

## **Introduction**

The United States is home to the world's largest cattle industry and is the largest beef producer for in-country consumption and exports. Cattle production contributes the largest share of total cash receipts for agricultural commodities, making it vital to the United States agricultural industry (Economic Research Service, 2022). Beef cattle breed associations, which contribute to industry success through connection with members, promote and develop a particular breed of cattle (International Committee for Animal Recording, 2019). According to the Beef Improvement Federation, a breed association is, "an organization that maintains pedigree and performance information and arranges for timely genetic evaluation of animals within that breed. Breed associations also establish regulations for the registration of animals, promote the breed, and advance the interests of the breeder members" (Parish, 2016, p. 108).

Most associations develop breeding goals, a herd book, and promote the breed through sales, media, and events (International Committee for Animal Recording, 2019). Beef cattle breed associations utilize their marketing teams to promote their cattle while sharing the story of the beef producer (American Hereford Association, 2020). Additionally, breed associations invest in seedstock producers by communicating current developments and advancing the direction of the breed moving forward (American Hereford Association, 2020).

Beef cattle breed associations communicate with their members through both online communication channels and print materials (Lisa Bryant, director of communications for Red Angus Association of America. Personal communication, November 10, 2022). Many breed associations utilize multiple social media channels (Facebook, Instagram, Twitter, Snapchat, YouTube, etc.), eBlasts, filmed TV episodes, and a website. Beef breed associations also launch advertising campaigns that highlight the best qualities of their breed or producers to encourage other producers to start raising cattle of the breed for the same benefits. The associations will also highlight opportunities for producers to maximize profit through branded programs to either produce elite females or gain a larger profit in feeder cattle (L. Bryant, personal communication, November 10, 2022). Additionally, associations utilize print materials through their monthly magazines, production sale catalogs, and postcards. During sale seasons, production sale catalogs fill the mailboxes of every member, giving each association multiple touchpoints for communicating with current and potential member producers (L. Bryant, personal communication, November 10, 2022).

### **Print Versus Digital Communications**

Though digital media is growing in prevalence among beef cattle producers (Vehige, 2021), the main channel of beef cattle breed association communication with their membership is their print magazine publications (Vehige, 2021). Breed association magazines highlight editorial pieces and advertisements. For many producers, the magazine is a statement piece on their coffee table that will be picked up multiple times until the next edition reaches their mailbox (L. Bryant, personal communication, November 10, 2022). In general, print magazines are a valued source of scientific and other information for farming and ranching communities (Naile & Cartmell, 2009).

There are very few current, peer-reviewed studies related to agricultural producers' preferences for print versus digital content in magazines. Some believe the Internet and digital media are replacing traditional media; however, others argue that increasing forms of digital media simply push traditional media, like magazines, into new niche uses (van der Wurff, 2011). Print magazines that are tailored to the needs and interests of farmers and ranchers can be used effectively to facilitate decision-making, encourage the adoption of new technologies, discuss

sustainability, and provide information on risks and uncertainties involved with new management practices. Print media attracts the attention of the targeted users when content addresses the real problems faced by beef producers (Farooq et al., 2007). Additionally, many magazine users prefer a print magazine as they are tired of reading on screens and want to physically hold the magazines in their hands (Ytre-Arne, 2011). However, digital magazines are gaining popularity among users and continue to evolve (Karan et al., 2016; Royal, 2008). Though some studies confirm the continued importance of print materials in the agricultural industry, one study by Arbuckle Jr. and Wall (2017) found that agricultural producers prefer gathering information from digital publications. In non-agricultural industries, many magazine-producing entities are abandoning their print magazines due to the huge cost savings of going digital. However, the consequences of switching to online-only content are minimally studied (Thurman & Fletcher, 2020).

Print magazines are one of the largest expenses beef breed association communication departments face during the fiscal year (L. Bryant, personal communication, November 10, 2022). With the costs of printing and postage continuously on the rise, some beef breed associations are searching for ways to make their print publications more economically strategic. To grow and evolve, beef breed associations need to better understand their audience's preferences both on magazine content and distribution format (L. Bryant, personal communication, November 10, 2022). Magazine availability is growing in popularity; however, there is not one solution to deciding whether a magazine should be print-based, digital-only, or available to the target audience in both forms (Holmes, 2018). The purpose of the current study was to determine what beef breed association magazine information beef producers use and need, as well as producer perceptions of the magazines in a print vs. digital format.

