Communication Channel Preferences: A Descriptive Audience Segmentation Evaluation

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Evaluation

Abstract
For over 70 years the use of opinion leaders in a two-step communication process has been employed and validated. However, despite the accepted importance of communicating with opinion leaders as a means to cascade information to opinion leaders’ networks of influence there have been few empirical studies specifically examining agricultural and natural resource opinion leader communication channel preferences, particularly from an audience segmentation perspective. The results reported in the study capitalize on previous research data examined from a unique perspective. Specifically, communication channel preferences were analyzed according to opinion leader self-reported demographic categories serving as audience segments. Associations between sex, age, level of employment, level of education and geographical region and communication channel preference were analyzed. The results of the study are descriptive and foundational in nature. Overall, the results indicate a dedicated web page or blog is the most preferred communication channel across all audience segments and conference calls are the least preferred communication channel across the majority of audience segments. The Facebook group communication channel had the most variability between audience segments and the LinkedIn group communicational channel had the largest observed effect sizes among audience segments.

Keywords
opinion leader, audience segmentation, communication channel preference, descriptive

Cover Page Footnote/Acknowledgements
The data analyzed in the study capitalize on data collected in the Lamm, Rumble, Carter, and Lamm (2016) sample.

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Introduction

At a basic level, effective communication requires delivering the right message, to the right audience, through the right channel, at the right time (McQuail, 2010). Differing communication strategies, engagement methods, media channels, and individual or group preferences produce a wide array of approaches and options when developing targeted messages or disseminating information. Therefore, determining the most effective method, or combination of methods, toward meaningful engagement among a targeted audience can prove to be challenging (Fuchs, 2017; Papacharissi, 2015). To drill down to particular communication channel preferences or audience relevance evokes even more nuanced challenges (Holt, Rumble, Telg, & Lamm, 2015; McQuail, 2010).

Issues related to agriculture, food, and the environment are often layered in complexity. Empirical research results, policy and federal regulation, media and industry response, as well as public perception, all interact upon an industry fundamentally focused on feeding and clothing the world’s population (Holt et al., 2015; Murdoch, 2006; Rumble, Holt, & Irani, 2014). Add to this complexity the rapidly-increasing news cycles, increased volume of media consumption, controversies around fake news, and decreased public trust—all, of which, present additional challenges (Shoemaker & Reese, 2013). Therefore, finding the right combination of timing, messages, media channels, and target audiences remains a persistent and dynamic goal. Despite the importance there are a limited number of empirical studies specifically analyzing agricultural communication channel preferences (Lamm, Rumble, Carter, & Lamm, 2016a), this study is intended to address this gap.

To juxtapose the complexities of message development and audience understanding expounds the challenges of effective engagement and information dissemination. This leads to a need for critically examining the processes associated with media convergence—specifically as media continue to integrate social-media dimensions of public engagement and discussion, and information consumers are carried across a variety of media platforms (Jenkins, 2006). While media convergence has predominantly been understood as a technological process that merges platforms and channels, Jenkins (2006) argues that “convergence represents a cultural shift as consumers are encouraged to seek out new information and make connections among dispersed media content” (p. 3). As media technology continues to evolve rapidly, such a cultural shift characterizes information sharing and audience engagement as dynamic rather than static, supporting the claim made by Boone, Meisenbach, and Tucker (2000); specifically, communication efforts need to recognize and stabilize the “deep-rooted human and social dimensions of a culture” (p. 49). Therefore, diverse audiences (in combination with dispersed media content) demand a combination of interactive and integrative strategies, channels, and media formats.

Effective message development and audience engagement are presented as grand challenges among communication practitioners charged with overseeing outcomes such as audience perception, organizational brand development, or issues management among others (Ashley & Tuten, 2015). To tackle such in its entirety would dilute the conversation around audience understanding. Previous researchers have shown narrowing in on the network of senders and receivers of information within the agricultural, food, and environmental discursive spaces itself proves to be incredibly challenging (Hughes, Johnson, Edgar, Miller, & Cox, 2016). Therefore, this research aimed to consider the role of the communication practitioner who is charged with disseminating information to key stakeholders within the industry—specifically opinion leaders and their network of influence.
For over 70 years the role of opinion leaders has been studied. Although the quantity and variety of communication channel options have expanded greatly since the concept of opinion leadership was introduced in 1940s (Lazarsfeld, Berelson, & Gaudet, 1948) the role of opinion leaders in the information dissemination process remains relevant. From a contemporary perspective, opinion leaders are the mavens (Gladwell, 2006) or thought leaders (e.g. Brosseau & Kawasaki, 2013) within their networks.

As aggregators, parsers, and distributors of information, these individuals become a trusted source of information within their networks. Empirically, opinion leaders are categorized as individuals who are engaged and knowledgeable on select issues, and are trusted sources of information within their social networks (e.g. Turcotte, York, Scholl, & Pingree, 2015). Consequently, reaching, engaging, and activating this group can propagate information through their networks of influence much more rapidly and effectively than might otherwise be possible (Huang & Lamm, 2017; Lamm, Lamm, & Carter, 2014; Putnam, Lamm, & Lundy, 2017).

In the agricultural and natural resource (ANR) industry the role of opinion leaders has been well established (Lamm, Lamm, & Carter, 2015; Ryan & Lamm, 2017; Taylor & Lamm, 2017). For example, opinion leaders and the dissemination of information through their networks is fundamental to Rogers’ Theory of Diffusion (Rogers, 1995), which has been a central, as well as contested, framework to agriculture and the Cooperative Extension system since the 1960s (Rivera & Sulaiman, 2009). However, despite the centrality and criticality of opinion leaders in the communication process, particularly within the ANR industry (Lamm et al., 2016a), there is a notable gap in the literature specifically dedicated to identifying the communication channel preferences of such opinion leaders. Identifying channels to engage ANR opinion leaders effectively is critical, particularly in an environment where credibility among most news organizations continues to decline (Pew Research, 2012) and controversies regarding fake news continue to evolve (Lazer et al., 2018).

