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McKayla Brubaker Nichols
Great Plains Ag, mbrubaker2012@gmail.com

Quisto Settle
Oklahoma State University, quisto.settle@gmail.com

Alisha Hardman
Mississippi State University, a.hardman@msstate.edu

Laura Downey
Mississippi State University, laura.downey@msstate.edu

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The Food Factor: Relating Brand Viewership to Behavior and Behavioral Intention

McKayla Brubaker Nichols

Great Plains Ag

Quisto Settle

Oklahoma State University

Alisha Hardman

Laura Downey

Mississippi State University

Mississippi residents (n = 404) were surveyed to determine how The Food Factor brand viewership impacted their behavior and behavioral intention. The Food Factor is a weekly Extension mass media program that communicates research-based information about food, nutrition, and healthy lifestyles. A researcher-developed instrument was used to collect information about behavior and behavioral intent, as well as perceptions of The Food Factor using Qualtrics from a representative sample. Respondents were split into viewer and non-viewer categories. Viewers were asked about their viewing frequency and their nutrition-related behaviors and behavioral intention to create a behavioral score. Non-viewers were also asked about their nutrition-related behaviors and behavioral intention to compare to viewers. The majority of viewers' results indicated they were casual viewers. On average, viewers had a slightly higher behavioral score than non-viewers. There was no statistically significant correlation between viewing frequency and viewers' behavioral scores. Overall, it was uncertain if the brand had meaningful effects on viewers. Recommendations include future studies on the use of branding in social marketing programs and other mass media programs in other states, and further evaluation of The Food Factor brand.

Keywords: mass media, social marketing, Extension, behavior, behavioral intent, branding

Introduction & Literature Review

As Extension is facing budget cuts (Serenari et al., 2013; Struckmeyer et al., 2019), programs are increasingly expected to provide evidence of success (Gregory-North, 2015; Monaghan et al., 2013). While behavioral outcomes have been an Extension objective for many years, Extension agents have been encouraged to consider innovative strategies to promote behavioral outcomes (Argabright et al., 2012; Martin & Warner, 2016; Sanagorski, 2014).

Direct correspondence to qsettle@okstate.edu

Social Marketing

Social marketing concepts were first discussed in the early 1970s (Kotler & Lee, 2016). Social marketing has several definitions, which creates confusion (Andreasen, 1994, 2002; Kotler & Lee, 2016; McDermott et al., 2005; Spotswood, 2010). Social Marketing Quarterly, the academic journal for social marketing, (2016) defined social marketing as

A process that uses marketing principles and techniques to change target audience behaviors to benefit society as well as the individual. This strategically oriented discipline relies on creating, communicating, delivering, and exchanging offerings that have positive values for individuals, clients, partners, and society at large (para. 1).

Social marketing has been used to address a variety of societal problems (Kotler & Lee, 2016) and has been identified as a way to address health and nutritional issues, such as obesity and other weight-related illness (Evans et al., 2010, 2015; Wood, 2015). These areas align similarly to the areas of outreach for Extension, such as agriculture and the environment, family and consumer sciences, 4-H and youth development, and governmental and business contexts.

Social marketing is a way to influence behavioral outcomes (Martin & Warner, 2016; Monaghan et al., 2013; Sanagorski, 2014; Skelly, 2005). Warner et al. (2016) said, “Social marketing is a promising approach to bringing about behavior change, yet it is underutilized in Extension programming” (p. 15).

Branding

Branding provides an opportunity to improve social marketing, but the application of branding to Extension social marketing programs is limited. Evans (2013) said, “Social marketing uses branding and other commercial marketing techniques to influence individual behaviors” (p. 172).

There is a need for further studies of branding in social marketing, specifically looking at the effects of brand attributes and associations on behavioral outcomes (Aaker, 1996; Evans, 2013; Evans & Hastings, 2008; Keller, 1998a; Leonard & Morey, 1996). Literature regarding social and health branding is limited but growing (Evans, 2013). “The *strategic* use of brands and branding in public health, based on behavioral theory, to change specific knowledge, attitudes, and health behaviors is a relatively new approach” (Evans & Hastings, 2008, p. 287).

