

# Applying Situational Theory of Publics to Tailor Agricultural Messages for Rural Communities

Tatevik Markosyan<sup>1</sup>

Kristin E. Gibson<sup>2</sup>

Alexa J. Lamm<sup>3</sup>

## Abstract

*Rural communities across the United States often face barriers to accessing healthy food, leading to elevated food insecurity and obesity-related health issues. Geographic and environmental challenges, high food costs, limited availability of healthy options, and low health literacy hinder informed nutritional decision-making. This study examined socio-demographic characteristics and rural residents' perceptions of barriers and enablers to healthy food access in Georgia, a state exhibiting high rates of rural obesity and diet-related diseases. Data were collected from 780 rural residents via an online survey using non-probability opt-in sampling. The results identified significant disparities in perceived barriers and enablers based on socio-demographic attributes. Black respondents reported more frequent barriers compared to White respondents. Full-time and part-time workers perceived greater barriers and enablers than retired or unemployed individuals. SNAP participants perceived greater barriers and enablers than non-SNAP participants. The findings imply a need for tailored agricultural communication strategies to address the unique challenges of marginalized populations, including Black residents and SNAP beneficiaries. Recognizing employment status' impact on food access perceptions further supports the necessity of customized messaging. Future research should assess the effectiveness of tailored agricultural communication approaches for specific rural segments, investigate actual food consumption patterns, and explore community-level dynamics. Advocacy for policy reforms focused on developing sustainable, health-focused rural food systems could assist in mitigating structural barriers. This study underscored the importance of targeted communication strategies in addressing rural food access disparities and promoting healthier communities.*

## Introduction

Rural populations in the United States often experience elevated levels of food insecurity and obesity issues, which are closely associated with higher rates of diet-related chronic diseases (Byker Shanks et al., 2022). Agricultural communicators have attempted to target rural communities by sharing pertinent information about proper nutrition (Meendering et al., 2023) and engaging in physical activity (Batra et al., 2019). In this process, communicators and educators have identified rural residents' barriers to adoption of proper nutrition and engaging in exercise across rural communities which can be used to inform broad communication strategies across the U.S. However, previously employed large-scale communication efforts have been determined ineffective at the individual and community level when it comes to actual engagement in physical activity and healthy eating behavior change (Barnidge et al., 2013) that can reduce

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<sup>1</sup>Tatevik Markosyan, Ph.D. is a Research Assistant in the Department of Agricultural Education, Leadership and Communication at the University of Georgia 450 College Station Rd., Athens, GA, USA, 30602, [tatevik.markosyan@uga.edu](mailto:tatevik.markosyan@uga.edu), ORCID# 0000-0002-6465-595X

<sup>2</sup>Kristin E. Gibson, Ph.D. is a Assistant Professor of Conservation and Environmental Education in the School of Natural Resources at the University of Missouri, 1111 Rollins St., Columbia, MO, 65201. ORCID# 0000-0002-1480-4005

<sup>3</sup>Alexa J. Lamm, Ph.D. is a Professor of Science Communication in the Department of Agricultural Leadership, Education and Communication at the University of Georgia, 132 Four Towers, Athens, GA 30602, [alammm@uga.edu](mailto:alammm@uga.edu). ORCID# 0000-0003-1999-8803

diet-related chronic diseases. The lack of engagement may be due to each community exhibiting unique social determinants of health (SDOH), creating barriers that should be addressed through communication efforts specific to group-identified demographics, such as age (Batra et al., 2019) and race (Cossman et al., 2017) to ensure belonging and access to agricultural, food, natural resources (AFNR) systems (AAAE, 2023).

Social determinants of health (SDOH) are social, cultural, and environmental conditions in which a person lives and grows that influence a person's quality of life and health outcomes (Singh et al., 2017). SDOH are individually or community-based and include factors such as gender, race/ethnicity, socioeconomic status (SES), education, income, employment, or disability status (Singh et al., 2017). SDOH disproportionately impact rural communities due to differences in the built environment (Baxter et al., 2022), resource access (Lenstra et al., 2022), lack of access to food systems (Hardin-Fanning & Rayens, 2015), and health literacy (Bailey et al., 2016).

