IDENTIFICATION AND EXAMINATION OF CRITICAL COMMUNITY ISSUES FACING RESIDENTS IN THE STATE OF GEORGIA

by

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(Under the Direction of Kevan W. Lamm)

ABSTRACT

This study identifies and examines the perception of critical community issues facing residents in the state of Georgia. The Delphi technique was used to build consensus among Extension experts regarding critical community issues in Georgia. The constant comparative method was used to develop heuristic themes related to the identified issues. Local residents across different counties of Georgia reported the level of perception they associated with each theme as a critical issue facing their communities. Chi-square tests of independence were used to determine how perception of critical community issues was distributed across different geographic groupings. The results of this study offer valuable implications for Extension personnel to tailor information delivery and program development according to the needs and interests of local communities.

INDEX WORDS: cooperative extension service, community capitals, critical community issues, geographic segmentation, program development

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B.S., University of Georgia, 2020

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

MASTER OF AGRICULTURAL AND ENVIRONMENTAL EDUCATION

ATHENS, GEORGIA

2022

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May 2022

DEDICATION

To my grandfather, Billy Powell Sr. Thank you for being one of the biggest supporters in my educational journey. Your interest in and support of my educational pursuits has meant more than you know. Thank you for always pushing me to strive for excellence. As you've always said, "Give the world your best and the world will give its best to you."

ACKNOWLEDGEMENTS

There are many people that I'm indebted to, and without whom I would not be where I am. To my advisor, Dr. Kevan Lamm, thank you for your mentorship and guidance over the past four years. It's been a privilege to work with you, and I'm grateful for how you've helped me grow as a researcher and writer. To my committee members, Drs. Abigail Borron and Alexa Lamm, thank you for serving on my committee. Your feedback was insightful and greatly improved the quality and content of this thesis. It's been a pleasure to work with you both.

To my parents, Billy and Cindy Powell, thank you for your endless support over the past 18 years of my educational journey. I would not be where I am today or be able to achieve the things I have without your love and encouragement. Thank you for always cheering me up when I've had a long day and for giving me the encouragement I needed to keep going when graduate school seemed insurmountable. To my sister, Ashtyn, thank you for sending me funny (albeit outdated) memes that always make me laugh and commiserating with me about the difficulties of grad school. To my grandparents, Billy and Beverly Powell, thank you for always showing so much interest and excitement about my educational accomplishments, especially within grad school. I know that you are proud of me, and I can't express how thankful I am that you were able to see me achieve this goal. To my partner, Caleb, thank you for your endless support over the past few years. Thank you for always listening to me when I've had a hard day and for sending cute animal videos that make me laugh. To my friends, Jade and Allison, thank you for being my grad school buddies! I'm glad I got to go through this journey with y'all and I'm grateful for all your support.

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CHAPTER 1

INTRODUCTION

Structure of Thesis

This thesis is comprised of five chapters, including an introductory chapter, a discussion of the conceptual framework upon which this research is based, two studies that address select research objectives, and a summary chapter that discusses conclusions, implications, recommendations, and limitations. Collectively, these chapters demonstrate how the Cooperative Extension Service in Georgia can maintain relevancy by providing programs that address current critical issues facing the communities they serve. Data were collected and analyzed according to an IRB-approved protocol. The researcher utilized the community capitals framework to understand the complexity of respondent needs as they relate to existing capital stocks within the community. Additionally, the researcher utilized audience segmentation to understand perception of community issues across geographic groupings and enable Extension personnel to tailor subsequent actions according to the specific needs and conditions of a community.

Introduction

Following the passage of the 1914 Smith-Lever Act, the Cooperative Extension Service was established to "solve the practical problems of everyday life" (Garst & McCawley, 2015, p.26). At a federal level, Extension is administered through the land-grant university system (Franz & Townson, 2008). At the state level, Extension is typically structured with a central unit located at the state's land-grant college or university, several district or regional offices, and numerous county offices (Franz & Townson, 2008). Through county Extension agents and state

specialists, Extension has been able to provide rural and urban communities alike with timely, research-based information and programs (Beasley & Beasley, 2014; Elbert & Alston, 2004).

Initially, Extension was developed to exclusively address the needs and agricultural issues of rural communities (Garst & McCawley, 2015). The focus of Extension in the early 20th century was to increase farm productivity and spark the American agricultural revolution (NIFA, n.d.). As a result, Extension programming was traditionally focused on providing training and technical expertise related to agriculture practices and mechanics (French & Morse, 2015). As the needs of rural populations shifted, Extension expanded their programming, offering homemaking demonstrations and establishing the 4-H youth development program (Garst & McCawley, 2015). Throughout the last half of the 20th century, Extension responded to shifting population trends, developing programming suited to address the needs of urban and suburban audiences (Hains et al., 2021; Ruemenapp, 2017; Gaolach et al., 2017). In response to the environmental movement of the 1960s-70s, Extension increased their environmental education, efforts, delivering information on pollution prevention and soil/water conservation (French & Morse, 2015; UGA Extension, n.d.). At the turn of the 21st-century, Extension adapted to the rise of Internet-based technologies and attempted to address the digital divide among stakeholders (Elbert & Alston, 2004). Most recently, Extension has been forced to innovate in the face of the COVID-19 pandemic, transforming much of their program delivery to an online format (Davis et al., 2021; Narine & Meier, 2020)

Over its tenure, one of the key organizational strengths of the Extension system has been its adaptive approach (French & Morse, 2015). Extension's commitment to respond to changing societal contexts and client needs, while continuing to provide communities with relevant, science-based knowledge, has demonstrated its persisting public value (Buys & Rennekamp,

2020; French & Morse, 2015). Gould et al. (2014) summarizes the challenges currently facing the Cooperative Extension Service:

> In our rapidly changing environment, Cooperative Extension has to maintain contemporary relevance and documented impact across the broad spectrum of our programming efforts. Is this possible given current programmatic structures? What will need to change in order for Cooperative Extension to keep top-of-mind awareness (and necessary funding) in our society? What challenges will Cooperative Extension face at the local, state, and national levels? (para. 11).

As Extension enters its second century of operation, it is imperative that the model of program development and delivery remains dynamic and adaptive (Gould et al., 2014; Henning et al., 2014). To continue demonstrating its public value, Extension must remain faithful to the mission mandated in the Smith-Lever Act, by identifying individual, community, and societal needs and using this information to develop relevant programming and resources (Garst & McCawley, 2015).

Statement of Problem

The 21st century has brought with it unprecedented events and challenges. At the time of writing, the COVID-19 pandemic continues to negatively impact the United States and global society (Hernandez, 2022; Phillips, 2022). Global average temperatures continue to soar (Lindsey & Dahlman, 2021), as individuals around the world petition lawmakers and corporations to take action against the climate crisis (Pruitt-Young, 2021). Farmers and agricultural laborers face economic security, fluctuations in demand, and disruptions to trade networks and the supply chain (Gloy & Widmar, 2020; MSF, 2020). These global and national trends have and will continue to have long-lasting impacts on residents in the state of Georgia.

UGA Extension is uniquely positioned to help Georgians respond to and thrive in the face of such challenges (UGA Extension, n.d.). Boasting a network of 400 faculty members, 800 professional staff, and 8,000 trained volunteers, UGA Extension offers services to over 10 million individuals across 159 counties. With such a wide and varied clientele base, it is important that Extension personnel in Georgia develop programming to meet the specific needs of the communities they serve with respect to the current conditions and resources of these communities (Garst & McCawley, 2015).

Purpose and Research Objectives

The purpose of this research is to identify and generate consensus regarding critical community issues facing Georgians. Identification of needs is the first step in the needs assessment process, followed by categorization and prioritization of needs according to importance or urgency (Garst & McCawley, 2015). Since there is not a one-size-fits-all solution to the challenges facing Georgians, it is imperative that Extension agents understand the identified issues relevant to their communities. This research sought to address this question by examining how perception of critical community issues differed based on respondent geographic characteristics (i.e., rurality, geographic region, and Extension district). The study was motivated by the following research objectives:

1. Creative a comprehensive list of potential critical issues facing the citizens of Georgia.
2. Generate consensus on the most critical issues facing the citizens of Georgia.
3. Develop a heuristic thematic grouping of critical issues facing the citizens of Georgia.
4. Describe critical community issues based on geographic region/grouping.
5. Determine whether rurality was significantly associated with perception of critical community issues.

6. Determine whether geographic region was significantly associated with perception of critical community issues.
7. Determine whether Extension district was significantly associated with perception of critical community issues.

Significance of Study

The development of human society has precipitated a profound and dramatic impact across every region on the planet (Roberts et al., 2016). As a result, complex, adaptive challenges are facing today's society, requiring "multiple perspectives and systems thinking to develop and implement sustainable solutions" (Roberts et al., 2016, p.58). Extension educators are well-positioned to aid communities in developing the skills necessary "to handle risk and potential crises effectively, make timely and appropriate decisions, locate needed resources, and mobilize and organize citizens to work together" (Roberts et al., 2016, p.50).