Consequently, health branding is a growing strategy in social marketing (Lefebvre, 2013), one that Extension could benefit from adopting, especially for the promotion of nutrition education (Aschemann-Witzel et al., 2012; Beall et al., 2012; Freeland-Graves & Nitzke, 2013; Grier & Bryant, 2005; Hastings, 2006; Henley et al., 2011; Herrick, 2007; Stead et al., 2013).

A brand is a “Complex, interrelated system of management decisions and consumer reactions that identifies a product (goods, services, or ideas), builds awareness of it, and creates meaning

for it” (Franzen & Moriarty, 2009, p. 6). The public develops favorable associations with strong brands (Keller, 1998a). There is a progression of steps a brand must take for success: First, the brand must establish its identity, then the brand needs to be recognized by the public, followed by the public choosing the brand, and the process ends with the public reaching a state of loyalty to the brand (Franzen & Moriarty, 2009).

Brands operate on a systems-based approach, including internal and external components, where individual components work together to make up the brand (de Chernatony, 2006; Franzen & Moriarty, 2009). The iceberg metaphor by de Chernatony explains the concept of internal and external branding. The smaller portion of the iceberg above water represents external branding, such as a logo or name (de Chernatony, 2006). The larger portion of the iceberg underneath the water represents internal branding, such as staff, values, or culture (de Chernatony, 2006). While external branding is often visible to the public, internal branding is not always visible to the public (Settle et al., 2016). For example, in Extension, the employees influence how the brand is interpreted by external audiences (Kimpakorn & Tocquer, 2010; Settle et al., 2016).

This study examined the external portion of *The Food Factor* brand, specifically viewership. Viewers gain increased familiarity with the brand, increasing their likelihood to choose the brand in the future if they have positive experiences with the brand. If watching *The Food Factor* improves behavioral outcomes for members of the public, they could be more likely to support Extension as the show’s producer. But it is important to remember that the external portion of *The Food Factor* is shaped by the decisions of the personnel working on the show, including determining the target audience and behaviors. *The Food Factor* will be described at the end of the literature review.

Branding in Extension

Extension uses branding strategy to face the challenge of staying current with evolving media and communication approaches. Branding has been mentioned in Extension literature as early as 1998 (Maddy & Kealy, 1998; Settle et al., 2016), but this was relatively late in Extension’s history, as it was founded in 1914 and branding started in the 19th century. Extension’s success relies on its communications that create awareness, interest, and engage the target audience (Chappell, 1990). Without a relationship with the brand of Extension, the public may not regularly use Extension, particularly if Extension is not communicating with the public effectively (Telg et al., 2007).

Several studies have looked at branding in Extension, although the application of branding concepts in Extension has been limited (Abrams et al., 2010; Settle et al., 2016). To understand the entirety of Extension’s brand, internal and external branding components should be evaluated (Settle et al., 2016).

Despite having a positive brand image with its users, several studies have indicated a lack of Extension brand awareness overall (Abrams et al., 2010; Copernicus Marketing, 2010; Felter, 2012; Settle et al., 2017). Extension strives to be well-known and used by the public but has been called the “Best kept secret” (DeBord, 2007, para. 1), an undesirable label when its goals are to maximize outreach to the public.

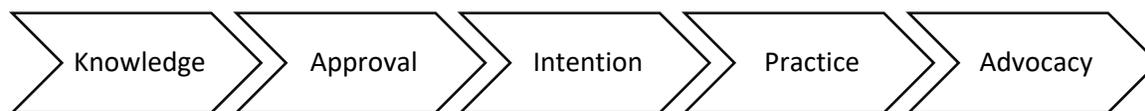
A national, 360-degree study about Extension brand value conducted in 2008 among employees, volunteers, and other stakeholders found that stakeholders agreed that brand value (visibility and marketing) of Extension needed to be improved and that few people knew about Extension and the services provided (Copernicus Marketing, 2010; Felter, 2012). Despite a lack of awareness, stakeholders and the public agreed on Extension’s brand characteristics, such as Extension serving as a trustworthy source and providing current, reliable information (Felter, 2012).

Extension has been working toward a brand-building campaign to foster awareness (Mississippi State University Extension Service & Office of Agricultural Communications, 2015). To overcome lack of awareness, Mississippi State University (MSU) Extension adopted the campaign slogan, “Extending knowledge. Changing lives,” which pairs a variation of the word “Extension” with the organizational purpose of promoting positive change in the lives of others by providing education. Additionally, it was recommended to maintain the brand clearly and consistently over time, as all pieces of communications need to support the brand and its missions, which includes promoting positive behavior change (Abrams et al., 2010; Alberts et al., 2004; Maddy & Kealy, 1998).