Rural communities also face inequities in resource allocations as a result of geographic and environmental barriers which may impact their residents' ability to achieve public health goals (Lenstra et al., 2022). Food cost and healthy food availability, both SDOH in rural communities, are often too high (costs) and too low (availability) yet integral to meeting healthy nutrition goals (Hardin-Fanning & Rayens, 2015). In addition, disproportionately low levels of health literacy affect rural residents' abilities to make informed decisions about health and nutrition (Bailey et al., 2016).

Food insecurity, a critical barrier to fostering healthy living, is exacerbated by inadequate access to nutritionally dense foods, further deepening social health disparities (U.S. Department of Health and Human Services, 2023). Addressing these challenges requires systems-level approaches to promote equitable access to AFNR resources (AAAE, 2023). Food insecurity encompasses insufficient food quantities and limited access to a diet rich in quality and variability (U.S. Department of Health and Human Services, 2023). The COVID-19 pandemic generated significant challenges in all spheres of life – social, economic, environmental, and governance (United Nations, 2023). The pandemic also revealed the vulnerability of global food supply chains and how they impact pre-existing health conditions of populations, which were further exacerbated due to lack of access to nutritional and healthy foods, uncertainties around government-imposed social distancing policies and practicing, lockdowns affecting mental well-being of the public, increasing food prices and other determinants (O'Hara & Toussaint, 2021; Torero, 2020). Movement restrictions during this time decreased labor accessibility within the food system in rural areas, causing disruptions to specific harvesting and agricultural operations ultimately impacting food distribution (Mardones et al., 2020). In addition, food safety was at risk since processing, packaging, shipping, and delivering foods were considered channels of virus transmission at the time (Mardones et al., 2020). The complex impact, ranging from disruptions in labor accessibility to increased food prices, underscored the critical need for a comprehensive and proactive approach to tailored communication, especially in agricultural contexts (O'Hara & Toussaint, 2021; Torero, 2020).

The global pandemic showcased a critical need for locally grown healthy foods to ensure accessible sources of nutritious food are available in both rural and urban areas (Enthoven & Van den Broeck, 2021; Leone et al., 2020). The need to create dynamic local food systems, where food grown or produced within a specific region is bought and consumed locally, is steadily increasing (Tidwell & Lamm, 2020). Research findings have indicated participating in local food systems has the potential to enhance local economies, decrease dependence on heavily processed foods and global food networks, and promote better health and overall well-being (Tidwell & Lamm, 2020). Tidwell and Lamm (2020) found audience segmentation was applicable when determining how to target specific age groups regarding the food system, suggesting there are pathways for enhancing involvement of a population using both sociographic and demographic characteristics. Further studies support their determination with consumption behaviors, including convenience, established habits, perceived value, health considerations, risk perception, and how

individuals react to societal expectations and norms, all having varying degrees of impact on consumers decision making (Kasza et al., 2022). Therefore, studying specific audience needs related to involvement in healthy food initiatives may inform agricultural communication approaches in rural areas, further ensuring their effectiveness.

### **Conceptual Framework**

Understanding the demographic, psychological, and social factors influencing health behavior is crucial before designing any communication initiative targeting specific behavior changes (Hardcastle & Hagger, 2016). Previous research has used audience segmentation to develop effective communication tactics designed to promote health behavior change, including health education campaigns (Chu et al., 2019). Therefore, audience segmentation, rooted in the Situational Theory of Publics (Grunig, 1989), was used as the conceptual framework for this study to identify the specific needs of targeted audiences in rural areas to ensure messages are effective. The Situational Theory of Publics provides a foundation for understanding how and why specific groups respond to communication efforts (Grunig, 2005). It segments publics based on problem recognition, constraint recognition, and level of involvement—factors that influence whether individuals actively or passively seek information (Grunig, 2005). Publics are categorized as latent, aware, or active depending on their engagement with a given issue, making the theory particularly useful for tailoring messages to diverse audiences (Grunig, 1989). This study applied these principles to identify rural audience segments most likely to engage with tailored communication efforts.

