Agricultural Opinion Leader Communication Channel Preferences: An Empirical Analysis of Participants of Agricultural and Natural Resource Leadership Development Programs

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Abstract

In the information rich society of the 21st century consumers have had access to many different communication channels where they can find information about agricultural topics. Individuals seek information that fulfills their needs and opinion leaders have been identified as a solution to communicating with audiences about complex topics. However, previous research has neglected to focus on the most effective means of communicating with opinion leaders. Using level of opinion leadership as a predictor of communication channel preference within a Uses and Gratifications framework a sample of 3,234 agricultural opinion leaders were surveyed. Descriptive statistics revealed that web pages and meetings are most preferred while Twitter, conference calls, and other communication channels are least preferred amongst agricultural opinion leaders. Furthermore, inferential statistics illuminated the importance of clearly defining an intended audience. Specifically, although opinion leaders are differentiated from non-opinion leaders within their networks there are additional levels of opinion leadership that may warrant consideration when selecting a communication channel.

Keywords: opinion leadership, communication channel, evaluation

Introduction

As the field of agricultural communications has evolved, there has been a shift from the need to communicate with those in the industry to a need to communicate with a more targeted general consumer audience (Telg & Irani, 2012). Through industrialization and technology, agriculture has advanced, but at the same time consumer skepticism and concerns toward agricultural production have increased (Sparks & Shepherd, 1994; Weatherell, Tregear, Allinson, 2003). Boone, Meisenbach, and Tucker (2000) noted one of the most critical factors affecting the future of agriculture was consumers' perceptions, opinions, and demands of agriculture. In discussing the future challenges for agricultural communication Jim Evans, a regarded agricultural communication scholar said,

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Agriculture and society will need new and improved agricultural information channels and services that are geared to the scientific, progressive, change-oriented dimensions of a culture. At the same time, agriculture and society will need a communications system that recognizes and maintains the stabilizing, deep-rooted human and social dimensions of a culture. The frictions will be tremendous because we are dealing with human values in conflict (Boone et al., 2000, p. 49).

In the information rich society of the 21st century (Edmunds & Morris, 2000; Nisbet & Scheufele, 2009), consumers have had access to many different communication channels through which they can find information about agricultural topics. However, new media, "a term often used to describe Web-based communications technologies" (Telg & Irani, 2012, p. 228), has changed how people exchange information. Individuals seek information that fulfills their needs (Lin, 1999) and new media allows consumers to create and share information (Telg & Irani, 2012) about agricultural topics that meet their needs as well as the needs of the people close to them. Although there are an abundance of communication channels available, the effectiveness of those channels to convey the intended message has not always been well understood (Nisbet & Scheufele, 2009).

Opinion leaders have been identified as a critical linkage that may provide a solution to communicating with audiences about difficult topics (Nisbet & Scheufele, 2009). These leaders are commonly viewed as role models and can communicate in an influential manner to those who follow them (Burt, 1999; Valente & Davis, 1999). Opinion leaders participate in a two-step communication process in which they receive information about a topic and then share that information with their social connections or followers (Lazarsfeld, Berelson, & Gaudet, 1948). Recent research has shown that opinion leaders can serve to connect source information and "otherwise inattentive peers, coworkers, and friends" (Nisbet & Kotcher, 2009, p. 329). "The time and energy of the change agent are scarce resources. By focusing communication activities upon opinion leaders in a social system, the change agent can leverage these scarce resources and hasten the rate of diffusion of an innovation" (Rogers, 2003, p. 388).

These findings are consistent with calls in the literature for science-based organizations and industries "to mobilize specially trained opinion leaders who can bridge the communication gap between news coverage and inattentive audiences, talking to their friends, family, and co-workers about the relevance of science-related issues..." (Nisbet & Scheufele, 2009, p. 1776). When discussing these issues, opinion leaders are viewed as a credible communication source that delivers important information on important issues (Lazarsfeld et al., 1948; Nisbet & Scheufele, 2009).

