

## **Audience Segmentation and Media Preferences in Ohio's AFNR Issue Landscape**

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*Agricultural, food, and natural resource issues are complex topics that require careful balancing of stakeholder perceptions when considering potential policy solutions. Ohio's diverse agricultural and natural resources serve both private interests and public recreation, with likely similar diversity in beliefs on how these resources should be used. Using the issue life cycle model and audience analysis, this study sought to segment Ohio residents based on their perceptions of AFNR issues. Using hierarchical cluster analysis, four audience clusters were identified. The groups varied in their perceptions of how Ohioans agreed or disagreed about AFNR issues. Chi-squared analysis revealed no significant differences between groups for occupation or community type, although some groups differed significantly in political orientation. Audience segment did not change the likelihood of news media usage, although some clusters were significantly more likely to use social media as a news source. Although political ideology factored into issue perceptions for some groups, overall, the differences across clusters could not be fully attributed to demographic factors. Participants generally believed that their fellow Ohioans were concerned or divided about the issues presented in this study, which may help communicators or policymakers working with the public on AFNR topics.*

### **Introduction**

Originally enacted in 1933 as a response to falling crop prices following the Great Depression, World War I, and the Dust Bowl, the farm bill has evolved into a crucial component of U.S. agricultural policy, influencing food systems, rural economies, and environmental efforts (Devarenne & DeSimone, n.d.). The primary purpose of the farm bill was to assist farmers through subsidy programs designed to reduce surplus goods, increase crop prices, and establish a federal crop insurance program (Agricultural Adjustment Act of 1933, 1933). In 1973, the farm bill evolved into an "omnibus" bill, incorporating nutrition provisions that addressed agricultural issues beyond the farm sector (Agriculture and Consumer Protection Act of 1973, 1973; Devarenne & DeSimone, n.d.). The current operating farm bill, titled the Agriculture Improvement Act of 2018, is projected to spend \$867 billion over fiscal years 2019-2028. Although the farm bill is intended to be passed every five years, the 2018 bill was extended beyond its 2023 expiration. An updated version has yet to be introduced in Congress, which must acknowledge and balance the diverse needs and concerns of stakeholder groups when considering the next iteration of the farm bill (Johnson & Monke, 2024). Most agricultural economists believe a farm bill will be passed in 2026, though budget concerns and SNAP cuts are major obstacles to its passage (Morgan, 2025). However, extensions and delays negatively affect stakeholders who rely on the farm bill for payments or supplemental programs (Cabrera, 2025; National Organic Coalition, 2025; Zaks, 2025).

Although the farm bill is created at the federal level, its impacts are felt across individual states. In Ohio, agriculture is not only a crucial part of the economy but also a sector heavily shaped by farm bill provisions. Between 1995 and 2024, Ohio farmers received nearly \$14 billion in farm subsidies (Environmental Working Group, 2025). However, food and agriculture

add more than \$124 billion to Ohio's economy each year, making it the state's number one industry (Ohio Dept. of Agriculture [ODA], 2025). Ohio also abounds in natural resources, with more than 7.8 million acres of forest land (USDA Forest Service, 2025), diverse mineral resources (Ohio Dept. of Natural Resources [ODNR], 2024), miles of rivers and streams, hundreds of lakes, and significant access to and control of Lake (Ohio EPA, 2024). The abundance of agricultural and natural resources benefits not only the individuals employed in the industry but also the broader community. Ohio's 76 state parks offer recreational opportunities for boating, hiking, camping, and fishing, and contribute \$19 billion to the state's economy (ODNR, 2025). Ohio's Department of Wildlife is primarily funded by user fees, including licenses, hunting permits, fines, and fuel tax attribution from boats, which generated 91.7% of income in 2023 (Golowenski, 2024).

As shared resources, environmental, ecological, and sustainability issues are collective phenomena that are socially constructed and defined (Hansen, 1993; Schoenfeld et al., 1979). Although these issues are able to be clearly defined and measured, they must still be communicated by scientists, stakeholders, and the media, which may frame them differently depending on the perceived social and political climate (Bonfadelli, 2010; Ding et al., 2023). While entities like the media serve as gatekeepers of information and have the power to shape public attention through topic selection (McCombs & Shaw, 1972), rising public attention may afford some issues more legitimacy and shape how policy or other mitigation efforts are crafted. For those working on complex issues (e.g., a new national farm bill or state-level policies), understanding public sentiment regarding agricultural, food, and natural resource issues (AFNR) is critical to ensuring policy addresses timely issues.