Behavior Change

The Population Communication Services developed a model for behavior change for family planning (Kincaid et al., 1997; Figure 1), but this model can be easily adapted to fit other health situations. The first stage in the Steps to Behavior Change model is Knowledge, which requires consumers to recall, understand, and identify methods or sources involved in the message. The second step is Approval, where consumers must respond favorably to the message, discuss the message with social networks, believe others approve, and finally approve of the message. The third step is Intention, where consumers must recognize that the message meets a personal need, may intend to reach out to an expert or resources for more information, and commit or intend to implement the change from the message. The fourth step is Practice, where the consumer seeks out the change, experts, or resources involved with the change and chooses a method to begin the change process. They then must practice continuance or maintenance with the change. The final step in the process is Advocacy. In this stage, the consumer experiences the benefits of the change and advocates or provides support to others and the community.

Figure 1. The Population Communication Services' Steps to Behavior Change



Behavioral intentions are a person's perception of the probability they will engage in a behavior (Institute of Medicine, 2002). Research indicates that people are fairly accurate in predicting their own behavior, and they can be one of the best predictors of their likelihood to follow through with the behavior (Institute of Medicine, 2002; Sheppard et al., 1988). Despite having an intent to perform a behavior, sometimes people are unable to do so due to certain barriers, such as environmental factors, a lack of skills, or ability (Institute of Medicine, 2002). For individuals who have made a strong intention to commit to the behavior and lack barriers, the likelihood that they will adopt the behavior is very high (Institute of Medicine, 2002).

Studies have identified that brand awareness is a predictor of consumer choice behavior (Axelrod, 1968; Haley & Case, 1979; Holden, 1993; Nedungadi & Hutchinson, 1985), which is operationalized as behavior change in this study. A study by Oh (2000) involving the hospitality industry found that creating strong brand awareness with potential customers increased their intent to purchase a certain lodging brand and decreased the need for customers' search behavior of other lodging options. Similarly, Kim and Kim (2016) found that higher brand awareness led to higher customer intent to purchase a brand.

In a social marketing setting, the intent to purchase would be replaced by the intent to adopt the particular behavior. Despite several studies stating that brand awareness and behavior are directly related, more evidence is needed to fully support the concept. This study specifically addresses the link between behavior and brand awareness of an Extension mass media program.

Television and Mass Media Programs and Interventions

While often modest in effects (Noar, 2006), mass media outlets have been shown to affect the public's health-related behaviors (Abroms & Maibach, 2008; Bertrand et al., 2006; Noar, 2006; Randolph & Viswanath, 2004). Bertrand et al. (2006) defined mass media interventions as, "Any programs or other planned efforts that disseminate messages to produce awareness or behavior change among an intended population through channels that reach a broad audience" (p. 568). For a media-based health campaign to be successful, messages need to be well-designed and have effective reach and frequency to reach the target audience (Abroms & Maibach, 2008).

Challenges that health-related mass media social marketing campaigns face are the presence of unhealthy messages in the same media environments, as well as health campaigns using too much jargon and focusing on treatment instead of prevention (Marshall-Chester, 1990). However, mass media still presents an opportunity for health promotion (Marshall-Chester,

1990) because of its ability to reach and appeal to broad audiences in a relatively cost-efficient manner (Randolph & Viswanath, 2004). More research is needed, though, to identify how mass media can strategically influence health behavior practices (Abroms & Maibach, 2008).

Extension Mass Media Programs

With Extension needing to broaden its reach, mass media channels can meet this need by broadening Extension's reach beyond those accessing traditional Extension programming (Boone et al., 2007; Woodson et al., 2008). "Mass media offers effective channels for communicating agricultural messages, which can increase knowledge and influence behavior of audience members" (Nazari et al., 2011, p. 931).

While mass media outlets offer the ability to reach broader audiences, traditional means of mass communication, such as television, have had mixed results in Extension. Boone et al. (2007) found that television was not a strong media preference for Extension users, though the authors reported mass media might be an effective way to reach non-Extension users. Telg et al. (2007) found that Extension agents in Florida were not in favor of mass media, but Fett et al. (1995) found more people were only exposed to Extension through mass media in a Wisconsin county. More research is needed on the use and effectiveness of mass media programs in Extension.