Theoretical Framework

For the purposes of this research two theoretical frameworks were employed. Specifically, audience segmentation as defined by Slater (1996) along with opinion leadership as defined by Lazarsfeld, Berelson, and Gaudet (1948). These frameworks were identified based on need to acknowledge that even within the scope of a given target audience, such an audience should not be generalized with a one-size-fits-all approach to selected communication strategies. Therefore, a more nuanced understanding of within-group dynamics is necessary. For the purposes of better understanding agricultural opinion leaders as a target audience, the process of audience segmentation guided the analysis of the data.

Audience Segmentation

Within the practices and strategies of communication, the development of the message for targeted audiences is of paramount importance (Slater, 1996). Audience segmentation, which is often used in commercial marketing, is rooted in understanding and tailoring messages to specific audiences based upon their demographics, attitudes, and beliefs (Slater, 1996). Within each of these audience segments, the individuals share commonalities that are relevant to the delivery of information. The segments should be developed with respect to measurable patterns or homogeneity related to demographics, attitudes, and behaviors (Hine et al., 2014; Slater, 1996). The aim of grouping audiences with similarities is to allow data analysis to focus on the between-group differences, rather than the within-group differences (Hine et al., 2014).
Similarly, tailoring communication has been extensively studied and refers to identifying specific characteristics of an individual and then developing messages that address the needs and interests of the individual (Hawkins, Kreuter, Resnicow, Fishbein, & Dijkstra, 2008). Typically, communication efforts target different categories within the public: mass communication, targeted communication; and tailored communication. Mass communication efforts are created to appeal to a mass, general audience. Targeted communication utilizes audience segmentation to identify needs and interests of similar groups. While tailored communication strategies focus on the needs of individuals and highlight those issues within the message (Hawkins et al., 2008). Research suggests that tailoring messages for audiences exists on a continuum and, while categories of tailoring exist, communication strategies should evaluate the needs of the audience and the purpose of the message when selecting the most appropriate method for communication (Hawkins et al., 2008).

While audience segmentation and tailoring communication have shown to impact consumers’ intention to adopt behaviors (Kim, Shen, & Morgan, 2011; Warner, Chaudhary, Rumble, Lamm, & Momol, 2017; Warner & Lamm, 2017), one concern with utilizing audience segmentation techniques is its potential to further polarize audiences on specific issues (Hine et al., 2014). Therefore, messaging and communication efforts should be tailored specifically to the needs, involvement level, and intention to engage within each audience group, with purposeful and intentional roles for each subgroup within the communication or marketing efforts (Warner et al., 2017; Lamm, Lundy, Warner, & Lamm, 2016). For example, in a study examining homeowners’ adoption of water conservation practices for landscaping, Warner et al. (2017) found creating subgroups based on established water conservation behaviors could ultimately lead to assigning different roles through messaging to each group. Utilizing water savvy conservationists in a more directive role to educate and advocate for conservation behaviors to other groups may be more beneficial. Additionally, it was recommended that by grouping like individuals together in subgroups, more appropriate and meaningful goals and adoption rates could be established to measure the success of an initiative or campaign (Warner et al., 2017).

Opinion Leadership

Lazarsfeld, Berelson, and Gaudet (1948) established a two-step process, whereby, a group of opinion leaders would determine relevant information to be communicated and shared with their communities, subgroups, and followers. Opinion leaders have been identified as those capable of sparking change and innovation in a natural and, often, infectious manner (Burt, 1999). Using their power to inspire others, opinion leaders have been shown to influence change with the information they communicate to their followers and subgroups (Lazarsfeld et al., 1948); therefore, it is imperative to understand how opinion leaders prefer to communicate information in order to more effectively engage with them and their subgroups about topics of interest in the agricultural field.

Purpose & Research Objectives

The purpose of this study was to examine the nature of the relationship between demographic characteristics and communication channel preference amongst agricultural opinion leaders. The study was driven by the following research objectives:

1. Describe agricultural opinion leader communication channel preferences based on demographic, or audience segmentation, characteristics.
2. Determine whether demographic, or audience segmentation, characteristics were statistically significantly associated with communication channel preferences.
Methods
To address the research objectives, a quantitative research design was undertaken. The design consisted of an online survey of agricultural opinion leaders. Respondents self-reported communication channel preference and demographic data. The data analyzed in the study capitalize on data collected in the Lamm et al. (2016a) sample, the current study extended the work in two important ways. First, the communication channel data are analyzed discretely at the audience category level. Second, extensive descriptive statistics are presented to provide greater insights for communication practitioners. These disclosures are presented based on recommendations within the literature for clarity (Kirkman & Chen, 2011).

Sample and Procedures
Based on previous research, agricultural opinion leaders were identified based on their participation in agricultural and natural resource leadership development programs (Lamm, Lamm, & Carter, 2014). The International Association of Programs for Agricultural Leaders (IAPAL) organization serves as a consortium of independent agricultural leadership programs that provide leadership development programming for adult agricultural opinion leaders (Kellogg, 2000). Therefore, programs associated with the IAPAL organization, and subsequent alumni from those programs, were identified as an appropriate sample frame (Lamm et al., 2016a).

To ensure a comprehensive representation of opinion leaders, a census of IAPAL program alumni was conducted. A census frequently provides the most complete data and ensures all respondents within a sample are provided an opportunity to participate (Ary, Jacobs, & Sorensen, 2010; Rossi, Lipsey, & Freeman, 2004). Within the IAPAL organization a total of 41 programs were active at the time of the research, 28 programs opted to participate. Contact information was provided for 7,152 alumni from the 28 participating programs. Alumni were contacted according to the tailored design method (Dillman, Smyth, & Christian, 2008), which included a pre-notice from the program director, an invitation to complete the survey in Qualtrics by the researcher, and three additional follow up reminders. There were a total of 3,234 completed questionnaires for a response rate of 45%. Based on established social science response rates, this was considered acceptable for analysis (Baruch & Holtom, 2008). Nevertheless, non-response analysis comparing early and late respondents found no statistically significant differences between the two groups. The finding indicated non-response bias was not a material consideration for further analysis (Lindner, Murphy, & Briers, 2001).