Ohio's diverse agricultural and natural resources serve both private interests and public recreation. While stakeholders may advocate for certain positions, public opinion may differ regarding the use and regulation of these resources. To craft policies or regulations that meet both public and private needs, it is important to understand how concerned the public is about AFNR topics, as a more divisive issue may require different approaches than one viewed homogeneously by interested parties. Aligned with the American Association for Agricultural Education (AAAE) research values of advancing public knowledge of AFNR systems and examining social dynamics in human and life sciences (AAAE, 2023), this study seeks to understand Ohioans' perceptions of AFNR issues, identify audience clusters based on their perspectives, and examine their news media preferences.

## **Theoretical Framework**

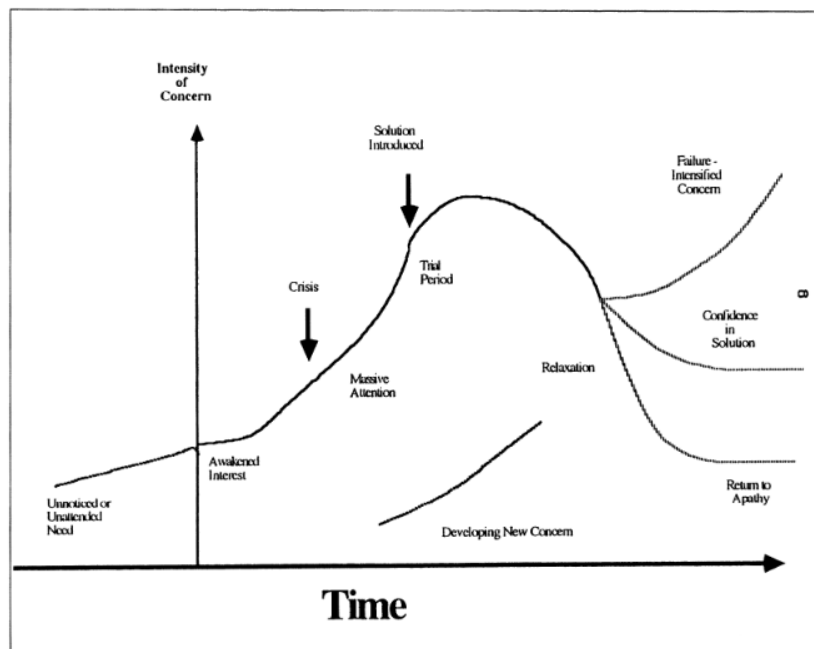
Any topic may become an "issue" once it becomes salient to a concerned audience, whether individual actors or an organization, and requires some kind of administrative or legislative action (Hilgartner & Bosk, 1988). According to Mahon and Waddock (1992), an issue can be defined from four different points of view, that of corporations, public policy makers, pressure groups, and issue networks. Issue networks, as defined by Hecl (1978), are individuals or groups that have similar knowledge about an issue that are often linked by similarities in business, government, and society.

The original issue life cycle model (LCM) consisted of four stages of issue development: 1) a gap between corporate and public awareness on an issue; 2) a controversy or politicization that launches the issue into higher awareness; 3) a legislative phase where laws or regulations regarding the issue are implemented; and 4) the litigation phase, where the specifics of new mandates are processed between companies and the government (Buchholz, 1990; Post, 1978). This model is public policy-focused and generally applied as a process tool within corporate management (Mahon & Waddock, 1992). However, later revisions have extended the model to explore the dynamic nature of issues, including resolutions outside the public policy route and the diminishing response options as an issue progresses in the cycle (Bigelow et al., 1991; Buchholz et al., 1985; Mahon & Waddock, 1992).

Tombari (1984) expanded the original LCM to create a new cycle featuring five main phases: 1) unnoticed or unattended need; 2) awakened interest; 3) massive attention, stimulated by an event or crisis; 4) trial period, which immediately follows solution implementation; and 5) outcomes, which comprise three scenarios based on the response to the solution: confidence in solution, failure-intensified concern, or return to apathy. This model extends the cycle to explore how solution implementation affects issue dynamics, whether the solution is a success and the current issue is resolved; the solution fails and the issue returns to public discussion; or if the solution is neither a success nor a failure, but the current issue falls out of favor and a more pressing issues take prominence. The third option acknowledges the tendency for issues to rise or fall in public perception, as this cycle is in motion for a multitude of issues at any given time.

**Figure 1**

*Issues life cycle model (Tombari, 1984; as pictured in Mahon & Waddock, 1992).*



Applying Tombari's (1984) issue life cycle model to public perception allows us to understand where the public is situated on agricultural and environmental issues, which can inform corporate strategy and public policy by aligning possible solutions with public concern.

