

An Investigation of Wheat Producer's Perceived Source Credibility

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Introduction/Need for Innovation

With the increasing need to feed more people with less resources, an ever-changing climate, and fast-changing technology, wheat producers are faced with the continuous pressure to adopt conservation practices (Feldman & Ingram, 2009; Vocke & Ali, 2013). Due to the overwhelming amount of information, producers will look to sources whom they have developed interpersonal, trusted relationships to meet their information needs (Moody, 2018; Phiri et al., 2019; Ranjan et al., 2019). Identifying the sources that wheat producers trust to meet their information needs and the characteristics that make a source credible will allow researchers, Extension educators, and industry experts to develop more effective communication and outreach strategies targeted at wheat producers (Feldman & Ingram, 2009).

Theoretical Framework

In this study, we examined the factors associated with wheat producers' perceptions of source credibility, drawing on previous literature on credibility to create a theoretical framework for this research. Some of the earliest scholarship on credibility defined it as expertise, trustworthiness, and goodwill. More recently, Hunt and Wald (2020) expanded on extant definitions by testing a novel model of source credibility that examined different ways to operationalize goodwill. Using this model, we define source credibility as: understanding, integrity, concern, and trust. In addition, we define scientific goodwill as: perceived bias and motivation. *Understanding* refers to the awareness and knowledge that an individual or group of individuals possesses of a topic (Hunt & Wald, 2020). *Integrity* is defined as the extent to which scientific research findings are influenced by the best available scientific evidence (Gauchat et al., 2016; Hunt & Wald, 2020). *Concern* refers to the extent to which scientists' research findings are influenced by concern for the best interests of the public (Horton et al., 2016; Hunt & Wald, 2020). Hunt and Wald (2020) include perceived *trust* as a component of source credibility and define it as one's willingness to trust scientists to give full and accurate information about scientific findings. The second latent factor, *goodwill*, is defined as the degree to which an individual or group of individuals is perceived as having bias or other-oriented motives (Hunt & Wald, 2020; McCroskey & Teven, 1999).

Methods

Our study was funded by Natural Resources Conservation Services, U.S. Department of Agriculture under Grant Number #NR183A750008G013, and the data presented here are part of a larger, multi-year research study. We used a cross-sectional survey design. A panel of experts established face and content validity of the survey instrument. Researcher bias was minimized (Frankel et al., 2019) through self-administration and the utilization of previously developed survey questions that had been evaluated to reliability and validity (Coberley et al., 2020; Hunt & Wald, 2020). Participants were U.S. wheat producers whose ages were greater than 24. The final survey included 38 questions. There were six questions that measured perceived source credibility and scientific goodwill of information sources. Section seven of the instrument asked participants to select the information source they believed was the most credible based on the Hunt and Wald's four components of source credibility and two components of scientific goodwill. Participants selected from a list of the following information sources: researchers, extension professionals, industry professionals, government agencies, local experts/opinion leaders, other producers, personal experience, and 'I do not obtain information about this practice/not applicable.' We calculated frequencies and

percentages for each information source within each component of credibility and scientific goodwill. We distributed the survey digitally using a modified version of Dillman's technique (2014) and used a convenience sample due to the nature of our target audience. To that end, we asked 27 wheat and grain associations to distribute the survey via email lists and newsletters, and 10 agreed to distribute the survey to their members.

Results

Compared to other sources, the largest number of participants selected Extension professionals to have integrity about soil health practices ($n = 19$; 41.30%), to trust the most when delivering information about soil conservation practices ($n = 18$; 39.13%), and to have scientific goodwill ($n = 20$; 43.49%). Participants also frequently cited themselves ($n = 15$; 32.61%) or a source of information who had personal experience as the source most likely to have concern for the best interest of the information seeker (e.g., another farmer; See Table 1).

Table 1

Participants Perceived Credibility of Information Sources (N = 46)

Information Source	Underst.		Integrity		Concern		Trust		Goodwill	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Ext. Professionals	13	28.26	19	41.30	12	26.08	18	39.13	20	43.49
Researchers	11	23.92	4	8.70	2	4.35	2	4.35	1	2.17
Personal Experience	8	17.39	9	19.57	15	32.61	10	21.74	12	26.08
Other Producers	6	13.04	7	15.22	5	10.87	9	19.57	8	17.39
Local Experts	4	8.70	5	10.87	5	10.87	5	10.87	3	6.52
Industry Professionals	2	4.35	1	2.17	2	4.35	1	2.17	2	4.35
Government Agencies	1	2.17	—	—	5	10.87	1	2.17	—	—

Conclusions

Results suggest that Extension educators remain a critical avenue for interpersonal communication with agricultural producers. These results differ from other studies that have found farmers more confident in agribusiness sources and input suppliers. It is possible that these results vary due to differences in language and framing used in this study. Alternatively, it is possible that Extension professionals could act as change agents to encourage producers to implement a new idea or innovation in soil health conservation (Rogers, 2003).

Implications/Recommendations/Impact on Profession

The study emphasizes the potential for differences in agricultural stakeholders' perceptions of source credibility, based on source type. More producers identified Extension educators as credible than those selecting government sources. The majority of funding for agricultural practices comes from government sources. Thus, government agencies may need to work with other sources to distribute information and engage agricultural stakeholders in efforts to encourage soil health practices. Additionally, respondents indicated an interest in engaging with sources with extensive experience implementing soil conservation practices. Efforts to address this need could include extension-led opportunities such as field days, trade shows, tailgate talks, product demonstrations, farm visits and tours, and farmer education programs.

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