

Perceptions of Barriers and Opportunities in Agricultural Production: Applying the Community Capitals Framework to Mississippi Farmers

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Abstract

Effective communication is fundamental to agricultural sustainability, shaping how farmers and agricultural stakeholders exchange knowledge, navigate challenges, and strengthen rural systems. This study investigates how agricultural producers and professionals perceive the barriers and opportunities influencing agricultural production through the Community Capitals Framework (CCF), emphasizing the communicative processes that connect economic, environmental, and social systems. Using a qualitative focus group design, the research engaged 54 participants in the Mississippi State Master Irrigator Program—an applied training initiative focused on water-use efficiency and farm profitability. Four focus groups were conducted involving farmers, farm managers, agricultural consultants, Extension professionals, researchers, and graduate students. Abductive thematic analysis combined inductive theme generation with deductive coding guided by the seven CCF capitals: natural, human, social, cultural, political, built, and financial. Findings reveal that agricultural production is viewed as an interconnected system in which communication acts as both catalyst and constraint. Participants emphasized barriers within human and financial capitals, including labor shortages, generational turnover, rising input costs, and limited credit access. These challenges were described as cascading into other capitals, restricting technology adoption and hindering long-term farm planning. Weakening built capital—such as deteriorating rural roads, insufficient broadband, limited service availability, and declining community amenities—further reduced operational viability and community cohesion. Despite these barriers, participants identified strong social and natural capitals as key sources of resilience. Trust-based relationships, peer networks, and collaborative engagement with Extension emerged as essential communication channels for learning, innovation, and problem solving. Natural resources, particularly water and soil quality, were viewed as enduring strengths; meanwhile, recent advances in precision irrigation and automation were seen as credible pathways for adaptation. These findings reinforce that agricultural resilience does not rest on a single capital but requires integrated support and intentional communication across all seven capitals. Results demonstrate the value of the CCF as a diagnostic tool for agricultural communication and rural development. By revealing how communication mediates relationships among individuals, institutions, and environmental conditions, this study highlights opportunities for communicators, educators, and policymakers to strengthen the relational infrastructure that underpins adaptive agricultural systems.

Keywords: Community Capitals Framework, rural resilience, Extension, qualitative research

Listening to the Profession: Insights from an Industry Needs Assessment to Inform Curriculum for a New Life Sciences Communication Major

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Abstract

The agricultural and life sciences communication profession is evolving in response to global agricultural shifts, rapid technological advancements, and heightened sociopolitical attention to issues such as food security and public health. These changes demand professionals who are not only proficient in translating complex scientific concepts but also effective at combating misinformation, engaging diverse audiences across emerging communication platforms, and using digital tools. Higher education institutions must therefore ensure that curricula remain relevant, equipping graduates with both foundational and emergent skills. This study sought to identify industry expectations and professional competencies to inform the design of a new undergraduate major in life sciences communication at [University]. A qualitative research design was employed, guided by the U.S. Department of Education's Employability Skills Framework. We conducted semi-structured interviews with agricultural and life sciences communication professionals representing organizations across the Mid-Atlantic region. Our participants had varied professional roles and experiences ranging from a few months to over a decade in agricultural and life sciences communication industries. We transcribed, coded, and thematically analyzed the interviews. Findings revealed three broad domains of skills essential for early-career success: applied knowledge, effective relationships, and workplace skills. Employers emphasized the importance of strong writing and critical thinking, while also highlighting the need for visual communication, storytelling, digital fluency, and adaptability. Participants underscored the central role of experiential learning, particularly internships, in bridging the gap between academic preparation and workplace demands. Interpersonal qualities such as teamwork, flexibility, and professionalism emerged as equally critical as technical competencies. Findings also pointed to growing expectations for systems thinking and ethical use of artificial intelligence in communication practices. These insights highlight the necessity for curricula that balance disciplinary knowledge in agriculture and communication, integrate experiential learning opportunities, and cultivate both foundational and emerging competencies. Beyond informing the development of the new major at [University], this study contributes to broader conversations on aligning agricultural and life sciences communication education with workforce expectations in a dynamic and complex communication environment. We recommend that scholars design and evaluate teaching strategies that promote AI literacy, systems thinking, and storytelling skills, drawing on experiential learning frameworks such as Kolb's cycle of thinking, doing, feeling, and reflecting. Further research could also examine strategies for preparing students to work effectively in communication teams, where collaboration often

presents challenges. Experimental, observational, and interview-based studies could explore how capstone courses and other experiential projects might be structured to cultivate teamwork skills in agricultural and life sciences communication contexts.

Keywords: agricultural communication, employability skills, curriculum development, experiential learning, life sciences communication

Narrative Communication: Engaging Low-Income Neighborhoods in Sustainable Urban Agriculture

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Abstract

Sustainable urban agriculture (UA) has increasingly been promoted as a strategy for addressing food insecurity, building community resilience, and fostering local empowerment in low-income urban neighborhoods. Yet, how residents emotionally and cognitively engage with UA narratives remains underexplored. This study qualitatively examines how low-income urban neighborhood residents in Columbus and Youngstown, Ohio, engage with sustainable UA narratives, focusing on the interplay between narrative transportation, character identification, and emotional engagement. Drawing on the Circumplex Model of Affect (Russell, 1980) and the Transportation-Imagery Model (Green & Brock, 2002), we analyze participants' affective and reflective responses to three urban farmers' narratives. Findings suggest that narrative transportation is strengthened when participants' expectations match narrative context(s). Also, identification is higher when participants shared geographic similarities with the character. Emotional engagement with varying intensity and tone, ranging from high-arousal (e.g., hope and pride) to low-arousal (e.g., productivity and acknowledgment), emerged as a key mechanism linking identification to deeper immersion and reduced counterarguing. Also, negative emotions such as frustration with systemic barriers heightened attentional focus and opened pathways for collective efficacy and solution-oriented thinking. By illuminating how low-income residents process and respond to UA narratives, this study highlights the potential of narrative-based communication strategies to cultivate support for sustainable food systems and advance equity in UA.