The Food Factor is a weekly 90-second television program that focuses on promoting nutrition- and health-related behaviors. The show's content includes sharing information about making recipes healthier, choosing healthier foods, and occasionally exercise-related information. MSU Extension produces the program through its Office of Agricultural Communications (Mississippi State University Extension Service, 2016a, 2016b). The program began in 2014 and aired on five television stations in the state at the time of data collection. It is worth noting that affiliates often remove the introduction that includes MSU Extension branding. Additionally, the program is included in the weekly *Farmweek*, which airs on the state's PBS affiliate and RFD-TV. Both *The Food Factor* and *Farmweek* are also available on YouTube and have a social media presence on Facebook, Twitter, and Pinterest.

There is not enough research about the use of branding in Extension's mass media programming to make meaningful conclusions about the effects on the program's impacts. The situation becomes more complicated with the addition of web-based mass media, which *The Food Factor* utilized, in addition to television broadcasts.

Purpose and Research Objectives

Innovative strategies can be beneficial for Extension in an era of budget cuts. Social marketing through mass media communication offers an innovative and underexplored approach in Extension. Proper branding of mass media programming could improve the public's knowledge of social marketing programs in Extension, potentially leading to changes in behavior. The

purpose of this study was to determine if brand viewership relates to behavior and behavioral intention. The research objectives guiding the study were the following:

1. Determine the viewing frequency for *The Food Factor*,
2. Describe and compare non-viewers' and viewers' behavior and behavioral intent related to *The Food Factor* content, and
3. Describe the relationship between viewing frequency and viewers' behavior and behavioral intentions.

Methods

This study consisted of a survey using an online panel of respondents through Qualtrics®. This paper reports on data collected as part of a larger instrument used to evaluate *The Food Factor*. The sections of the instrument included in this paper were respondents' viewing frequency of *The Food Factor* and respondents' behavior and behavioral intent related to *The Food Factor*. While not included in this paper, the instrument also included food-purchasing and preparation behaviors and perceptions, perceptions of *The Food Factor*, perceptions of a *The Food Factor* episode, perceptions of MSU Extension, and respondent demographics. Two articles from this data collection have been published on perceptions of *The Food Factor* (Brubaker et al., 2017) and perceptions of MSU Extension (Settle et al., 2019).

The population for the study was residents of Mississippi, of which there are 2.9 million people. Non-probability quota sampling was used to ensure respondents from the online panel were representative of the state's population based on the 2010 U.S. Census based on sex, race, and Hispanic/Latino status. The total number of respondents was 404. Frequencies were calculated to describe the demographic characteristics (e.g., race, income level, household size, etc.) of the sample. All recruitment of respondents was done by Qualtrics. After receiving the initial invitation, prospective respondents will usually receive one or two reminders to take the survey before it closes (J. Matson, personal communication, February 9, 2021).

To help ensure face and content validity, the instrument was reviewed by a panel including the director of MSU Office of Agricultural Communications, two evaluation specialists, and *The Food Factor* Media Relations Manager. They reviewed the instrument for clarity and to ensure the questions were appropriate for evaluating *The Food Factor*. To further improve validity, two cognitive interviews were also conducted to ensure the instrument's clarity and that interviewees' interpretations of the questions reflected the intended nature of the questions (Dillman et al., 2014).

Viewership was assessed by asking if respondents were aware of the show and, if so, how often they viewed the show, which could be on TV or online, and when was the last time they viewed the show. For objective 1, viewing frequency was analyzed through frequency counts. Behavior and behavioral intent were assessed by asking respondents if they engaged in a behavior from a

list of 20 behavior items related to the show's content, which are detailed in the results. If they did not engage in the behavior, they were asked if they intended to. A behavioral score was created by counting the number of behaviors in which respondents either engaged or intended to engage. The two items were combined for analysis because engaging in the behavior and intending to engage in the behavior would both be positive outcomes, and separating them would unnecessarily complicate analysis. Cronbach's alpha to assess reliability for the behavior score was above .9 for viewers and non-viewers. For objective 2, the behavioral scores of viewers were compared to non-viewers with an independent samples *t*-test. Objective 3 assessed the relationship between viewing frequency and behavioral intent score using Kendall's Tau.