In order to share information with followers, opinion leaders must first connect to the information source. Previous literature has found that individuals engaged in agricultural pursuits tend to have preferences for sources and channels of information. For example, Vergot, Israel, and Mayo (2005) found that beef cattle producers in Florida preferred newsletters, magazines, and the observations of other ranchers. Additionally, corn and soybean producers in Iowa expressed a preference for interpersonal communication methods over mass media (Licht & Martin, 2007). However, these findings appear to be inconsistent with previous research that has indicated opinion leaders are exposed to more mass media than non-opinion leaders (Chan & Misra, 1990). Within the literature there has been little, if any, research that has examined the preferred media channels for contemporary opinion leaders (Nisbet & Kotcher, 2009).

The absence of empirical research examining the preferred communication channel of agricultural opinion leaders represents a gap in the literature and insights that are of practical importance. "Understanding who opinion leaders are and what motivates them may improve the means through which policy makers, marketers, activists, health professionals, and others change people's behavior" (Rose & Kim, 2011, p. 204). In order to use opinion leaders effectively it is critical to understand them and their preferences (Rose & Kim, 2011); therefore understanding their preferred channel to source information is paramount (Chan & Misra, 1990).

The American Association for Agricultural Education's National Research Agenda has prioritized research examining the process by which consumers and policy makers make informed decisions about agricultural topics (Doerfert, 2011). One area of scientific focus includes determining the potential of communication strategies to equip the public to make informed decisions on agricultural topics. Therefore, the purpose of this study was to examine agricultural opinion leaders preferred channel of communication, so they may effectively receive information through these channels and disseminate agricultural information to their followers.

Conceptual Framework

The organizing framework that guided this study was Herzog's (1940) theory of uses and gratifications. The theory explains the choices audiences make in their media selection and use (Lin, 1999). Media selection behaviors are built upon an individual's needs and their desire to fulfill those needs (Katz, Blumler, & Gurevitch, 1974). The needs identified with media selection are self-actualization needs, or needs with social origin and the ability to aid in self-development (Blumler, 1985; Maslow, 1970). Throughout history, several scholars have suggested varying needs or factors said to influence media selection in order to fulfill gratifications (Ruggiero, 2000). Katz, Gurevitch, and Haas (1973) identified five self-actualization needs that apply to the theory of uses and gratifications including cognitive, affective, integrative, contact, and escape needs.

Cognitive needs simply refer to the need to access information through a media channel in order to understand (Katz et al., 1973; Lin, 1999). The need for emotional experiences drives the selection of media channels based on affective needs. If a communication channel provides access to information that strengthens the receiver's confidence, credibility, or stability then the channel is fulfilling the individual's integrative needs. Contact needs refer to the needs fulfilled through social contact with family, friends, and others. Lastly, the escape need refers to the selection of a media channel to allow one to forget about current problems or troubles (Katz et al., 1973; Lin, 1999).

The theory of uses and gratifications has been used to examine a wide variety of media and communication channel preferences. For example, Lev-On (2012) found that affective needs were a determinant of both communication channel and information source preferences used in a time of crisis within a community. Additionally, Okwu and Daudu (2011) found that cognitive needs predicted level of communication channel use among farmers in Nigeria. Social media preferences have also been explored using uses and gratifications as a guiding framework (e.g. Smock, Ellison, Lampe, Wohn, 2011).

When looking at a specific audience, such as agricultural opinion leaders, a consistent preferred media channel could be identified according to shared motivations or needs (McQuail, 2010). Agricultural opinion leaders, or those in another specific audience, are thought to be actively involved in the topic, have similar goal-directed needs relative to the topic, and thus select similar media channels (Littlejohn, 2002). According to Lazarsfeld et al. (1948), one of the defining characteristics of an opinion leader is their competence or expertise; accordingly opinion leaders would be expected to have similar cognitive (knowledge) and integrative (credibility) needs.

Purpose & Research Objectives

The purpose of this study was to examine agricultural opinion leaders preferred channel of communication. The study was driven by the following research objectives:

- 1. Describe agricultural opinion leaders preferred channels for communication.
- 2. Determine whether agricultural opinion leadership predicts preferred channels for communication.