The purpose of audience segmentation is to develop strategic messages that aim to expand knowledge, influence attitudes, and promote long-lasting behavior change (Slater, 1996). Audience segmentation produces a cluster of socially motivated groups within a bigger, more diversified population (Leiserowitz et al., 2021; Slater, 1996) and is commonly used to distinguish homogeneous groups of customers who can be targeted in the same way because they have similar needs and preferences (Wedel & Kamakura, 1998).

Demographics alongside psychographics, which “classifies segments by lifestyle or personality traits or characteristics” (Adeola et al., 2019, p. 46) when segmenting audiences have been found to result in the most impactful health communication campaigns. Wills et al. (2014) utilized psychographics segmentation to inform obesity prevention strategies in England concluding “even within a relatively homogenous socio-demographic community, there needs to be a range of interventions and messages tailored for different population segments” (p. 658). In another study examining how social media resources can supplement restricted in-person communication and contribute to the promotion of mental and physical well-being amid the COVID-19 pandemic, public health interventions were found to rely on demographic factors to identify target audiences with certain demographic factors significantly correlated with individual health (Ihm & Lee, 2021). In addition, Lamm et al. (2019) found using demographic characteristics (sex, age, level of employment, level of education, geographical region) “can be an effective way to deliver tailored content to specific audiences” (p. 13).

Eiseman et al. (2023) explored consumer attitudes and perceptions toward locally produced foods, particularly focusing on the effectiveness of videos in connecting consumers with local food producers. Their findings indicated utilizing social media and video marketing to promote locally produced food had the potential to boost consumers' intentions to purchase local products, but demographic factors such as age, education, gender, political party affiliation, community type, and income level influenced consumers' decision-making and perceptions toward local food producers. In addition, perceived benefits of purchasing local food, like supporting the local economy, community, health, environmental sustainability, food quality, taste, and affordability also had an impact (Eiseman et al., 2023).

Segmenting audiences and customizing agricultural communications have been demonstrated to influence consumers' intention to adopt certain behaviors (Lamm et al., 2019). However, the recognition of “*a priori* approaches” (Obilo & Alford, 2018, p. 64) to audience segmentation techniques must be utilized without polarizing audiences while tailoring food messages to their specific needs and requirements (Lamm et al., 2019; Slater, 1996). Further, clarity and framing of a message, a technique used for tailoring messages, where manipulating how information is presented is done to influence people's behavioral decisions, can contribute to more successful communication efforts (Myers, 2010). Tailored messaging and inclusivity of diverse demographics, as well as fostering a more comprehensive understanding and support for existing beliefs and values of the target audience, are crucial components in effective and efficient communication (Lamm et al., 2019; Obilo & Alford, 2018; Slater, 1996; Fischer et al., 2023). Therefore, a study examining how specific socio-demographics of rural residents' impact perceived barriers and enablers to engagement with healthy food choices is warranted.

### **Purpose and Research Objectives**

The purpose of this study was to examine if barriers and enablers to accessing healthy food choices varied by socio-demographic characteristics for rural residents. The following research objectives guided the study:

1. Identify socio-demographic characteristics of rural residents.
2. Determine if differences existed in respondents' perceived barriers to accessing healthy food choices based on their socio-demographic characteristics.
3. Determine if differences existed in respondents' perceived enablers to accessing healthy food choices based on their socio-demographic characteristics.

### **Methods**

The study presented here was part of a larger research project designed to explore how an CDC-funded health promotion Extension project could best meet the needs of rural audiences with the intent of increasing physical activity, altering food policy to improve access to healthy food choices, and build stronger connections between rural residents and their local food system. An online survey of rural residents in Georgia was conducted. Georgia, located in the Southeastern U.S., exhibits one of the highest rates of rural obesity and associated diet-related chronic disease in the U.S. making its' residents an informative example of rural communities where food systems communication is needed and can be most effective. The data obtained through the survey has been published previously; however, the specific analysis used to address the research objectives in this study were intentionally crafted and designed from the inception of the project making this an appropriate use of the data (Kirkman & Chen, 2011). The part of the survey germane to reaching the research objectives requested respondents identify perceived barriers and enablers to accessing healthy food along with self-reported socio-demographic characteristics.