To maintain relevancy and increase impact, Cooperative Extension must be attuned to the needs of the communities it serves. This study represents the first steps in a state-level needs assessment for UGA Extension by identifying and generating stakeholder consensus around critical community issues. Heuristic grouping of these issues enables Extension personnel to assess the human and material capital in their communities and identify how these critical issues affect and are influenced by these capitals. Furthermore, analyzing how perceptions of these issues differ across geographic groupings better enables Extension personnel to determine their community's pressing needs and serves as a starting point for further assessment. The results of this study provide insight into the touchpoints that Extension personnel may utilize to spark conversations with community members and devise participatory solutions to address these issues.

Limitations

There are several limitations to this study. First, the results of article one may not be generalizable to a large population because the results of the Delphi process are inherently limited by the perspectives of the expert panelists. The expert panelists used within article one hold leadership positions within UGA Extension and therefore their responses may be influenced by the nature of their employment. Additionally, the online survey used to collect data in article two was limited to respondents who had access to the Internet. Some rural parts of Georgia have minimal to no Internet access (King & Stutka, 2021); therefore, the perspectives of individuals living in these areas may be missing. Non-probability sampling procedure was used to limit nonresponse bias. Furthermore, the data for this study were collected prior to the outbreak of the COVID-19 pandemic, which precipitated profound disruptions across the state of Georgia. Therefore, it may be possible that respondent perceptions of critical community issues have changed due to new challenges engendered by the ongoing pandemic. Finally, the primary author and coder of the data is from a small suburban community in North Georgia and has previously collaborated on extension research studies. Therefore, personal experiences may affect interpretation of the data; however, peer debriefing and member checking were utilized to limit such biases according to recommendations in the literature (Lincoln & Guba, 1985).

Organization of Thesis

This thesis is organized into five chapters. Chapter one is an introductory chapter that examines how the Cooperative Extension Service has evolved throughout its first century of operations. Chapter two is a review of the conceptual framework on which this research is based; it also discusses the community capitals framework and provides examples of these capitals in Georgia. Additionally, chapter two defines the consensus building theory and audience

segmentation and discusses their applicability to this study. Finally, chapter two describes the five geographic regions of Georgia as well as the four Extension districts in the state. Chapter three is a mixed methods study that addresses research objectives 1-3. Chapter four is a quantitative study which addresses research objectives 4-7. Chapter five summarizes the results of the two research articles, discusses the implications for UGA Extension, addresses the limitations of the overall study, and provides recommendations for practice and future research. This body of work seeks to identify critical issues facing communities across the state of Georgia and utilizes audience segmentation to examine the prevalence of such issues across different geographic groups. Study one is grounded in the community capitals framework and evaluates how the identified community issues connect with the six community capitals. Study two is grounded in communication theory, specifically audience segmentation, and examines whether geographic grouping influences perception of critical community issues.

CHAPTER 2

LITERATURE REVIEW

Overview of Chapter

This chapter provides a detailed discussion of the conceptual framework on which this study is based. The selected frameworks include the consensus building theory, community capitals framework, and audience segmentation theory. Examples of community capital assets in the state of Georgia and the southeastern United States are provided. Additionally, this chapter summarizes the geographic diversity within Georgia by examining rural/urban differences, the five geographic regions of Georgia, and the four Extension districts. The chapter concludes with a discussion on how the community capitals framework and audience segmentation theory are appropriate for analyzing the perception of critical community issues across the state.

Conceptual Framework

Consensus Building Theory

Generating consensus involves gathering individuals who represent varied interests and engaging these individuals in a dialogue to address an area of shared concern (Innes & Booher, 1999). This practice is a common way to "search for feasible strategies to deal with uncertain, complex, and controversial planning and policy tasks" (Innes & Booher, 1999, p.412). The consequences of effective consensus building include high quality agreements between stakeholders who may otherwise not associate with one another, tangible products such as formal agreements and partnerships, and intangible products including social, intellectual, and political gains (Innes & Booher, 1999). From a societal perspective, consensus building is regarded as

valuable because it “links the distributed intelligence of many players [to] form a more coherent and responsive planning system” (Innes & Booher, 1999, p.421). A primary advantage of consensus building is the development of social capital, which can facilitate community building and promote effective civic capacity (Harvey, 2013; Saegert, 2006).

Within the 1990s, the consensus building framework rose in popularity, replacing the previously favored community organizing approach (Harvey, 2013; Saegert, 2006). Several approaches were associated with consensus building, including the community capitals framework (Flora et al., 2016), capacity building (Chaskin et al., 2001), and asset-based community development (Kretzman & McKnight, 1993). These approaches emphasize facilitating “communication among residents so that they can recognize their own interests, build trust, develop a shared vision of community, and apply their collective assets to its achievement” (Harvey, 2013, p. 258). In particular, collective approaches, such as consensus-building, operate on the belief that “every place, no matter how distressed, has the internal capacity to initiate” (p.259) conversations around community development (Harvey, 2013).

The results of applying consensus building to community development initiatives are mixed. Buchecker and Hunziker (2006) found that use of consensus building to determine development of a rural population in Switzerland had a net positive effect. Furthermore, Diaz et al. (2020) employed consensus building to determine a comprehensive list of program evaluation challenges among early-career extension professionals. The results of this study were used to inform professional development programming and mitigate the negative outcomes associated with challenging evaluation competencies (Diaz et al., 2020). However, existing social relations may affect the utility of the consensus building method (see Harvey et al., 2013). For instance, racial division in the Mississippi Delta region reduced the effectiveness of consensus building to

build civic capacity among community members (Harvey et al., 2013). Overall, every community, no matter the underlying obstacles, has the capacity necessary to take an active role in its transformation (Kretzman & McKnight, 1993), and the consensus building approach represents a valid method for engaging stakeholders in participatory-based community development (Saegert, 2006).

Community Capitals Framework

The community capitals framework was devised as a method to "analyze community and economic development efforts from a systems perspective by identifying the assets in each capital (stock), the types of capital invested (flow), the interaction among the capitals, and the resulting impacts across capitals" (Emery & Flora, 2006, p.20). Researchers have identified seven distinct capitals, i.e., human, social, natural, political, built, financial, and cultural (Emery & Flora, 2006). The seven capitals can be broadly categorized as human capitals, i.e., human, social, cultural, and political; or material capitals, i.e., natural, built, and financial (Emergy & Flora, 2006).

Human capital is defined as the "skills and abilities of people to develop and enhance their resources" (p.21) as well as their ability to access outside resources and knowledge to increase understanding and contribute to community development (Emery & Flora, 2006). Social capital refers to the ties among individuals, including "reciprocity, mutual trust, collective identity, cooperation, and a sense of a shared future" (Flora, 2004, p.8). These connections result in a social network, which facilitates collective action and effectively advances shared ideas and objectives (Emery & Flora, 2006). Cultural capital indicates how an individual understands the world and acts within it, including one's language and traditions (Emery & Flora, 2006). Political capital refers to "individual or group capacity for transforming community practices and

conventions into recognized rules that influence how resources are allocated" (Borron et al., 2020, p.46).

Natural capital includes a community's natural assets (e.g., climate, geography, quality of resources) and forms the foundation of all other capitals (Emery & Flora, 2006; Flora et al., 2016). Financial capital refers to the availability of financial resources "to invest in community capacity-building, to underwrite the development of business, to support civic and social entrepreneurship, and to accumulate wealth for future community development" (Emery & Flora, 2006, p.21). Built capital consists of manufactured and constructed elements, as well as the infrastructure necessary to support the activities associated with the other capitals (Emery & Flora, 2006; Borron et al., 2020). Subsequent factor analysis indicated built capital and financial capital represented the same latent variable and could be consolidated into a singular construct (see Borron et al., 2020).

The community capitals can be conceptualized as an interconnected web, where changes in the stock or flow of one capital may cause changes in the stock or flow of other capitals (Emery & Flora, 2006). For example, an increase in social capital stock and flow was found to increase stock of other capitals and precipitate a spiraling-up process, where assets continue building on one another (Emery & Flora, 2006). Conversely, a loss in assets can facilitate a decline in all community capitals, referred to as a spiraling-down process (Emery & Flora, 2006). While the community capitals are often examined for their impacts on other capitals, it can be useful to examine each capital independently (Borron et al., 2020). By examining the community capitals as separate components, Extension practitioners can gauge the existing capital stocks and assets of individual communities and may leverage these assets as entry points for programming and community development (Borron et al., 2020).

