc. Client,

In a few days, Reba Ellen Hicks, a master's student in the Department of Agricultural Education and Communication at the University of Florida, will be contacting you to participate in a national study regarding the use of digital media in marketing purebred cattle.

Ranch House Designs, Inc. is supporting this research and we hope that you will participate. The results of this survey will assist agricultural communicators and industry professionals better understand your advertising needs. The email that you will receive from Reba will explain more details of the research and the importance of this research. Most importantly, she will explain the importance of your participation in the survey questionnaire.

Thank you in advance for your contribution to this master's research.

Sincerely,
Rachel Cutrer
President and Creative Director
Ranch House Designs, Inc.

Initial Contact Email

Dear Ranch House Designs, Inc. Client,

Please take a moment out of your day to assist me in gathering data for my master's thesis project. As a master's student in agricultural communications and someone who has a passion for the cattle industry, I am interested in discovering the best way to market your cattle within regards to using digital media. With your assistance, the data collected will help beef cattle producers like yourself market cattle in the most effective way.

The link below will direct you to a short questionnaire regarding your personal use of digital media in promoting purebred cattle. This questionnaire should take approximately 15-20 minutes to complete. You assistance with this research is greatly appreciated. If you have any questions regarding the questionnaire or the research the data supports, please feel free to contact me at the email address provided below.

Follow this link to the Survey: Take the Survey

Or copy and paste the URL below into your Internet browser: https://ufl.qualtrics.com/WRQualtricsSurveyEngine/?Q_SS=3W4oMkePg5L5ARn_54J2gjKvqiZEfLT&_=1

Follow the link to opt out of future emails: Click here to unsubscribe

Sincerely,
Reba Ellen Hicks
University of Florida
Graduate Assistant
Department of Agricultural Education and Communication
rhicks@ufl.edu

Follow-Up Contact Email

Dear Ranch House Designs, Inc. Client,

I wanted to take this opportunity to thank you for participating in my research and encourage you to complete the survey instrument if you have not already done so. It is not my intention to continue to bombard you with e-mails, but it is part of the research design I must adhere to in order for my research to be deemed valid.

The link below will direct you to a short questionnaire regarding your personal use of digital media in promoting purebred cattle. This questionnaire should take approximately 15-20 minutes to complete. You assistance with this research is greatly appreciated. If you have any questions regarding the questionnaire or the research the data supports, please feel free to contact me at the email address provided below.

Follow this link to the Survey: Take the Survey

Or copy and paste the URL below into your Internet browser: https://ufl.qualtrics.com/WRQualtricsSurveyEngine/?Q_SS=3W4oMkePg5L5ARn_54J2gjKvqiZEfLT&_=1

Follow the link to opt out of future emails: Click here to unsubscribe

Once again, your participation in completing the survey is greatly appreciated. You are helping to develop a better understanding of marketing methods used by purebred cattlemen.

Thank you,
Reba Ellen Hicks
University of Florida Graduate Assistant
Department of Agricultural Education and Communication
rhicks@ufl.edu

Final Follow-Up Contact Email

Dear Ranch House Designs, Inc. Client,

I am sending you this message as a **final reminder** that I need your assistance. I am currently collecting data for my thesis, and your response is imperative to the success of my research. Two weeks ago, I sent you the following email: *Please take a moment out of your day to assist me in gathering data for my master's thesis project. As a master's student in agricultural communications and someone who has a passion for the cattle industry, I am interested in discovering the best way to market your cattle within regards to using digital media. With your assistance, the data collected will help beef cattle producers like yourself market cattle in the most effective way. The link below will direct you to a short questionnaire regarding your personal use of digital media in promoting purebred cattle. This questionnaire should take approximately 15-20 minutes to complete. You assistance with this research is greatly appreciated. If you have any questions regarding the questionnaire or the research the data supports, please feel free to contact me at the email address provided below.*

Follow this link to the Survey:

https://ufl.qualtrics.com/SE/?SID=SV_54J2gjKvqiZEfLT

Or copy and paste the URL below into your Internet browser:

https://ufl.qualtrics.com/SE/?SID=SV_54J2gjKvqiZEfLT

This questionnaire is only available for **one more week**, so please participate at your earliest convenience. Your time and input are so important to me, and a crucial for the success of my master's thesis. If you have any questions regarding the survey or the research being supported by the survey, please feel free to contact me. Thank you again for your assistance!