Results

The two most represented racial groups in the study were White ($n = 241$, 59.7%) and Black or African American ($n = 156$, 38.9%; Table 1). As shown in Table 2, the most common response for income level was \$21,000 to \$39,000 ($n = 120$, 29.7%), which includes the median income for the state at \$39,665 (United States Census Bureau, 2015). In Mississippi, the poverty level for a family of four was \$23,834 in 2014 (Center for American Progress, 2017). The majority of households had two ($n = 112$, 27.7%) to three ($n = 99$, 24.5%) members. The most frequent responses for number of children in the household were no children under the age of 18 ($n = 223$, 55.2%) and one child in the household ($n = 112$, 24.3%). When asked about their role/relationship in the household, the most common response was wife ($n = 114$, 28.2%), followed by mother ($n = 88$, 21.8%).

Table 1. Demographic Comparisons between Survey Respondents and the Mississippi Population

Race	Percent of Survey Respondents	Percent of Mississippi Population Reported in 2010 U.S. Census
White	59.7	59.1
Black or African American	38.9	37.0
American Indian or Alaska Native	0.7	0.5
Asian	0.2	0.9
Native Hawaiian and Pacific Islander	—	< 0.1
Other (2+ races)	0.5	1.1
Hispanic or Latino Origin	2.2	2.7

Note. The Mississippi population was based on 2010 U.S. Census Bureau results (United States Census Bureau, 2015). Native Hawaiian and Pacific Islanders had a negligible population of less than 0.1%.

Table 2. Household Demographics

Characteristic	<i>n</i>	Percent
Income		
Less than \$20,000	110	27.2
\$21,000-39,000	120	29.7
\$40,000-59,000	67	16.6
\$60,000-79,000	56	13.9
\$80,000+	51	12.6
Number of People in Household		
1	73	18.1
2	112	27.7
3	99	24.5
4	68	16.8
5	28	6.9
6	16	4.0
7	4	1.0
8	4	1.0
Number of Children in Household (Under 18)		
0	223	55.2
1	98	24.3
2	55	13.6
3	14	3.5
4	9	2.2
5	2	0.5
6	3	0.7
Role/Relationship in the Household		
Wife	114	28.2
Mother	88	21.8
Husband	75	18.6
Father	73	18.1
None of the above	64	15.8
Child	51	12.6
Other relative	27	6.7
Boyfriend	21	5.2
Girlfriend	20	5.0
Grandparent	17	4.2

To Determine the Viewing Frequency for *The Food Factor*

Respondents were mostly unaware of *The Food Factor* ($n = 319$, 79%). Only 85 (21%) respondents were previously aware of *The Food Factor*. Viewers indicated that they watch *The Food Factor* less than once per month ($n = 47$, 55.3%), followed by at least once a month ($n = 20$, 23.5%), 2-3 times per month ($n = 13$, 15.3%), and every week ($n = 5$, 5.9%). The last time viewers identified watching *The Food Factor* varied widely, with 27.1% of viewers watching within the past week ($n = 23$), and 24.7% of viewers watching within the past two years ($n = 21$). The next most common responses were within the past month ($n = 16$, 18.8%) and within the past year ($n = 10$, 11.8%).

To Describe and Compare Non-Viewers' and Viewers' Behavior and Behavioral Intent Related to *The Food Factor* Content

For Objective 2, the behavioral composite scores were used to run an independent samples *t*-test to compare viewers' and non-viewers' implementation of content related to *The Food Factor*. The items are presented in Table 3. On average, viewers ($M = 17.59$, $SD = 4.22$) were completing one additional behavior compared to non-viewers ($M = 16.47$, $SD = 4.77$). An independent samples *t*-test was conducted to compare non-viewers' and viewers' behavioral composite scores. This test was found to be statistically significant, $t(402) = 1.987$, $p = .048$. The effect size for this analysis was small ($d = .250$) using Cohen's (1988) conventions (as cited in Field, 2013).