Data
Within the survey, respondents were asked to indicate whether they were interested in interacting with alumni of leadership development programs through a list of eight potential communication channels, Yes was coded as 1, No was coded as 0. Communication channel options included: informal meetings coordinated by alumni (informal meetings), dedicated web page or blog, formal annual meetings, Facebook group, LinkedIn group, conference calls, and Twitter. Interactions were operationalized as receiving communications for the purposes of the study.

Demographically, respondents provided information regarding their sex, age, level of employment, and level of education. Geographic region of the program was assigned based on the Extension regions (Lamm, Carter, & Lamm, 2016; USDA, 2014).

Data Analysis
Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics were calculated to describe agricultural opinion leaders preferred channels for communication. Additionally, Chi-Square analysis were completed to test for associations between demographic characteristics and communication channel (Rossi et al., 2004). Cramer’s V (reported as \( \Phi \)) was calculated to determine effect sizes of associations with effect size interpretations according to Cohen (1988) summarized in Table 1. A level of significance of .05 was established a priori.

Table 1

| Cramer’s V Effect Size Interpretation (Cohen, 1988) |
|---|---|---|---|
| df* | small | medium | large |
| 1 | .10 | .30 | .50 |
| 2 | .07 | .21 | .35 |
| 3 | .06 | .17 | .29 |
| 4 | .05 | .15 | .25 |
| 5 | .04 | .13 | .22 |

Results

Related to informal meetings (Table 2) there were observed associations between gender, age, organizational level, educational attainment, region and informal meetings. Accounting for the degrees of freedom, or number of categories within a demographic set, effect sizes ranged from small to medium (Cohen, 1988). The largest effect was observed between age groups, with younger individuals expressing the strongest interest in informal meetings and interest diminishing inversely with age.

Table 2

| Communication Channel Preference Based on Demographic, or Audience Segmentation, Characteristics – Informal meetings |
|---|---|---|---|---|---|---|
| Characteristic | Yes | | No | | | |
| | f | % | f | % | N | \( \chi^2 \) | \( \Phi \) |
| Gender | | | | | | | |
| Male | 1090 | 50.7% | 1061 | 49.3% | 2151 | 8.20** | .05 |
| Female | 549 | 56.2% | 428 | 43.8% | 977 | | |
| Age | | | | | | | |
| Under 30 | 46 | 67.6% | 22 | 32.4% | 68 | 61.36*** | .14 |
| 30 to 39 | 346 | 63.1% | 202 | 36.9% | 548 | | |
| 40 to 49 | 378 | 53.7% | 326 | 46.3% | 704 | | |
| 50 to 59 | 546 | 52.1% | 502 | 47.9% | 1048 | | |
| 60 to 69 | 264 | 45.2% | 320 | 54.8% | 584 | | |
| 70 and Over | 25 | 29.8% | 59 | 70.2% | 84 | | |
| Level | | | | | | | |
| Nonsupervisory employee | 262 | 55.9% | 207 | 44.1% | 469 | 27.18*** | .09 |
| Manager | 596 | 52.3% | 543 | 47.7% | 1139 | | |
| Owner, CEO, President | 628 | 54.9% | 515 | 45.1% | 1143 | | |
| Not applicable | 160 | 40.6% | 234 | 59.4% | 394 | | |
| Education | | | | | | | |
| High school diploma/GED | 54 | 62.1% | 33 | 37.9% | 87 | 15.80* | .07 |
| Trade/technical training | 33 | 66.0% | 17 | 34.0% | 50 | | |
Regarding formal annual meetings (Table 3), associations between gender, age, and organizational level were observed. Additionally, a large effect size (Cohen, 1988) between gender categories was observed with females indicating a stronger preference than males.

Table 3
Communication Channel Preference Based on Demographic, or Audience Segmentation, Characteristics – Formal annual meetings

| Characteristic                  | Yes |        | No |        | N  | \(\chi^2\) | \(\Phi\)  |
|--------------------------------|-----|--------|----|--------|----|------------|----------|
| Gender                         |     |        |    |        |    |            |          |
| Male                           | 1179| 55.2\%| 958| 44.8\%| 2137| 60.57***   | .14      |
| Female                         | 683 | 69.9\%| 294| 30.1\%| 977 |            |          |
| Age                            |     |        |    |        |    |            |          |
| Under 30                       | 48  | 70.6\%| 20 | 29.4\%| 68  | 15.99**    | .07      |
| 30 to 39                       | 334 | 61.5\%| 209| 38.5\%| 543 |            |          |
| 40 to 49                       | 420 | 60.4\%| 275| 39.6\%| 695 |            |          |
| 50 to 59                       | 652 | 61.9\%| 401| 38.1\%| 1053|            |          |
| 60 to 69                       | 321 | 55.0\%| 263| 45.0\%| 584 |            |          |
| 70 and Over                    | 42  | 48.8\%| 44 | 51.2\%| 86  |            |          |
| Level                          |     |        |    |        |    |            |          |
| Nonsupervisory employee        | 301 | 64.9\%| 163| 35.1\%| 464 | 8.55*      | .05      |
| Manager                        | 687 | 60.6\%| 446| 39.4\%| 1133|            |          |
| Owner, CEO, President          | 667 | 58.4\%| 475| 41.6\%| 1142|            |          |
| Not applicable                 | 219 | 56.0\%| 172| 44.0\%| 391 |            |          |
| Education                      |     |        |    |        |    |            |          |
| High school diploma/GED        | 48  | 56.5\%| 37 | 43.5\%| 85  | 11.29      | .06      |
| Trade/technical training       | 31  | 59.6\%| 21 | 40.4\%| 52  |            |          |
| Some college - no degree       | 168 | 68.9\%| 76 | 31.1\%| 244 |            |          |
| Associate/Community college degree | 109 | 57.4\%| 81 | 42.6\%| 190 |            |          |
| Bachelor's degree              | 964 | 60.3\%| 636| 39.8\%| 1600|            |          |
| Master's degree                | 436 | 57.8\%| 318| 42.2\%| 754 |            |          |
| Professional degree (e.g., JD, MD) | 51  | 58.0\%| 37 | 42.0\%| 88  |            |          |
| Doctorate (e.g., PhD, EdD)     | 71  | 56.3\%| 55 | 43.7\%| 126 |            |          |
| Region                         |     |        |    |        |    |            |          |
| Western                        | 494 | 56.3\%| 383| 43.7\%| 877 | 8.19       | .05      |