Community Capitals in Georgia

Human. According to data collected during the 2020 Census, there are 10.7 million people living in Georgia (U.S. Census, 2021), with an expected increase of 17.7% by 2030 (Georgia Department of Economic Development, 2021). However, population growth in Georgia has disproportionately occurred in urban areas, resulting in a 4% decrease of total rural population from 2010 to 2020 (Tanner, 2021; Fennessy & Mador, 2021). Currently, 87% of Georgia residents have received a high school diploma, which represents a 14% increase from 1990 (U.S. Census Bureau, 2021; Georgia Department of Economic Development, 2021). Additionally, 31% of Georgia residents hold a bachelor's degree or higher, which marks a 9% increase over the past 30 years (Georgia Department of Economic Development, n.d.). The proportion of individuals with less than a high school diploma has decreased in both rural and urban populations (Tanner, 2021; USDA-ERS, 2021). Among urban areas, the rate has decreased from 43.6% in 1980 to 11.6% in 2019 (USDA-ERS, 2021). However, rural populations experienced a much greater decrease with rates falling from 57.7% in 1980 to 18.6% in 2019 (USDA-ERS, 2021). Approximately 63% of individuals aged 16 or higher in Georgia are involved in the civilian labor force (U.S. Census Bureau, 2021). The top five occupations for Georgia workers include: 1) Office and Administrative Support, 2) Sales and Related Occupations, 3) Transportation and Material Moving, 4) Food Preparation and Serving Related Occupations, and 5) Production (U.S. Bureau of Labor Statistics, 2021).

Social. The family unit is a crucial component of the social system in the southeastern U.S. (Parker et al., 2018; Pittman, 2014). In 2021, Georgia ranked 38th in the nation for child and family well-being (Georgia Family Connection Partnership, 2021). The rate of children living in poverty provides insight to the resources and opportunities available to children within a

particular community (Georgia Family Connection Partnership, 2021). Prior to the COVID-19 pandemic, the rate of children living in poverty was 9% in 2019 (Georgia Family Connection Partnership, 2021). Due to negative impacts associated with the pandemic, the rate of children living in poverty in Georgia has increased dramatically, with some rural counties reaching 30% (Miller, 2021).

Political. The majority of individuals in Georgia identify as politically conservative (Pew Research Center, n.d.). For much of Georgia's history, state politics were dominated by Democratic conservatives (Lerer & Fausset, 2020; Wiegel, 2020). Today, the majority political party in Georgia is the Republican party (Weigel, 2020). However, new data suggests this trend may be changing. For example, Atlanta and its surrounding metro communities have become a hub for progressive political ideologies (Wiegel, 2020). Additionally, Georgia's electoral college votes went to Joe Biden in the 2020 presidential election, while Jon Ossoff and Raphael Warnock defeated Republican incumbents David Perdue and Kelly Loeffler in the 2020 Senate runoff (NBC News, 2021). With regards to urban and rural differences, urban populations in Georgia tend to identify as progressive, while rural populations generally identify as conservative (Wiegel, 2020). In terms of collective action within Georgia, Hogler et al. (2015) found that southern culture impacted how residents regard collective action. The researchers argued traditional social structures within the Southern United States negatively impact contemporary levels of union membership (Hogler et al., 2013). Additionally, within political elections, single-party control and a long history of gerrymandering has decreased political power among minority parties and underrepresented populations (Armstrong et al., 2021).

Cultural. Culturally, the southeastern United States is characterized by southern hospitality, which describes the warm, welcoming nature of many individuals (Megehee &

Spake, 2007). Other hallmarks of southern culture include a sense of community and rootedness (Coffman & BeLue, 2009; Schwarz, 1997). Additionally, Georgia is situated along the 'Bible Belt' (Carter, 2007), and a large percentage of the population identifies as evangelical Christian (Hitcher et al., 2021).

Natural. Georgia has a wealth of natural resources (Georgia DNR, n.d.). There are over 70,000 miles of rivers and streams, 425,000 acres of lakes, and approximately 4.5 million acres of freshwater wetlands (Georgia DNR, n.d.). Pine forests cover 60% of the state's surface area and contribute to 75% of the U.S. pine supply (Georgia DNR, n.d.). Additionally, the state is home to nearly 8 million acres of fertile farmland with the "soil quality, growing season, and moisture supply necessary to produce sustained yields of crops" (Georgia DNR, n.d., para. 2). which contributes over $73 billion annually to the state's economy (Georgia DNR, n.d.; Georgia Farm Bureau, n.d.). Over 8 million metric tons of kaolin, associated with a value of $1 billion, are mined within Georgia annually (Georgia DNR, n.d.). Other mineral resources include manganese, iron ore, and copper (Georgia DNR, n.d.). Additionally, the northern part of the state is rich in limestone, marble, clay, oil, and coal deposits (Georgia DNR, n.d.). Finally, several major water supplies throughout the Southeast are located in Georgia, including the Floridian Aquifer, Chattahoochee River, and Lake Lanier (Georgia DNR, n.d.; Southern Environmental Law Center, n.d.).

Built-Financial. Over 900,000 firms and approximately 240,000 employer establishments are located within the state of Georgia (U.S. Census Bureau, 2021). Additionally, the state contains over 1200 miles of interstate highways, 5000 miles of railways, and 120 public transportation systems (Georgia Transit Association, n.d.). Hartsfield-Jackson International Airport is located in south Atlanta, offering service to more than 100 million individuals annually (City of Atlanta,

2021). The cities of Savannah and Brunswick are home to deep water ports, which function as critical conduits for international trade and investment (Georgia Ports, n.d.).

Aging and insufficient infrastructure represents a significant threat to Georgia's built assets (Carpenter, 2014). A report by the Georgia Municipal Association (n.d.) analyzed and projected the infrastructure needs of Georgia cities and counties during 2020-2024. The highest reported needs were in the areas of transportation, water, and sewer (Georgia Municipal Association, n.d.). Additionally, over 1 million Georgia residents lack access to reliable, high-speed Internet broadband services (Georgia DCA, n.d.). Nearly 70% of these areas are located in rural parts of Georgia (Georgia DCA, n.d.). Furthermore, the majority of counties within Georgia lack sufficient healthcare infrastructure to meet resident needs (Catherman, 2020).

In terms of financial resources, the median household income for Georgia residents in 2019 was $58,700, which was lower than the national median household income of $62,843 (United States Census Bureau, n.d.). However, the median household income for Black and Hispanic residents in Georgia was lower than the median household income for White and Asian residents (Shrider et al., 2021). The reported poverty rate was 13.3% in 2019 for the state of Georgia, which was nearly two points higher than the national poverty rate (U.S. Census Bureau, n.d.). Additionally, only 63% of the state's 4.3 million housing units were owner-occupied (U.S. Census Bureau, 2021).

Audience Segmentation

Audience segmentation describes the method of separating individuals into different groups according to shared characteristics, which may be behavioral, psychological, geographical, socio-economic, or demographic in nature (Newton et al., 2013; Kotler & Roberto, 1988). This method is useful, especially when examining large diverse populations, because it

enables researchers to develop targeted educational materials and/or communication strategies according to the needs and interests of specific audience groupings (Warner et al., 2022). Although first employed in social marketing campaigns (Kotler & Lee, 2008), audience segmentation has been successfully applied to health promotion campaigns (see Maibach et al., 1996; Boslaugh et al., 2005), behavioral change interventions (see Moss et al., 2009; Forthofer & Bryant, 2000), and climate change communication (see Detenber et al., 2016; Hine et al., 2014; Maibach et al., 2011).

Furthermore, audience segmentation has been successfully applied to non-formal education contexts, including programs offered through Cooperative Extension (Warner et al., 2022). For example, Bowers et al. (2016) applied audience segmentation based on the Six Americas groups to inform climate change communication practices for Extension educators. This research revealed common ground between the six audience groups, which may be used by Extension personnel to discuss how all individuals can contribute to their community's environmental quality and economic health (Bowers et al., 2016). Additionally, Huang et al. (2016) used audience segmentation to inform Extension program development in Florida and develop targeted educational materials for high water users. Warner et al. (2017) identified learning preferences based on land management practices. This segmentation enabled Extension personnel to target residential irrigation water conservation programs to the needs of local stakeholders (Warner et al., 2017). Finally, Warner et al. (2022) utilized audience segmentation to examine how integrated pest management education influenced water conservation practices. The results were used to inform Extension programming related to water quality and availability in residential areas of Florida (Warner et al., 2022). At a composite level, audience segmentation is useful in Extension research because it enables the understanding of needs and interests based

on different audience groupings, which may facilitate effective resource use and development of salient programming (Warner et al., 2017; Huang et al., 2016).

For the present study, geographic segmentation was used. This type of audience segmentation groups individuals according to shared geographic characteristics (Kahle, 1986). Geographic segmentation is useful because geographic regions possess distinct cultures, histories, resources, and climate, which may influence how they receive information (Kahle, 1986). In the words of Abraham Verghese (2009), "Geography determines destiny" (p.9). Therefore, grouping individuals based on geographic characteristics allows researchers to tailor information delivery or program development according to the needs and interests of individuals in a certain geographical region (Qualtrics, n.d.; Kahle, 1986). For example, Rentfrow et al. (2013) identified three robust profiles (i.e., Friendly & Conventional, Relaxed & Creative, Temperamental & Uninhibited) among the U.S. population and found each profile clustered geographically. Examining these psychological profiles through a geographic perspective enabled the researchers to determine how geographic characteristics interacted with macro-level political, social, economic, and health outcomes (Rentfrow et al., 2013). Furthermore, Lamm, Holder et al. (2021) examined the relation between geographic region and personality traits of agricultural leadership development program participants. However, Lamm, Holder et al. (2021) reported a small effect size for this relationship, which was inconsistent with Rentfrow et al.'s (2013) findings.