## **Conceptual Framework**

Uses and gratifications theory and gatekeeping theory guided this study. Uses and gratifications theory focuses on understanding why and how individuals seek out certain media to satisfy their needs, concluding that the uses and gratifications approach is focused on the social and psychological origins of needs leading to consumer media exposure and resulting in need gratifications (Katz et al., 1973). The theory assumes individuals are not passive consumers of media, but instead, individuals have the power to choose the media they consume and integrate into their lives (Katz et al., 1973). Levy and Windahl (1984) described the uses and gratifications approach to research as considering "active consumers" of media through audience activity. Audience participation in the communication process facilitates, limits, or otherwise influences the gratifications associated with media exposure (Levy & Windahl, 1984). Uses and gratifications theory provides many perspectives regarding what motivates audiences to use and adopt media (Kim et al., 2015), and those motivations can include fulfilling the needs for information, personal identity, entertainment, and social interaction (Katz et al., 1973; Kim et al., 2015; McQuail, 1983).

Gatekeeping is the role the media, or any leader of information distribution, plays in determining which of the numerous topics available are worth reporting on or sharing with the masses (Shoemaker & Vos, 2009). The idea of gatekeeping was originally developed by Lewin (1947) as the influence on society by those who select information or goods to distribute. Though gatekeepers' day-to-day and moment-to-moment decisions may seem trivial, the process of gatekeeping constructs social realities on a constant basis (Shoemaker & Vos, 2009). Tying gatekeeping and uses and gratifications together, Weiss and Sternadori (2020) mention that magazines have similarities to newspapers, radio, television, and digital media forms, as they also "report on and interpret events, confer status, enforce social norms, narcotize readers, allow and disallow items to enter their 'gates,' set and build agendas, and provide a variety of important uses

and gratifications for their audiences. Yet some magazines do indeed enjoy a privileged position from which they can shape culture, society, or a certain sector of life” (p. 62). In the livestock world, editors of livestock publications are gatekeepers, and they need to remain familiar with their readership audience as that readership diversifies, while also helping producers meet their goals through publishing helpful and valuable content (Naile & Cartmell, 2009).

### **Need for Research – Print Versus Digital Magazines**

To print or not to print is a large debate in the communication industry (Herring & Rost, 2007). Current research about monthly print magazines is scarce (LaFerle et al., 2000; Payne et al., 1988; Perse & Courtwright, 1993; Randle, 2003; Schmidt, 1980), and studies that help determine the effectiveness of customer magazines are also limited (Koch et al., 2020). Few studies have published results on print magazine uses and gratifications (Weiss & Sternadori, 2020). Of those few, recent studies have reported on uses and gratifications related to advertising in women’s magazines (Kim et al., 2015), message efficacy in weight loss magazines (Sarge & Knobloch-Westerwick, 2017) and gratifications and readership of women’s magazines (Roux, 2021). Though much research has been conducted on advertising effectiveness, and digital media such as TV and radio have been studied extensively regarding uses and gratifications (Dunne et al., 2010; Scherr & Wang, 2021; Smith & Watkins, 2020; Trevino et al., 2016), research needs to be conducted on reader satisfaction of editorial content in print magazines within the uses and gratifications theoretical concept (Randle, 2003), particularly as print magazines are considering “going digital.” One recent study related to the uses and gratifications of print versus digital reading of periodicals includes a study of newspaper readership in Argentina, which dives into how changes in lived experiences occur when print newspapers are in decline (Boczkowski et al., 2020). In another recent uses and gratifications study related to digital versus print magazine use, Thurman and Fletcher (2020) stress a need for more studies about the consequences of moving magazine content to online-only.

### **Need for Research – Content Preferences in Beef Breed Association Magazines**

Naile and Cartmell (2009) found the importance of communicating science to agricultural producers, as well as the use of magazines for disseminating industry-advancing information to producers, will continue to increase as the livestock and agricultural industries grow. Researched information from decades ago claims farmers and ranchers want information on the topics of animal nutrition, animal health, markets, management, technology, and genetics (Foltz et al., 1996; Murphy, 1960), but current studies are needed to verify what topics producers currently need. A study by Trotter (1975) found that audiences who agree with magazine editors are more likely to believe publications are created for individuals like them, which is true for livestock publications as they are limited by commodity interest. Outside of agriculture, in one recent gatekeeping study of women’s magazine communications staff, study participants noted having little time or manpower to determine reader preferences (Cheng & Tandoc, 2021). Livestock organization communications staff are likely to have accurate perceptions of their specialized audience due to their positions within the industry and personal experiences; however, editors of livestock publications can underestimate the importance of livestock publications in the flow of information from research to producer-applicable concepts (Naile & Cartmell, 2009).