Note. * \(p < .05\), ** \(p < .01\), *** \(p < .001\)
Analyzing the dedicated web page or blog communication channel (Table 4), an association between the audience categories of age, organizational level, educational attainment, and region was observed. Accounting for the number of categories as degrees of freedom, all effect sizes were in the small range (Cohen, 1988). With identified preferences ranging from 60.6% for individuals with professional degrees, to 88.9% for individuals with trade or technical training across all audience categories.

### Table 4

| Characteristic                        | Yes |   | No  |   | N  | χ²  | Φ   |
|---------------------------------------|-----|---|-----|---|----|-----|-----|
| **Gender**                            |     |   |     |   |    |     |     |
| Male                                  | 1571| 72.6% | 594 | 27.4% | 2165 | 1.72 | .02 |
| Female                                | 733 | 74.8% | 247 | 25.2% | 980  |       |     |
| **Age**                               |     |   |     |   |    |     |     |
| Under 30                              | 55  | 80.9% | 13  | 19.1% | 68   | 10.94 | .06 |
| 30 to 39                              | 403 | 74.2% | 140 | 25.8% | 543  |       |     |
| 40 to 49                              | 533 | 76.1% | 167 | 23.9% | 700  |       |     |
| 50 to 59                              | 778 | 73.5% | 280 | 26.5% | 1058 |       |     |
| 60 to 69                              | 415 | 69.7% | 180 | 30.3% | 595  |       |     |
| 70 and Over                           | 58  | 66.7% | 29  | 33.3% | 87   |       |     |
| **Level**                             |     |   |     |   |    |     |     |
| Nonsupervisory employee               | 372 | 78.6% | 101 | 21.4% | 473  | 27.61 | .09 |
| Manager                               | 811 | 71.0% | 331 | 29.0% | 1142 |       |     |
| Owner, CEO, President                 | 876 | 75.8% | 279 | 24.2% | 1155 |       |     |
| Not applicable                        | 256 | 65.0% | 138 | 35.0% | 394  |       |     |
| **Education**                         |     |   |     |   |    |     |     |
| High school diploma/GED              | 67  | 78.8% | 18  | 21.2% | 85   | 22.91 | .09 |
| Trade/technical training             | 48  | 88.9% | 6   | 11.1% | 54   |       |     |
| Some college - no degree             | 166 | 68.9% | 75  | 31.1% | 241  |       |     |
| Associate/Community college degree    | 142 | 74.0% | 50  | 26.0% | 192  |       |     |
| Bachelor's degree                    | 1200| 74.4% | 412 | 25.6% | 1612 |       |     |
| Master's degree                      | 554 | 72.0% | 215 | 28.0% | 769  |       |     |
| Professional degree (e.g., JD, MD)   | 63  | 70.0% | 27  | 30.0% | 90   |       |     |
| Doctorate (e.g., PhD, EdD)           | 77  | 60.6% | 50  | 39.4% | 127  |       |     |
| **Region**                           |     |   |     |   |    |     |     |
| Western                              | 604 | 68.6% | 277 | 31.4% | 881  | 18.42 | .08 |
| North Central                        | 861 | 73.0% | 319 | 27.0% | 1180 |       |     |
| Southern                             | 545 | 75.5% | 177 | 24.5% | 722  |       |     |
| Northeast                            | 222 | 80.1% | 55  | 19.9% | 277  |       |     |
| Non-US                               | 124 | 71.3% | 50  | 28.7% | 174  |       |     |

Note. * p < .05, ** p < .01, *** p < .001
There was an association between age, organizational level, region, and conference calls observed (Table 5). The observed effect size was small for organizational level and between medium and large for both age and region (Cohen, 1988). Further analysis within age indicated younger audiences had the strongest preference for conference calls with observed preference diminishing inversely with age, with individuals over 70 having the lowest preference.

Table 5

| Communication Channel Preference Based on Demographic, or Audience Segmentation, Characteristics – Conference calls |
|-------------------------------------------------|-----------------|-----------------|----------------|-----------------|-----------------|
| Characteristic                                  | Yes             | No              |                |                |
|                                                 | f               | %               | f              | %               |
| Gender                                          |                 |                 |                |                 |
| Male                                            | 316             | 15.2%           | 1767           | 84.8%           | 2083            |
| Female                                          | 162             | 17.2%           | 779            | 82.8%           | 941             |
| Age                                             |                 |                 |                |                 |
| Under 30                                        | 23              | 33.8%           | 45             | 66.2%           | 68              |
| 30 to 39                                        | 140             | 25.9%           | 400            | 74.1%           | 540             |
| 40 to 49                                        | 143             | 21.4%           | 526            | 78.6%           | 669             |
| 50 to 59                                        | 115             | 11.2%           | 911            | 88.8%           | 1026            |
| 60 to 69                                        | 37              | 6.7%            | 516            | 93.3%           | 553             |
| 70 and Over                                     | 5               | 6.0%            | 78             | 94.0%           | 83              |
| Level                                           |                 |                 |                |                 |
| Nonsupervisory employee                         | 85              | 18.7%           | 369            | 81.3%           | 454             |
| Manager                                         | 185             | 16.8%           | 915            | 83.2%           | 1100            |
| Owner, CEO, President                           | 164             | 14.8%           | 942            | 85.2%           | 1106            |
| Not applicable                                  | 45              | 11.9%           | 334            | 88.1%           | 379             |
| Education                                       |                 |                 |                |                 |
| High school diploma/GED                         | 12              | 15.0%           | 68             | 85.0%           | 80              |
| Trade/technical training                        | 7               | 13.7%           | 44             | 86.3%           | 51              |
| Some college - no degree                        | 38              | 16.2%           | 196            | 83.8%           | 234             |
| Associate/Community college degree              | 30              | 16.3%           | 154            | 83.7%           | 184             |
| Bachelor’s degree                               | 254             | 16.4%           | 1298           | 83.6%           | 1552            |
| Master’s degree                                 | 112             | 15.2%           | 624            | 84.8%           | 736             |
| Professional degree (e.g., JD, MD)              | 9               | 10.1%           | 80             | 89.9%           | 89              |
| Doctorate (e.g., PhD, EdD)                      | 18              | 14.9%           | 103            | 85.1%           | 121             |
| Region                                          |                 |                 |                |                 |
| Western                                         | 70              | 8.3%            | 775            | 91.7%           | 845             |
| North Central                                   | 184             | 16.2%           | 950            | 83.8%           | 1134            |
| Southern                                        | 139             | 20.1%           | 554            | 79.9%           | 693             |
| Northeast                                       | 33              | 12.5%           | 231            | 87.5%           | 264             |
| Non-US                                          | 60              | 35.7%           | 108            | 64.3%           | 168             |