Rurality

Of the 159 counties within Georgia, 120 are classified as rural (State Office of Rural Health, 2017). The majority of urban counties are clustered around the metro Atlanta region. The Distressed Communities Index (DCI) was developed by the Economic Innovation Group as a

metric to determine how well-being differs across communities (Economic Innovation Group, n.d.). A composite DCI score is based on seven county factors including: 1) percentage of adults with no high school diploma, 2) poverty rate, 3) percentage of adults not working, 4) housing vacancy rate, 5) median household income, 6) change in employment, and 7) change in establishments (Economic Innovation Group, n.d.). Counties are classified as: 1) prosperous, 2) comfortable, 3) mid-tier, 4) at-risk, or 5) distressed (Economic Innovation Group, n.d.). According to the 2020 DCI map, 20.8% of Georgia's population lives in a distressed community, while 22.2% lives in a prosperous community (Economic Innovation Group, n.d.). Most rural counties in Georgia were classified as at-risk or distressed, while the majority of urban counties were designated as prosperous or comfortable. There were exceptions, with seven rural counties classified as prosperous, and five urban counties designated as distressed (Economic Innovation Group, n.d.).

While the overall rate of poverty in both rural and urban counties has declined since the 1970s, rural Georgians still experience a higher rate of poverty than their urban counterparts (USDA ERS, 2021). On average, the median household income in rural counties was lower than urban counties (Economic Innovation Group, n.d.). Additionally, the population of rural Georgia is decreasing (Fennessy & Mador, 2021), representing only a quarter of the state's total population in 2020 (U.S. Census Bureau, 2021). This trend in population parallels recent economic trends. In 2014, 78% of all jobs in the state of Georgia were located in urban counties (Bluestone & de Zeeuw, 2016). The economy of rural Georgia is mainly driven by agricultural production and manufacturing (Flatt, 2020; Coe et al., 2019). However, the economic sectors in urban Georgia is much more diverse, including film production, logistics, finance, cybersecurity, and wholesale trade (Coe et al., 2019).

Geographic Regions

The state of Georgia contains five unique geographic regions: 1) the Appalachian Plateau, 2) Ridge and Valley, 3) Blue Ridge Mountains, 4) Piedmont, and 5) Coastal Plain, which is subdivided into the Upper and Lower Coastal Plains (Usery, 2018). This section discusses each region, detailing their topographic, geological, and economic attributes.

Appalachian Plateau. Characterized by sloping sandstone bluffs above surrounding valleys, the Appalachian Plateau is Georgia's smallest geographic region (Chowns, 2018a; Dewolf, n.d.). Located in the northwest corner of Georgia, this region borders Alabama and Tennessee (Dewolf, n.d.). Formed by the same tectonic shifts as the Ridge and Valley region, the Appalachian Plateau contains stunning natural attractions, including Cloudland Canyon and Lookout Mountain (Chowns, 2018a; Usery, 2018). Historically, the region was home to thriving blast furnaces which profited from underground iron seams (Chowns, 2018a). Excessive mining practices exhausted the ironstone deposits; however, contemporary mining activities focus on the region's abundant limestone deposits, which are used for cement and aggregate (Chowns, 2018a). Additionally, the only known source of coal in Georgia is in the Appalachian Plateau (Dewolf, n.d.). While widespread agricultural production is limited by poor soil composition, some corn and soybean are produced here (Dewolf, n.d.). Today, tourism and forestry serve as the main drivers of economic profitability in this region (Dewolf, n.d.).

Ridge and Valley. Located between the Appalachian Plateau and Blue Ridge Mountain region, the Ridge and Valley region consists of northeast-to-southwest trending ridges separated by fertile valleys (Chowns, 2018b). The ridges are formed from layers of sandstone and chert, which contributes to acidic soil composition, while limestone and shale form the fertile soils of the valleys (Chowns, 2018b). This region's distinct topography is the result of millions of years

of erosion between the alternating layers of hard and soft sedimentary rocks (Chowns, 2018b). Economic industries within this region include hardwood and pine timber harvesting and textile manufacturing (Dewolf, n.d.). Additionally, the carpet capital of the world – Dalton, Georgia – is located in the Ridge and Valley region, making significant contributions to the local economy (Dewolf, n.d.). Only 4% of the land is used for agricultural purposes, including the production of corn, wheat, cotton, and soybeans (Dewolf, n.d.).

Blue Ridge Mountains. Situated within northwest Georgia along the borders of Tennessee and North Carolina, the Blue Ridge Mountain region forms the southernmost part of the Appalachian Mountain range (Seabrook, 2020). Spanning five counties, this region boasts stunning mountain scenery, gorges, and waterfalls (Seabrook, 2020). The Blue Ridge Mountain region contains rich biological diversity, featuring oak-hickory forests, hemlock, grouse, black bear, wild board, and whitetail deer (Seabrook, 2020). Historically, the region was home to the sight of the first gold rush in the United States (Seabrook, 2020). Overharvesting of timber for copper smelting operations prompted the U.S. government to seize much of the land in this region. As a result, the Chattahoochee National Forest was established in 1937 to restore the forest and protect the Chattahoochee River (Seabrook, 2020).

In terms of economic industries, this region is dominated by tourism and recreation, hospitality, and manufacturing (Seabrook, 2020). Agriculture is limited to the flood plains of creeks and rivers, but notable agricultural outputs include apples, corn, and livestock (Seabrook, 2020; Dewolf, n.d.). A distinct cultural heritage embodying many characteristics of southern Appalachia is present within the Blue Ridge region (Seabrook, 2020). Residents celebrate their culture through Bluegrass music, folk art, and festivals (Seabrook, 2020). Additionally, the nationally acclaimed Foxfire magazine, which has chronicled the skills, experiences, and

traditions associated with Appalachian culture since the 1960s, is produced by students in Rabun County (Mendonca, 2015). Conversely, a negative stereotype of the people and cultural heritage of this region was perpetuated in the novel *Deliverance* (Seabrook, 2020).

Piedmont. Beneath the Ridge and Valley and Blue Ridge regions sits the Piedmont. This region is part of the southern Piedmont geologic region which runs northeast-to-southwest across the southeastern and mid-Atlantic areas of the United States (Golley, 2017). Characterized by gently rolling hills and red clay, the Piedmont contains 30% of the state's surface area (Golley, 2017). Over half of the state's population lives in the Piedmont region, which is home to Atlanta, its surrounding suburbs, and the metropolitan areas of Augusta, Columbus, Athens, and Macon (Usery, 2018; Golley, 2017). As a result, the Piedmont region is highly industrialized, with major industries including financial services, technology, telecommunications, and manufacturing (Forbes, 2019; Dewolf, n.d.). Significant agricultural production occurs within the Piedmont, including animal processing (e.g., poultry, eggs, pigs, beef, and cattle), poultry and pig production, and dairy farming (Dewolf, n.d.).

Upper Coastal Plain. Separated from the Piedmont region by the Fall Line, the Coastal Plain covers 60% of Georgia's surface area (Dewolf, n.d.). The Upper, or Inner, Coastal Plain is located across central and southwestern Georgia (Usery, 2018). Due to its fertile soil deposits, the Upper Coastal Plain is known as the agricultural heartland of Georgia (Kirkman, 2020; Usery, 2018). Prominent agricultural exports include cotton, peanuts, soybeans, peaches, Vidalia onions, and pecans (Dewolf, n.d.). Loblolly and slash pine plantations support the state's thriving forestry and pulpwood industries (Kirkman, 2020). Historically, longleaf pine and wiregrass dominated the Upper Coastal Plain (Kirkman, 2020; Way, 2019). Formed through frequent fires, the longleaf pine ecosystem was recognized as the most species-rich ecosystem in North

America (Way, 2019). However, fire suppression, excessive timber harvesting, and increase in agricultural land use led to a 90% decrease in old-growth longleaf pine forests (Way, 2019). Due to habitat loss and deforestation, many of the longleaf pine ecosystem's endemic species, such as the gopher tortoise, are now endangered (Way, 2019).

Lower Coastal Plain. Located across southeast Georgia, the Lower, or Outer, Coastal Plain contains Georgia's coastline and barrier islands (Usery, 2018). The topography of this region consists of sandy plains, swamps, and coastal marshes (Seabrook, 2018). Twelve islands off the coast of Georgia form a barrier between the Atlantic Ocean and the mainland (Seabrook, 2018). These islands provide important ecological services, such as protection from hurricanes and nursery grounds for marine species (Seabrook, 2018). Maritime industries, including commercial fishing and seafood processing, contribute significantly to the economic prosperity of the Lower Coastal Plain (Seabrook, 2018; Dewolf, n.d.). Furthermore, major international ports located within the cities of Savannah and Brunswick provide vital connections to the global market (Seabrook, 2018; Dewolf, n.d.). The tourism and recreation industry are also a significant driver of the coastal Georgia economy, featuring natural attractions such as the Okefenokee Swamp, Cumberland Island National Seashore, and Tybee Island (Seabrook, 2018).