Literature suggests “relatively few readers stop consuming magazines’ print editions as a direct result of the introduction of web versions,” (Thurman & Fletcher, 2020, p. 1226), and in some cases, print magazine readers have a higher loyalty to the brand, on average, than digital

consumers of content. With a dearth of current peer-reviewed print versus digital studies in U.S. agriculture, and with the need for updated information about what topics agriculturalists are interested in reading in magazines, our study serves to add needed literature via magazine readership in the beef breed association sphere.

## **Purpose and Objectives**

Building upon the current focus of uses and gratification and gatekeeping research, the purpose of this study was to determine what beef breed association magazine information beef producers use and need, as well as producer perceptions of the magazines in a print versus digital format. A greater goal of the research is to inform beef breed association communications staff about how to strategically meet the needs of their magazine readership by understanding how their editorial content is currently being used, and by emphasizing and focusing on editorial content that is meaningful and useful for their audience. The research objectives that guided this study were:

1. Determine the information beef producers use from their beef breed association magazines.
2. Determine the topics beef producers wanted to see more of in their beef breed association magazines.
3. Determine producer perceptions and uses of print versus digital beef breed association magazines.

## **Method**

Using a descriptive quantitative survey research design, we distributed a survey instrument to participants in the intended target audience: beef cattle breed association members. The descriptive research aimed to summarize the study participants' attitudes regarding the identified variables of the study (Siedleckli, 2020), including print versus digital preferences of magazines; what beef producers use the magazines for; and topics they would like to see more of in their beef breed association magazines. We also collected information on producer demographics and operation characteristics.

## **Population and Sample**

The target population of this study was members of United States beef breed associations. Our goal was to survey members from each association with over 10,000 animal registrations (National Pedigreed Livestock Council, 2017), as associations with over 10,000 animal registrations are expected to have a large producer membership. Associations meeting the criteria were the American Angus Association, American Brahman Breeders Association, American Gelbvieh Association, American International Charolais Association, American Hereford Association, American Shorthorn Association, American Simmental Association, Beefmaster Breeders United, International Brangus Breeders Association, North American Limousin Foundation, and the Red Angus Association of America.

The Kansas State University Institutional Review Board approved this study before data collection began. We sent an email to the 11 beef breed associations identified as potential study participants. Six associations agreed to participate – the American Gelbvieh Association, American Hereford Association, American Shorthorn Association, Beefmaster Breeders United, North American Limousin Foundation, and the Red Angus Association of America.

The study utilized nonprobability purposive and convenience sampling. Nonprobability

purposive sampling was used since beef breed associations and their members were selected in a matter not related to probability theory (Babbie, 2018). Additionally, convenience sampling was used as any individual in the selected sample could agree to participate (Stratton, 2021).

## **Instrumentation**

Instrument questions related to producer demographics and operation characteristics were taken from Waggle (2020), and questions related to magazine uses were taken and modified from Moon and An (2022) and Xu et al. (2018). Each question was presented to participants on an individual page (Dillman et al., 2014). Survey questions asked participants what association they were a member of and what magazine publication(s) they received, then, asked “Do you prefer to read the magazine(s) in a print or digital format?” with the option to select one: “print” or “digital.” The survey instrument contained skip patterns to present participants with follow-up questions for more specific information on their print versus digital preference, with matrix table questions: “I prefer print magazines because:” (6 items; 5 point scale from *Strongly disagree* to *Strongly agree*) or “I prefer digital magazines because:” (6 items, 5 point scale from *Strongly disagree* to *Strongly agree*). Respondents were sent to the end of the survey if they selected the option of not receiving any beef breed association magazines, as their responses were not taken into consideration for the study. We looked at the potential negative aspect of the skip pattern survey design, (Couper et al., 2001; Manfreda et al., 2002; as cited in Dillman et al., 2014); however, the risk did not seem to be significant enough to justify alterations. Additional survey questions asked about current information uses, as well as what information participants would like to see more of in the magazines. Regardless of print or digital preferences, survey questions asked participants: “Consider what you use association magazines for, and indicate how much you agree or disagree with the following statements. I use beef breed association magazines to:” followed by a matrix table with 5 items related to beef cattle breed association topics, and a second matrix table with 5 items related to management decisions (5-point scales from *Strongly disagree* to *Strongly agree*). Survey questions also asked participants to indicate the types of information they would like to see more of in the magazines by ranking 8 items related to beef cattle breed association topics (such as “association marketing programs,” and “member services”), and in a separate question, 8 items related to management decisions (such as “breed improvement strategies” and “nutrition guidance”).