Note. * p < .05, ** p < .01, *** p < .001

An association was observed between Facebook group communication channel preference and all audience categories: gender, age, organizational level, educational attainment, and region (Table 6). Within age, where as other channels tended to have the highest level of preference with the youngest age category diminishing inversely as age increased, the Facebook group channel had a different observed preference pattern. Specifically, preference increased from the under 30 category at 32.8%, peaked in the 40 to 49 category at 40.8%, and then diminished inversely with
age with the lowest observed preference in the 70 and over category at 22.6%. A similar pattern was observed within educational attainment, with the lowest preference observed in the trade/technical training category at 20%, peaking with Master’s degree at 39.2%, and diminishing to 36% at the Doctorate level. Within organizational level the highest observed category was non-supervisory employee at 43.6%, decreasing to 29.3% for owners, CEOs, or presidents. Across all statistically significant results the observed effect size was small (Cohen, 1988).

Table 6
Communication Channel Preference Based on Demographic, or Audience Segmentation, Characteristics – Facebook group

| Characteristic                  | Yes | No  | N   | $\chi^2$ | $\Phi$ |
|--------------------------------|-----|-----|-----|----------|--------|
| Gender                         |     |     |     |          |        |
| Male                           | 670 | 32.0% | 1426 | 68.0% | 2096 | 25.72*** | .09 |
| Female                         | 400 | 41.4% | 567  | 58.6% | 967  |        |       |
| Age                            |     |     |     |          |        |
| Under 30                       | 22  | 32.8% | 45   | 67.2% | 67   | 38.16*** | .11 |
| 30 to 39                       | 208 | 38.8% | 328  | 61.2% | 536  |        |       |
| 40 to 49                       | 283 | 40.8% | 411  | 59.2% | 694  |        |       |
| 50 to 59                       | 357 | 34.8% | 668  | 65.2% | 1025 |        |       |
| 60 to 69                       | 149 | 26.3% | 417  | 73.7% | 566  |        |       |
| 70 and Over                    | 19  | 22.6% | 65   | 77.4% | 84   |        |       |
| Level                          |     |     |     |          |        |
| Nonsupervisory employee        | 201 | 43.6% | 260  | 56.4% | 461  | 43.28*** | .12 |
| Manager                        | 436 | 39.0% | 683  | 61.0% | 1119 |        |       |
| Owner, CEO, President          | 327 | 29.3% | 790  | 70.7% | 1117 |        |       |
| Not applicable                 | 113 | 29.8% | 266  | 70.2% | 379  |        |       |
| Education                      |     |     |     |          |        |
| High school diploma/GED        | 19  | 23.5% | 62   | 76.5% | 81   | 18.46*  | .08 |
| Trade/technical training       | 10  | 20.0% | 40   | 80.0% | 50   |        |       |
| Some college - no degree       | 82  | 34.2% | 158  | 65.8% | 240  |        |       |
| Associate/Community college degree | 55  | 29.6% | 131  | 70.4% | 186  |        |       |
| Bachelor's degree              | 541 | 34.4% | 1032 | 65.6% | 1573 |        |       |
| Master's degree                | 291 | 39.2% | 451  | 60.8% | 742  |        |       |
| Professional degree (e.g., JD, MD) | 33  | 37.1% | 56   | 62.9% | 89   |        |       |
| Doctorate (e.g., PhD, EdD)     | 45  | 36.0% | 80   | 64.0% | 125  |        |       |
| Region                         |     |     |     |          |        |
| Western                        | 271 | 31.6% | 586  | 68.4% | 857  | 10.07*  | .06 |
| North Central                  | 409 | 35.6% | 739  | 64.4% | 1148 |        |       |
| Southern                       | 249 | 35.5% | 452  | 64.5% | 701  |        |       |
| Northeast                      | 106 | 39.0% | 166  | 61.0% | 272  |        |       |
| Non-US                         | 71  | 42.0% | 98   | 58.0% | 169  |        |       |

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

An association between all audience categories: gender, age, organizational level, educational attainment, and region and LinkedIn group was observed (Table 7). LinkedIn had the highest preference in the under 30 category at 57.9%, and diminishing inversely with age with the 70 and over category having the lowest preference at 22.9%. Related to educational attainment, a different pattern was observed. The high school diploma/GED category had a preference of 32.1% that
increased and peaked with the strongest preference observed within the some-college – no degree category at 48.6%, and diminishing to the Doctorate category at 23.8%. Nonsupervisory employees had the highest preference at 48.8%.