Extension Districts

The Cooperative Extension Service in Georgia is organized into four geographical regions across the state: 1) Northeast, 2) Northwest, 3) Southeast, and 4) Southwest (UGA Extension, n.d.). The Northeast region is comprised of individuals living in the Ridge and Valley, Blue Ridge Mountains, and Piedmont regions (UGA Extension, n.d.). The Northwest district serves communities across the Appalachian Plateau, Ridge and Valley, and Piedmont regions (UGA Extension, n.d.). The Southwest region is in the Upper Coastal Plain (UGA

Extension, n.d.). The Southeast region contains the Lower Coastal Plains and portions of the Upper Coastal Plain (UGA Extension, n.d.). The majority of urban counties in Georgia are located in the Northeast and Northwest districts, with the exception of Lowndes County and the urban counties of coastal Georgia (UGA Extension, n.d.). The Southeast and Southwest districts consist primarily of rural counties (UGA Extension, n.d.).

Conclusion

As Extension personnel seek to continue providing relevant information, it is necessary to identify assets of the communities they serve and leverage these assets as a starting point to engage in participatory learning with local stakeholders and community members. No two communities are alike; each has its own unique history, cultural traditions, values, needs, and desires. Utilizing geographic segmentation enables Extension personnel to determine how perception of critical community issues differs across different regions of the state. Additionally, classifying these issues according to the community capitals framework enables Extension personnel to analyze the existing capital assets of their community and recognize capital areas that lack sufficient assets. This approach will aid Extension personnel in tailoring program development and information delivery according to the unique needs and attributes of a community. Therefore, Extension personnel may be able to target their resources more efficiently and continue helping Georgia communities thrive throughout the 21st century.

CHAPTER 3

CRITICAL ISSUES FACING GEORGIANS: AN APPLICATION OF THE DELPHI TECHNIQUE AND COMMUNITY CAPITALS FRAMEWORK[1]

[1] Powell, A., Lamm, K. W., Borron, A., and Lamm, A. J. To be submitted to the *Journal of Agricultural Education*

Abstract

The 21st century has brought with it unforeseen challenges and influential trends that will have significant impact of the livelihood and wellbeing of Georgia residents. Cooperative extension can extend their mandate by identifying issues that represent present and near-present threats and use these issues to inform programming and direct resource allocation. The conceptual basis for this study relied upon the community capitals framework and the consensus-building theory. Data were collected using a three round Delphi process, with an expert panel comprising of Extension leadership and administrative personnel. A final list of 21 unique issues resulted from the Delphi processs and was analyzed thematically using the constant comparative method. Five heuristic themes resulted from this analysis: 1) Investment in Youth and Adults, 2) Agricultural and Rural Economic Development, 3) Agriculture and Food Safety Information, 4) Resource Access and Availability, 5) Social and Personal Economic Concerns. Comparison with the community capitals framework revealed that each of the heuristic themes lie at the intersection of multiple community capitals. The immediate efforts of Extension should be directed towards addressing issues within the *Investment in Youth and Adults* and *Resource Access and Availability* themes using the associated community capitals as entry points for change.

Keywords: community development, consensus building, community capitals, issue identification, extension

Introduction

The 21st century has brought with it significant challenges (Abumhadi et al., 2012; Garforth, 2010). Globally, the issues of climate change (Weiskopf et al., 2020), population growth (Vollset et al., 2020), and the COVID-19 pandemic (Chakraborty & Maity, 2020) pose

significant threats. Within the United States, farmers are threatened by economic insecurity, disruptions in trade networks, and fluctuations in demand (Gloy & Widmar, 2020; MSF Agriculture, 2020). These global and domestic trends will impact industries and livelihoods across Georgia (Suttles et al., 2018; Cammarano & Tian, 2018; Chin et al., 2020). Therefore, it is imperative for extension professionals and policy makers to identify which issues facing Georgia residents will be most critical (e.g., Lamm, Powell et al., 2021).

Issues are matters of concern shared by a broad population and consist of multiple interrelated problems (Penn, n.d.). There are several types of issues, including current, emerging, and potential (Penn, n.d.). For this study, we define a critical issue to be one with current or emerging matters of concern, which, if unresolved, will have widespread, adverse effects on all Georgia residents. The land-grant mission of the University of Georgia is underscored by a federal mandate to use university resources and personnel to benefit the citizens of Georgia (UGA Public Service and Outreach, n.d.). For over a century, the University of Georgia Cooperative Extension service has provided Georgians with academic research, timely information, and novel technologies (UGA Extension, n.d.). Thus, cooperative extension has a unique insight into the lives of Georgia residents (Davis, 2016). One way that cooperative extension services can continue their mission and remain relevant to the citizens of the state, both rural and urban, is by identifying critical issues that indicate present and near-present challenges facing Georgia residents. Once identified, the issues can help to inform future programming and to direct extension resources and efforts.

Extension is well adapted to responding and innovating in response to environmental changes and crises (Davis et al., 2021). As the 21st century progresses, the needs of urban and rural communities continue to evolve in response to changing stimuli (Narine & Meier, 2020).

To remain faithful to the mission mandated in the Smith-Lever Act and to meet the needs of a changing world, extension must identify the current and emerging issues facing Georgia residents. The present study utilizes an expert panel of extension professionals to identify these critical issues and generate consensus regarding which issues are most paramount. The results of this study will make significant contributions to the UGA Cooperative Extension Service by providing a framework to develop programming and policy focus areas and to guide resource allocation. By addressing the critical issues facing Georgians, extension will build community resilience and help citizens thrive.

Theoretical Framework

Consensus Building Theory

Generating consensus involves gathering individuals who represent varied interests and engaging these individuals in a dialogue to address an area of shared concern (Innes & Booher, 1999). This practice is a common way to "search for feasible strategies to deal with uncertain, complex, and controversial planning and policy tasks" (Innes & Booher, 1999, p.412). The consequences of effective consensus building include high quality agreements between stakeholders who may otherwise not associate with one another, tangible products such as formal agreements and partnerships, and intangible products including social, intellectual, and political gains (Innes & Booher, 1999). Overall, consensus building is "valuable from a societal perspective because it links the distributed intelligence of many players so they can form a more coherent and responsive planning system" (Innes & Booher, 1999, p.421).

Within the 1990s, the consensus building framework rose in popularity, replacing the previously favored community organizing approach (Saegert, 2006). Several approaches were associated with consensus building, including the community capitals framework (Flora et al.,

2016), capacity building (Chaskin et al., 2001), and asset-based community development (Kretzman & McKnight, 1993). These approaches emphasize facilitating "communication among residents so that they can recognize their own interests, build trust, develop a shared vision of community, and apply their collective assets to its achievement" (Harvey, 2013, p. 258). The results of applying consensus building to community development initiatives are mixed.

Buchecker and Hunziker (2006) found that use of consensus building to determine development of a rural population in Switzerland had a net positive effect. Through this process, participants discovered that their attitudes toward regional development agreed with the attitudes of other regional groups (Bucheker & Hunziker, 2006). The researchers posit that the decrease in perceived differences between attitudes of the participants and the other groups was a key factor in the effectiveness of the consensus building process (Bucheker & Hunziker, 2006). In his work among the Mississippi Delta region, Harvey (2013) found that racial divisions and pre-existing structural conflicts between participants reduced the effectiveness of consensus building. Members of the wealthy business elite group, who were majority white, voiced that while everyone should have the opportunity to give their input, "only those with the requisite education and professional experience should be involved in planning and implementation" (Harvey, 2013, p.266). Among the Black political and non-profit elite, individuals felt that community development was their responsibility and perceived white elites' attempts to be involved as threats (Harvey, 2013). Overall, every community, no matter the underlying obstacles, has the capacity necessary to take an active role in its transformation (Kretzman & McKnight, 1993), and the consensus building approach represents a valid method for engaging stakeholders in participatory-based community development (Saegert, 2006).

Community Capitals Framework

The community capitals framework has been used extensively in the social sciences discipline to analyze the complex interactions between human, social, political, and environmental systems (Emery & Flora, 2006; Flora & Flora, 2013) and make recommendations for community development initiatives (Anglin, 2015; Jones, 2021). The following section provides definitions of each capital with examples from the southeastern U.S. and Georgia.