We tested the survey instrument with a panel of experts consisting of two agricultural communications assistant professors, one professor and head of an Extension and research center, one beef breed association magazine editor, and one beef breed association magazine publisher. The panel reviewed the instrument for content accuracy, theoretically guided questions, survey flow, and skip logic implementations. We adjusted minor details in the instrument based on the panel’s feedback. The panel unanimously agreed to the survey instrument meeting both content and face validity (Nikolopoulou, 2022; Straub et al., 2004; Taherdoost, 2016).

We developed a pilot survey, and we intended for the American Shorthorn Association (ASA) membership to serve as a pilot; however, with an impressive response rate from their members, we decided to use the first 27 ASA responses to test survey reliability and the remaining responses to be included as data in the study. Using coded variables from the instrument, we used SPSS to test the reliability of question sets. Though Cronbach’s alpha values of 0.8 or greater are acceptable (Kline, 1999), Nunnally (1978) argued in the early stages of research values as low as 0.5 will suffice for reliability of scales. Reliability tests were satisfactory:  $\alpha = 0.705$  for items related to reasons for use of beef cattle breed association magazines for association-related topics;  $\alpha = 0.730$  for items related to the reasons for use of beef cattle breed association magazines for

management topics;  $\alpha = 0.760$  for items related to print versus digital magazine preference; and  $\alpha = 0.856$  for items asking why beef producers want print magazines.

## Distribution and Data Analysis

We used Qualtrics to construct and distribute the survey instrument. We assisted each association’s primary communications staff member in developing the recruitment message to be sent to association members, and we created custom survey instrument URLs for each association to allow us to track the number of responses per association. Though consistent distribution by each association would have been ideal, we could not follow rigorous guidance on survey distribution (Dillman et al., 2014) because beef breed associations had concerns about and preferences for the number of times and format of survey link distribution. We allowed associations to decide in what format and how many times to distribute the survey link (Table 1), and survey links were made available to the members of the respective breed associations for at least one week. We used descriptive statistics in SPSS v.28 to analyze the data.

**Table 1**

*Beef Breed Associations’ Chosen Method for Survey Distribution to Their Membership*

Beef Breed Association	Survey Dissemination Method
American Gelbvieh Association	One eblast; included once in e-newsletter
American Hereford Association	Included once in e-newsletter
American Shorthorn Association	One eblast
Beefmaster Breeders United	One eblast
North American Limousin Foundation	One eblast
Red Angus Association of America	One eblast; included twice in e-newsletter

## Respondent Demographics and Sample Size

We received 365 usable survey responses. Respondents were asked to indicate from a “select all” list with which beef breed association(s) they were members. The total number of beef breed association members per organization was found on each organization’s website to calculate the response rate per organization. Survey participants were members of the American Shorthorn Association ( $n = 165$ ; a 6.6% response rate), Beefmaster Breeders United ( $n = 78$ ; a 2.6% response rate), Red Angus Association of America ( $n = 66$ ; a 2.1% response rate), American Gelbvieh Association ( $n = 46$ ; a 4.6% response rate), American Hereford Association ( $n = 37$ ; a 0.5% response rate), the North American Limousin Foundation ( $n = 15$ ; a 1.0% response rate), and some respondents were members of other associations not included in the study ( $n = 57$ ). The gender, age, and state of operation of respondents are shown in Table 2.

**Table 2***Demographics and Other Characteristics of Study Participants*

Characteristic	<i>n</i>	%
Gender		
Male	243	67.3
Female	110	30.5
Prefer not to say	8	2.2
Age		
18-21 <sup>a</sup> years old	9	2.5
22-29 years old	34	9.6
30-39 years old	59	16.6
40-49 years old	62	17.25
50-59 years old	82	23.1
60-69 years old	69	19.4
70-79 years old	37	10.4
80-89 years old	3	0.9
U.S. State of Cattle Operation		
Texas	52	14.2
Missouri	31	8.5
Oklahoma	26	7.1
Kansas	22	6.0
Ohio	20	5.5
Outside of the U.S.	1	0.3

<sup>a</sup> 18- 21-year-old members qualify for Junior Membership, which is why age groups were categorized this way

**Results**

Through research objective one, we sought to determine the information beef producers are using from their beef breed association magazines. Using a five-point Likert scale ranging from *1 = Strongly disagree* to *5 = Strongly agree*, participants were asked to consider why they use beef breed association magazines and identify their level of agreement with their use related to the identified topics. There were 10 prompts split into two categories: *beef cattle breed association topics* and *management decision topics*.