Table 7
Communication Channel Preference Based on Demographic, or Audience Segmentation, Characteristics — LinkedIn group

| Characteristic                | Yes | No  | N   | χ²   | Φ    |
|------------------------------|-----|-----|-----|------|------|
| **Gender**                   |     |     |     |      |      |
| Male                         | 613 | 29.0% | 1500 | 71.0% | 2113 | 201.66*** |
| Female                       | 546 | 55.5% | 437  | 44.5% | 983  |
| **Age**                      |     |     |     |      |      |
| Under 30                     | 39  | 57.4% | 29   | 42.6% | 68   | 98.75*** |
| 30 to 39                     | 269 | 49.4% | 276  | 50.6% | 545  |
| 40 to 49                     | 299 | 43.4% | 390  | 56.6% | 689  |
| 50 to 59                     | 344 | 32.9% | 702  | 67.1% | 1046 |
| 60 to 69                     | 155 | 27.0% | 420  | 73.0% | 575  |
| 70 and Over                  | 19  | 22.9% | 64   | 77.1% | 83   |
| **Level**                    |     |     |     |      |      |
| Nonsupervisory employee      | 227 | 48.8% | 238  | 51.2% | 465  |
| Manager                      | 405 | 35.9% | 722  | 64.1% | 1127 |
| Owner, CEO, President        | 399 | 35.2% | 733  | 64.8% | 1132 |
| Not applicable               | 132 | 34.1% | 255  | 65.9% | 387  |
| **Education**                |     |     |     |      |      |
| High school diploma/GED      | 27  | 32.1% | 57   | 67.9% | 84   |
| Trade/technical training     | 24  | 47.1% | 27   | 52.9% | 51   |
| Some college - no degree     | 119 | 48.6% | 126  | 51.4% | 245  |
| Associate/Community college degree | 75  | 40.1% | 112  | 59.9% | 187  |
| Bachelor's degree            | 596 | 37.5% | 994  | 62.5% | 1590 |
| Master's degree              | 272 | 36.1% | 481  | 63.9% | 753  |
| Professional degree (e.g., JD, MD) | 26  | 29.2% | 63   | 70.8% | 89   |
| Doctorate (e.g., PhD, EdD)   | 29  | 23.8% | 93   | 76.2% | 122  |
| **Region**                   |     |     |     |      |      |
| Western                      | 268 | 30.8% | 601  | 69.2% | 869  |
| North Central                | 459 | 39.5% | 703  | 60.5% | 1162 |
| Southern                     | 292 | 41.4% | 414  | 58.6% | 706  |
| Northeast                    | 121 | 44.5% | 151  | 55.5% | 272  |
| Non-US                       | 51  | 29.5% | 122  | 70.5% | 173  |

*Note. *p < .05, **p < .01, ***p < .001

An association between organizational level and Twitter was observed. The effect size of the association was small (Cohen, 1988). Additional details and results are presented in Table 8.

Table 8
Communication Channel Preference Based on Demographic, or Audience Segmentation, Characteristics — Twitter

| Characteristic                | Yes | No  | N   | χ²   | Φ    |
|------------------------------|-----|-----|-----|------|------|

An association between organizational level and Twitter was observed. The effect size of the association was small (Cohen, 1988). Additional details and results are presented in Table 8.
### Table 9

**Most and Least Preferred Communication Channel by Audience Segment**

| Characteristic | Most Preferred | Least Preferred |
|----------------|----------------|-----------------|
| **Gender**     |                |                 |
| Male           |                | web page        |
| Female         |                | conference call |
| **Age**        |                |                 |
| Under 30       |                | web page        |
| 30 to 39       |                | conference call |
| 40 to 49       |                | web page        |
| 50 to 59       |                | conference call |
| 60 to 69       |                | web page        |
| 70 and Over    |                | conference call |
| **Level**      |                |                 |
| Nonsupervisory employee | 133 | 28.7% | 331 | 71.3% |
| Owner, CEO, President | 269 | 24.1% | 848 | 75.9% |
| Not applicable | 70             | 18.4%           | 310 | 81.6% |
| **Education**  |                |                 |
| High school diploma/GED | 28 | 33.7% | 55 | 66.3% |
| Trade/technical training | 13 | 25.5% | 38 | 74.5% |
| Some college - no degree | 73 | 31.2% | 161 | 68.8% |
| Bachelor's degree | 372 | 23.5% | 1209 | 76.5% |
| Master's degree | 183 | 24.5% | 563 | 75.5% |
| Doctorate (e.g., PhD, EdD) | 27 | 22.3% | 94 | 77.7% |
| **Region**     |                |                 |
| Western        | 200            | 23.4%           | 656 | 76.6% |
| North Central  | 311            | 26.8%           | 848 | 73.2% |
| Southern       | 178            | 25.5%           | 521 | 74.5% |
| Northeast      | 79             | 29.4%           | 190 | 70.6% |
| Non-US         | 32             | 18.9%           | 137 | 81.1% |

*Note. * p < .05, ** p < .01, *** p < .001*

A summary of the descriptive communication channel preference results based on demographic, or audience segmentation, category is presented in Table 9. Specifically, the table displays the communication channel receiving the highest percentage of *Yes* selections in the most preferred column. Additionally, the table displays the highest percentage of *No* selections in the least preferred column. All audience segments based on demographic category indicated dedicated web page or blog as their most preferred communication channel. Additionally, with the exception of individuals under 40 and not located in the United States, conference calls were identified as the least preferred communication channel.
Conclusions, Recommendation, and Implications

Despite the acknowledgement of the importance of delivering the right message to the right audience (McQuail, 2010), there remained a notable gap in the literature addressing the audience segmentation and communication channel considerations, particularly as it relates to ANR opinion leaders. The purpose of this research was to address this gap through rigorous empirical investigation and to provide a practical resource for communication practitioners.

The results indicated that amongst ANR opinion leaders there are differences between audience segments, and these distinctions are related to communication channel preferences. A primary finding from the study was that each analyzed audience category identified a dedicated web page or blog as its most preferred communication channel. With the exception of individuals under 40 or those living outside the United States, the least preferred communication channel was conference calls.