### **Data Collection and Sampling**

Non-probability opt-in sampling methods were employed with data obtained from 780 rural residents in Georgia using an online survey instrument. Non-probability sampling methods are often used in public opinion research to make population estimates with the accuracy of the results found to be greater than or equal to those obtained through probability sampling methods. Lamm and Lamm (2019) and Gibson et al. (2021) reported non-probability sampling techniques have assisted in creating targeted and effective communication and education efforts; therefore, it was deemed to be an acceptable technique for this current study. However, a limitation was only rural residents with access to the Internet could participate, potentially increasing sampling bias. Rurality was the only eligibility criteria for study participation. Survey respondents were recruited by Qualtrics, an online survey company, and compensated for their participation

according to Qualtrics's standard protocols. Respondents were recruited to fill quotas set *a priori* to ensure the sample was representative of rural Georgia residents based on the zip code their primary residence was situated to determine geographic spread, sex, age, and race/ethnicity.

### Instrumentation

The online survey captured socio-demographic characteristics including sex, ethnicity, age, marital status, employment, income, receiving Supplemental Nutrition Assistance Program (SNAP) benefits, receiving Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) benefits, and education level. Respondents were allowed to select 'all-that-apply' for race. Respondents who selected more than one race were recoded into a single group labeled 'mixed race'. All socio-demographics were recoded into categorical variables for further analysis.

Respondents perceived barriers to accessing healthy food choices were identified using a six-item scale adapted from the Missoula Food Bank (2021) community food insecurity survey. Respondents were asked to indicate how often each of the six items made it challenging for them to get access to fruits and vegetables on a 5-point Likert-type scale ranging from 1 - *never* to 5 - *all of the time*. Fruits and vegetables are noted in the literature as being a descriptive standard that can be used as an indicator of healthy food choices general respondents can relate to despite physical location (Missoula Food Bank, 2021). Therefore, fruits and vegetables were used in the instrument in place of the words healthy food choices to ensure respondent perception of the foods being asked about were indeed healthy in both the barriers and enabler scales. Respondents were allowed to select 'not applicable' if an item did not apply to them. The items included: *limited access to or no available kitchen/cooking equipment, don't know how to prepare and cook meals with fruits and vegetables, not enough time to eat fruits and vegetables at work or school, no refrigeration at work or school, don't like fruits, and don't like vegetables*. A mean score was calculated by taking the average score to the six items ( $M = 1.85$ ,  $SD = 0.85$ ). Respondents who selected not applicable received a mean score for the item based on their overall responses to the rest of the items before their average score was calculated. A higher mean score indicated a respondent experienced barriers to accessing healthy foods more often. Reliability was calculated *ex post facto* ( $\alpha = .83$ ; Cortina, 1993) confirming the use of the scale with the population of interest.

How often respondents perceived enablers to accessing healthy food choices were identified using a 14-item scale adapted from the Missoula Food Bank (2021) community food insecurity survey. Respondents were asked to indicate how much each of the six items made it easier for them to access fruits and vegetables on a 5-point Likert-type scale ranging from 1 - *never* to 5 - *all of the time*. Respondents were allowed to select 'not applicable' if an item did not apply to them. The items included: *less expensive, more items provided at my food bank/food pantry/meal delivery program, community garden in my neighborhood, more farmers markets or farm stands, knowing how to grow my own food, having the space to grow my own food, more grocery stores near where I live and work, more convenience stores/gas stations that sell fruits, vegetables, and lean proteins, bus routes or public transportation options to places that sell fruits, vegetables, or lean proteins, knowing how to prepare fruits, vegetables, and lean proteins, more fruits and vegetables offered at gas stations and/or convenience stores, more fruits and vegetables offered at restaurants (including fast food), and more fruits and vegetables offered at dollar type stores*. Respondents who selected 'not applicable' on one or more item received a mean score for that item based on their overall responses to the items completed. A mean score was calculated by taking the average score to the 14 items ( $M = 3.30$ ,  $SD = 0.93$ ). A higher mean score indicated a respondent experienced enablers to accessing healthy food choices more often. Reliability was calculated *ex post facto* ( $\alpha = .92$ ; Cortina, 1993) confirming the use of the scale with the population of interest.