Of the 362 who responded to magazine usage related to *beef cattle breed association topics*, ( $f = 332$ , 91.7%) said they either *strongly agree* or *somewhat agree* with the prompt: "I use beef breed association magazines to learn about association news, marketing programs, events, member services, and foundation opportunities;" 90.6% ( $f = 327$ ) of the respondents indicated they either *strongly agree* or *somewhat agree* with the prompt: "I use beef breed association magazines to learn about marketing strategies and upcoming sales through producer advertisements;" 89.3% ( $f = 324$ ) of participants indicated they *strongly agree* or *somewhat agree* with the prompt: "I use beef breed association magazines to learn about breed improvement strategies;" and 70.3% ( $f = 249$ ) of respondents indicated they *strongly agree* or *somewhat agree* with the prompt: "I use beef breed association magazines to stay informed about junior events and show champions." Finally, 61.8% ( $f = 223$ ) of participants *strongly agree* or *somewhat agree* with the prompt: "I use beef breed

association magazines to learn more about branded beef programs.” Table 3 shows detailed respondent use results for magazine topics related to *beef breed associations*.

**Table 3**

*Participants’ Use of Beef Breed Association Magazines for Breed Association Topics (N = 364)*

Prompt	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree		
	<i>n</i>					<i>M</i>	<i>SD</i>
Learn about association news, marketing programs, events, member services, and foundation opportunities. <sup>a</sup>	214	118	18	7	5	4.46	0.80
Learn more about branded beef programs. <sup>b</sup>	77	146	102	21	15	3.69	1.01
Learn about breed improvement strategies. <sup>c</sup>	177	147	28	6	5	4.34	0.80
Stay informed about junior events and show champions. <sup>d</sup>	131	118	67	20	18	3.92	1.11
Learn about marketing strategies and upcoming sales through producer sale advertisements. <sup>e</sup>	195	132	24	8	4	4.38	0.82

*Note:* Five-point Likert scale questions; 1 = strongly disagree to 5 = strongly agree. Real limits: 1.00 to 1.49 = *Strongly disagree*, 1.50 to 2.49 = *Somewhat disagree*, 2.50 to 3.49 = *Neither agree nor disagree*, 3.50 to 4.49 = *Somewhat agree*, 4.50 to 5.00 = *Strongly agree*.

<sup>a</sup> (n = 362), <sup>b</sup> (n = 361), <sup>c</sup> (n = 363), <sup>d</sup> (n = 354), <sup>e</sup> (n = 364)

Of the 364 who responded to magazine usage related to *management decision topics*, 84.1% ( $f = 306$ ) said they either *strongly agree* or *somewhat agree* with the prompt: “I use beef breed association magazines to learn more about current events in the beef industry;” 87% ( $f = 317$ ) of the respondents indicated they either *strongly agree* or *somewhat agree* with the prompt: “I use beef breed association magazines to gain information on new technological advancements for my operation;” 81.3% ( $f = 296$ ) indicated they either *strongly agree* or *somewhat agree* with the prompt: “I use beef breed association magazines to better understand genetic selection practices;” and 75% ( $f = 274$ ) participants either *strongly agree* or *somewhat agree* with the prompt: “I use beef breed association magazines to learn more about success stories from other cattle producers.” Finally, 60.8% ( $f = 220$ ) of respondents either *strongly agree* or *somewhat agree* with the prompt: “I use beef breed association magazines to receive nutritional guidance for my cattle.” Table 4 shows detailed respondent use results for magazine topics related to *management decisions*.