Table 3. List of Behaviors Viewers and Non-Viewers Were Asked If They Engaged In or Intended to Engage In

In the past 3 months, have you implemented any of the following into your lifestyle?	Viewers	Non-Viewers
Set goals for a healthier lifestyle (food choices, exercise, etc.)		
Yes, I have done this	52.9	51.0
No, I have not done this, but I plan to start in the next 3 months	38.8	36.4
No, I have not done this and do not plan to start in the next 3 months	8.2	12.5
Reduced or eliminated unhealthy behaviors		
Yes, I have done this	58.8	44.5
No, I have not done this, but I plan to start in the next 3 months	32.9	36.1
No, I have not done this and do not plan to start in the next 3 months	8.2	19.4
Cooked more meals at home, rather than eating out		
Yes, I have done this	71.8	71.8
No, I have not done this, but I plan to start in the next 3 months	20.0	19.7
No, I have not done this and do not plan to start in the next 3 months	8.2	8.5
Eaten meals together as a family		
Yes, I have done this	60.0	70.2
No, I have not done this, but I plan to start in the next 3 months	27.1	18.2
No, I have not done this and do not plan to start in the next 3 months	12.9	11.6
Eaten more fruits and vegetables		
Yes, I have done this	62.4	65.2
No, I have not done this, but I plan to start in the next 3 months	25.9	27.0
No, I have not done this and do not plan to start in the next 3 months	11.8	7.8
Eaten less fried foods		
Yes, I have done this	57.6	63.0
No, I have not done this, but I plan to start in the next 3 months	31.8	22.6
No, I have not done this and do not plan to start in the next 3 months	10.6	14.4

In the past 3 months, have you implemented any of the following into your lifestyle?	Viewers	Non-Viewers
Used healthier cooking methods, like baking or grilling instead of frying		
Yes, I have done this	57.6	66.5
No, I have not done this, but I plan to start in the next 3 months	31.8	20.4
No, I have not done this and do not plan to start in the next 3 months	10.6	13.2
Reduced salt or sodium in the foods you eat		
Yes, I have done this	49.4	50.8
No, I have not done this, but I plan to start in the next 3 months	40.0	29.5
No, I have not done this and do not plan to start in the next 3 months	10.6	19.7
Reduced sugar or other sweeteners in the foods you eat or drink		
Yes, I have done this	57.6	52.4
No, I have not done this, but I plan to start in the next 3 months	32.9	28.5
No, I have not done this and do not plan to start in the next 3 months	9.4	19.1
Made more economical food choices when shopping		
Yes, I have done this	61.2	63.3
No, I have not done this, but I plan to start in the next 3 months	29.4	24.8
No, I have not done this and do not plan to start in the next 3 months	9.4	11.9
Made healthier food choices when shopping		
Yes, I have done this	62.4	64.9
No, I have not done this, but I plan to start in the next 3 months	25.9	19.4
No, I have not done this and do not plan to start in the next 3 months	11.8	11.3
Chosen healthier food options when eating out		
Yes, I have done this	63.5	53.9
No, I have not done this, but I plan to start in the next 3 months	23.5	28.5
No, I have not done this and do not plan to start in the next 3 months	12.9	17.6
Used an MS-grown commodity in your recipes, like catfish or sweet potatoes		
Yes, I have done this	63.5	48.0
No, I have not done this, but I plan to start in the next 3 months	24.7	26.0
No, I have not done this and do not plan to start in the next 3 months	11.8	26.0
Used a healthy recipe featured on <i>The Food Factor</i> ^a /Used a healthy recipe featured on a media outlet (i.e., television, online, etc.) ^b		
Yes, I have done this	41.2	40.8
No, I have not done this, but I plan to start in the next 3 months	37.6	32.3
No, I have not done this and do not plan to start in the next 3 months	21.2	27.0
Done a recipe makeover (made a healthier version of a recipe)		
Yes, I have done this	49.4	32.9
No, I have not done this, but I plan to start in the next 3 months	36.5	37.6
No, I have not done this and do not plan to start in the next 3 months	14.1	29.5