A panel of faculty members in food systems communications, nutrition, and health promotion reviewed the survey for face and content validity prior to it being pilot tested. A pilot test was conducted

on 50 rural Georgia residents representative of the population of interest. Both scales were confirmed to be reliable and used for the full study. The study protocol was approved by the University of Georgia Institutional Review Board (Protocol #00005553) prior to data collection.

### Data Analysis

Data were analyzed descriptively to address objective one and inferentially using a series of Analysis of Variance (ANOVAs) in SPSS to address objectives two and three. One-way ANOVAs were conducted using socio-demographics (race, income, employment, receiving SNAP benefits, and sex.) as the independent variables and the enabler scale and barrier scale as the dependent variables. One-way ANOVAs were used to determine statistically significant differences between the means of categorical variables. ANOVA effect sizes were calculated with *eta squared*, which is the sum of squares effect divided by the sum of squares total. A small effect size was noted as less than or equal to 0.01, a medium effect size 0.02 - 0.06, and a large effect size 0.07 or greater (Cohen, 1988). A Bonferroni test was used *post hoc* with significant ANOVAs to determine specific group differences.

### Results

Results from the first objective indicated 78.4% of the respondents representing rural residents in Georgia had not completed a college education with 41.6% only having a high school education. In addition, 54.9% reported an annual household income of less than \$40,000/year in 2022, 40.9% were on SNAP benefits and 13.7% were on WIC benefits. Ages ranged equally across categories from 18 – 68+ and 24.8% reported being unemployed. A socio-demographic profile of the entire set of respondents can be found in Table 1.

**Table 1**

*Socio-demographics of respondents (N = 780)*

	<i>F</i>	%
Sex		
Female	543	69.6
Male	237	30.4
Ethnicity (Hispanic/Latinx/ Chicanx)		
No	748	95.9
Yes	32	4.1
Race		
White	577	74.0
Black/African American	172	22.1
American Indian or Alaskan Native	4	0.5
Mixed race	19	2.4
Asian or Pacific Islander	3	0.4
Other	5	0.6
Age		
18-27	101	12.9
28-37	177	22.7
38-47	160	20.5
48-57	118	15.1

	<i>F</i>	%
58-67	135	17.3
68+	89	11.4
<b>Marital Status</b>		
Married	308	39.5
Single	200	25.6
Divorced	99	12.7
Living with a partner, not married	91	11.7
Widowed	47	6.0
Separated	35	4.5
<b>Employment</b>		
Full-time	274	35.1
Part-time	69	8.8
Retired	146	18.7
Self-employed	71	9.1
Student	19	2.4
Unemployed, looking for work	87	11.2
Unemployed, not looking for work	114	14.6
<b>Income</b>		
Less than \$19,000	204	26.2
\$20,000 - \$39,999	224	28.7
\$40,000 - \$59,999	142	18.2
\$60,000 - \$79,000	54	6.9
\$80,000 - \$99,999	59	7.6
\$100,000 - \$119,999	45	5.8
\$120,000 or more	52	6.7
<b>Receives SNAP Benefits</b>		
Yes	319	40.9
No	441	56.5
Unsure	20	2.6
<b>Receives WIC Benefits</b>		
Yes	107	13.7
No	668	85.6
Unsure	5	0.6
<b>Educational Level</b>		
Less than high school	41	5.3
High school or GED	283	36.3
Some college	194	24.9
Associate's degree	93	11.9
Bachelor's degree	99	12.7
Graduate degree (master's, doctorate)	70	9.0

### Differences in Perceived Barriers

An ANOVA was used to determine if differences existed in how often respondents' perceived barriers to accessing healthy food choices based on socio-demographic characteristics (see Table 2). There was a statistically significant difference between how often respondents' perceived barriers to accessing healthy food choices based on race ( $F = 5.56, p < .001$ ), employment ( $F = 8.76, p < .001$ ), and receiving SNAP benefits ( $F = 7.82, p < .001$ ). All had a medium effect size.