As noted by Bigelow et al. (1991), individuals' underlying values often drive issue discussions and solutions. Therefore, stakeholders who propose solutions to issues should not only be aware of which issues are currently prominent in the public sphere, but also how potential solutions align with the value orientations held by society or other key stakeholders.

Though stakeholders and or pressure groups may play a role in highlighting a specific issue, they are more often brought to public attention by the media (McCombs, 1997; McCombs & Shaw, 1972). Previous research has explored media framing of agriculture, environment, and natural resources issues, such as domestic and international agricultural perceptions (Kubitz et al., 2013), water quality and quantity (Leal et al., 2015), nutrient reduction strategies (Witzling et al., 2022), agriculture health and safety (Lundy et al., 2018), oceanic species conservation (Brown et al., 2020; Reamer et al., 2024), and the rural opioid epidemic (Lawson et al., 2022). Media attention to an issue, known as agenda setting, serves as a salience cue for the public, indicating which issues should be considered important (Wanta, 2023). Indeed, how the media frames an issue often influences public perceptions and response to it (Danner et al., 2022; Khanya, 2024), and may affect its longevity in the issue life cycle model.

Previous research exploring climate change (McComas & Shanahan, 1999) and biotechnology (Nisbet & Huges, 2006) supports the idea that issues tend to rise and fall in media and public awareness. However, health issues, such as diseases and outbreaks, may not follow this same cycle, as reports of new cases, health policies, or scientific evidence may push these stories back into the news cycle and, by extension, the minds of the public (Arendt & Scherr, 2019; Fung et al., 2022; Shih et al., 2008). These competing findings lend credence to the complex and dynamic nature of issues (Bigelow et al., 1991; Buchholz et al., 1985; Mahon & Waddock, 1992) and may provide insight into why different issues fall at different stages of the issue life cycle model at any given time.

In the digital era, social media also factor into the life cycles of issues, as consumers, businesses, media, and other entities use social platforms to share and gather information (Eriksson, 2018). Exposure to issues through social media influences stakeholder and consumer decision-making abilities and increases their capacity to anticipate, influence, and collaborate (Santa Soriano et al., 2018). However, social media is known for creating echo chambers, in which users are more likely to engage with like-minded users who share and reinforce a similar narrative (Cinelli et al., 2021; Terren & Borge-Bravo, 2021). Echo chambers are often attributed to algorithms that show users content based on their past interactions (Alatawi et al., 2021) and consumers' selective exposure to belief-affirming sources (Spohr, 2017).

Research indicates that echo chambers develop differently on different platforms. Facebook and X (formerly Twitter) have most often been discussed for creating echo chambers on their platforms (Cinelli et al., 2020; Garimella et al., 2018). Kitchens et al. (2020) found that increased Facebook use was associated with increased information source diversity, but a shift toward more partisan news consumption. In the same study, increased Reddit usage was associated with increased source diversity and a shift toward more moderate sites, whereas increased X usage showed little to no change in either. Kim and Kim (2021) suggest that political polarization can occur when interest in a specific topic increases due to selective

exposure, even if an individual's media consumption is balanced. Other research has indicated that in single-topic scenarios, echo chambers are more likely to occur (Guess et al., 2018).

However, when multiple issues are salient, the formation of echo chambers is less likely (Nagura & Akiyama, 2025). As social media rarely focus on only one topic, users engaging with these sites are likely to be exposed to and engage with a variety of issues and opinions outside their own beliefs (Dubois & Blank, 2018; Nagura & Akiyama, 2025). This exposure to discourse about multiple salient issues may influence individuals' perceptions of how issues are positioned within the life cycle model. For instance, Specht et al. (2020) examined social media discussions about cultured meat in the U.S. and found that it was most prevalent on social channels when similar stories were in the news media, suggesting that this issue was likely positioned early in the life cycle model. Thus, while social media may provide an additional platform for engagement with consumers by media and stakeholders, the issues life cycle model may be more influenced by the traditional news cycle, as suggested by Wanta (2023).