Methods

A quantitative research design was used to investigate the research objectives proposed for the study. Specifically, an online survey was administered to a large group of agricultural opinion leaders to determine their communication channel preferences, and how their level of opinion leadership influenced channel preferences. Descriptive statistics and logistic regression were employed accordingly.

Sample and Procedures

Consistent with previous opinion leadership studies (e.g. Kelly et al., 1991), opinion leaders were identified based on their participation in activities or organizations whereby they would be perceived as central to their communication network. Specifically, previous research has found agricultural leadership development programs recruit and develop emerging and established opinion leaders within the agricultural and natural resource industry (Lamm, Lamm, & Carter, 2014).

For the purposes of this study, the population of interest was defined as individuals that choose to participate in agricultural and natural resources leadership development programs patterned on the Kellogg model (Kellogg, 2000). Specifically, the goal of the Kellogg model "was to provide young agricultural and rural leaders with a broader view of society, as well as a greater sense of the world and how they fit into the bigger picture" (Kellogg, 2000, p. 1). A census was employed and included any individual that had participated in a leadership development program affiliated with the International Association of Programs for Agricultural Leaders (IAPAL) organization. The IAPAL organization "is a consortium of leadership programs in the USA and several other countries" (IAPAL, 2013, para. 1) that were derived from the Kellogg model and thus have similar characteristics such as program participant attributes and program curriculum (IAPAL, 2013). An assumption was made that all respondents were opinion leaders vis-à-vis their participation in a leadership development program.

A census, or comprehensive sample, frequently yields the most comprehensive data within a population of interest (Ary, Jacobs, & Sorensen, 2010; Rossi, Lipsey, & Freeman, 2004). To conduct a census of the population all programs affiliated with IAPAL were invited to participate. A total of 41 active programs were invited, 28 programs elected to participate in the research. Of the 13 programs that opted not to participate, one program indicated they were in their first class, which meant they had just begun programming, and did not feel as though they had the time to assist with the research. The other 12 programs did not provide a response regarding the request and were subsequently removed from the available sample frame.

Data were collected in the spring of 2014. Participant names and email addresses were provided to the researchers by each individual participating program director, the researchers then contacted participants using Dillman, Smyth, and Christian's (2008) tailored design method and asked to respond to an online questionnaire developed in Qualtrics and managed and facilitated by the researchers. The specific data collection process included: a pre-notice emailed to all program participants sent by the program director approximately one week prior to the survey. The researcher followed up with an email invitation to each participant that included a link to the survey along with a requested response date, typically three weeks later. The invitation also included the Institutional Review Board verbiage and notified participants that there were no penalties or compensation for participating or not participating. One week after the invitation to the survey was sent the researcher sent a reminder email to non-responders. Approximately two weeks after the original invitation the researcher sent a second reminder email to non-responders. Approximately two days prior to the close of the survey the researcher sent a fourth and final email to non-responders.

Alumni from the Florida leadership development program were surveyed as a pilot of the survey. A total of 185 potential respondents were invited to participate, there were 98 surveys returned for a 53% response rate. Data from the pilot test were analyzed to verify survey reliability and validity. Specifically Cronbach's α was calculated to ensure adequate internal consistency for the scale of interest. Minor modifications to the survey were made based on pilot responses; however, no modifications were made to areas related to this particular research study. The revised survey was reviewed and approved by an expert panel.

A total of 7,152 alumni from the 28 programs were invited to participate in the research; 4,185 questionnaires were started for a preliminary response rate of 59%; however, after analysis of missing data a total of 3,234 questionnaires were considered complete for an effective response rate of 45%. Based on established social science response rates, this was considered acceptable for generalization (Baruch & Holtom, 2008). Nonresponse analysis was conducted by comparing early and late respondents based on the recommendations of Lindner, Murphy, and Briers (2001). Early responders were identified as those individuals that completed the survey prior to receiving the first reminder message, late responders were identified as those individuals that completed the survey after receiving the third reminder message. No statistically significant differences between the two groups were observed. Consequently, non-response bias was not found to be an issue.

Demographic data were obtained through respondent self-report. The sample was 68.3% (n = 2,271) male with a mean age of 50.7 (SD = 11.1) with reported ages ranging between 23 and 82. A total of 95.6% (n = 3,055) or respondents identified themselves as White.