The results indicated the most effective channel through which to reach ANR opinion leaders, regardless of audience segmentation, is through a dedicated web page or blog. This implies the ongoing importance for providing engaging and fundamentally sound content to appear, and be refreshed, on websites. Given this a recommendation is that, all things being equal, a dedicated web page or blog should be the primary focus for communicating with ANR opinion leaders with investment and resources allocated to this communication channel accordingly. A recommendation for future research would be to examine how ANR opinion leaders learn about, and become reliant upon, specific websites and blogs for communication (Al-Qeisi, Dennis, Alamanos, & Jayawardhena, 2014). A noteworthy limitation associated with the study findings is the grouping of web pages and blogs into one category. Future research is recommended to further
investigate whether there are any differences between web pages and blogs when considered independently.

The results also indicated the use of conference calls to reach ANR opinion leaders may not be effective. Given the ubiquity of conference calls across ANR, this was an unexpected result. This implies that unless there is strong empirical evidence within a very well-defined and understood audience, alternative communication channels may be preferable over conference calls when engaging with ANR opinion leaders.

Demographic, or audience segmentation, characteristics were found to be significantly associated with informal meeting preference. The results of the study imply females and younger individuals are more likely to prefer informal meetings than their counterparts. The findings indicated that between the two different types of meetings, formal and informal, there tends to be higher levels of audience segmentation associated with informal meetings relative to formal meetings. An implication from this result is that formal meetings may be more appropriate for more general communication across a wide variety of audiences, whereas informal meetings may be more appropriate if there is a targeted audience, which is aligned with the findings of Hawkins et al., 2008 and Hine et al., 2014.

Facebook groups were analyzed as a social media communication channel. The results indicated Facebook groups tend to be more audience-specific than other communication channels. An implication from these results is that communication professionals may want to consider a Facebook group when they wish to target very specific audiences. Similar to Warner et al. (2017), future research should examine whether utilizing separate Facebook groups for targeted audiences could be utilized to further assign roles to ANR opinion leaders to work toward a larger project. A second social media platform, LinkedIn, was also analyzed. Results were inconsistent with Facebook indicating LinkedIn may also be an effective communication channel when wanting to target a specific audience, particularly as it relates to age and educational attainment (Hine et al., 2014).

Finally, Twitter was analyzed as a potential communication channel. Unlike many of the other analyzed channels few statistically significant associations between categories were observed. The results implied Twitter is not a preferred communication channel among ANR opinion leaders. An implication from this result is that Twitter may not be the most effective channel to reach ANR opinion leaders if resources are limited.

A limitation of the findings presented here is the rate at which the results become dated given the continued emergence of new communication channels. Therefore, the results should be interpreted as a snapshot in time and should not be interpreted beyond the moment in which they were captured. A second limitation is the communication channels that were included in the study. It is difficult to predict what emergent channels will be relevant in the future and what channels will become irrelevant.

Overall, there are recommendations for practice associated with the present research. First, using audience segmentation can be an effective way to deliver tailored content to specific audiences, and different audiences have different communication channel preferences. Therefore, when communicating with ANR opinion leaders, a dedicated web-page or blog is likely to be the most universally preferred channel. To the contrary, conference calls were generally not preferred. Given limited resources, finding the right channel for the audience is critical.

Additionally, recommendations for future research are also associated with the study. Specifically, a recommendation for future research would be to replicate the study using emerging communication channels in addition to those that are well established. A further recommendation
would be to replicate the study among both ANR opinion leaders, as well as other non-ANR or non-opinion leader audiences and determine whether any differences exist. Future research is also encouraged to examine the interaction of communication channels as they relate to preference. For example, the use of Facebook to drive audiences to a dedicated web page or blog.

Lastly, a general recommendation from the study would be for communication practitioners to thoughtfully consider what message they are trying to deliver, and to what audience. By better understanding audience preferences, more effective and efficacious communications can be delivered to their intended audience (McQuail, 2010).
References

Al-Qeisi, K., Dennis, C., Alamanos, E., & Jayawardhena, C. (2014). Website design quality and usage behavior: Unified Theory of Acceptance and Use of Technology. *Journal of Business Research, 67*(11), 2282-2290.

Ary, D., Jacobs, L. C., & Sorensen, C. (2010). *Introduction to research in education*. Belmont, CA: Wadsworth Cengage Learning.

Ashley, C., & Tuten, T. (2015). Creative strategies in social media marketing: An exploratory study of branded social content and consumer engagement. *Psychology and Marketing, 32*(1), 15-27. doi:10.1002/mar.20761

Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations, 61*(8), 1139-1160. doi:10.1177/0018726708094863

Boone, K., Meisenbach, T., & Tucker, M. (2000). *Agricultural communications changes and challenges*. Ames, IA: Iowa State University Press.

Brosseau, D., Kawasaki, G. (2013). *Ready to be a thought leader? How to increase your influence, impact, and success*. San Francisco, CA: Jossey-Bass.

Burt, R. S. (1999). The social capital of opinion leaders. *Annals of the American Academy of Political and Social Science, 566*, 37-54.

Cohen J. (1988) *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ.: Erlbaum

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2008). *Internet, mail, and mixed-mode surveys: The tailored design method* (2nd ed.). Hoboken, N.J.: Wiley & Sons, Inc.

Fuchs, C. (2017). *Social media: A critical introduction* (2nd ed.). Los Angeles, CA: Sage Publications Ltd.

Gladwell, M. (2000). *The tipping point: How little things can make a big difference*. Boston, MA: Little, Brown.

Hawkins, R. P., Kreuter, M., Resnicow, K., Fishbein, M., & Dijkstra, A. (2008). Understanding tailoring in communicating about health. *Health Education Research, 23*(3), 454-466. doi: 10.1093/her/cyn004

Hine, D. W., Reser, J. P., Morrison, M., Phillips, W. J., Nunn, P., & Cooksey, R. (2014). Audience segmentation and climate change communication: Conceptual and methodological considerations. *WIREs Climate Change, 5*(4), 441-459. Doi: 10.1002/wcc.279
Holt, J., Rumble, J., Telg, R., & Lamm, A. (2015). The message or the channel: An experimental design of consumers’ perceptions of a local food message and the media channels used to deliver the information. *Journal of Applied Communication, 99*(2). Retrieved from https://doi.org/10.4148/1051-0834.1046

Huang, P., & Lamm, A. J. (2017). Activating opinion leaders across the nation to increase water conservation. *Journal of Extension, 55*(5). Retrieved from https://www.joe.org/joe/2017october/a7.php

Hughes, A., Johnson, T., Edgar, L., Miller, J., & Cox, C. (2016). A content and visual analysis of promotional pieces used in a communication campaign for the Arkansas [commodity] promotion board. *Journal of Applied Communication, 100*(2). Retrieved from https://doi.org/10.4148/1051-0834.1027

Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. New York, NY: New York University Press.