**Table 2**

*Differences in how often respondents' perceived barriers to accessing healthy food choices based on socio-demographics*

	<i>df</i>	<i>F</i>	<i>p</i>	<i>n</i> <sup>2</sup>
Employment	6	8.76	<.001	0.06
Race	5	5.56	<.001	0.03
SNAP benefits	2	7.82	<.001	0.02
Income	6	1.32	.244	-
Sex	1	0.43	0.51	-

The specific differences between the sociodemographic groups and how often respondents' perceived barriers to accessing healthy food choices were explored with planned comparison using a Bonferroni test (Table 3). Respondents who identified as Black ( $M = 2.12, SD = 0.99$ ) perceived barriers to accessing healthy food choices more often than respondents who identified as White ( $M = 1.77, SD = 0.79$ ). Respondents who indicated they worked full-time ( $M = 2.03, SD = 1.00$ ) or part-time ( $M = 2.06, SD = 0.92$ ) perceived barriers to accessing healthy food choices more often than respondents who indicated they were retired ( $M = 1.50, SD = 0.48$ ) or self-employed ( $M = 1.59, SD = 0.59$ ). Respondents who indicated they were unemployed and looking for work ( $M = 1.96, SD = 0.89$ ) and unemployed and not looking for work ( $M = 1.86, SD = 0.72$ ) perceived barriers to accessing healthy food choices more often than respondents who indicated they were retired ( $M = 1.50, SD = 0.48$ ). Finally, respondents who indicated they received SNAP benefits ( $M = 1.96, SD = 0.93$ ) or were unsure if they received SNAP benefits ( $M = 2.27, SD = 1.10$ ) perceived barriers to accessing healthy food choices more often than respondents who indicated they did not receive SNAP benefits ( $M = 1.76, SD = 0.77$ ).

**Table 3**

*Bonferroni results examining the differences between how often respondents' perceived barriers to accessing healthy food choices related to specific socio-demographics*

(I) Classification	(J) Classification	Mean Difference (I-J)	<i>SE</i>	
Race	American Indian	Asian	0.54	0.64
		Black	0.59	0.43
		White	0.93	0.42
		Other	0.8	0.56
		Mixed race	1.01	0.46
Asian	Black	0.05	0.49	
	White	0.4	0.49	
	Other	0.26	0.61	

(I) Classification	(J) Classification	Mean Difference (I-J)	SE
	Mixed race	0.47	0.52
Black	White	.35***	0.07
	Other	0.21	0.38
White	Mixed race	0.42	0.2
	Other	-0.14	0.38
Other	Mixed race	0.07	0.2
	Mixed race	0.21	0.42
Employment			
Full-time	Part-time	-0.04	0.11
	Retired	.53***	0.08
	Self-employed	.44***	0.11
	Student	0.29	0.2
	Unemployed, looking for work	0.06	0.1
	Unemployed, not looking for work	0.17	0.09
Part-time	Retired	.56***	0.12
	Self-employed	.47**	0.14
	Student	0.33	0.21
	Unemployed, looking for work	0.1	0.13
	Unemployed, not looking for work	0.2	0.13
Retired	Self-employed	-0.09	0.12
	Student	-0.24	0.2
	Unemployed, looking for work	-.47***	0.11
	Unemployed, not looking for work	-.36**	0.1
Self-employed	Student	-0.15	0.21
	Unemployed, looking for work	-0.38	0.13
	Unemployed, not looking for work	-0.27	0.13
Student	Unemployed, looking for work	-0.23	0.21
	Unemployed, not looking for work	-0.12	0.21
Unemployed, looking for work	Unemployed, not looking for work	0.11	0.12
SNAP benefits			
Yes	No	.20***	0.06
	Unsure	-0.31	0.19
No	Unsure	-0.51*	0.19

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

### Differences in Perceived Enablers

An ANOVA was used to determine if differences existed in how often respondents' perceived enablers to accessing healthy food choices based on socio-demographic characteristics (see Table 4). There was a statistically significant difference between how often respondents' perceived enablers to

accessing healthy food choices and employment ( $F = 6.62, p < .001$ ) and receiving SNAP benefits ( $F = 6.59, p = .001$ ). Both had a medium effect size.