### **Audience Segmentation**

Given the complex nature of issues, audience segmentation is critical to understanding how individuals align and differ. At its core, audience segmentation methodology recognizes that a given population consists of many subgroups with similar values or interests in regard to specific issues (Dewey, 1927). A systematic and explicit process, audience segmentation divides a population into groups of individuals who are similar to each other in areas such as demographics, needs, or opinions (Grunig, 1989; Slater, 1996; Tuten, 2020). A key outcome of audience segmentation is the opportunity to enhance communication efforts through effective and efficient messaging (Slater, 1996). To develop messaging that meets the unique needs and motivations of each group, Navarro (2016) recommends considering both psychographic and demographic information. In the context of agriculture, audience identification and segmentation has been used to explore consumption choices, genetic modification, water conservation, sustainable farming, climate change, (Burke et al., 2020; Gibson et al., 2020; Graham & Abrahamse, 2017; Orton et al., 2024; Rohling et al., 2016; Warner et al., 2017, 2017). As Ohio is a diverse state with many opportunities for, and opinions on, agricultural, food, and natural resource issues, understanding the distinct audience segments that underlie potentially divisive issues is critical for message development and effective policy responses.

### **Purpose and Objectives**

The purpose of this study was to explore the position of AFNR issues in Ohio using Tombari's (1984) issue life cycle model. This study also explored the issue networks that exist in Ohio and how those networks impact positioning on these issues. The following research objectives guided this study:

- RO1: Describe the position of AFNR issues in Ohio on the issues life cycle model for all audiences.
- RO2: Segment participants based on their perceptions of Ohio's AFNR issues and describe the resulting clusters using individuals' employment status, political ideology, and community type as defining variables.

RO<sub>3</sub>: Determine news source preferences based on audience clusters.

## Methods

This research is part of a larger project that sought to understand Ohio residents' perceptions of agricultural issues. To develop the quantitative survey instrument, researchers conducted an environmental scan of eight websites, including three most widely circulated Ohio newspapers (the *Columbus Dispatch*, *Cincinnati Enquirer*, and *Cleveland Plain Dealer*), the *Wall Street Journal*, the *New York Times*, Ohio Farm Bureau, U.S. Farmers and Ranchers Alliance, and Pew Research Center between June 1, 2022, and June 1, 2023. From this environmental scan, researchers identified five issue categories—food production, climate change, animals and livestock, governmental policy, and environment—with a total of 56 sub-categories (12, 12, 8, 13, and 11, respectively) that would be addressed in the survey. Next, the researchers developed a survey instrument to assess issue importance, perceptions, and the issue cycle placement for each sub-category issue, with perceptions of issue cycle placement serving as the focus of this manuscript. Issue importance and perceptions were previously reported (Thapa et al., 2025).

To ensure the instrument's reliability, a pilot test yielding 65 responses was conducted using Qualtrics between November 17 and 18, 2023. Issue items, grouped by their categories, demonstrated internal consistency, with Cronbach's alpha values ranging from .85 to .93, greater than the acceptable value of .80 (Carmines & Zeller, 1979). Food issues had an alpha level of .85, climate change issues  $\alpha = .92$ , animal and livestock issues  $\alpha = .88$ , government policy issues  $\alpha = .93$ , and environmental issues  $\alpha = .91$ . A panel of experts reviewed the instrument to ensure validity, and The Ohio State University Institutional Review Board granted approval to conduct the study. Data were collected between November 21, 2023, and December 8, 2023.

## Participants

The population of interest consisted of Ohio residents aged 18 years or older. The survey instrument was distributed by Qualtrics Research Services. Quotas were established based on U.S. Census data to ensure a sample representative of Ohio residents based on gender, age, and race. To ensure data integrity, partial responses were excluded, resulting in a total of 515 responses included in the data analysis. Using Hecló's (1978) definition of issue networks, we included three demographic variables in our analysis: employment as *business*, political orientation as *government*, and community type as *society*. In this sample, most participants were either unemployed/other ( $n = 142$ ), retired ( $n = 131$ ), or employed in business, finance, and management ( $n = 89$ ). Conservative political orientation was the most reported ( $n = 180$ ), followed by moderate ( $n = 178$ ), and liberal ( $n = 119$ ), with 38 individuals not reporting their orientation. Participants were mostly from suburban areas ( $n = 250$ ), followed by rural ( $n = 147$ ), then city/urban ( $n = 118$ ).