Human. Human capital consists of the natural and learned competencies of individuals and how these competencies are leveraged to increase resources in and outside of the community (Borron et al., 2019; Anglin, 2015). Some examples of human capital include educational and technical skills, leadership skills, work ethic, and lifestyle (Flora & Flora, 2013). Georgia is one of the fastest growing states in the U.S., with a projected increase in population of 17.7% by 2030 (Georgia Department of Economic Development, 2021). However, rural populations in Georgia have been declining, with a 4% loss from 2010 to 2020 (Tanner, 2021; Fennessy & Mador, 2021). Since 1990, the percentage of Georgia citizens with a high school diploma has increased from 71% to 85%, while the percentage of citizens with a four-year degree rose from 19.3% to 28.5% (Georgia Department of Economic Development). Moreover, the proportion of individuals with less than a high school diploma has decreased in both rural and urban populations (Tanner, 2021; USDA-ERS, 2021). Among urban areas, the rate has decreased from 43.6% in 1980 to 11.6% in 2019 (USDA-ERS, 2021). However, rural populations experienced a much greater decrease with rates falling from 57.7% in 1980 to 18.6% in 2019 (USDA-ERS, 2021). The top five occupations in Georgia during 2020 included 1) Office and Administrative Support, 2) Sales and Related Occupations, 3) Transportation and Material Moving, 4) Food

Preparation and Serving Related Occupations, and 5) Production (U.S. Bureau of Labor Statistics, 2021).

Social. Social capital refers to the connections between individuals and organizations in the community that enable collective action and foster change (Flora & Flora, 2013). One of the most crucial units of the social system in the southeastern U.S. is the family unit (Parker et al., 2018; Pittman, 2014). However, in 2021, Georgia ranked 38th in the nation for child and family well-being for the second year in a row (Georgia Family Connection Partnership, 2021). The rate of children living in high poverty areas indicates the resources and opportunities available to children within a community (Georgia Family Connection Partnership, 2021). Prior to the COVID-19 pandemic, the rate of children living in high poverty areas statewide was 9% in 2019 (Georgia Family Connection Partnership, 2021). Due to negative impacts of the pandemic, this proportion has increased dramatically rising to over 30% in some rural counties (Miller, 2021). Furthermore, the overall rate of poverty in both rural and urban populations in Georgia has been declining since the late 1970s (USDA ERS, 2021). However, the rate of poverty in rural Georgia counties is almost 20%, over seven percentage points higher than the rate of poverty in urban counties (USDA ERS, 2021).

Cultural. Cultural capital is defined as what constitutes knowledge, how this knowledge is to be achieved, and how it is to be validated through the existing community power hierarchy (Flora & Flora, 2013; Anglin, 2015). Culture in the southeastern United States has been characterized by southern hospitality (Megehee & Spake, 2007), rootedness (Schwarz, 1997), and sense of community (Coffman & BeLue, 2009). Religion, particularly evangelical Christianity, is a dominant cultural value across the southeastern U.S. (Hitcher et al., 2021), an area often referred to as the ‘Bible Belt’ (Carter, 2007).

Political. Political capital represents a community's capacity to transform societal norms, practices, and values into rules that govern distribution of community resources (Lamm, Borron et al., 2021). For example, Hogler et al. (2015) found that southern culture impacted how residents regard collective action and argue that the traditional social structures of the south negatively impact contemporary levels of union membership. Additionally, within political elections, single-party control and a long history of gerrymandering can decrease political power among the minority party and underrepresented populations (Armstrong et al., 2021).

Regarding political ideology, the majority of Georgia residents identify as conservative (Pew Research Center, n.d.). Historically, conservative Democrats dominated Georgia's political history, a trend spanning from the Reconstruction Era to the end of Jimmy Carter's presidency (Lerer & Fausset, 2020; Wiegel, 2020). In more recent years, conservative Republican coalitions have become the dominant political party in Georgia (Wiegel, 2020). However, new data suggests this trend may be changing. For example, Atlanta and its surrounding metro communities have become a hub for progressive political ideologies (Wiegel, 2020). Additionally, Georgia's electoral college votes went to Joe Biden in the 2020 presidential election, while Jon Ossoff and Raphael Warnock defeated Republican incumbents David Perdue and Kelly Loeffler in the 2020 Senate runoff (NBC News, 2021). With regards to urban and rural differences, urban populations in Georgia tend to identify as progressive, while rural populations generally identify as conservative (Wiegel, 2020).

Natural. Natural capital refers to the "concentration of all environmental resources – renewable and non-renewable – within a community" (Lamm, Borron et al., 2021, p.289). Such resources include forestry, water, air and soil quality, weather, geography, and topography (Emery & Flora, 2006; Flora et al., 2016). Within the southeastern United States, there is a

wealth of natural capital. Specifically, within Georgia there are almost eight million acres of farmland with the "soil quality, growing season, and moisture supply necessary to produce sustained yields of crops" (Georgia DNR, n.d., para. 2). Additionally, Georgia has the most commercial forest land of any state, which contributes to almost 75% of the U.S. pine supply (Georgia DNR, n.d.). Water is a vital resource in the southeastern United States and rights to use of the Apalachicola-Chattahoochee-Flint River basin have embroiled the tri-state area (Georgia, Alabama, and Florida) in conflict since the 1990s (Southern Environmental Law Center, n.d.).

Built-financial. Built capital consists of the infrastructure necessary to support the maintenance and development of community activities, including production, transportation, and power (Anglin, 2015; Flora & Flora, 2013). Financial capital refers to the economic resources accessible to a community for the development and support of wealth accumulation (Lamm, Borron et al., 2021). While not exclusively monetary, the resources in financial capital can all be translated to monetary instruments or converted into other forms of capital (Anglin, 2015). Previous factor analysis confirmed that these capitals can be combined into a singular construct (Lamm, Borron et al., 2021). Aging infrastructure represents a significant threat to built capital resources in Georgia (Carpenter, 2014). A report by the Georgia Municipal Association (n.d.) analyzed and projected the infrastructure needs of Georgia cities and counties during 2020-2024. The highest reported needs were in the areas of transportation, water, and sewer (Georgia Municipal Association, n.d.). In terms of financial resources, the median household income for Georgia residents in 2019 was $58,700, which was lower than the national median household income of $62,843 (United States Census Bureau, n.d.). However, the median household income for Black and Hispanic residents in Georgia was lower than the median household income for White and Asian residents (Shrider et al., 2021). The reported poverty rate was 13.3% in 2019

for the state of Georgia, which was nearly two points higher than the national poverty rate (U.S. Census Bureau, n.d.)

Purpose and Research Objectives

The purpose of this study is to identify and generate consensus regarding the critical issues facing Georgia residents. The study was driven by the following research objectives:

1. Creative a comprehensive list of potential critical issues facing the citizens of Georgia.
2. Generate consensus on the most critical issues facing the citizens of Georgia.
3. Develop a heuristic thematic grouping of critical issues facing the citizens of Georgia.

Methods

Delphi Technique

The methodology for this study included the Delphi technique and the constant comparative method. The Delphi technique was initially developed and used by Rand Corporation in the 1950s to control for interpersonal variables in decision making (Goodman, 1987). In the past 70 years, this technique has evolved into a widespread, systematic method that enables experts to discuss complex issues and "convert diverse views… [into a] communal notion" (Allen et al., 2019, p.1309). The basics of conducting an iterative Delphi process are as follows: 1) determine meaning of "expert" in study context and compose a panel of experts; 2) administer initial questionnaire round where panelists generate responses; 3) conduct consecutive rounds where experts review previous group responses and generate consensus (Allen et al., 2019; Habibi et al., 2014). Generally, consensus is achieved within two to four rounds (Allen et al., 2019).

One advantage of using the Delphi technique is that this method is flexible and adaptable to specific study contexts (Vernon, 2009). Within the literature, there is precedence for tailoring

the Delphi technique for application to issues facing food safety industry (Lamm, Randall, & Diez-Gonzalez, 2021), environmental education (Ruppert & Duncan, 2017), and sustainable farming practices (Ranjan et al., 2014). Additionally, the Delphi technique enables researchers to access a wide range of professionals who may not otherwise be able to generate consensus together (Vernon, 2009). Based on these factors, the Delphi technique was selected to establish consensus among extension professionals regarding critical issues facing Georgians.

While there are numerous benefits to the Delphi, there are several criticisms that must be taken into consideration when employing this method. First, the entire Delphi technique is based on the composition of the expert panel (Vernon, 2009). If individuals on the expert panel are not selected rigorously, and indeed are not "experts", this can result in invalid results. Relatedly, even if consensus is generated, this does not always imply that the "right" answers have been found. Since Delphi results rely heavily on the validity, knowledge, and competence of expert panelists, it is imperative that measures have been taken to ensure a rigorous selection of competent and knowledgeable panel members. Even with measures taken to strengthen validity and credibility of expert panelists, the results of Delphi studies should be interpreted cautiously (Vernon, 2009).

For the current study, the panel was comprised of 19 individuals from the Georgia Extension leadership team, which included the Dean of Extension, associate deans, district extension directors, program development coordinators, and other administrative leaders. Extension in the state of Georgia has a county delivery model with a presence in 159 counties across the state. The administrative structure includes four geographic regions with administrative personnel representing each, as well as a main location at the University of Georgia Athens Campus.

Data were collected from August to September 2018. Three rounds of the Delphi process were administered online via the survey platform Qualtrics. The response rate for all three rounds was 100%. During the first round, panelists were asked to provide up to five responses, either a word or short phrase, to the following question: "In your opinion, what are the most critical issues facing the citizens of Georgia?" Items generated during round one were analyzed and duplicates were consolidated into single items. The resulting list of 63 unique issues were presented to panelists in round two.