**Table 4**

*Differences how often respondents' perceived enablers to accessing healthy food choices based on socio-demographics*

	<i>df</i>	<i>F</i>	<i>p</i>	<i>n</i> <sup>2</sup>
Employment	6	6.62	<.001	0.05
SNAP benefits	2	6.59	.001	0.02
Race	5	1.97	0.08	-
Income	6	1.55	0.16	-
Sex	1	1.03	0.31	-

The specific differences between the socio-demographic groups and how often respondents' perceived enablers to accessing healthy food choices were explored with planned comparison using a Bonferroni test (Table 5). Respondents who worked full-time ( $M = 3.47, SD = 0.91$ ) perceived enablers to accessing healthy food choices more often than respondents who were retired ( $M = 2.99, SD = 0.89$ ) or unemployed and not looking for work ( $M = 3.09, SD = 0.82$ ). Respondents who were unemployed and looking for work ( $M = 3.54, SD = 0.96$ ) perceived enablers to accessing healthy food choices more often than respondents who were retired ( $M = 2.99, SD = 0.89$ ). Finally, respondents who received SNAP benefits ( $M = 3.45, SD = 0.93$ ) perceived enablers to accessing healthy food choices more often than respondents who did not receive SNAP benefits ( $M = 3.20, SD = 0.91$ ).

**Table 5**

*Bonferroni results examining the differences between how often respondents' perceived enablers to accessing healthy food choices related to specific socio-demographics*

	(I) Classification	(J) Classification	Mean Difference (I-J)	SE
Employment	Full-time	Part-time	0.11	0.12
		Retired	.48***	0.09
		Self-employed	0.15	0.12
		Student	0.29	0.22
		Unemployed, looking for work	-0.07	0.11
		Unemployed, not looking for work	.38***	0.1
	Part-time	Retired	0.37	0.13
		Self-employed	0.04	0.15
		Student	0.18	0.24
		Unemployed, looking for work	-0.18	0.15
		Unemployed, not looking for work	0.27	0.14
		Retired	Self-employed	-0.33
	Student	-0.19	0.22	

(I) Classification	(J) Classification	Mean Difference (I-J)	SE
Self-employed	Unemployed, looking for work	-.55***	0.12
	Unemployed, not looking for work	-0.1	0.11
	Student	0.14	0.23
	Unemployed, looking for work	-0.22	0.15
	Unemployed, not looking for work	0.23	0.14
Student	Unemployed, looking for work	-0.36	0.23
	Unemployed, not looking for work	0.09	0.22
Unemployed, looking for work	Unemployed, not looking for work	.45**	0.13
SNAP benefits			
Yes	No	.24***	0.07
	Unsure	0.25	0.21
	Yes	-.24***	0.07
No	Unsure	0.01	0.21

### Conclusions and Implications

Rural communities face significant challenges accessing resources due to geographic and environmental obstacles, which can hinder the achievement of public health goals (Baxter et al., 2022; Davis & Arnold, 2020; Lenstra et al., 2022). SDOH, particularly factors like food costs and the availability of healthy food options, play a pivotal role in shaping dietary choices in rural areas (Hardin-Fanning & Rayens, 2015). Tailoring initiatives to address the diverse SDOHs experienced based on specific socio-demographics can be an effective strategy for promoting healthy eating in rural communities (Batra et al., 2019; Chu et al., 2019; Cossman et al., 2017).

The results of this study indicated socio-demographic characteristics, specifically race, employment status, and participation in government assistance programs like SNAP, have a significant influence on how often rural residents perceive both barriers and enablers to accessing healthy food. Notably, respondents identifying as Black face barriers to accessing healthy food choices more often when compared to those identifying as White, highlighting the continued existence of racial disparities in healthy food access in rural communities. The results support previous studies that found recognizing and addressing disparities could result in targeted extension interventions developed to reduce food access inequalities in rural areas (Batra et al., 2019; Cossman et al., 2017). The findings imply there is a continued need for targeted interventions that address the unique challenges faced by marginalized racial groups.