Keywords: Urban agriculture, Narrative transportation, Low-income neighborhoods, Character Identification, Emotional engagement

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An Emerging Program and Curriculum Development Model for Agricultural Science Communication

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Abstract

Agricultural science communication (ASC) plays a vital role in addressing and translating complex scientific issues in food systems. While agricultural communication and science communication increasingly share research priorities and practical concerns, few studies have examined their convergence from a curricular perspective. This study addresses that gap by exploring points of alignment between the two disciplines to inform the development of an ASC academic program, guided by the Curriculum Development Model. A scoping review was conducted to examine relevant programmatic and curriculum development literature in agricultural and science communication. The review drew from two major academic databases and three leading journals in the field, focusing on literature published between 2000 and 2023. The analysis revealed four major clusters of competencies that are essential to the development of a robust ASC curriculum. These include foundational communication skills such as verbal, written, and oral presentation abilities; applied media and public relations competencies including journalism, photography, and design tools; professionalism, ethics, and strategic thinking to support public trust and engagement; and message development and execution skills to effectively tailor and deliver content across diverse audiences and platforms. A set of recommended courses was developed to form the core of an ASC program. These include foundational instruction in ASC, writing and reporting for agricultural audiences, visual media and design, public relations, digital agriculture communication, strategic and crisis communication, storytelling and presentation, as well as a seminar course to provide students with exposure to real-world industry practices and career pathways.

Keywords: scoping review, program development, science communication pedagogy, agricultural communication pedagogy

Title

Exploring Response to Scientific Messaging about Gene-Edited Pigs Using Music as a Hedonic Cue

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Abstract

Public understanding of emerging scientific innovations can be influenced by ethical, emotional, and cultural concerns, which complicate how people interpret their benefits. Therefore, appealing to the emotional as well as logical side of decision-making may assist when communicating about innovations that could cause concern. The use of gene editing in agriculture is an example, including the recently developed Porcine Reproductive and Respiratory Syndrome (PRRS)-resistant pig. Music has been shown to garner attention as a form of hedonic stimuli and may assist in emotionally connecting someone to scientific information. This study examined how background audio could influence hedonic response, elaboration, and recall of a scientific message about the PRRS-resistant pig on Instagram. Using an experimental design, 1,000 U.S. respondents were randomly assigned to view an Instagram-style reel accompanied by one of five audio treatments: rap music, pop music, country music, AI-generated voiceover, or no sound. Hedonic response, elaboration, and recall were measured using validated scales and analyzed using a one-way ANOVA and Tukey's post hoc tests. Results indicated country and pop music produced the highest hedonic responses, while the AI-generated voiceover and country music resulted in the highest elaboration. Rap music led to the highest recall scores. The findings implied music's potential as an effective communication tool in digital settings. Agricultural communicators seeking to improve public understanding of scientific innovations, especially on social media, can include specific music genres with their messaging to elicit high hedonics, increase elaboration, and enhance recall.

Keywords: gene editing, music, PRRS-resistant pigs, hedonics, elaboration, recall

Communication Catalysts: A study seeking to understand how certified crop advisors communicate BMPs to farmers

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Abstract

Certified Crop Advisors (CCAs) across North America educate and advise farmers about emergent technology, pest management concerns, and supply chain sustainability. To continue improving environmental outcomes and sustaining agricultural systems, CCAs and other agricultural advisors play a critical role in best management practices (BMP) communication. Yet, the communication about BMPs and the implementation of BMPs remain complex and often ineffective due to a variety of social, cognitive, and structural barriers. Additionally, despite CCAs viewing themselves as trustworthy information brokers for their clients, there is a gap that exists in fully understanding their perception, knowledge, and trust of the information sources they use to educate their agricultural producer clients. The purpose of this study was to understand how CCAs in the southeastern United States, as opinion leaders for farmers, communicate about best management practices for soil nutrient management. This study used a survey to understand the barriers, benefits, and social norms of CCAs related to communicating BMPs with their farmer clients. The survey was sent to CCAs in Florida, Alabama, Georgia, and South Carolina based on a list from the national CCA organization. The analysis used responses collected in Fall of 2024 ($n = 116$). Respondents advised in states across the southeast with clientele ranging from 1 to 600. Crops included small grains, turf, orchard crops, fruits and vegetables, tobacco, and forages. Results indicated only 31% ($n = 34$) of respondents use state BMP manuals often or always. Most participants indicated they were very concerned, concerned, or somewhat concerned (66%; $n = 72$) about the accuracy and reliability of current BMP information. Seventy-three percent ($n = 80$) indicated they strongly or somewhat agreed that their clients trust them to make conservation practice recommendations. Of the ways used to share information with their clients, respondents indicated face-to-face as the primary method (89%; $n = 103$), followed by text and phone calls (both 73%; $n = 85$), email (66%; $n = 76$), and social media (6%; $n = 5$). Time constraints were the most common barrier (55%; $n = 64$) faced by crop advisors. Opportunities exist to reduce barriers for CCAs in their communication with farmers about BMPs. Future research should investigate ways to streamline user-facing information sources, such as university Extension websites, that are tailored toward the interactive nature of

CCAs. This will not only create unique ways for Extension staff to create new crop advising content but also entice CCAs to use these sites as the go-to resource for working with their clientele.

Keywords: Best Management Practices (BMPs), certified crop advisors, community-based social marketing, opinion leaders

Rhetoric and reception: Communicating Best Management Practices (BMPs)

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Abstract

Best Management Practices (BMPs) are evidence-based strategies designed to help agricultural producers optimize productivity while minimizing environmental impact. Despite their scientific foundation and policy support, BMP adoption remains inconsistent across regions and stakeholder groups. This applied qualitative study investigates how BMP communicators (Extension agents, specialists, and government agency employees) perceive and navigate the rhetorical, semiotic, and messaging challenges inherent in BMP communication. Guided by a conceptual framework integrating Communication Accommodation Theory (CAT), Audience Design Theory, and Semiotics, the study explores how language, audience perception, and symbolic meaning shape the reception and implementation of BMPs. Using a phenomenological approach, researchers conducted two focus groups and four interviews with 18 BMP regional communicators. In addition to answering questions about their experiences with BMP communication, participants engaged in a semantic card sorting activity to assess stakeholder comprehension of 41 BMP-related terms. Data were analyzed using constant comparative methods and descriptive statistics. Findings revealed four key themes: 1) BMPs carry multiple, sometimes conflicting meanings depending on context and audience; 2) communicators frequently adapt language to align with stakeholder heuristics and expectations; 3) misalignment and confusion in messaging erode trust between; and 4) scientific jargon and acronyms complicate accessibility and hinder message clarity. The card sorting activity reinforced these findings, with 97.56% of terms identified as potentially problematic by at least one participant. Terms such as “digital agriculture,” “proximal sensing,” and “sequestering agents” were consistently flagged as confusing. Only “scouting” was unanimously deemed unproblematic. These results underscore the importance of comprehensibility in BMP messaging and the need for communicators to bridge the gap between scientific precision and stakeholder understanding. The study concludes that effective BMP communication requires more than factual accuracy—it demands rhetorical sensitivity, audience awareness, and intentional language design. Participants demonstrated adaptive communication strategies aligned with CAT and Audience Design Theory, tailoring messages to resonate with diverse stakeholder groups. However, the persistence of jargon and symbolic misalignment suggests a need for institutional support, including training in adaptive communication and the development of plain-language resources. Implications include the creation of a stakeholder-friendly glossary of BMP terms, increased training for BMP communicators in audience-centered communication, and the integration of plain-language summaries to enhance message clarity. Future research should explore stakeholder perspectives