During the second round, panelists were presented with the list of items generated during the first round of the Delphi process. Panelists were then asked to indicate the level of importance for each item using a five-point, Likert-type scale. Possible responses ranged from "1 – Not at all important" to "5 – Very important". Following the second round, a mean level of importance was computed for each issue. A threshold value of 3.55 was determined *a priori* (Keeney et al., 2011). Items with a mean level of importance lower than this threshold were not retained for further analysis. The resulting list consisted of 41 unique issues.

During round three, panelists were presented with the list of 41 issues retained from round two. Panelists were asked to indicate the level of consensus they associated with each issue by determining whether each issue should be retained. Panelists indicated whether an issue should be retained by using a dichotomous scale with possible responses "Yes" or "No". Percentage scores were calculated to indicate the composite level of consensus associated with each item. A threshold value of 80% was determined *a priori* according to recommendations in the Delphi literature (Keeney et al., 2011). Items with a composite level of consensus lower than 80% were not retained for further analysis. Twenty-one issues were retained following round three of the Delphi process.

Constant Comparative Method

The constant comparative method is a qualitative analytic technique which enables researchers to systematically generate theories that are integrated, consistent, and close to the data through explicit coding and analytic procedures (Glaser, 1965). There are four stages to this method: "1) comparing incidents applicable to each category, 2) integrating categories and their properties, 3) delimiting the theory, and 4) writing the theory" (Glaser, 1965, p.439). In general terms, the researcher begins by first assigning a code to each data point, which may be a short phrase or word. The researcher reviews these initial codes, comparing them to one another and thereby generating new codes or categories of codes. This iterative processed is repeated until the initial codes have been transformed into heuristic themes. Reviewing the resulting themes and codes enables the researcher to form theories about the data (Glaser, 1965).

Within this study, the final list generated from the Delphi process was reviewed by the researcher. Each issue on the list was given an initial code. These initial codes were reviewed and compared repeatedly, generating categories and eventually themes. The coding was initially completed by hand, using a manual, color-coded process, but was eventually converted to a digital format using a spreadsheet software. The themes resulting from the constant comparative analysis were examined to develop theories regarding the data and make appropriate recommendations.

Results

The first round of the Delphi technique resulted in 63 unique responses related to critical issues facing Georgia residents. Table 1 displays the mean level of importance as well as the individual frequency counts for each issue. The two issues with the highest mean importance scores were "access to rural healthcare" and "rural job growth and availability".

Table 1.

Delphi Round Two Results: Level of Importance for Critical Issues Facing Georgians (n = 63)

Items	*n*	1	2	3	4	5	*Mean*
Access to rural healthcare	19	0	0	1	6	12	4.58
Rural job growth and availability	19	0	0	1	7	11	4.53
Agricultural prosperity	19	0	0	2	7	10	4.42
Economic development in rural GA	19	0	0	1	11	7	4.32
Economic viability in rural communities	19	0	0	3	7	9	4.32
Education (all)	19	0	0	4	5	10	4.32
Access to resources in rural areas	19	0	0	2	10	7	4.26
Limited access to broadband in rural areas	19	0	0	2	10	7	4.26
Career readiness and workforce preparation	19	0	0	5	5	9	4.21
Obesity	19	0	0	4	7	8	4.21
Rural poverty	19	0	0	2	11	6	4.21
Lack of qualified workforce	19	0	1	4	5	9	4.16
Chronic disease	19	0	0	4	8	7	4.16
Health	19	0	0	5	7	7	4.11
Lack of workforce soft skills	19	0	1	5	5	8	4.05
Youth education	19	0	0	4	10	5	4.05
Poor health status due to preventable causes	19	0	0	5	8	6	4.05
Water quantity	19	0	1	2	11	5	4.05
Youth leadership development	19	0	0	6	7	6	4.00
Graduation rate	19	0	1	5	6	7	4.00
Youth development	19	0	0	6	8	5	3.95
Limited access to healthy food choices	19	0	2	2	10	5	3.95
State revenue	19	0	1	6	5	7	3.95
Water quality	19	0	1	3	11	4	3.95
Limited understanding of the importance of agriculture and where food comes from	19	0	1	5	7	6	3.95
Limited access to fresh food choices	19	0	2	2	10	5	3.95
Low performing schools	19	0	1	4	10	4	3.89
Urban poverty	19	0	1	6	6	6	3.89
Rural flight to urban centers	19	0	2	6	3	8	3.89
Literacy	19	0	0	7	7	5	3.89
Financial wellbeing and income	19	0	0	7	7	5	3.89
Family stability	19	0	1	4	10	4	3.89
Aging population	19	0	2	6	4	7	3.84
Lack of values	19	0	3	1	12	3	3.79
Financial literacy and management	19	0	0	8	7	4	3.74
False information (i.e., GMO understanding) leads to incorrect food choices	19	0	2	6	6	5	3.74

Economics	19	0	1	7	7	4	3.74
Impacts of urban migration	19	0	4	2	8	5	3.74
New technology for crop production	19	0	3	5	6	5	3.68
Crime and violence	19	0	3	5	6	5	3.68
Low pay for schoolteachers	19	0	3	6	4	6	3.68
Drug abuse and addiction including the opioid crisis	19	0	2	5	9	3	3.68
Generational poverty	19	0	1	8	6	4	3.68
Children that do not have appropriate role models	19	0	1	10	3	5	3.63
Lack of civic and community leadership capacity at all stages of the life cycle	19	0	2	9	3	5	3.58
Aging infrastructure	19	0	2	8	6	3	3.53
Exercise for youth and adults	19	0	3	5	9	2	3.53
Food quantity	19	0	2	9	5	3	3.47
Limited access to critical expertise to work with them in solving community-based concerns	19	0	4	7	4	4	3.42
Automobile traffic congestion	19	0	3	7	9	0	3.32
Teen pregnancy	19	0	3	10	4	2	3.26
Lack of affordable transportation	19	0	4	8	5	2	3.26
Inability to balance time, energy, and resources	19	1	5	6	3	4	3.21
Unplanned metro growth and urban sprawl	19	0	6	6	5	2	3.16
Urban job growth and availability	19	0	4	9	6	0	3.11
Population growth diminishing the quality of life	19	0	5	11	2	1	2.95
Limited bringing people together	18	1	7	4	6	0	2.83
Student loan repayment	19	3	5	7	3	1	2.68
Lack of teen jobs	19	0	9	8	2	0	2.63

Table 2 displays the composite level of consensus associated with each issue. Three items obtained a unanimous level of consensus: 1) youth development, 2) youth leadership development, 3) career readiness and workforce preparedness.

Table 2.
Delphi Round Three Results: Level of Consensus with Critical Issues Facing Georgians (n = 41)

Item	Consensus %
Youth development	100.00
Youth leadership development	100.00
Career readiness and workforce preparedness	100.00

False information of food issues (i.e., GMO understanding) leads to incorrect food choices	94.12
Agricultural prosperity	94.12
New technology for crop production	94.12
Limited understanding of the importance of agriculture and where food comes from	94.12
Water quality	94.12
Limited access to healthy food choices	94.12
Limited access to fresh food choices	94.12
Youth education	94.12
Access to resources in rural areas	93.75
Lack of civic and community leadership capacity at all stages of the life cycle	88.89
Water quantity	88.89
Financial wellbeing and income	88.24
Financial literacy and management	88.24
Economic development in rural GA	88.24
Lack of workforce soft skills	87.50
Family stability	82.35
Aging population	82.35
Fair water distribution for agriculture	82.35
Children that do not have appropriate role models	76.47
Education (all)	76.47
Access to rural healthcare	76.47
Lack of qualified workforce	75.00
Rural poverty	73.33
Lack of values	68.75
Literacy	64.71
Urban poverty	64.71
Rural job growth and availability	64.71
Economic viability in rural communities	64.71
Graduation rate	62.50
Impacts of urban migration	56.25
Limited access to broadband in rural areas	52.94
Low performing schools	50.00
Economics	50.00
State revenue	37.50
Crime and violence	35.29
Rural flight to urban centers	35.29
Low pay for schoolteachers	31.25

After the Delphi process was completed, the resulting list of 21 issues were thematically analyzed using the constant comparative method (Glaser, 1965). Following this analysis, five

categories emerged. These themes and the individual issues associated with them are presented in Table 3.