## Measures

### *Issue Cycle Perceptions*

Participants were first asked to rank the broad categories—food production, climate change, animals and livestock, governmental policy, and environment—from most to least pressing. Participants then assessed the sub-category issues on importance, perceptions, and ranking on the issues cycle, moving through each category before moving on to the next. For each of the 56 issues identified by the environmental scan (Thapa et al., 2025), participants were asked to “best describe the position of the issue among Ohioans” using a matrix table. The scale was built using the phases of Tombari’s (1984) issue cycle. For each issue, participants could indicate it as “Not on the minds of Ohioans,” “A divided issue amongst Ohioans,” “Ohioans are very concerned about this issue,” “Most Ohioans agree about this issue,” or “Ohioans are confident about solutions to address this issue.” These prompts were assigned values on a 1-5 scale, with 1 indicating “Not on the minds of Ohioans” and 5 indicating “Ohioans are confident about solutions to address this issue.” A challenge of Likert-type items is their status as vague quantifiers, meaning they lack a single, clear meaning for each of the labels in the scale (Dillman et al., 2015). When responses lie between the given vague quantifiers, a priori conventions for describing findings is necessary (Lindner & Lindner, 2024). To interpret the results of the mean values in this study, the vague quantifiers above have been assigned associated values (*Not on the minds of Ohioans* = 1 – 1.5, *A divided issue amongst Ohioans* = 1.51 – 2.5, *Ohioans are very concerned about his issue* = 2.51 – 3.5, *Most Ohioans agree about this issue* = 3.51 – 4.5, and *Ohioans are confident about solutions to address this issue* = 4.51 – 5.)

### ***Information Source Frequency***

Participants were asked to identify how often they used various sources for information: newspapers, television news, radio news, Facebook, Twitter (now X), Instagram, TikTok, and websites (*I don’t use this source* = 0, *1-2 times per month* = 1, *once a week* = 2, *2-6 times per week* = 3, *once daily* = 4, and *more than once daily* = 5). Newspapers, television news, and radio news were combined into a single News category, with the highest reported value for any one item indicating the frequency of source use. Similarly, Facebook, Twitter, Instagram, and TikTok were collapsed into a Social Media category.

### **Data Analysis**

Data were exported from Qualtrics to SPSS Version 31 for analysis. Descriptive statistics were used to assess research Objective 1. A two-step cluster analysis, using hierarchical cluster analysis (HCA) then K-means cluster analysis, method was applied to explore research Objective 2. Hierarchical cluster analysis has previously been used to understand communication frames (Donk et al., 2012; Mathes, 2021), but it is also a useful method for identifying audience segments in science communication (Runge et al., 2018). Though its use has increased in mass communication efforts, it has been less used in the applied field of agricultural communications (Orton et al., 2025; Steede et al., 2023). First, Ward’s method for hierarchical cluster analysis (HCA) was applied to explore patterns within the data (Essary et al., 2022; Ward, 1963). A visual inspection of a dendrogram of the agglomeration schedule confirmed four unique segments (Everitt & Hothorn, 2011). K-mean cluster analysis assigned individual responses to a segment, which were used to describe and compare segments based upon issue perceptions (Campo et al., 2012). Chi-square analysis of association was used to evaluate differences in demographic variables between audience clusters. Chi-square analysis is appropriate when

comparing categorical variables to assess how observed frequencies in the categories differ from those expected by chance (Field, 2024). Objective 3 was explored using ordinal logistic regression analysis to determine the odds of news source use frequency by audience cluster. Ordinal logistic regression is appropriate when the dependent variable is categorical and ordinal. The coefficients obtained in the analysis reveal the probability that a cluster uses a news source more frequently (Bozpolat, 2016).

## Results

### **Objective 1: Describe the Position of AFNR Issues in Ohio on the Issue Life Cycle Model for All Audiences**

Objective 1 sought to identify the position of the 56 sub-issues on the issue life cycle model for Ohio residents. In this section, we analyzed the data to determine where each issue fell on the model. The issue “Government/Policy: Land prices” was the highest-ranked item ( $M = 3.38$ ,  $SD = 1.24$ ), while the issue “Climate Change: Cattle emissions” was the lowest-ranked item overall ( $M = 2.4$ ,  $SD = 1.22$ ). The range in mean values suggests Ohioans rank agricultural issues between “divided” and “very concerned,” though the large standard deviations indicate large variability in responses, potentially ranging from “not an issue” to “most Ohioans agree.” In addition, high standard deviations—ranging from 0.80 to 1.33— indicate wide variation in participants’ perspectives.