directly, assess the long-term impact of communication clarity on BMP adoption, and evaluate the self-efficacy of BMP communicators in using adaptive strategies.

Keywords: Best management practices, qualitative, rhetoric, communication accommodation, audience design, semiotics

Tick Tactics: Extension Agents, Education, and the Bite Behind Belief

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Abstract

Tick-borne diseases are a growing public health concern in the southeastern United States, where the prevalence of ticks such as the lone star and Asian longhorned tick continue to rise.

Extension professionals, particularly those working in agriculture and natural resources, are frequently exposed to ticks and are uniquely positioned to serve as opinion leaders in their communities. This study explored Extension professionals' ability to educate and communicate about ticks and tick-borne disease by examining their experiences, knowledge, concern, and information sources. Guided by the Health Belief Model and the concept of opinion leadership, this research surveyed 233 Extension professionals across six southeastern states.

Findings revealed that while most respondents rated themselves as moderately knowledgeable about tick-borne diseases, objective knowledge scores were lower, especially regarding emerging threats like the Asian longhorned tick. Concern levels were moderate across diseases such as Lyme disease and alpha-gal syndrome, despite high exposure and personal or community experience with tick-borne illnesses. Notably, 8.2% of respondents had been diagnosed with a tick-borne disease, and 76.8% knew someone who had. However, preventive behaviors were inconsistent—only a small percentage regularly used tick repellents or treated livestock for ticks. Information sources played a critical role in shaping perceptions. Extension websites, colleagues, and healthcare providers were the most frequently used and trusted sources, serving as key cues to action. Social media platforms were less trusted, despite their potential for broad reach. The study also found that professionals in rural areas and certain states, such as Florida, reported lower levels of concern, suggesting geographic and cultural influences on perceived risk.

The Health Belief Model helped explain these findings, particularly in terms of perceived susceptibility, severity, and barriers to action. Additionally, the role of Extension agents as opinion leaders was evident in their trusted status and communication practices. However, gaps in knowledge and concern may limit their effectiveness in promoting tick prevention.

Recommendations include targeted educational programming to increase awareness of emerging tick threats, promote consistent use of repellents, and enhance risk communication skills.

Empowering Extension professionals as health opinion leaders can strengthen community-level prevention efforts and improve public health outcomes related to tick-borne diseases.

Keywords: ticks, vector-borne disease, health belief model, opinion leadership, Extension agents

Civil Discourse about Cultivated Meats in Cattle Country?

Leveraging dialogic co-production to inform responsible innovation

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Abstract

Recent research calls for democratization of innovation highlighting the need for inclusion of diverse stakeholders in discussions about emerging technologies to meaningfully inform the development of these technologies, anticipate future social impacts, and inform governance. Cultivated meat is an emerging technology that could benefit from public dialogue due to its controversial status in the U.S. This study reflects the listening session of a two-day National Institutes of Standards and Technologies (NIST) Roadmapping workshop in Nebraska, a major beef producing state. We designed a listening session based on an enhanced dialogic co-production model, including an ice breaker exercise, mutual rule setting, context orientation, and a framing development exercise. Twenty-five stakeholders were recruited using intentional convenience sampling; this included farmers/cattle-ranchers, cultivated meat scientists/engineers, rural public(s), environmentalists, NGOs, state governance representatives, and social scientists. Stakeholders met together to discuss protein sustainability and the challenges and opportunities posed by cultivated meat innovation. We build on prior research design with the aim of answering the following research questions: (RQ1) What factors do stakeholders perceive have influenced sustainability of protein production in the last five to ten years? What have been the opportunities and challenges to sustainable protein production? (RQ2), What are stakeholders' perceptions of the opportunities and challenges posed by the development of cultivated meats?

Findings from qualitative, thematic analysis identified three themes characterizing the tensions, uncertainties, and possibilities afforded by the introduction of cultivated protein. Themes included 1) Sustainability as Innovation, 2) Negotiated Futures of Cultivated Meats (subthemes: Threat, Contested Future Partnerships, Socio-political Dependencies), and 3) Concerns for Public Perceptions about Protein Production. Participants tended to emphasize economic considerations for sustainability of protein production innovations, minimizing environmental or ethical considerations. Farmers/ranchers predominantly endorsed cultivated meat as a binary, wherein if cultivated meat production succeeded, conventional meat production was threatened. Comparatively, cultivated meat scientists, engineers, and NGOs predominantly saw the benefits of the technology - often promoting partnerships between conventional and cultivated meat industries. The potential for partnerships was contested. Participants agreed that to meet the positive promises of cultivated meats, socio-political factors would be determinant. There was consensus across all stakeholder groups that public perceptions were paramount in acceptance of conventional and cultivated meats and that current media was instrumental in misrepresenting both industries. We discuss the implications of using an enhanced dialogic co-production model for civil discussion of controversial issues to enhance more socially informed innovation and governance decisions.