**Table 4**

*Participants' Use of Beef Breed Association Magazines for Management Decision Topics (N = 364)*

Prompt	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree	<i>M</i>	<i>SD</i>
	<i>n</i>						
Learn more about success stories from other cattle producers.	115	159	71	15	4	4.01	0.88
Gain information on new technological advancements for my operation.	151	166	31	10	6	4.23	0.84
Receive nutritional guidance for my cattle. <sup>a</sup>	88	132	88	34	20	3.65	1.11
Better understand genetic selection practices.	150	146	47	13	8	4.15	0.93
Learn more about current events in the beef industry.	171	135	43	7	8	4.25	0.90

*Note.* Five-point Likert scale questions; 1 = strongly disagree to 5 = strongly agree. Real limits: 1.00 to 1.49 = *Strongly disagree*, 1.50 to 2.49 = *Somewhat disagree*, 2.50 to 3.49 = *Neither agree nor disagree*, 3.50 to 4.49 = *Somewhat agree*, 4.50 to 5.00 = *Strongly agree*.

<sup>a</sup> (*n* = 362)

Through research objective two, we sought to determine topics beef producers wanted to see more of in their beef breed association magazines, including topics not tied to associations as well as association-related topics. Survey participants were presented with a question asking them to rank preferred topics related to management practices they would like to see more of in their beef cattle breed association magazines. There were eight topics listed in two categories, and items in each list were coded 1-8, with a “1” being the highest preferred topic. For the topics not tied to associations, Breed Improvement Strategies (*M* = 1.90, *SD* = 1.29) ranked highest (see Table 5).

**Table 5**

*Topics (Not Tied to Associations) Beef Producers Want to See More of in Association Magazines (N = 207)*

Topic	<i>M</i>	<i>SD</i>
Breed improvement strategies	1.90	1.29
Genetic selection	3.55	1.82
Technology advancements	3.64	1.50
Producer success stories	4.37	2.08
Nutrition guidance	4.48	1.92
Current event happenings	5.01	1.97
Branded beef programs	6.18	1.57
Junior activities	6.86	1.81

*Note.* The lower the mean, the higher the average ranking.

For association-related topics, Association News and Association Marketing Programs tied as highest preferred topics (see Table 6).

**Table 6**

*Association-Related Topics Beef Producers Want to See More of in Association Magazines (N = 204)*

Topic	<i>M</i>	<i>SD</i>
Association news	3.43	1.79
Association marketing programs	3.43	1.97
Member services	3.52	1.95
Association events	4.00	1.81
Sale advertisements	4.03	2.08
Foundation opportunities	5.16	2.04
Show champions	5.60	2.07
Other	6.82	2.07

*Note.* The lower the mean, the higher the average ranking.

Through research objective three, we sought to determine producer perceptions and uses of print versus digital beef breed association magazines. Participants were asked to indicate their format preference of beef breed association magazines: print or digital. Participants were then presented with a five-point Likert scale and statements regarding why they preferred their desired format. Table 7 describes the format preferences of beef producers regarding beef breed association magazines. Most participants preferred print magazines ( $n = 347, 95.1\%$ ), while the remaining respondents indicated they preferred digital magazines ( $n = 18, 4.9\%$ ).

**Table 7***Beef Producer Magazine Format Preference (N = 365)*

Magazine format	<i>n</i>	%
Print	347	95.1
Digital	18	4.9

Survey participants who selected a print preference were directed to a question asking why they preferred beef breed association magazines in a print format. Though 347 respondents stated they prefer print magazines, 344 respondents selected reasons why. Beef producers who prefer print magazines strongly agree their beef breed association magazines in print are easier to read ( $n = 341$ ,  $M = 4.72$ ,  $SD = 0.541$ ), convenient ( $n = 341$ ,  $M = 4.57$ ,  $SD = .685$ ), and accessible ( $n = 344$ ,  $M = 4.52$ ,  $SD = .833$ ). Additionally, beef producers who prefer print magazines agreed printed beef breed association magazines are portable ( $n = 339$ ,  $M = 4.46$ ,  $SD = .864$ ), do not require internet access ( $n = 339$ ,  $M = 4.40$ ,  $SD = .999$ ), and are timely ( $n = 332$ ,  $M = 3.96$ ,  $SD = 1.071$ ). Table 8 displays the data.