Kim, J. N., Shen, H., & Morgan, S. E. (2011). Information behaviors and problem chain recognition effect: Applying situational theory of problem solving in organ donation issues. *Health Communication, 26*(2), 171-184. doi: 10.1080/10410236.2010.544282

Kirkman, B.L. & Chen, G. (2011). Maximizing your data or data slicing: Recommendations for managing multiple submissions from the same data set. *Management and Organization Review, 7*, 3, 433-446. doi: 10.1111/j.1740-8784.2011.00228.x

Lamm, A. J., Lundy, L. K., Warner, L., & Lamm, K. W. (2016). Associating importance with behavior: Providing direction for water conservation communication. *Journal of Applied Communication, 100*(3). doi: 10.4148/1051-0834.1229

Lamm, K. W., Carter, H. S., & Lamm, A. J. (2016). Evaluating extension based leadership development programs in the southern United States. *Journal of Agricultural Education, 57*(1), 121-136. doi: 10.5032/jae.2016.01121

Lamm, K. W., Lamm, A. J., & Carter, H. (2015). Bridging water issue knowledge gaps between the general public and opinion leaders. *Journal of Agricultural Education, 56*(3), 146-161. DOI: 10.5032/jae.2015.03146

Lamm, K. W., Lamm, A. J., & Carter, H. S. (2014). Opinion leadership development: Context and audience characteristics count. *Journal of Agricultural Education, 55*(2), 91-105. doi:10.5032/jae.2014.02091

Lamm, K. W., Rumble, J. N., Carter, H. S., & Lamm, A. J. (2016a). Agricultural opinion leader communication channel preferences: an empirical analysis of participants of agricultural and natural resource leadership development programs. *Journal of Agricultural Education, 57*(1), 91-105. doi: 10.5032/jae.2016.01091
Lazarsfeld, P., Berelson, B., & Gaudet, H. (1948). *The people's choice* (2nd ed.). New York: Columbia University Press.

Lazer, D. M. J., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., … Zittrain, J. L. (2018). The science of fake news. *Science, 359*(6380), 1094 LP-1096. Retrieved from http://science.sciencemag.org/content/359/6380/1094.abstract

Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education, 42*(4), 43-53. doi:10.5032/jae.2001.04043

McQuail, D. (2010). *McQuail’s Mass Communication Theory*. Los Angeles, CA: Sage Publications Ltd.

Murdoch, J. (2006). Networking rurality: Emergent complexity in the countryside. In P. Cloke, T. Marsden, & P. Mooney (Eds.), *Handbook of rural studies* (171-184). London, UK: Sage Publications Ltd.

Papacharissi, Z. (2015). *Affective publics: Sentiment, technology, and politics*. Oxford, UK: Oxford University Press.

Pew Research (2012). *Further decline in credibility ratings for most news organizations*. Retrieved from www.people-press.org/2012/08/16/further-decline-in-credibilityratings-for-most-news-organizations/.

Rivera, W., & Sulaiman, R. (2009). Extension: Object of reform, engine for innovation. *Outlook on Agriculture, 38*(3), 267-273.

Rogers, E. (1995). *Diffusion of innovations*. New York, NY: The Free Press.

Rossi, P. H., Lipsey, M. W., & Freeman, H. E. (2004). *Evaluation: A systematic approach*. Thousand Oaks, CA: Sage.

Rumble, J., Holt, J., & Irani, T. (2014). The power of words: Exploring consumers’ perceptions of words commonly associated with agriculture. *Journal of Applied Communications, 98*(2). Retrieved from https://doi.org/10.4148/1051-0834.1072

Ryan, C. & Lamm, A. J. (2017). Extension’s role in developing opinion leaders to drive water conservation. *Journal of Extension, 55*(1). Retrieved from https://www.joe.org/joe/2017february/rb4.php

Shoemaker, P., & Reese, S. (2013). *Mediating the message in the 21st century: A media sociology perspective*. New York, NY: Routledge.

Slater, M. D. (1996). Theory and method in health audience segmentation. *Journal of Health Communication, 1*(3), 267-283. doi: 10.1080/108107396128059
Taylor, M. R. & Lamm, A. J. (2017). Identifying the needs of opinion leaders to encourage widespread adoption of water conservation and protection. *Journal of Agricultural Education, 58*(4) 269-281. DOI: 10.5032/jae.2017.04269.

Turcotte, J., York, C., Irving, J., Scholl, R. M., & Pingree, R. J. (2015). News recommendations from social media opinion leaders: Effects on media trust and information seeking. *Journal of Computer-Mediated Communication, 20*, 520–535. doi: 10.1111/jcc4.12127

United States Department of Agriculture. (2014). *Cooperative extension system regions*. Retrieved from http://www.csrees.usda.gov/qlinks/partners/extension_regions.pdf

W.K. Kellogg Foundation. (2000). *The legacy of the ag leadership development program: Rich heritage cultivates future opportunities*. (No. 534). W.K. Kellogg Foundation.

Warner, L. A., Chaudhary, A. K., Rumble, J. N., Lamm, A. J. & Momol, E. (2017). Using audience segmentation to tailor residential irrigation water conservation programs. *Journal of Agricultural Education, 58*(1), 313 - 333. Doi: 10.5032/jae.2017.01313

Warner, L. A. & Lamm, A. J. (2017). Understanding residential irrigation users to target water conservation extension programs. *Journal of Extension, 55*(3). Retrieved from https://www.joe.org/joe/2017june/rb4.php

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