Keywords: Dialogic Co-production, Framing, Innovation Communication, Responsible Innovation, Cultivated Meats

Consumers' Processing of Information about CRISPR-edited Pork Products

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Abstract

The U.S. Food and Drug Administration (FDA) has approved the use of CRISPR editing technology to create pigs resistant to the porcine reproductive and respiratory syndrome (PRRS). With these products on the precipice of commercialization, assessing consumer information seeking and processing behaviors for CRISPR-edited pork product information, is necessary to inform evidence-based communication strategies. Guided by the Risk Information Seeking and Processing (RISP) model, we examined the factors influencing how consumers process information about CRISPR-edited pork products ($N=2,006$). We applied the RISP model to examine how factors such as information sufficiency, sufficiency threshold, relevant channel beliefs, and perceived information gathering capacity across multiple channels, relate to U.S. consumers' information seeking, avoidance, and processing behaviors regarding CRISPR-edited pork. Respondents reported neutral information sufficiency on CRISPR-edited pork but a high sufficiency threshold, indicating they were open to learning about CRISPR-edited pork. They reported somewhat high information seeking and somewhat low information avoidance. Respondents engaged in relatively higher levels of systematic processing, compared to heuristic processing. Relevant channel beliefs were highest for social media, followed by news media, then Extension and interpersonal. Perceived information gathering capacity was highest for extension, followed by news media, social media, then interpersonal. Since respondents reported being open to learning about CRISPR-edited pork, we recommend scientists and communicators actively engage the public on this technology rather than shying away from engagement, as was seen with other biotechnologies in the past. To facilitate this engagement, communicators can leverage various channels, including science journalism through traditional media, social media, and other digital platforms, as well as practical, in-person engagements such as science talks and public outreach activities. Given the observed tendencies toward information seeking and low avoidance, continuous engagement could be particularly effective in building awareness, understanding, and trust. Since respondents expressed neutral feelings about the amount of information they felt they needed on CRISPR-edited pork, but reported a high threshold for feeling adequately informed, we recommend applying a modular communication approach for CRISPR-edited pork information dissemination, starting with simple explanations and building toward more technical details for those who desire them. This method, which organizes messages into distinct, self-contained units, offers flexibility and allows audiences to progressively engage with content at their own pace by focusing on one unit and completing it, before moving to the next. Given the prevalence of systematic processing, communicators should avoid oversimplifying messages and instead support content with scientific evidence, data visualizations, and citations. Additionally, this finding supports the need for deep cultural tailoring of messages, which incorporates an audience's underlying values, beliefs, and social norms, over surface-level tailoring. Communicators could tailor CRISPR pork information to address the psychographics (values, beliefs, and social norms) of specific audiences, rather than focusing solely on demographic characteristics. Finally, since perceived information gathering capacity was highest for Extension, communicators working on CRISPR-edited pork could ensure Extension professionals are equipped with the latest and most accurate information on gene-edited pork for dissemination to the public.

Keywords: Consumers, Evidence-based communication, RISP Model, CRISPR, Gene editing

Framing Urban Forests: Psychological and Communication Strategies to Motivate Tree-Planting Intentions

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Abstract

Urban heat islands (UHIs) pose serious threats to human health, energy systems, and environmental conditions as cities continue to grow. One opportunity to mitigate UHIs is through increased urban tree canopy coverage, but success depends on sustained individual and community level engagement in tree planting and maintenance. Several studies have documented the environmental and health benefits of urban trees, as well as the perceived positive impacts and barriers of urban forestry initiatives. However, less is known about how these factors interact and influence the effectiveness of communication strategies intended to engage residents in tree planting. This study developed a conceptual model that draws from existing urban forestry literature on psychological variables and integrates gain versus loss framing to further extend the model to include communication frames. Data collection for this project began in October 2025 and is ongoing. Respondents are being recruited through Qualtrics, using non-probability quota sampling for age, gender, and race. Data were analyzed using single-group structural equation modeling (SEM) with Bayesian estimation, a method appropriate for small samples and non-normal data, allowing estimation of full posterior distributions. The results indicated that perceived social impacts positively predicted intention and barriers had complex effects. The communication intervention did not produce a significant effect as compared to the control in this preliminary dataset, suggesting that visual elements, such as images of trees in neighborhoods, may have influenced participants more than textual framing. These findings provide initial insights for environmental and agricultural communication strategies, emphasizing the potential of combining psychological understanding with visual and textual framing to promote urban tree adoption.

Keywords: Communication, Framing Theory, Trees, Urban Forestry, Urban Heat

Panem et Circenses: Agriculture and Natural Resource Commodities and Governmental Control in Dystopian Societies in *The Hunger Games*

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Abstract

In 2008, Suzanne Collins released the first book in *The Hunger Games* trilogy, which revolved around Katniss Everdeen and her fight to survive the Hunger Games and life in the dystopian world of Panem. In this dystopian world, thirteen districts each specialize in a specific resource or commodity with varying perceived levels of importance by the central power of the Capitol. Framed by social semiotics, the purpose of this study was to explore agriculture and natural resource products in *The Hunger Games* and their importance and influence on security and government control of citizens in the districts of Panem. We utilized social semiotic thematic analysis to understand how the written word, visual depiction, and a variety of popular sources, such as interviews with Suzanne Collins, portrayed food insecurity, agriculture and natural resource commodities, and propaganda in the series. Findings in the major theme of government control illuminated aspects of oppressive control through unequal distribution of resources, the regulated dispersion of food, and the pervasive nature of media manipulation and propaganda in the dystopian world. Likewise, the major theme of the importance of agriculture and natural resource commodities showed the emergence of sub-themes of the perceived importance of resources, such as clothing, the value of food as a luxury versus the need for food to survive, and energy production throughout Panem. Based on the findings, we recommend comparing the current society to this popular dystopian series, including the newer prequel books and movie. We also suggest that agricultural communicators leverage this series to show how governmental policies can impact access to agricultural resources or simply impact agriculture in general. Moreover, since this series can appeal to a wide range of demographics, especially to those outside of the agriculture industry, agricultural communicators can use this series to bridge the gap between agriculture and natural resource issues in the real world to those in a popular series.