Sincerely,

Reba Ellen Hicks
University of Florida Graduate Assistant
Department of Agricultural Education and Communication
rhicks@ufl.edu

APPENDIX C
MARKETING PUREBRED CATTLE SURVEY QUESTIONNAIRE

Informed Consent
Protocol Title: Effectiveness **of** Digital Media for Marketing Purebred Cattle
Please read this consent document carefully before you decide to participate in this study.
Purpose of the research study:
The purpose of this study is to collect information from cattle producers regarding the utilization of digital media in purebred livestock operations.
What you will be asked to do in the study:
You will be asked to participate in a survey, where you will be asked a series of questions regarding the current marketing strategy of your purebred cattle operation.
Time required:
20 minutes
Risks and Benefits:
There are no risks associated with this study. There are no direct benefits to you for participating in the study.
Compensation:
You will not be compensated for your participation.
Confidentiality:
Your identity will be kept confidential to the extent provided by law. Your name will not be connected with your responses nor be used in any report.
Voluntary participation:
Your participation in this study is completely voluntary. There is no penalty for not participating.
Right to withdraw from the study:
You have the right to withdraw from the study at anytime without consequence.
Whom to contact if you have questions about the study:
Reba Hicks, or Hannah Carter, Assistant Professor,

Whom to contact about your rights as a research participant in the study:
IRB02 Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; phone 392-0433.
Agreement:
I have read the procedure described above. By clicking yes, I voluntarily agree to participate in the procedure and I have received a copy of this description.

- ◯ Yes
- ◯ No

Survey Completion
0% 100%

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Basic Components

Basic components include colors, a logo, or tagline.Listed below are examples of basic components. Carol Rose Quarter Horses used blue and yellow as primary colors prior to a dispersal sale in 2013. Carol Rose Quarter Horses also used a logo and tagline to promote top quality purebred horses.

Please answer the following questions regarding the use of basic components in your purebred cattle operation and how the basic components influences the success of your operation. If you do not use any of the components, please select "I do not use this."

	.			Using this has			
	I am currently using	I would like to use	I am not interested in using	had a large impact on promoting my cattle	had minimal impact on promoting my cattle	had no impact on promoting my cattle	I do not use this
Colors	○	○	○	○	○	○	○
Name	○	○	○	○	○	○	○
Logo	○	○	○	○	○	○	○
Tagline	○	○	○	○	○	○	○

Survey Completion

0% 100%

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Outdoor Advertising

Outdoor components can include farm signs, pedigree signs, promotional displays (such as the display shown below), or showing animals.

Please answer the following questions regarding the use of outdoor advertising in your purebred cattle operation and how the this form of advertising influences the success of your operation. If you do not use any of the components, please select "I do not use this."

	.			Using this has			
	I am currently using	I would like to use	I am not interested in using	had a large impact on promoting my cattle	has a minimal impact on promoting my cattle	had no impact on promoting my cattle	I do not use
Farm Signs	○	○	○	○	○	○	○
Billboards	○	○	○	○	○	○	○
Pedigree Signs	○	○	○	○	○	○	○
Promotional Displays	○	○	○	○	○	○	○
Show Animal Exhibition	○	○	○	○	○	○	○

Survey Completion

0% 100%

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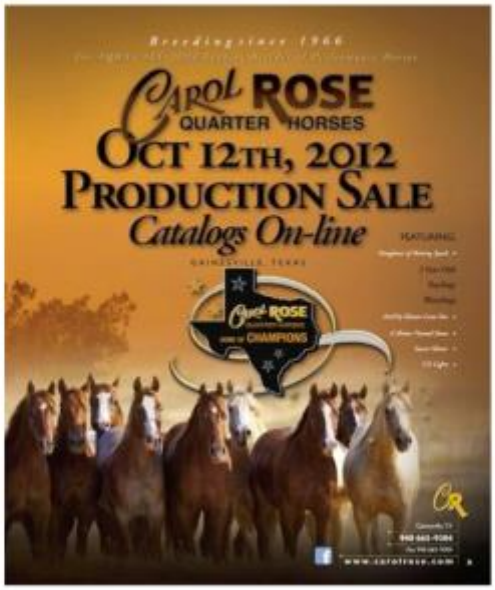
Web-Based Advertising

Web-based advertising includes anything that is done on the web to promote the cattle in your purebred operation such as websites, social media, online sales, etc. Below are examples of an online sale catalog and social media site.