Measures

Communication channels. 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. Channels were based on a researcher-developed list that included traditional (formal and informal meetings), quasi-traditional (conference calls and web pages), quasi-emergent (Facebook and LinkedIn), and emergent (Twitter or Other).

Opinion leadership. Childers' (1986) opinion leadership scale was used to measure level of opinion leadership. Opinion leadership was hypothesized to be a consistent need within the population of interest and therefore an appropriate antecedent, or predictor, of communication channel preference (McQuail, 2010). The scale included six questions presented in a five-place bipolar response format. Pairs of dissimilar statements were presented, one at each end of a rating scale. A one indicated the negative statement; a five indicated the positive statement. *Ex post facto* reliability was calculated on the opinion leadership construct following the pilot of the survey and a Cronbach's α of .86 was obtained. Following the administration of the survey an overall Cronbach's α of .90 was obtained. Across all respondents a minimum score of 1.00 and a maximum score of 5.00 (M = 3.93, SD = .77) was obtained.

Control variables. Technology and media usage have been shown to be influenced by individual characteristics (e.g. Smock et al., 2011). Respondent age and gender were included as control variables.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 21. Descriptive statistics were calculated to describe agricultural opinion leaders preferred channels for communication. Additionally, logistic regression (Peng, Lee, & Ingersoll, 2002) was used to determine whether level of agricultural opinion leadership predicted preferred channels for communication. A level of significance of .05 was established *a priori*. Finally, the relationship between opinion leadership and communication channel preferences were visually explored. For

ease of representation, respondents were grouped into three categories: low opinion leadership, average opinion leadership, and high opinion leadership. Opinion leadership categories were based on calculated z-score, or number of standard deviations away from the overall mean. A negative z-score was associated with a lower level of opinion leadership category (low category) (n = 1093), a z-score of zero was associated with an average level of opinion leadership category (average category) (n = 849), and a positive z-score was associated with a higher level of opinion leadership category (high category) (n = 2243).

Results

Preferred Channels for Communication

Almost 73% (n = 2,356) of respondents preferred to receive communications through a dedicated web page or blog. Respondents were least interested in receiving information through conference calls, with only 16% (n = 486) selecting this communication channel. The 56 individuals that selected the "Other" category had the opportunity to provide a free text response describing their preference. Most frequently respondents indicated e-mail, followed by commodity/industry based meetings, and online or printed newsletters. Specific response data are presented by communication channel in Table 1.

Table 1

Agricultural Opinion Leader Preferred Channel for Communication

Communication Channel	n Yes		No	
		n (%)	n (%)	
Dedicated web page or blog	3234	2356 (73%)	878 (27%)	
Formal annual meetings	3201	1908 (60%)	1293 (40%)	
Informal meetings coordinated by alumni	3215	1673 (52%)	1542 (48%)	
LinkedIn group	3182	1191 (37%)	1991 (63%)	
Facebook group	3147	1106 (35%)	2041 (65%)	
Twitter	3152	800 (25%)	2352 (75%)	
Conference calls	3104	486 (16%)	2618 (84%)	
Other	385	56 (15%)	329 (85%)	

Level of Opinion Leadership and Preferred Communication Channel

Logistic regression analysis was completed to determine whether level of opinion leadership predicted communication channel preferences (see Table 2). Each communication channel was treated as a dependent variable. Gender, age, and level of opinion leadership were treated as the independent variables of interest.

With the exception of the Facebook group, level of opinion leadership was found to be a positive, statistically significant predictor of communication channel preference. After controlling for gender and age, opinion leadership had the strongest prediction of informal meetings (B = .32, p < .001, OR = 1.37) across the provided channels. These results indicated that for every one unit increase in opinion leadership individuals were 1.37 times more likely to select informal meetings after controlling for all other variables. The relationship between level of opinion leadership and communication channel preference was further explored by plotting the mean level of preference for each channel according to level of opinion leadership category, either low, average, or high (see Figure 1). Consistent with the results of the logistic regression, the plot indicates individuals with the highest levels of opinion leadership have the greatest preference for the communication channel. One noteworthy exception is that of Twitter, where individuals with an average level of opinion leadership had the highest level of preference. The mean level of preference across

communication channels was relatively consistent across respondents within the low and average opinion leadership categories.