Keywords: Social Semiotics, Dystopian, Hunger Games, Agriculture, Food

Investigating Consumer Intention to Purchase CRISPR-Edited Pork: An Audience Segmentation Analysis

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Abstract

CRISPR gene-editing offers the potential to improve animal health and agricultural productivity, but consumer acceptance remains a key factor in its adoption. As gene-edited food products move closer to commercialization in the U.S., communicators need a clearer understanding of who is most receptive to these innovations to inform public engagement. This study examined U.S. consumer intention to purchase CRISPR-edited pork and identified distinct audience segments to inform communication strategies. A national survey of 2,006 adults assessed intention to consume CRISPR-edited pork as well as respondent demographic characteristics, including age, gender, education, income, political ideology, and area of residence. Data were analyzed using hierarchical and K-means cluster analyses to categorize respondents into stratified audience groups based on the purchase intention scores, followed by chi-squared tests to examine associations between demographics and cluster membership. Cluster analyses revealed three groups: low, medium, and high intention to consume CRISPR-edited pork. High-intention consumers were younger, urban, higher income, and represented both political polarities (very liberal and very conservative), while low-intention consumers were older, female, and politically conservative or apolitical. The medium-intention cluster included individuals with lower education levels and moderate or apolitical views. Demographic factors including gender, age, education level, annual income, race/ethnicity, and area of residence (rural, urban, suburban) were significantly associated with cluster membership, highlighting differences in receptiveness to gene-edited foods. These findings demonstrate that consumer perceptions are diverse and suggest that communication strategies should be tailored to specific audience segments. Overall, audience segmentation provides a practical framework for understanding consumer behavior and designing effective strategies to increase informed acceptance of CRISPR-edited foods, which may support smoother market introduction and future adoption of similar agricultural biotechnologies.

Keywords: gene-editing, CRISPR, pork, Theory of Planned Behavior, cluster analysis

Exploring Servicemember Agricultural Vocation Education (SAVE)'s Online Presence: A Qualitative Content and Sentiment Analysis

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Abstract

With a growing number of veterans transitioning to civilian life and seeking careers in agriculture, the demand for training programs is rising. Research on the marketing efforts of veteran-focused agricultural training programs remains limited, particularly in the case of the Servicemember Agricultural Vocation Education (SAVE) program. Exploring how veteran-focused agricultural training programs are marketing their organization on social media to veterans can provide insight into how to better efforts to be more effective. This study aimed to examine the SAVE program's online presence and marketing efforts by conducting a qualitative content analysis design, paired with a sentiment analysis conducted through Mentionlytics. Posts from SAVE program's Facebook page were collected, spanning the period from January 1 to October 22, 2024. These posts were examined for their visuals and captions. Codes were derived from both imagery and captions, allowing for the identification of recurring themes. The results of the study revealed that SAVE program's current social media marketing efforts primarily target a male demographic, while also striving to communicate the organization's values through its captions. While SAVE program's incorporated engagement strategies into their posts when promoting events, there is an opportunity to increase engagement by tagging collaborators and partners in the captions. These collaborations can increase awareness of both the events and [Blinded Program] itself. The results also indicated that most of the sentiment surrounding online content [Blinded Program] was either positive or neutral. Future research should explore additional social media platforms where the SAVE program is active, such as X (Twitter), Instagram and YouTube. Expanding beyond the SAVE program, research should also examine similar programs across the United States that focus on training veterans in agricultural practices. To support the growth of agricultural programs aimed at helping veterans, it is crucial to encourage the effective use of social media in marketing these organizations.

Keywords: Vocational Education, Social Media Marketing, Veterans, Sentiment Analysis

A Quantification and Exploration of Perceptions Related to Farmers' Roles in Climate Change Issues

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Abstract

Awareness and understanding of climate change, along with its causes and influences, have become of greater concern to individuals more recently due to increasing politicization, media coverage, and increased effects on individuals. With an increased risk and severity of natural disasters and weather events across the United States, individuals perceive and attribute the causes and effects of climate change differently. Farmers are central to global climate change debates and must enhance their farm resilience through climate adaptation and mitigation strategies to reduce risks associated with climate variability. Though farmers generally hold a favored and trusted position with the U.S. public, only a small portion of the population is engaged in agriculture. As such, it is important to understand if and how consumers attribute climate change effects to farmers along with their support for mitigation strategies or public policies that could impact farmers. The purpose of this study was to explore perceptions of farmers' roles regarding climate change issues. Exploratory factor analysis revealed three constructs: farmer acceptance and adaptation to climate change; farmer social pressures and judgment; and farmer protection. Results indicate consumers do not attribute farmers with high controllability of climate change and its effects, as they don't seem to support imposing additional policy measures, but may be more likely to support farmers when they implement climate mitigation efforts.

Keywords: Climate change, attribution theory, consumer perceptions, climate mitigation

Identifying Climate Risk Audience Segments in the United States

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Abstract

In the United States, many areas and communities are at risk when it comes to mitigating and navigating the effects of climate risk. The issue is not one that will be easily resolved or quick to pass as scientists project increases in weather extremes and other effects are likely to unfold. As the high-risk nature of climate issues continue, communicators must be prepared to communicate complex and controversial information. However, a population is made up of many groups and not all messages will resonate with certain groups or members. Audience segmentation is a tool that can help identify target audiences, or subgroups with similar characteristics. In this study, we analyzed responses on items related to climate risk from 2,191 U.S. residents to reveal four unique audience segments. While uniquely distinct, group similarities also present opportunities to further explore the best ways to communicate about climate risk. Among the groups, benevolence was the highest-rated personal value and many indicated moderate political beliefs. Communicators should be mindful of audience preferences and create messages based upon criteria that are relevant to audience members.

Keywords: Audience segmentation, climate risk, risk communication

Communicating Food Date Labels: Informational Messages and Social Norms Shape Visual Attention and Discard Decisions

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Abstract

Consumer confusion and misunderstanding of food date labels are recognized as key contributors to individual-level food waste, while label phrases are often neglected in discard decisions. This study aims to identify effective communication strategies to convey the meaning of label phrases and reduce the disposal of past-date foods that are still safe and edible, with a focus on the “Best If Used By”. A 2 (Intervention: informational vs. informational + social norm) × 2 (Food Category: perishable vs. non-perishable) mixed factorial design was employed. Results showed that both the information-only and social norm interventions significantly reduced intentions to discard past-date foods. Intervention effects on attention and cognitive appraisals differed between perishable and non-perishable foods. The information-only intervention increased dwell time on the label phrase of perishable foods and enhanced perceived safety of past-date perishable foods, while the social norm intervention increased attention priority to the label date and enhanced both perceived quality and perceived safety across all food categories. These findings provide evidence that informational interventions and social norm interventions can reshape consumers’ attention allocation, cognitive evaluations, and discard behaviors. The results offer practical guidance for designing communication strategies to mitigate label-related food waste.