In the past 3 months, have you implemented any of the following into your lifestyle?	Viewers	Non-Viewers
Added a healthy food type or group into your cooking routine (i.e., a superfood, etc.)		
Yes, I have done this	60.0	46.1
No, I have not done this, but I plan to start in the next 3 months	28.2	31.7
No, I have not done this and do not plan to start in the next 3 months	11.8	22.3
Followed nutrition tips (i.e., how to read nutrition labels, etc.)		
Yes, I have done this	60.0	50.8
No, I have not done this, but I plan to start in the next 3 months	32.9	28.8
No, I have not done this and do not plan to start in the next 3 months	7.1	20.4
Used cooking tips recommended on <i>The Food Factor</i> ^a /Used cooking tips recommended on a media outlet (i.e., television, online, etc.) ^b		
Yes, I have done this	48.2	50.5
No, I have not done this, but I plan to start in the next 3 months	34.1	23.5
No, I have not done this and do not plan to start in the next 3 months	17.6	26.0
Used food preparation tips from <i>The Food Factor</i> ^a /Used food preparation tips from a media outlet (i.e., television, online, etc.) ^b		
Yes, I have done this	38.8	45.8
No, I have not done this, but I plan to start in the next 3 months	38.8	28.8
No, I have not done this and do not plan to start in the next 3 months	22.4	25.4
Followed food safety advice (i.e., washing your hands, storing meat, etc.)		
Yes, I have done this	65.9	78.7
No, I have not done this, but I plan to start in the next 3 months	21.2	12.9
No, I have not done this and do not plan to start in the next 3 months	12.9	8.5

Note. ^aWording used for viewers; ^bWording used for non-viewer

Describe the Relationship Between Viewing Frequency of Viewers' Behavioral Intentions and Behaviors

The third objective was analyzed using Kendall's Tau to describe the relationship between viewing frequency and the behavioral intent composite score. No statistically significant relationship existed ($r_{\tau} = -.026, p = .783$).

Conclusions

To Determine the Viewing Frequency for *The Food Factor*

The majority of respondents were non-viewers. *The Food Factor* viewers' responses indicated they were not regular viewers. Respondents also identified seeing the show within the past two years instead of more recently, signifying a lack of continual viewership. Because most respondents had not seen the show and those who had were casual viewers, the show is unlikely

to progress through the behavior change process. Knowledge is the first step (Kincaid et al., 1997) and cannot occur without exposure to information. The results of the next objective comparing viewers and non-viewers of the study might have been different had the majority of *The Food Factor* viewers been regular viewers.

To Describe and Compare Non-Viewers' and Viewers' Behavior and Behavioral Intent Related to *The Food Factor* Content

Objective 2 compared viewers' and non-viewers' behavioral composite scores related to *The Food Factor* content. There was a statistically significant difference between viewers' and non-viewers' behavioral scores, but the effect size was small. The difference was only one more intended or engaged in behavior out of a list of 20 items.

In addition to currently engaged in behaviors, behavioral intent allows for fairly accurate predictions to be made about their likelihood to follow through with the behavior (Institute of Medicine, 2002; Kincaid et al., 1997; Sheppard et al., 1988). If non-viewers' and viewers' behavioral scores are similar, it indicates that viewing *The Food Factor* is making little impact on changing intent, thereby stalling opportunities for behavior change.

It is important to note that the behavioral composite scores were relatively high overall. Without baseline data, the study could not determine if *The Food Factor* was successful in behavior change with its audience over the past three years. Despite people's ability to accurately predict their likelihood of behavior change, behavioral intent is not the same as behavior change (Institute of Medicine, 2002; Sheppard et al., 1988). Since the study used self-reporting of behaviors, findings may be overinflated, as people may believe they intend to do the behaviors. However, the study did not actually capture their ability to follow through.

Describe the Relationship Between Viewing Frequency of Viewers' Behavioral Intentions and Behaviors

There was no statistically significant correlation between viewing frequency and viewers' behavioral scores, indicating those who viewed less frequently did not have any more or less intent to complete the behaviors than someone who watched frequently. As previous research suggests, the more exposure someone is given to a brand, the more likely they are to engage in that brand's mission (Franzen & Moriarty, 2009; Keller, 1998b), which makes the lack of a relationship between viewership and behavioral intent unexpected based on prior literature.

This lack of difference in behavior score based on viewership is a cause for concern when it comes to justifying the program to Extension administrators. If Extension programs cannot show their impacts, especially in times of limited funding and shifting legislative priorities (Montgomery, 2016; Seranari et al., 2013; Struckmeyer et al., 2019), they could face termination. One explanation for the lack of correlation could be due to *The Food Factor* not executing its

branding as effectively as possible. The show was not being consistently branded, including having the introductions removed when it was shown on some news stations (K. Lewis, personal communication, 2016). This could disrupt awareness of the brand, which is disrupting the change process from intention to practice of the behavior change.