Within the control variables, respondent gender was a statistically significant predictors of formal meetings (B = -.61, p < .001, OR = 0.54), Facebook group (B = -.34, p < .001, OR = 0.71), and LinkedIn group (B = -1.07, p < .001, OR = 0.34). These results indicated that men were 2.34 (i.e. 1/0.34) times more likely to select using a LinkedIn group, after controlling for all other variables, than women. Respondent age was found to be a negative predictor across all communication channels indicating the older a respondent was the less likely they were to use communication channels.

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Table 2

Logistic Regression of Preferred Communication Channel on Demographic and Professional Characteristics

Dedicated Web		Formal Meetings		Informal		LinkedIn Group		
	Page		C C		Meetings			_
Predictor		OR		OR		OR		OR
Gender	-0.07	0.93	-0.61***	0.54	-0.15	0.86	-1.07***	0.34
Age	-0.01*	0.99	-0.01*	0.99	-0.03***	0.98	-0.03***	0.97
Opinion Leadership	0.31***	1.36	0.13**	1.14	0.32***	1.37	0.12*	1.12
Constant	0.34	1.41	0.69*	1.99	0.22	1.25	1.41***	4.08
Chi-square	55.87***		72.80***		125.84***		286.16***	
df	3		3		3		3	
-2 log likelihood	3460.54		3990.15		4059.54		3676.39	
Cox and Snell pseudo R^2	0.02		0.02		0.04		0.09	
Sample size	3040		3018		3026		2996	

Note. OR = odds ratio.

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

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Table 2 (Continued)

Logistic Regression of Preferred Communication Channel on Demographic and Professional Characteristics

	Facebook Group		Twitter		Conference Calls		Other		
Predictor		OR		OR		OR		OR	
Gender	-0.34***	0.71	-0.05	0.96	-0.01	0.99	-0.46	0.63	
Age	-0.02***	0.98	-0.01	0.99	-0.05***	0.95	0.02	1.02	
Opinion Leadership	0.03	1.03	0.11*	1.12	0.16*	1.18	0.40*	1.49	
Constant	0.34	1.40	-1.22***	0.30	0.18	1.20	-4.15***	0.02	
Chi-square	46.00*	46.00***		8.08*		135.12***		8.13*	
df	3		3		3		3		
-2 log likelihood	3788.22		3332.60		2421.34		288.26		
Cox and Snell pseudo R^2	0.02		0.00		0.05		0.02		
Sample size	2963		2965		2928		357		

Note. OR = odds ratio. * *p* < .05, ** *p* < .01, *** *p* < .001



Figure 1. Percentage of Preferred Communication Channel by Level of Opinion Leadership

Conclusions, Discussion, and Implications

The results of the study revealed agricultural opinion leaders have clear communication channel preferences and that those preferences were typically predicted by their level of opinion leadership. Overall, respondents preferred a dedicated web page or blog, followed by formal and informal meetings. Respondents identified conference calls and Twitter as the least preferred communication channels amongst the provided options. Level of opinion leadership was a positive, statistically significant predictor of all communication channels with the exception of a Facebook group.

Communication Channel Preferences

The results of this study were inconsistent with previous research finding cattle producers preferred to receive information through newsletters and magazines the most, and through web sites the least (Vergot et al., 2005). Specifically, across opinion leaders, there was the strongest preference for receiving information from a dedicated web page or blog. There may be several explanations for this difference. With almost a decade between studies the need for more contemporary communication channel preferences is evident. There were several communication channels examined in this study that were non-existent at the time of the first study. Additionally, the audience for the previous study was not specifically opinion leaders. Without a central communication role within their network, the cattle producers surveyed may have different information needs than those of the opinion leaders specifically targeted in the current study.

The preference for observations of other ranchers identified by Vergot et al. (2005) is consistent with the current study's finding regarding an interest in formal and informal meetings.