Keywords: food date label, social norm, food waste, best if used by, eye-tracking

Factors Influencing Public Openness to Engage with Experts in Cultivated Meat Decision-Making

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Abstract

Cultivated, or lab-grown, meat is an alternative to conventional meat production and is gaining traction in the global food system; however, social science research shows the American public remains ambivalent about cultivated meats. Addressing public concerns through participatory governance of emerging technologies could enhance trust in both technology development and policy decisions. Public perception research to date has focused on general consumer attitudes toward adoption of technology or market acceptance, rather than the more nuanced question of what factors shape public openness to engage with experts in policy and scientific decision-making. This study addresses this gap by investigating the psychological, perceptual, and socio-demographic factors that influence public openness to engage in cultivated meat decision-making processes in Indiana. This study is grounded in an integrated theoretical framework drawing from deliberative democracy theory, risk perception theory, and the trust in science and technology framework to inform the public's openness to participate in discussions regarding emerging technologies. With technological innovations like cultivated meats, informed dialogue could allow stakeholders to have a meaningful voice in decision-making. A random sample of 771 Indiana residents participated in a field-tested, structured online panel survey measuring socio-demographic and attitudinal variables (concerns, benefits, familiarity, inclusion in decision-making, trust in scientists or engineers, and confidence that feedback would be considered). In addition to descriptive analyses, the research used hierarchical binary logistic regression to model factors predicting public openness to engage with cultivated meat experts (scientists and engineers) about this emergent technology.

Of interest, descriptive findings highlight that more than 90% of the participants indicated a preference for public involvement in industry decision-making regarding development and implementation of emerging technologies. More than half of the participants reported familiarity with cultivated meats; nearly two-thirds reported having heard about cultivated meats but not having eaten it. These findings suggest addressing the gap between awareness and understanding before initiating public engagement on technology decision-making could help in developing and regulating this technology. Additionally, participants expressed higher levels of concern for the impact of cultivated meat on the food system than on themselves. Cultivated meats were perceived as a beneficial meat alternative in the event of climate disruption or other extreme weather events. In terms of public participation with experts, small-group meetings such as focus groups were preferred to larger town hall meetings.

The theoretical model developed through regression analysis correctly classified nearly 75% of participants' openness to engage with experts. Perceived benefits from cultivated meats was the best predictor of respondents' openness to engage with experts, followed by level of confidence that public feedback would be taken into consideration by experts, and preference for direct public inclusion in decision-making. The overall findings from this work underscore the necessity of substantive rather than symbolic public participation, as well as the need for transparency to achieve legitimate and socially sustainable emerging technology development and governance practices. This research offers practical insights for policymakers, researchers, and industry leaders seeking to design inclusive and socially aligned adoption pathways for cultivated meat and other emerging technologies.

Keywords: cultivated meat, engaging with experts, perceptions, inclusion in decision-making, participatory governance

Describing American Beef Producer's Sustainability Information Needs and Message Preferences Using Q Methodology

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Abstract

The U.S. beef industry faces growing expectations to demonstrate and communicate sustainable production practices to meet public and market demands. While producers' attitudes toward sustainability have been increasingly studied, less is known about how to design and deliver messages that effectively leverage these attitudes and encourage adoption of sustainable on-farm behaviors. This study explored cattle producers' preferences for message content, structure, and style related to sustainability communication. Using a mixed-methods design, we employed Q methodology with think-aloud interviews and a follow-up survey to identify producers' information needs, preferred message sources, and preferred communication channels. Sixteen producers from across the United States participated in the study. Four distinct viewpoints emerged, representing producers curious about... *cattle sustainability's big-picture role and economic impact, navigating farm finances and drought, social and soil dimensions, and local practices and economic outcomes*. Across groups, producers expressed a strong desire for information about financial implications, incentive programs, and how cattle production contributes to a sustainable society. They preferred messages delivered by other producers through in-person and experiential formats such as field days, workshops, and on-farm visits. Interviews underscored the importance of messaging that highlights stewardship and profitability without relying on potentially polarizing labels like "sustainable." Findings provide a foundation for evidence-based message design and practical recommendations for communicators seeking to promote sustainable beef production through trusted sources, relevant content, and empowering communication styles.

Keywords: Evidence-based message development, message attributes, sustainability communication

Examining the Impacts of Sustainability Messages on U.S. Cattle Producer's Message Perceptions

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Abstract

Cattle producers face increasing pressure to adopt sustainable practices, driven by public expectations, policy initiatives, and industry benchmarks and their related marketing or communication campaigns. While consumer-facing sustainability messaging has been widely studied, little research has examined how producers interpret sustainability messages. This study experimentally tested how message language (i.e., content) and motivational framing (i.e., style) influence producers' perceptions of sustainability communication. A 2×2 between-subjects experiment was conducted with cattle producers attending the 2024 National Cattlemen's Beef Association Convention ($N = 201$). Participants were randomly assigned to one of four producer-facing flyers advertising an on-farm workshop that varied in content (sustainability language vs. alternative language) and style (economic vs. stewardship motivation). Constructs from the Elaboration Likelihood Model (argument quality, event attitude, message relevance, and prior knowledge) were analyzed using two-way ANOVAs and regression models. Open-ended responses were thematically coded. Mean scores across constructs were positive, and no significant differences emerged between message groups. Producers rated all messages favorably, with event attitude highest ($M = 4.44$) and argument quality lowest ($M = 3.94$). Qualitative feedback provided further understanding. The majority (51.8%) of respondents provided positive comments describing the messages as informative and relevant, while 21% noted negative aspects such as design or length. Messages using "sustainability" language paired with an economic motivation received the most positive feedback, countering assumptions that producers react negatively to sustainability terminology. Findings suggest that producers are receptive to sustainability messaging regardless of language or motivational framing. Based on our findings, communicators can confidently incorporate sustainability language and highlight both economic and stewardship motivations when engaging producers. Future research should expand message testing across delivery modes and audiences to identify strategies that most effectively support sustainable decision-making within the U.S. cattle industry.