Please answer the following questions regarding the use of web-based advertising in your purebred cattle operation and how web-based advertising influences the success of your operation. If you do not use any of the components, please select "I do not use this."

				Using this has			
	I am currently using	I would like to use	I am not interested in using	had a large impact on promoting my cattle	had a minimal impact on promoting cattle	had no impact on promoting my cattle	do not use
Blogs	○	○	○	○	○	○	○
Email Blasts	○	○	○	○	○	○	○
Email Address	○	○	○	○	○	○	○
Website	○	○	○	○	○	○	○
Web Banner Advertising	○	○	○	○	○	○	○
Web Links	○	○	○	○	○	○	○
Social Media	○	○	○	○	○	○	○

Survey Completion
0% 100%

Printed Advertising

Printed advertising includes brochures, business cards, sale catalogs, personalized letterheads and envelops, magazine advertisements, or postcards.

Please answer the following questions regarding the use of printed advertising in your purebred cattle operation and how print advertising influences the success of your operation. If you do not use any of the components, please select "I do not use this."

	.			Using this has			
	I am currently using	I would like to use	I am not interested in using	had a large impact on promoting my cattle	had a minimal impact on promoting my cattle	had no impact on promoting my cattle	do not use
Brochures	○	○	○	○	○	○	○
Business Cards	○	○	○	○	○	○	○
Catalogs	○	○	○	○	○	○	○
Letterhead/Envelopes	○	○	○	○	○	○	○
Magazine/Newspaper	○	○	○	○	○	○	○
Postcards	○	○	○	○	○	○	○

Survey Completion
0% 100%

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Broadcast Advertising

Broadcast advertising includes any advertisements that may be broadcast to the public such as commercials, online cattle sales, or video sales.

Please answer the following questions regarding the use of broadcast advertising in your purebred cattle operation and how broadcast advertising influences the success of your operation. If you do not use any of the components, please select "I do not use this."

	.			Using this has			
	I am currently using	Would like to use	I am not interested in using	had a large impact on promoting my cattle	had a minimal impact on promoting my cattle	had no impact on promoting my cattle	do not use
Internet Broadcasts	○	○	○	○	○	○	○
Radio Broadcasts	○	○	○	○	○	○	○
Television Broadcasts	○	○	○	○	○	○	○

Survey Completion
0% 100%

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Other Advertising

Other marketing tools include promotional materials, professional photography of your animals, or apparel. Below is an example of professional photography used as a marketing tool.

Please answer the following questions regarding the use of web-based advertising in your purebred cattle operation and how web-based advertising influences the success of your operation. If you do not use any of the components, please select "I do not use this."

	.			Using this has			
	I am currently using	I would like to use	I am not interested in using	had a large impact on promoting my cattle	had a minimal impact on promoting my cattle	had no impact on promoting cattle	do not use
Apparel	○	○	○	○	○	○	○
Photography	○	○	○	○	○	○	○
Promotional Items	○	○	○	○	○	○	○
Sponsorships	○	○	○	○	○	○	○

Survey Completion
0% 100%

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Please rank the following methods of marketing purebred cattle in your operation from most preferred (1) to least preferred (8)

- Outdoor Advertising
- Web-Based Advertising
- Social Media
- Printed Advertising
- Broadcast Advertising
- Apparel, Promotional Items
- Photography, Video
- Sponsorships

Survey Completion
0% 100%

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Please indicate which (if any) of the following social media tools you currently use to promote your operation. Please select all that apply.

- [ ] Facebook
- [ ] Twitter
- [ ] LinkedIn
- [ ] Blogs
- [ ] YouTube
- [ ] Other

Survey Completion
0% 100%

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Do you have Internet access at your home or at your purebred cattle operation?