**Table 8***Beef Producer Print Magazine Preferences*

Preference	<i>M</i>	<i>SD</i>	Interpretation
It is easier to read. <sup>a</sup>	4.72	0.54	Strongly agree
It is convenient. <sup>a</sup>	4.57	0.69	Strongly agree
It is accessible. <sup>b</sup>	4.52	0.83	Strongly agree
It is portable. <sup>c</sup>	4.46	0.86	Agree
It does not require internet access. <sup>c</sup>	4.40	1.00	Agree
It is timely. <sup>d</sup>	3.96	1.07	Agree

*Note:* Five-point Likert scale questions; 1 = strongly disagree to 5 = strongly agree. Real limits: 1.00 to 1.49 = *Strongly disagree*, 1.50 to 2.49 = *Somewhat disagree*, 2.50 to 3.49 = *Neither agree nor disagree*, 3.50 to 4.49 = *Somewhat agree*, 4.50 to 5.00 = *Strongly agree*.

<sup>a</sup> ( $n = 341$ ), <sup>b</sup> ( $n = 344$ ), <sup>c</sup> ( $n = 339$ ), <sup>d</sup> ( $n = 332$ )

Respondents who selected a preference for beef breed association magazines in a digital format were directed to a question about their preferences regarding the digital magazine. Though 18 respondents indicated they prefer digital magazines, 17 respondents selected reasons why. Beef producers who prefer digital magazines strongly agree digital magazines are portable ( $n = 17$ ,  $M = 4.59$ ,  $SD = .712$ ) and timely ( $n = 17$ ,  $M = 4.59$ ,  $SD = .712$ ). Additionally, beef producers who prefer digital magazines agree digital magazines are convenient ( $n = 17$ ,  $M = 4.47$ ,  $SD = .717$ ), accessible ( $n = 17$ ,  $M = 4.35$ ,  $SD = .862$ ), easier to read on the go ( $n = 17$ ,  $M = 3.94$ ,  $SD = 1.029$ ) and help the environment ( $n = 16$ ,  $M = 3.69$ ,  $SD = 1.138$ ). Table 9 displays the data.

**Table 9***Beef Producer Digital Magazines Preferences*

Preference	<i>M</i>	<i>SD</i>	Interpretation
It is portable. <sup>a</sup>	4.59	.71	Strongly agree
It is timely. <sup>a</sup>	4.59	.71	Strongly agree
It is convenient. <sup>a</sup>	4.47	.72	Agree
It is accessible. <sup>a</sup>	4.35	.86	Agree
It is easier to read on the go. <sup>a</sup>	3.94	1.03	Agree
It helps the environment. <sup>b</sup>	3.69	1.14	Agree

*Note:* Five-point Likert scale questions; 1 = strongly disagree to 5 = strongly agree. Real Limits: 1.00 to 1.49 = *Strongly disagree*, 1.50 to 2.49 = *Somewhat disagree*, 2.50 to 3.49 = *Neither agree nor disagree*, 3.50 to 4.49 = *Somewhat agree*, 4.50 to 5.00 = *Strongly agree*.

<sup>a</sup> (*n* = 17), <sup>b</sup> (*n* = 16)

### Discussion, Conclusions, and Recommendations

In terms of print versus digital, overwhelmingly, beef cattle producer survey respondents preferred to receive their beef cattle breed association magazines in a print format rather than a digital format (95% (*n* = 347) of respondents preferred print while 5% (*n* = 18) of respondents preferred digital). It is important to reiterate that our survey was distributed digitally and that 102 respondents (28%) were under the age of 40. The top reasons respondents preferred print magazines were “It is easier to read,” “It is convenient,” and “It is accessible.” The top reasons respondents preferred digital magazine content were “It is portable” and “It is timely.” Beef producers in this study clearly achieved gratifications sought through the use of the print magazine, reflecting the uses and gratifications theory as individuals seek media sources to satisfy their individual needs (Ruth-McSwain, 2008). The preference for print format in our study aligns with results from studies 15-20 years ago (McCarthy et al., 2008; Vergot III et al., 2005). However, results from recent studies of young adults in non-agricultural contexts suggest a steep jump in preferences for digital content for leisure. For example, in a recent study of college students (digital natives) in South Africa, the majority of participants preferred to read fashion magazines digitally due to convenience, timeliness, and/or easy access. Study participants believed neither print nor digital magazines needed to be eliminated, but that they both could exist and excel (Mbombo, 2021). In a recent study of 5,000+ adolescents in Singapore, a majority of participants preferred to read for leisure on their smartphone or in printed format over an e-reader, tablet, or computer, with smartphones desired over print (Loh & Sun, 2022).