It would appear that while communication channel options may change, a persistent preference for interpersonal interaction remains. These findings are consistent with Rogers' (2003) description of opinion leaders, specifically, such individuals tend to be more informed and innovative than their peers; however, they are not necessarily innovators. The lack of preference for emergent and quasi-emergent communication channels would tend to support this perspective.

There are several implications and recommendations associated with these findings. First, researchers and practitioners need to continue to update and validate the available, and preferred, channels for communicating with opinion leaders. It is highly likely that new communication channels will emerge (for example Instagram). What might have been considered emergent in 2005 (web sites) were considered quasi-traditional for the current study. Similar maturation within the list of communication channels used in this study would be expected over time. Consequently, replication studies are recommended to validate and refresh associated findings. Second, given the results of the study, practitioners would be advised to direct the majority of the communication efforts towards dedicated web pages or blogs and meetings, both formal and informal, to communicate with agricultural opinion leaders. Effectively locating and engaging opinion leaders can yield significant benefits from a change and communication perspective (e.g. Kelly et al., 1991; Rogers, 2003), these results provide meaningful guidance on how to communicate with this audience most effectively (Rumble & Buck, 2013).

Level of Opinion Leadership and Communication Channel Preference

Although research within the theoretical context of uses and gratifications has been conducted previously (Lev-On, 2012; Okwu & Daudu, 2011), this is the first empirical study that has examined communication channel preferences of agricultural opinion leaders (Ruggiero, 2000). Furthermore, unlike previous studies that focused on individuals needs being satisfied through the consumption of various forms of media, this study was focused on how a particular need may predict communication channel preference.

The results indicated that level of opinion leadership can serve as an appropriate need from which to predict communication channel preference. These findings are consistent with the theory of Uses and Gratifications (Herzog, 1940), wherein opinion leadership may serve as a conceptual hybrid of Katz et al.'s (1973) cognitive and integrative needs, combining the need for acquiring information as well as increasing credibility and status. From these results one may infer that individuals may prefer communication channels for a variety of reasons, and frequently these reasons may not fit clearly within preexisting taxonomies. Therefore there is a need to investigate additional antecedents of channel preference without being constrained by historical classifications of needs.

According to Lazarsfeld et al. (1948) one of the defining characteristics of an opinion leader is their increased exposure to information relative to their peers. The study findings are consistent with this definition and observable in the positive predictive relationship between opinion leadership and channel preference. Specifically, as opinion leadership goes up the odds of having a preference for a particular channel also increases. These results would indicate that those with the highest levels of opinion leadership are going to be more open to, and engaged in, a diversity of communication channels.

Differences between levels of opinion leadership were further supported by the examination of low, average, and high opinion leaders. In particular, there appear to be observable distinctions between the categories of opinion leaders, specifically in regards to high opinion leaders. An implication from these findings is that in order to reach high opinion leaders, a dedicated web page or blog would be suggested. Additionally, high opinion leaders are likely to have a stronger preference for informal meetings than low or average opinion leaders. This finding is noteworthy when juxtaposed with the relative consistency across all three categories within the formal meeting channel. Practitioners and educators would be advised to provide communication

through a variety of channels; however, a dedicated web page or blog supplemented with informal meetings may result in the greatest efficacy, especially when targeting high opinion leaders.

Limitations and Recommendations

While several research contributions and implications for practice are associated with this study (Ruggiero, 2000), a number of limitations must also be acknowledged. Specifically, scholars caution that studies examining the uses and gratifications of an audience by self-reported typologies, attitudes, and lifestyle variables may be limited and suggest behavioral observation as the ideal measure (Rosenstein & Grant, 1997). Risks associated with this limitation were mitigated by selecting an existing measure that had been previously established as valid with the population of interest (Ary et al., 2010).

A second limitation was the communication channel options provided to participants. Although the list provided a diversity of options, it is important to acknowledge that this list was not all-inclusive; for example, there are several media channels omitted (e.g. radio, newspaper, and television). To mitigate the risks associated with this limitation there was a dedicated effort not to extend results or recommendations beyond the observed data. For example, there is a limitation associated with the interpretability of results associated with the current study relative to those of Vergot et al. (2005). Specifically, the use of different potential communication channel options presented to respondents. Future research is recommended to include all communication channels options associated with both the current study, and the previous Vergot et al. (2005) research, to further investigate communicational channel preferences within different populations.