Keywords: Elaboration Likelihood Model, experimental design, message testing, evidence-based messaging

Expanding Global Perspectives: Assessing the Impact of Short-Term Study Abroad on Agricultural Students' Knowledge, Attitudes and Global Citizenship

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Abstract

Agricultural communication is central to addressing global challenges such as climate change, sustainability, and international trade, yet research shows undergraduate students often lack opportunities to develop cross-cultural perspectives and policy communication skills. Short-term study abroad (STSA) programs have emerged as one strategy to build global competence, but limited research has examined their role in preparing students as agricultural communicators. This study evaluated the impact of a faculty-led STSA program to France, Spain, and Italy on participants' global agricultural policy knowledge, attitudes towards climate change, and global citizenship, positioning these outcomes as foundational to agricultural science and policy communication. The study employed a quasi-experimental, pre-/post-test design with a convenience sample of undergraduate students ($N = 34$) enrolled in the program during the 2025 summer semester. Findings revealed participants demonstrated significant increases in global agricultural policy knowledge ($d = -1.21$) and global citizenship ($d = -0.97$), confirming that immersive international experiences can strengthen both content knowledge and dispositions essential for agricultural communication practice. Attitudes toward climate change remained stable, though high pretest scores suggest participants entered the program with supportive views, limiting potential for measurable change. Correlation analyses indicated positive but nonsignificant associations among gains in global agricultural policy knowledge, attitudes toward climate change, and global citizenship, pointing to relationships worth exploring in future research. These results extend the literature on study abroad by linking knowledge gains and global citizenship development to communication competence in agricultural contexts. For practitioners, the study emphasizes that STSA programs can help cultivate a workforce prepared to interpret, frame, and disseminate agricultural issues for international audiences. This research responds to long-standing calls to strengthen global and policy communication within agricultural communication curricula. By situating students in real-world international agricultural contexts, STSA programs provide a pathway for developing the knowledge and dispositions required of effective communicators in an interconnected world.

Keywords: short-term study abroad, experiential learning, heuristic–systematic model, climate policy, science communication

Climate Change Beliefs vs. Policy Support: Exploring Cognitive Dissonance in U.S. Public Opinion

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Abstract

Climate change is a defining global issue that continues to evoke political division in the United States. Despite strong scientific consensus regarding the role of human activity, public support for climate-related policies remains polarized. Although many Americans acknowledge that climate change is happening, levels of concern and policy engagement vary significantly across political ideologies. Understanding how individuals reconcile environmental beliefs with political identity is critical to advancing public support for climate action. Guided by Festinger's (1957) cognitive dissonance theory, this study explores how climate change belief, policy knowledge, political ideology, and voting behavior influence support for climate policies in a polarized environment. A cross-sectional survey was administered through Qualtrics Panels in October 2024 to 1,996 U.S. adults recruited to reflect national demographics. Participants completed validated scales measuring climate change belief, policy knowledge, and policy support, along with political ideology and 2024 voting behavior. Descriptive findings showed that while most respondents accepted the existence of climate change, fewer viewed it as a very serious issue. Policy knowledge was low, yet support increased when respondents were presented with policy details. Regression analyses confirmed that belief in climate change and policy knowledge predicted policy support; however, political ideology moderated this relationship. Among conservatives, stronger belief did not consistently translate to greater policy support, indicating cognitive dissonance. Voters in the 2024 election were also more supportive of climate policies than nonvoters. These findings have important implications for science communication, political strategy, and environmental education. Because ideological identity can override factual understanding, communicators must consider the psychological processes shaping climate attitudes. Cognitive dissonance theory clarifies why some individuals resist climate policy even when they acknowledge climate change and underscores the value of designing messages that reduce dissonance by aligning climate action with core values or co-benefits. This study advances understanding of the mechanisms underlying public opinion and highlights the need to bridge the gap between belief and policy support to achieve sustainable, bipartisan climate solutions in the United States.

Keywords: climate policy support, cognitive dissonance, climate change beliefs, science communication

Rooted in Resilience: A Case Study Exploration of Community Resilience in a Drought-Stressed Rural Area

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Abstract

Community resilience is commonly understood as the ability of a community to adapt and change in the face of challenge or uncertainty. However, community resilience does not have one widespread definition because it is largely dependent on the context, culture, and operations of an individual community. There are many ways to measure community resilience, but previous literature suggests commonly used statistical and quantitative measures do not adequately capture its nuances. This single holistic case study sought to capture a holistic understanding of community resilience in Altus, Oklahoma, by exploring how residents viewed community resilience in the context of their city. The study was guided by the community capitals framework. Data were collected from June to August 2025 through narrative interviews with civically involved community members, a focus group with community-engaged research students, and a document analysis of public artifacts. All data were analyzed using Glaser's constant comparative method. Results revealed participants did view Altus as resilient and were very proud of their community and its history. Participants attributed resilient successes in the community to excellent leadership in the community, collaboration across community entities, and transparency of community functions. Place attachments and a sense of belonging also played instrumental roles in making residents care deeply about their community and work tirelessly to ensure its prosperity. Despite participants' varied times of residency in Altus, all felt a deep connection and sense of pride in the community. This study expands our understanding of what residents consider community resilience to be and how a community operates to ensure resilience. Findings suggest a multifaceted review of a community is best to capture a complete understanding of community resilience. Future research should continue to explore community resilience in other communities to determine if these findings are transferable and applicable to other areas of the nation.

Keywords: Rural, Community resilience, Community capital, Place attachments, Civic leadership

From Farmer to Founder: A Qualitative Analysis of Kansas Agritourism Operators' Entrepreneurial Journeys

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Abstract

Faced with threats such as climate change and market volatility, U.S. agricultural producers are increasingly turning to agritourism to diversify income and build resilient businesses. While this combination of agriculture and tourism offers economic opportunities, it requires producers to adopt new aspects of an entrepreneurial mindset, exposing them to unique challenges that generic agritourism resources often fail to address. There is a need to know how agritourism operators, particularly in Kansas, navigate these challenges to develop the entrepreneurial knowledge necessary for success. Grounded in the entrepreneurial learning framework, this study examines how agritourism operators transform experience into specialized, usable entrepreneurial knowledge. We collected qualitative data through six semi-structured focus groups and three interviews with existing and prospective agritourism operators in Kansas. Findings indicate motivations for starting an agritourism business are diverse, stemming from agricultural careers, family experiences, and non-agricultural work. Operators transform past failures and risk management experiences into crucial entrepreneurial knowledge by exploiting existing knowledge to refine customer activities and exploring new marketing strategies on social media. External factors influence the learning process, with barriers hindering development and positive community interactions acting as assets. The findings highlight the need for tailored support systems, including industry-specific mentoring, financial incentives, and targeted workshops. By understanding the entrepreneurial journey of agritourism operators, agricultural communicators can develop more effective resources to foster sustainable growth in this flourishing sector.