Another possible explanation is that the social marketing process is continuing despite issues with *The Food Factor* brand awareness, but confusion exists between awareness and the change itself. For example, *The Food Factor* encompasses a variety of topics and behavior changes from food safety practices to cooking tips to selecting healthy choices when eating at restaurants. Past research has shown that focusing on a limited number of behaviors increased success by simplifying things for the audience (Kotler & Lee, 2016). If the show limited the types of behaviors being promoted, that might increase the show's ability to effect change.

Additionally, *The Food Factor's* lack of change to behavior and behavioral intent could be due to the social marketing process having an unspecified audience and message (Kotler & Lee, 2016). For instance, *The Food Factor's* target audience is urban Mississippians. It might experience better adoption rates of behavior change by more specifically targeting an audience. Then, branding could be more strategically used to reach that more specific audience.

As a result of this research, other evaluation work that indicated a lack of clear targeted behaviors and audience, and *The Food Factor* assessing the demographics of its Facebook followers, the show shifted its focus to women aged 35–65 as a more specific audience and moved from broadcast television to focusing on online-oriented content, including incorporation in MSU Extension's blog (K. Lewis, personal communication, 2020). The show has shortened its episodes and focused more on how-to content in its videos. Engagement in the show's content increased on Facebook during this transition. Because *The Food Factor* is about 90 seconds, it may be better suited for online delivery where shorter videos are the norm than television.

Recommendations

Despite lacking evidence of *The Food Factor* having a meaningful impact on behavior change, there are several recommendations for Extension, other practitioners, and those conducting future research. Evidence about mass media's role in Extension is limited (Boone et al., 2007; Fett et al., 1995; Telg et al., 2007), and more work beyond the present study is needed to fully understand the role mass media should or should not play in reaching audiences.

The first recommendation for mass media programs is to develop a social marketing plan if they intend to effect behavior change. A plan will allow internal stakeholders to reach agreement on the program's goals and audience. Without an integrated strategy to reach specified audiences with realistic goals, change is difficult (Kotler & Lee, 2016).

The second recommendation to Extension and program administrators is to practice continuous, formative evaluations and give adequate time to see evidence of success. Programs that encompass social marketing efforts require more multiyear evaluation commitment starting from planning through program monitoring (Asbury et al., 2008). A lack of baseline data limited the interpretation of this research. As the first evaluation of *The Food Factor* in its three-year history at the time of data collection, the program's impact is currently unknown; however, evidence of program success is necessary (Gregory-North, 2015; Monaghan et al., 2013; Sanagorski, 2014).

One recommendation for future research is to continue exploring social marketing programs in Extension because of the dearth of existing literature (Warner et al., 2016). This becomes increasingly important as Extension is faced with budget cuts (Montgomery, 2016; Serenari et al., 2013; Struckmeyer et al., 2019), since social marketing has been thought to more efficiently direct Extension resources and budgets (Andreasen, 2002; Evans & Hastings, 2008; Skelly & Singletary, 2014). Research is needed on the efficacy of specific social marketing tactics.

Another area of future research is the use of branding within social marketing in relation to the behavior change process. The optimal use of branding in social marketing has yet to be identified; this has created a challenge for social marketers (Gordon et al., 2016). Understanding the strategic use of branding in social marketing programs, like *The Food Factor*, is important because they have the opportunity to promote change for both individual and societal good.

This study has limitations. Only one program was assessed in one state. More research is needed on Extension mass media programs in different states and across different communication channels (e.g., websites and radio) to understand the role of mass media in Extension programming and how that relates to the behavior of viewers. This was also a quantitative study, so there is a need for qualitative research assessing Extension mass media programming, particularly for why members of the target audience would be motivated to view such programs.

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McKayla Brubaker Nichols is the marketing communications coordinator for Great Plains Ag, a division of Great Plains Mfg., Inc. She obtained her master's degree from Mississippi State University's School of Human Sciences and her bachelor's degree from Kansas State University in agricultural communications.

Quisto Settle is an assistant professor in the Department of Agricultural Education, Communications, and Leadership at Oklahoma State University.

Alisha Hardman is an assistant professor in the School of Human Sciences at Mississippi State University.

Laura Downey is an associate Extension professor in the School of Human Sciences at Mississippi State University.