In terms of participants’ use of beef breed association magazines for breed association topics, 75% or more of respondents agreed that they use beef breed association magazines to learn about association news, marketing programs, events, member services, and foundation opportunities; to learn about marketing strategies and upcoming sales through producer advertisements; and to learn about breed improvement strategies. For participants’ use of beef breed association magazines for management decision topics, 75% or more respondents agreed that they use beef breed association magazines to learn more about current events in the beef industry; to learn about new technological advancements for their operation; to better understand genetic selection practices; and to learn more about success stories from other cattle producers. These findings partially align with previous findings from Foltz et al. (1996) and Murphy (1960) as popular topics of magazine use among beef producers include animal nutrition, technology, markets, genetics, and reproduction. The results of this study indicated some use of the beef cattle

breed association magazines to learn about junior events and branded beef programs, and to receive nutritional guidance. Based on previous studies, these topics are still important to the beef producers using the magazines, but the topics do not indicate the highest information-seeking use of the magazines or gratifications obtained from magazine use (Katz et al., 1973).

The three highest-ranked management-related topics producers want to see more of in beef breed association magazines were breed improvement strategies, genetic selection, and technological advancements. Though not in the same publishing timeframe, these results pair well with research by Naile and Cartmell (2009), who found that editors of monthly livestock publications perceive animal health, management, breeding, and genetics to be the most important scientific topics. In terms of association-related topics, association news, association marketing programs, and member services were ranked highest as content types which they would like to see more.

There are several limitations to this study. Contrary to Dillman et al. (2014) guidance in survey distribution methods, the survey instrument was distributed in a variety of digital formats, and with varying frequency, depending on each breed association's preference or communication style. Inconsistent distribution across associations likely affected varying and low response rates per organization. Due to varying and low response rates, survey respondents are not a representative sample of all U.S. beef breed association members. Results of this study cannot be applied to all U.S. beef breed associations, nor to all of their members, and results cannot be clearly tied to each individual beef breed association. However, we believe the results are still informative for the industry. Also, some respondents indicated they were members of multiple associations, and received multiple beef breed magazines. Those respondents could not provide magazine-specific responses, but general beef breed magazine use preferences.

Noting the limitations of this study summarized above, our results can be used by communications staff at beef cattle breed associations to 1) make sure their content is relevant in terms of the longevity of use of their magazines, and 2) inform their role as gatekeepers by delivering to beef producers the information they need to be successful. Our recommendations for beef breed association editors and communications staff align with the recommendations of others: print continues to be the preferred format of beef breed association magazines, and though costs to produce print magazines is high, practitioners must consider the potential consequences of moving away from print to digital formats. Loyalty to print magazines associated with the associations' brand could be high, and in past case studies where print magazines moved to digital-only to save expenses, time spent with magazine content decreased steeply (Thurman & Fletcher, 2020). The complicated potential implications of decreased time spent on editorial content versus advertising content in this industry are unknown. In terms of gatekeeping, digital and print content can be selected carefully, with more timely and brief information shared digitally, and lengthy, less-timely content provided in print (along with association news and other reader preferences, as described above). We recommend communications practitioners periodically monitor their audiences, particularly younger generations' preferences, and offer both print and digital information to reach a broad audience (McCarthy et al., 2008). Because print strongly lives on – for now – in studied agricultural audiences, we recommend that the design of publications for print remain in the agricultural communications curriculum, alongside new media and digital media classes.

According to recent studies of digital natives related to magazine readership and leisure reading (e.g. Loh & Sun, 2022; Mbombo, 2021), digital preferences for content cannot be ignored (Vehige, 2021). Too few junior members (18–21-year-olds in this study) of breed associations responded to this survey to compare digital versus print preference by age. To anticipate future needed changes in platforms for magazine content, research related to print versus digital preferences of magazine content in younger agricultural audiences is needed.

Beef breed associations are one of the industries where print magazines still thrive in terms of user preference. To better understand the effectiveness, and preference for, printed beef breed association magazines, future theory-based research could dive into the more specific gratifications print magazine users seek, as we did not study types of gratifications sought through magazine reading. More specific gratifications research could use Koob et al. (2023) as a launch point to dive into consumer identity gratifications (“content experiences that help consumers construct and consolidate who they are” (Koob et al., 2023, p. 17), and aesthetic theories (Welsch, 2017) to include haptics (Guest et al., 2011; Melumad & Pham, 2020) and visuals (Haase & Wiedmann, 2018). Continuing to study gatekeeping and the uses and gratifications of print magazines in audiences with a print magazine preference will have both theoretical implications and use for applied communications work.

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