Keywords: Agritourism, entrepreneurial learning, farm diversification, social learning

Old MacDonald Had a Virtual Farm: Immersion and Authenticity in Farming Video Games

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Abstract

Farming video games represent an understudied area of media-effects research in agricultural communications, despite their popularity among gaming audiences. Video game research often describes games in terms of immersion, or the ability of a player to feel as though they are inside a game, and their authenticity, or how well they fit the expectations of the player. Using this conceptual framework, we conducted a qualitative content analysis of two of the most popular farming games available on Steam: *Stardew Valley* and *Farming Simulator 25*. We observed gameplay and noted elements related to graphic realism, the purpose of farming within each game, production methods included, available equipment and technology, the game's monetary components, its social environment, and how cooking and food are incorporated. While *Farming Simulator 25*, a realistic farming sim, presented a visually more accurate depiction of agriculture, the cozy game *Stardew Valley* felt more authentic in its portrayals of social relationships within its gameplay. Both games present aspects of agriculture in varying degrees of realism: They feature crop-growing seasons, components of animal husbandry like breeding and care, and commodity and product sales as a driver of game success. We recommend surveying players of both games to understand the potential effects of gameplay on their knowledge, attitudes, beliefs, and behaviors related to agriculture. To agricultural communicators and educators, we recommend using these games to help audiences understand food and fiber production and characteristics of the people engaged in those activities.

Keywords: Video games, agriculture, virtual worlds, immersion, authenticity

Practitioner Perspectives on Skills and Knowledge Needed for Agricultural Communications Students' Career Readiness

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Abstract

This study examined agricultural communications (ACOM) practitioners' perspectives on the skills/competencies and technical agriculture knowledge most critical for career readiness. This quantitative, descriptive survey research study used a snowball sampling method to reach (n=56) ACOM practitioners in nine U.S. states. Practitioners rated 67 skills and 13 technical agriculture knowledge areas on a five-point, Likert-type scale. Results indicated that communication fundamentals such as writing and reporting remain the cornerstone of success, with the writing scale rated extremely important (M=4.57, SD=.418). All other scales were rated very important. All technical agriculture knowledge items were rated moderately important, with the exception of top-rated agribusiness, which was very important (M=3.56, SD=.895). We conclude that strong writing and broad technical agriculture knowledge help graduates remain credible and employable amid constant technological change. ACOM programs should prioritize foundational communications skills and experiential learning while continuing to integrate new media strategically.

Keywords: Agricultural communication, career readiness, practitioner perspectives, curriculum development, writing

Applying Situational Theory of Publics to mRNA Vaccine Communication for the U.S. Beef Industry

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Abstract

While research has shown potential opportunities for messenger RNA (mRNA) vaccines to combat diseases that are detrimental to the animal agriculture industry, these novel vaccines have not been approved for use in livestock in the United States as of 2025. Despite this lack of approval, consumers have voiced their concerns about the potential use of mRNA vaccines and brought forth proposed policies regarding their use in livestock. The purpose of this study was to identify and understand the different segments of publics in the United States regarding the use of mRNA vaccine technology in the beef cattle industry. This study used the Situational Theory of Publics (STOPs) and the Five Publics Model based on knowledge and involvement to examine consumers' perceptions of mRNA vaccines in beef cattle and develop segments of publics. An online survey instrument was distributed via Qualtrics in the Fall of 2024 and was completed by 519 U.S. beef consumers ($n = 519$). Knowledge, issue involvement, trust in regulation, risk perceptions, and purchasing intent related to mRNA vaccine use in beef cattle were measured in the survey instrument. Overall, respondents possessed low knowledge levels regarding mRNA and animal vaccines, and they reported neutral perceptions of risk, issue involvement, and purchasing intent regarding beef administered mRNA vaccines. However, their trust in regulation of these vaccines were somewhat positive. Following Hallahan's Five Publics Model, respondents' issue involvement and knowledge were used to develop the categories for Active, Aware, Aroused, or Inactive publics. The Inactive Public was the largest group in the sample, which was unsurprising given the low reported levels of knowledge and personal involvement regarding the use of mRNA vaccines in beef cattle. Additionally, the Inactive Public possessed higher risk perceptions and lower levels of trust in regulation and intent to purchase beef products administered mRNA vaccines when compared to the Active Public and Aroused Public. The Active Public had the highest reported purchasing intent, which was significantly larger than the three other publics' purchasing intent. This study highlights the importance of strategic communication efforts in addressing potential misinformation and public concern for novel vaccine technology. Agricultural communicators and industry stakeholders can use these findings to inform targeted messaging strategies, enhance consumer education, and improve future acceptance of mRNA vaccines in beef cattle if approved for use in the future.

Keywords: Vaccines, Situational Theory of Publics, Risk Perceptions, Animal Health

Trust Across Fence Lines: A Framework for Extrafamilial Land Tenure Relationships

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Abstract

The future of the United States' food system depends on the agricultural industry's ability to support beginning farmers and ranchers (BFRs) in their pursuit of stable land tenure. Many BFRs seek to lease or rent land to grow their operations, contributing to the two-thirds of land tenure relationships formed between extrafamilial parties. However, further research is needed to understand how these relationships form and are sustained over time. This qualitative study interprets the lived experiences of Land Link coordinators, who facilitate extrafamilial land tenure relationships, through the lenses of proximity theory and social exchange theory to create a framework for trust development. We found trust between extrafamilial parties evolves through three phases. The first phase, prerequisite trust, depends on some degree of shared proximity (social, geographic, cognitive, organizational, or institutional) between the landowner and land seeker, along with clearly established expectations. The second phase, fragile trust, arises when the landowner and land seeker engage in negotiated exchanges with the support of a third-party advisor, such as the Land Link coordinator. The final phase, resilient trust, relies on the continuous reciprocal exchange of time, energy, and resources by the parties involved which deepens their interpersonal attachment to each other and the land they manage together. The resulting framework expands the tools available to Land Link coordinators and other third-party supporters, helping them to facilitate extrafamilial land tenure relationships between BFRs and landowners. It can also inform agricultural communications practitioners' development of tailored educational and outreach materials for both groups.

Keywords: beginning farmers and ranchers, land tenure relationships, trust development