As a recommendation for research, additional studies are suggested to verify the results, as well as to explore alternate needs that may be used within a Uses and Gratifications framework. Additionally, future research is encouraged to examine how opinion leaders are actively using communication channels to receive information. For example, an evaluation of the use and efficacy of interactive websites and Facebook pages in combination with conference calls might illuminate not only preferred channels, but also an appropriate combination of channels to maximize value.

From a practical perspective it is recommended that the preferences identified be leveraged when making communication channel decisions. Specifically, web pages and meetings are most preferred while Twitter, conference calls, and other communication channels are least preferred. Finding the appropriate balance between channel innovativeness and efficacy should be tested based on intended outcomes and audience. Additionally, this study illuminates the importance of clearly defining an intended audience. Although opinion leaders are differentiated from nonopinion leaders within their networks there are additional levels of opinion leadership that may warrant consideration.

In summary, the findings reported offer key insights into the communication channel preferences of agricultural opinion leaders. A large sample size strengthens the interpretation of results and associated discussion within the context of acknowledged limitations. Several contributions were made regarding the nature of opinion leaders, Uses and Gratifications, and communication channel preferences from a literature perspective. Additionally, numerous observations were made that have implications for practice, including specific audience preferences and recommendations.

References

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

- Blumler, J. G. (1985). The social character of media gratifications. In K. E. Rosengren, L. A. Wenner, & P. Palmgreen (Eds.), *Media gratifications research: Current perspectives* (pp. 41-59). Beverly Hills, CA: SAGE
- Boone, K., Meisenbach, T., & Tucker, M. (2000). *Agricultural communications changes and challenges*. Ames, IA: Iowa State University Press.
- Burt, R. S. (1999). The social capital of opinion leaders. *Annals of the American Academy of Political and Social Science, 566*, 37-54.
- Chan, K. K., & Misra, S. (1990). Characteristics of the opinion leader: A new dimension. *Journal* of Advertising, 19(3), 53-60. doi: 10.1080/00913367.1990.10673192
- Childers, T. L. (1986). Assessment of the psychometric properties of an opinion leadership scale. *Journal of Marketing Research*, 23(2), 184-188.
- 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.
- Doerfert, D. L. (Ed.) (2011). National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.
- Edmunds, A., & Morris, A. (2000). Problem of information overload in business organisations: A review of the literature. *International Journal of Information Management, 20*(1), 17-28. doi: 10.1016/S0268-4012(99)00051-1
- Herzog, H. (1940). Professor quiz: A gratification study. In P. F. Lazarsfeld (Ed.), *Radio and the printed page* (pp. 64-93). New York: Duell, Sloan and Pearce.
- IAPAL. (2013). IAPAL directory. Retrieved from http://karlprogram.com/resources/iapaldirectory/
- Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Utilization of mass communication by the individual. In J. G. Blumler, & E. Katz (Eds.), *The uses of mass communications: Current perspectives on gratifications research* (pp. 20). Beverly Hills, CA: SAGE
- Katz, E., Gurevitch, M., & Haas, H. (1973). On the use of the mass media for important things. *American Sociological Review*, 38(2), 164-181.
- Kelly, J. A., St. Lawrence, J. S., Diaz, Y. E., Stevenson, L. Y., Hauth, A. C., Brasfield, T. L., Kalichman, S. C., Smith, J. E., & Andrew, M. E. (1991). HIV risk behavior reduction following intervention with key opinion leaders of population: an experimental analysis. *American Journal of Public Health*, 81(2), 168-171.
- 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