### **Objective 2: Segment Participants Based on Their Perceptions Of Ohio’s AFNR Issues and Describe the Resulting Clusters and Describe Using Individuals’ Employment Status, Political Ideology, And Community Type as Defining Variables**

To identify the underlying audience segments that might account for the wide variations, hierarchical cluster analysis (HCA) was conducted, followed by K-means analysis. This two-step analysis revealed four segments based on the means for the 56 AFNR issues identified in the environmental scan. Each of the 56 issues contributed to the clusters, as significant differences between clusters were confirmed (Everitt & Hothorn, 2011; Runge et al., 2018). In other words, each cluster was significantly different from the others in its perceptions of the AFNR issues’ positions on the issue cycle. A chi-square analysis of association was conducted between the identified clusters and employment, political orientation, and community type (Table 2). All expected cell frequencies were greater than five. There was a statistically significant association between political ideology and cluster,  $\chi^2(9) = 25.44$ ,  $p = .003$ . There was not a statistically significant association between employment,  $\chi^2(18) = 26.72$ ,  $p = .084$ , or community type,  $\chi^2(6) = 8.89$ ,  $p = .180$ . With the exception of political ideology, clusters were similar in their demographic makeup, indicating that similarities were more closely aligned with participants’ perspectives on the issues than with the demographic identifiers employment, political orientation, and community type. Below are the summaries for each cluster, followed by the descriptive Table 2 and Figure 2, which shows the distribution of issue ratings by cluster.

Cluster 1 ( $n = 123$ ) ranked items like food prices, food safety, local food, food availability, water quality in general, and food security as “Ohioans are very concerned about this issue.” Otherwise, this group put most issues as “A divided issue amongst Ohioans,” with

cattle emissions being the only one ranked as “Not on the minds of Ohioans.” Due to their focus on food and water essentials, this cluster was named “Essentialists.” Political orientation was not significantly different than other clusters.

Cluster 2 ( $n = 125$ ) varied the most in their perceptions of issues. They perceived that most Ohioans agreed about land prices, commodity prices, water supply, protecting the water supply, water quality in general, and farmland preservation. The majority of issues, including food safety, water management, rural economy, local food, immigration, animal cruelty, chemical regulations, harmful algal blooms, government support/subsidies, food security, were ranked as “Ohioans are very concerned about this issue.” Issues such as organic food, trade and tariffs, large scale livestock production, extreme weather events, bioengineered food, invasive animal species, climate resiliency strategies, and elimination of fossil fuels ranked as divided issues. This cluster was more likely to report conservative political ideology. Due to their overall balanced level of concern with an emphasis on economic and natural resources, this cluster was titled “Pragmatic Guardians.”

Cluster 3 ( $n = 150$ ) ranked every issue as “Ohioans are very concerned about this issue,” leading to their title “Alarmists,” due to perceived universal concern. This cluster was more likely to report moderate political ideology.

Cluster 4 ( $n = 117$ ) ranked most issues as “Most Ohioans agree about this issue.” However, they did rank exotic animals, food miles, food deserts, organic food, cattle emissions, GMOs, elimination of fossil fuels, and lab grown meat as “Ohioans are very concerned.” Their perceptions of broad agreement among Ohioans, with few exceptions, leads to this cluster’s title of “Consensus Seekers.” Political orientation was not significantly different than other clusters.

**Table 1**  
*Demographic Identifiers of Audience Clusters*

	Essentialists		Pragmatic Guardians		Alarmists		Consensus Seekers	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Employment								
Creative and Cultural Industries	9	7.3	9	7.2	8	5.3	6	5.1
STEM and Technical	8	6.5	9	7.2	16	10.7	11	9.4
Business, Finance, and Management	25	20.3	21	16.8	25	16.7	18	15.4
Service and Support Roles	9	7.3	8	6.4	22	14.7	13	11.1
Health, Safety, and Social Services; Agriculture & Natural Resources	9	7.3	5	4.0	6	4.0	5	4.3
Retired	33	26.8	46	36.8	30	20.0	22	18.8
Unemployed & Other	30	24.4	27	21.6	43	28.7	42	35.9

### Political Orientation

Liberal	35 <sub>a</sub>	28.4	26 <sub>a</sub>	20.8	28 <sub>a</sub>	18.7	30 <sub>a</sub>	25.6
Moderate	41 <sub>a</sub>	33.3	30 <sub>a</sub>	24.0	69 <sub>b</sub>	46.0	38 <sub>a</sub>	32.5
Conservative	38 <sub>a</sub>	30.9	62 <sub>b</sub>	49.6	40 <sub>a</sub>	26.7	40 <sub>a</sub>	34.2
Prefer not to answer	9 <sub>a</sub>	7.3	7 <sub>a</sub>	5.6	13 <sub>a</sub>	8.7	9 <sub>a</sub>	7.7