Additionally, the findings indicated employment status is a key determinant of how often barriers are perceived, with full-time and part-time workers encountering barriers to accessing healthy food more often than retired or self-employed individuals. However, employment status also acted as an enabler, with those working full time perceiving enablers to accessing healthy food choices more often than respondents who were retired or unemployed and not looking for work. Perhaps those working full time or part time did not feel they had the time in their busy schedules and therefore perceived barriers related to time. Interestingly, when responding to perceived enablers, those working full time felt their financial situation allowed them to think about access from a financial perspective which was achievable and therefore felt

more agency than respondents who are retired or unemployed and not looking for work who are on a tight budget.

When it comes to financial barriers, SNAP is available to those that qualify (are under a standard gross monthly income based on family size equal to 130% of poverty; United States Department of Agriculture, 2023). Upon qualification, SNAP participants are granted a specific monthly allotment to use on food for their family. Respondents receiving SNAP benefits did perceive enablers to access to healthy food choices more often than those not receiving SNAP benefits. Alternatively, they also perceived barriers more often than respondents who did not receive SNAP benefits. The findings imply those receiving SNAP benefit may have become more aware of the financial constraints to feed their families healthy food than those who have not applied purely by becoming educated through the process.

Overall, the findings emphasize the complexity of food access challenges in rural communities, suggesting the need for comprehensive approaches that extend beyond individual-level interventions, as discussed in previous studies, to tackle systemic factors contributing to disparities (Hardcastle & Hagger, 2016). The results also support previous studies that rural households with low incomes continue to struggle with food insecurity despite employing coping strategies, such as government assistance programs like SNAP (Byker Shanks et al., 2022). The socio-demographic differences in how often both barriers and enablers are perceived by specific groups implies the use of audience segmentation (Grunig, 1989) can assist in providing the information needed to tailor communication messages effectively, particularly in promoting behavior change and expanding knowledge among diverse groups (Slater, 1996) in rural areas.

### **Recommendations**

Agricultural communication articulating the importance of consuming healthy food need to be tailored to unique marginalized populations in rural communities based on how often they perceive barriers based on the findings of this study. Unique marginalized populations include Black residents, those working full time or part time (specifically regarding reducing the perceived amount of time it takes to access healthy food) and residents receiving SNAP benefits. Perhaps utilizing churches, employers and SNAP communication materials would be ways to reach these specific target audiences with messaging appropriate to their needs. However, more research needs to be done to determine where rural residents falling into these categories obtain information related to making food choices.

In addition, research is needed to explore the effectiveness of tailored messages targeting specific populations, such as those mentioned above, in rural communities to determine effectiveness. Approaches could include conducting surveys, interviews, or focus groups with local community opinion leaders representing each specific target segment to gather insights from the community perspective. By obtaining more nuanced information in regard to specific target segment barriers and enablers, communication messages could be tailored to include socio-cultural relevance for greater impact. By investigating SDOH and how they impact health behavior, more targeted, evidence-based recommendations to enhance access to healthy food, promote healthier food choices and behaviors, and reduce health disparities among vulnerable populations in rural areas can be designed and shared broadly by federal organizations like the Center for Disease Control.

One limitation of this study was the information obtained was self-reported by residents and only captured perception. Additional research should explore actual consumption patterns of rural residents to accurately portray what specific audience segments are eating. In addition, measurements of community-level convenience, established habits, perceived worth of healthy food, health priorities, risk assessment, and responses to societal norms and expectations could be measured as they have been found to be core factors affecting choices related to healthy food (Kasza et al., 2022).

Another recommendation for future research includes investigating local food systems in rural areas to determine if access to locally grown and produced healthier food options are a way of improving access to foods grown specifically for locally implemented health promotion and behavioral change projects in rural communities (Tidwell & Lamm, 2020). Comprehending unique, community specific SDOHs could also lead to designing recommendations and advocating for policy changes supporting sustainable health-promoting environments to address structural determinants which affect access to healthy food in marginalized populations within rural communities. Food access challenges in rural communities are complex and the need for comprehensive approaches that extend beyond individual-level interventions to tackle systemic factors contributing to disparities are needed. Despite these challenges, equitable access to healthy food options should be readily available to all U.S. citizens. The more we know about the challenges rural residents face; the more targeted agricultural communication efforts can be in helping reduce perceived barriers while emphasizing enablers to empower rural residents in making the right behavioral food choices that will result in healthier people and a healthier society.

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