- Lazarsfeld, P., Berelson, B., & Gaudet, H. (1948). *The people's choice* (2nd ed.). New York: Columbia University Press.
- Lev-On, A. (2012). Communication, community, crisis: Mapping uses and gratifications in the contemporary media environment. *New Media Society*, 14(1), 98-116. doi: 10.1177/1461444811410401
- Licht, M. A. R., & Martin, R. A. (2007). Communication channel preferences of corn and soybean producers. *Journal of Extension* [On-line], 45(6), Available at: http://www.joe.org/joe/2007december/rb2p.shtml
- Lin, C. A. (1999). Uses and Gratifications. In G. Stone, M. Singletary, & V. P. Richmond (Eds.), *Clarifying communication theories: A hands-on approach* (pp. 199-208). Ames, IA: Iowa State University Press.
- 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
- Littlejohn, S. W. (2002). *Theories of human communication* (7th ed.). Belmont, CA: Wadsworth/Thomas Learning.
- Maslow, A. H. (1970), *Motivation and Personality*, 2nd ed. New York: Harper & Row Publishers, Inc.
- McQuail, D. (2010). *McQuail's mass communication theory* (6th ed.). Thousand Oaks, CA: SAGE.
- Nisbet, M. C., & Scheufele, D. A. (2009). What's next for science communication? Promising directions and lingering distractions. *American Journal of Botany*, *96*(10), 1767-1778.
- Nisbet, M. C., & Kotcher, J. E. (2009). A two-step flow of influence? Opinion-leader campaigns on climate change. *Science Communication*, *30*(3), 328-354.
- Okwu, O. J., & Daudu, S. (2011). Extension communication channels' usage and preference by farmers in Benue State, Nigeria. *Journal of Agricultural Extension and Rural Development*, 3(5), 88-94. Retrieved from http://academicjournals.org/JAERD
- Peng, C. J., Lee, K. L., & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *Journal of Educational Research*, *96*, 3–14.
- Rogers, E. M. (2003). Diffusion of innovations (5th ed. ed.). New York, NY: Free Press.
- Rose, P., & Kim, J. (2011). Self-monitoring, opinion leadership and opinion seeking: a sociomotivational approach. *Current Psychology*, 30(3), 203-214.
- Rosenstein, A. W., & Grant, A. E. (1997). Reconceptualizing the role of habit: A new model of television audience. *Journal of Broadcasting & Electronic Media*, 41(3), 324-344.
- Rossi, P. H., Lipsey, M. W., & Freeman, H. E. (2004). *Evaluation: A systematic approach*. Thousand Oaks, CA: Sage.

- Ruggiero, T. E. (2000). Uses and gratifications theory in the 21st century. *Mass Communication & Society, 3*(1), 3-37. doi:10.1207/S15327825MCS0301_02
- Rumble, J. N., & Buck, E. B. (2013). Narrowing the farm-to-plate knowledge gap through semiotics and the study of consumer responses regarding livestock images. *Journal of Applied Communications*, 97(3), 57-70.
- Smock, A. D., Ellison, N. B., Lampe, C., Wohn, D. Y. (2011). Facebook as a toolkit: a uses and gratification approach to unbundling feature use. *Computers in Human Behavior*, 27, 2322-2329.
- Sparks, P., & Shepherd, R. (1994). Public perceptions of food-related hazards: Individual and social dimensions. *Food Quality and Preference*, 5(3), 185-194. doi: 10.1016/0950-3293(94)90034-5
- Telg, R., & Irani, T. A. (2012). *Agricultural communication in action: A hands-on approach*. Clifton Park, NY: Delmar, Cengage Learning.
- Valente, T. W., & Davis, R. L. (1999). Accelerating the diffusion of innovations using opinion leaders. *The Annals of the American Academy of Political and Social Science*, 566(1), 55-67. doi: 10.1177/000271629956600105
- Vergott III, P., Israel, G., & Mayo, D. E. (2005). Sources and channels of information used by beef cattle producers in 12 counties of the Northwest Florida Extension District. *Journal of Extension* [On-line], 43(2), Available at: http://www.joe.org/joe/2005april/rb6.shtml
- W.K. Kellogg Foundation. (2000). *The legacy of the ag leadership development program: Rich heritage cultivates future opportunities.* (No. 534).W.K. Kellogg Foundation.
- Weatherell, C., Tregear, A., & Allinson, J. (2003). In search of the concerned consumer: UK public perceptions of food, farming and buying local. *Journal of Rural Studies*, *19*(2), 233-244. doi:10.1016/S0743-0167(02)00083-9

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