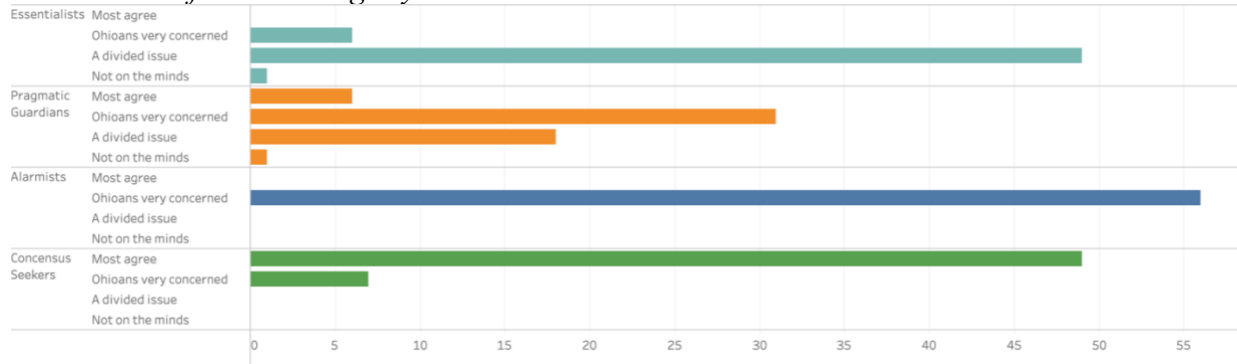
### Community Type

Rural	27	21.9	33	26.4	49	32.7	38	32.5
Suburban	69	56.1	67	53.6	66	44.0	48	41.0
City Urban	27	22	25	20	35	23.3	31	26.5

**Note.** For political orientation, in the same row, values with subscript a do not differ significantly from other values with subscript a, but differ at the .05 level from those with subscript b.

**Figure 2**

*Distribution of Issue Ratings by Audience Clusters*



### Objective 3: Determine News Source Preferences Based on Audience Clusters

Three ordinal logistic regressions with proportional odds were run to determine the effects of audience cluster on the frequency of use of news media, social media, and websites for information. The four categorical audience groups were recoded into three dummy codes, with Alarmists used as the reference group due to perceived universal concern about these issues. For each dummy variable, the group of interest—Essentialists, Pragmatic Guardians, or Consensus Seekers—was coded as 1. All other groups were coded as 0.

For news media, the test of parallel lines was not significant, indicating that the assumption of proportional odds had been met,  $\chi^2(12) = 17.71, p = .125$ . The goodness-of-fit test indicated that the model provided a good fit to the observed data,  $\chi^2(12) = 18.95, p = .084$ . However, the final model was not a statistically significant predictor for the use frequency of news sources for information,  $\chi^2(3) = 2.45, p = .485$ . For websites, the test of parallel lines is not significant, indicating that the assumption of proportional odds has been met,  $\chi^2(12) = 8.06, p = .781$ . The goodness-of-fit test indicated that the model provided a good fit to the observed data,  $\chi^2(12) = 7.68, p = .809$ . However, the final model was not a statistically significant predictor for the use frequency of websites for information,  $\chi^2(3) = 1.41, p = .702$ , indicating audience segment did not change the likelihood of news media usage.

For social media, the test of parallel lines was not significant, indicating that the assumption of proportional odds had been met,  $\chi^2(12) = 13.34, p = .345$ . The goodness-of-fit test indicated that the model provided a good fit to the observed data,  $\chi^2(12) = 13.47, p = .336$ . The final model statistically significantly predicts the use frequency of social media for information,  $\chi^2(3) = 38.63, p < .001$ . Essentialists were predicted to have a 0.045 (4.5%) increase in the odds of using social media more frequently as a news source, compared to Alarmists,  $p < .001$ . Pragmatic Guardians were predicted to have a 0.245 (24.5%) decrease in the odds of using social media more frequently as a news source, compared to Alarmists,  $p < .001$ . There was no significant difference between Consensus Seekers and Alarmists in the odds of using social media more frequently as a news source.

### **Conclusions/Recommendations/Implications**

Using Tombari's (1984) issue life cycle model, we sought to understand how Ohioans perceived and rated known AFNR issues. For the full sample, most issues were rated as "divided" or "very concerned." Though we did not examine individuals' own opinions in this study, based on these results, we can conclude that Ohioans perceive AFNR issues to be important to the state, with multiple opinions on how they should be handled. However, large standard deviations indicated wide variation in participant responses, warranting further analysis.