- ( ) Yes
- ( ) No

Do you own a smart phone?

- ( ) Yes
- ( ) No

Survey Completion
0% 100%

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How do you use your smart phone? (Please select all that apply)

- [ ] Access social media
- [ ] Access the Internet
- [ ] Access e-mail
- [ ] Send/receive text messages
- [ ] Send/receive phone calls
- [ ] View online cattle sales, etc.
- [ ] Other

Survey Completion
0% 100%

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What is your gender?

- Male
- Female

What is your current age?

- 18 to 19
- 20 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 or over

What is the highest level of education you have completed?

- Less than High School
- High School / GED
- Some College
- 2-year College Degree
- 4-year College Degree
- Masters Degree
- Doctoral Degree
- Professional Degree (JD, MD)

Survey Completion

0% 100%

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How many head of purebred cattle do you own?

- Less that 25
- 25-50
- 51-100
- 101-200
- 201-300
- 301-499
- 500-999
- 1000 or more

How many years have you had been involved with this operation?

- 1-5
- 6-10
- 11-20
- More than 20

What breed(s) of cattle do you raise?

What is your role in the cattle operation? Please select all that apply, or indicate if other.

- [ ] Herdsman
- [ ] Herd Manager
- [ ] Owner/Non-Operator
- [ ] Owner/Operator
- [ ] Ranch Hand
- [ ] Other

Does your operation produce any other agricultural commodities such as corn, cotton, produce, or other livestock? If yes, what commodity does your operation produce?

- ( ) Yes
- ( ) No

Is raising purebred cattle your primary employment?

- ( ) Yes
- ( ) No

Survey Completion
0% 100%

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What is your primary employment?

Survey Completion
0% 100%

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What was your 2012 annual sale gross from purebred cattle?

- ◯ Under $10,000
- ◯ $10,001-$20,000
- ◯ $20,001-30,000
- ◯ $30,001-$50,000
- ◯ $50,001-$75,000
- ◯ $75,001-$100,000
- ◯ $101,000-$150,000
- ◯ $150,001-$175,000
- ◯ $175,001-$200,000
- ◯ $200,001-$300,000
- ◯ $300,001-$400,000
- ◯ $400,001-$500,000
- ◯ More than $500,001

What was your 2013 annual sale gross from purebred cattle?

- ◯ Under $10,000
- ◯ $10,001-$20,000
- ◯ $20,001-30,000
- ◯ $30,001-$50,000
- ◯ $50,001-$75,000
- ◯ $75,001-$100,000
- ◯ $101,000-$150,000
- ◯ $150,001-$175,000
- ◯ $175,001-$200,000
- ◯ $200,001-$300,000
- ◯ $300,001-$400,000
- ◯ $400,001-$500,000
- ◯ More than $500,001

Please rank in order the majority of the sale gross for your operation with 1 being the highest. Please leave the box blank if you do not use.

- ☐ Breeding Females
- ☐ Herd or Clean Up Bulls
- ☐ AI Bulls
- ☐ Donor Females
- ☐ Embryos
- ☐ Semen
- ☐ Show Prospects

Between years 2012 and 2013, did you add any new marketing tools such as a website or social media (Facebook, Twitter, Youtube, etc.)?

- Yes
- No

Survey Completion

0% 100%

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Which marketing tools did you add?

If you do not use digital media to market your cattle, why is this?

Survey Completion

0% 100%

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We thank you for your time spent taking this survey.
Your response has been recorded.

Survey Completion

0% 100%

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BIOGRAPHICAL SKETCH

Reba Ellen Hicks was born in Dothan, Alabama. She graduated from Rehobeth High School in May of 2008. Following high school graduation, she enrolled at Auburn University. During her time at Auburn University, Miss Hicks was heavily involved in Student Government Association and Auburn's College of Agriculture. In May of 2012, Miss Hicks received her Bachelor of Science in animal sciences from Auburn University. In August of 2012, Miss Hicks entered the graduate department in the Department of Agricultural Education and Communication at the University of Florida where she specialized in agricultural communications. During her time in the graduate program at the University of Florida, she served as a graduate teaching assistant as well as faculty support.