Using hierarchical and K-means cluster analysis, we identified four audience segments based on their perceptions of the positions of issues in the issue life cycle model. Again, participants were not asked to express their *own* beliefs on where the issues fell in the model, but where they believed *Ohioans* fell on each issue. Essentialists (cluster 1) generally believed most AFNR issues were divided, but also believed Ohioans were very concerned about a few main topics, namely issues related to food and water quality. Pragmatic Guardians (cluster 2) expressed the widest range in perspectives, believing Ohioans to be concerned or divided about most issues, yet also believing residents agreed on issues such as land and commodity prices, farmland preservation, and water issues. Alarmists (cluster 3) perceived Ohioans to be universally concerned about most issues, while Consensus Seekers (cluster 4) believed Ohioans agreed on most issues. However, Consensus Seekers identified a few issues of concern (e.g., food concerns, fossil fuels, cattle emissions) that highlight key areas of emphasis.

Issues are generally perceived differently by issue networks: groups with similar knowledge often based on business, government, and society (Hecklo, 1978). In this study, we examined the four audience clusters based on occupation, political orientation, and community type. Chi-square analysis revealed no significant differences in the clusters for occupation and community type. However, there were significant differences between the groups in political orientation: Pragmatic Guardians (cluster 2) were more likely to report conservative ideology, while Alarmists (cluster 3) were more likely to report moderate ideology. Essentialists (cluster 1) and Consensus Seekers (cluster 4) were not significantly different in political orientation than other clusters. Though political ideology factored into issue perceptions for some groups, overall, the differences across clusters could not be fully attributed to the factors that usually drive issue networks. Instead, it is more likely that perspectives stemmed from underlying beliefs and values

(i.e., psychographics) that were not measured in this study. Future research should endeavor to connect participants' psychographics with their perspectives of the issue life cycle.

Prior research indicates the news media plays a role in shaping public perceptions of issues, whether that's through a natural rise and fall of attention (McComas & Shanahan, 1999; Nisbet & Huge, 2006) or, for time-sensitive issues, increasing their public attention as needed (Arendt & Scherr, 2019; Fung et al., 2022; Shih et al., 2008). Results of the ordinal logistic regression indicated audience clusters were no more likely than others to use the news media or websites as sources of information. These results suggest that how these sources portray news might not affect how perceptions of issues are formed, in contrast to Wanta's (2023) findings. However, we did not ask participants to indicate which news sources or websites they use (e.g., *The New York Times*, CNN, Fox News). As different sources may present similar content within different frames (Bonfadelli, 2010; Ding et al., 2023), future research should explore how different news sources shape the way issues unfold along the life cycle model.

Social media are powerful tools for consumers, media, and businesses to share and gather information (Eriksson, 2018), providing these groups with the opportunity to anticipate, influence, and collaborate on current issues (Santa Soriano et al., 2018). In this study, Essentialists were slightly more likely to use social media as an information source more frequently than Alarmists, while Pragmatic Guardians were less likely to use it for information. Given the complex nature of social media and exposure to similar or differing opinions through echo chambers, selective exposure, and broader public discourse (Dubois & Blank, 2018, 2018; Guess et al., 2018; Kim & Kim, 2021; Nagura & Akiyama, 2025), it is possible that how frequently these groups used social media influenced how they perceived Ohioans's alignment or discord on these issues. However, we did not ask participants to report other engagement factors, such as the specific sources, which issues, or how often they chose to engage with information, which limits our understanding of how broader social media engagement influences perceptions of AFNR issues, another opportunity for future research.

Perceptions about AFNR issues in Ohio appear to be as diverse and abundant as the state's agricultural and natural resources. Participants generally believed that their fellow Ohioans were concerned or divided about the issues presented in this study. It is important to note that, while we asked participants to rate their beliefs about Ohioans' overall perceptions, they may have reported their own beliefs about the issues instead, which limits the application of this study. In addition, we cannot know what *side* of an issue participants believed residents agreed upon. For stakeholders seeking to engage the public on AFNR issues, this study offers insight into the varied perceptions of Ohioans. Communicators should be aware of consensus or disagreement on a particular issue, especially when seeking to engage consumers on social media, as certain groups may be more likely to use this channel for news. Offering opportunities to engage with multiple issues may expose audiences to a broader understanding and awareness of these issues. While this study focused on perceptions of Ohioans on agriculture, food, and natural resource issues, these issues are likely present in other areas of the country. Future research should explore how AFNR issues, such as those of debate for inclusion in an upcoming farm bill, are perceived using a national sample, as state and regional variation in public opinion and news coverage may influence the positioning of these issues on the life cycle model and showcase opportunities for stakeholders to engage with the public.

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