Table 3.
Constant Comparative Method Thematic Analysis Results (n = 21)

Categories	Number of Issues Overall	Number of Issues with 90-100% Agreement
Investment in Youth and Adults	5	4
Youth development		
Youth leadership development		
Career readiness and workforce preparedness		
Youth education		
Lack of workforce soft skills		
Agricultural and Rural Economic Development	3	2
Agricultural prosperity		
New technology for crop production		
Economic development in rural GA		
Agriculture and Food System Information	2	2
False information of food issues (i.e., GMO understanding) leads to incorrect food choices		
Limited understanding of the importance of agriculture and where food comes from		
Resource Access and Availability	6	4
Water quality		
Limited access to healthy food choices		
Limited access to fresh food choices		
Access to resources in rural areas		
Water quantity		
Fair water distribution for agriculture		
Social and Personal Economic Concerns	5	0
Lack of civic and community leadership capacity at all stages of the life cycle		
Financial wellbeing and income		
Financial literacy and management		
Family stability		
Aging population		

Conclusions, Recommendations, and Limitations

Thematic analysis of the 21 issues from the Delphi technique resulted in the identification of five major themes encompassing the critical issues facing Georgia residents. These heuristic

categories offer enhanced insight into expert feedback from extension professionals and provide a starting point for action. The dimensions of the *Investment in Youth and Adults* theme highlight the need for increased education, workforce preparation, and leadership development. Within the *Agricultural and Rural Economic Development* theme, the associated issues underscore the importance of agriculture in Georgia's economy and future economic development. The issues identified in the *Agriculture and Food Safety Information* theme highlight the need for increased awareness regarding new agricultural innovations and the value of Georgia's agricultural industries. *Resource Access and Availability* relate to the threats facing water use in Georgia and the implications of food insecurity. Finally, *Social and Personal Economic Concerns* delineate gaps in general financial knowledge, lack of societal role models, and the impacts of changing demographic characteristics.

Community Capitals Framework and Thematic Analysis

The community capitals framework is a useful lens to provide a more heuristic classification of the issues identified during the consensus building process. Analysis through the lens of community capitals enables us to determine how the critical issues identified in this study relate to the perceptions of capital stock within Georgia communities. This framework provides a holistic view of the human and material resources available to Georgia communities, enabling extension practitioners to direct resources more efficiently and develop programming that addresses the most pressing community needs. Each of the themes resulting from CCM analysis and their associated issues corresponded to multiple community capitals. Figure 1 displays the five themes and corresponding community capitals.

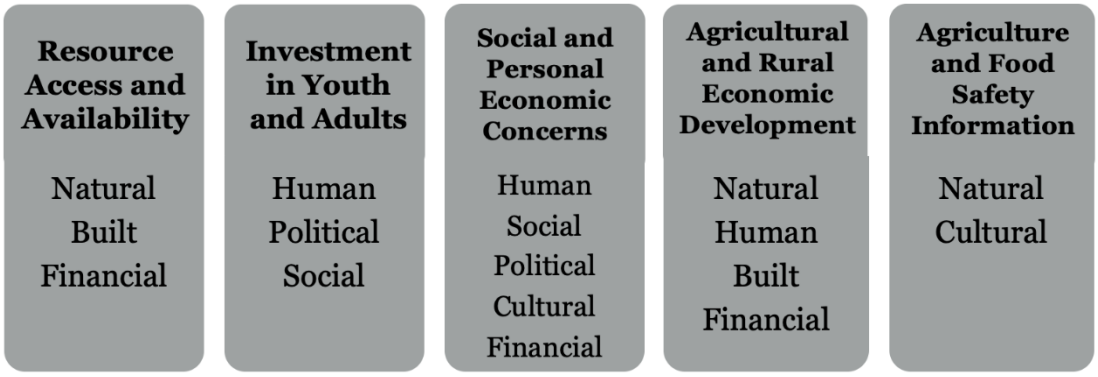


Figure 1. CCM Themes and Corresponding Community Capitals

The interaction between human and political capitals is apparent within *Investment in Youth and Adults*. Much of Georgia's economic growth has been hemorrhaged by "low workforce participation and lack of access to opportunities in high-growth sectors" (Coe et al., 2019, para. 3). While Georgia's vocational programs lead the nation, there is a need to direct qualified candidates into training programs that teach employer-demanded skills (Coe et al., 2019). Doing so could reskill 19,000 unemployed workers and increase Georgia's workforce by 400,000 individuals (Coe et al., 2019). Additionally, Extension-sponsored youth leadership development programs, such as 4-H, enables adolescent to smoothly transition into adulthood by empowering them with independence, critical thinking skills, self-confidence, and responsibility for others (Kelsey, 2020). Involving youth in extracurricular programs may also stimulate desired political and civic behavior during adulthood (Rasmussen et al., 2009; Smith, 1999).

Natural, political, built, and financial capitals overlap within *Resource Access and Availability*. To provide clean water to its residents, Georgia relies heavily on groundwater supplies (EPA, 2013). However, occasional droughts, a growing population, and demand from neighboring states have strained Georgia's existing water supply (Smolen et al., 2017; EPA, 2013). Therefore, the development of sustainable water resource management plans and water use policies accounting for fair distribution to agricultural industries and neighboring states are

necessary to ensure the protection of this valuable resource (Gaffney, 2019; Georgia Conservancy, n.d.). Another resource inequality issue is apparent regarding food security and fresh food accessibility in Georgia. Over 20% of Georgia residents live in urban areas of the state that are more than one mile from a grocery store, or in rural areas that are more than ten miles away from a grocery store (Prabhu, 2021). Physical or financial inability to access fresh foods can result in negative health and community impacts (Prabhu, 2021; Capelouto, 2021; Aglanta, 2021). Increase of infrastructure such as neighborhood markets, expansion of transportation services, and development of policies (i.e., the Double Up Food Bucks program) are necessary to stimulate community capitals that combat food insecurity (Aglanta, 2021).

Regarding *Agricultural and Rural Economic Development*, the identified issues underscore the relationships between financial, built, human, and natural capitals. As mentioned previously, the development of Georgia's rural economy can be stimulated through vocational training programs that teach highly demanded skills (Coe et al., 2019). Furthermore, increasing agricultural prosperity is possible through technological innovations that enable efficient nutrient application (Michaux, 2019; Davoodi et al., 2018) and increased crop resiliency (Floyd, 2021; Melancon, n.d.). Natural and cultural capitals describe the issues associated with *Agricultural and Food Safety Information*. A significant barrier to agricultural and food safety communication is public trust in government agencies and scientists (Pechar et al., 2018; Öz et al., 2018; Settle et al., 2017). One factor is public knowledge or involvement in agriculture (Settle et al., 2017). If an individual is not involved in agriculture-related industries or does not live in an agrarian-based community, their awareness of agricultural issues is likely to be lower (Settle et al., 2017). Additionally, "functional networks are based on trust which, in turn, are based on norms or values that guide social actors' behaviors" (Sseguya et al., 2018, p.119).

Finally, issues within the *Social and Economic Concerns* theme highlight the intersection of cultural, political, social, financial, human, and built capitals. For example, community leadership creates social networks at individual and community levels, provide opportunities for human capital growth, and inspire civic engagement (Apaliyah et al., 2017). Financial literacy can increase availability of financial capital through wise investments and debt management (National Financial Educators Council, n.d.), contribute to enhanced wellbeing (Zemtsov & Osipova, 2015), and is mediated by the influence of social networks (Bongomin et al., 2016). Regarding family dynamics, instability in familial relationships can have negative effects on child well-being, scholastic achievement, and career outcomes (Härkönen et al., 2017). Additionally, 20% of Georgia's population are expected to be over the age of 60 by 2030 (Landers et al., 2006). This trend will increase demand for elderly care services (Nolin, 2019) and use of social welfare programs (Georgia Department of Human Services, 2017).

Since extension possesses limited financial and human resources, we recommend immediate efforts be directed toward issues that generated the most agreement from experts. There were 12 top critical issues identified (i.e., issues with 90-100% agreement in round three of the Delphi technique). Based on this data, primary efforts should be directed toward addressing issues associated with *Resource Access and Availability* (4 issues in top 12) and *Investment in Youth and Adults* (4 issues in top 12) followed by *Agricultural and Rural Economic Development* (2 issues in top 12) and *Agriculture and Food Safety Information* (2 issues in top 12). Although the critical issues in the *Social and Personal Economic Concerns* theme are important, none of these were in the top 12 issues.

One noteworthy finding is the three issues with unanimous agreement from expert panelists are all associated with the *Investment in Youth and Adults* theme. Human capital

represents a critical resource within Georgia (Coe et al., 2019). Future economic development in suburban and rural areas depends on the maximization of human resources (Coe et al., 2019). However, the issues identified within the Investment in Youth and Adults theme illustrate an opportunity for development. Although the state of Georgia has potential in the number of individuals able to enter the workforce, there is an opportunity to enhance existing education and career preparation programs (Coe et al., 2019). In particular, youth leadership development and career preparation programs represent two areas with perceived needs. Although 4-H educators are already making contributions to youth leadership development and education, the results of this study underscore the importance of continuing such programs. Additionally, we recommend extension professionals identify highly demanded technical and soft skills and use these findings to inform the development of extension education and vocational training programs.

Within the Delphi process, there are limitations which may restrict the generalizability of results. For instance, the scope of the identified issues is inherently limited by the insights and perspectives of the expert panelists. Although measures were taken to reduce bias and assemble a heterogenous panel with statewide expertise, the expert panelists' perspectives and personal characteristics may have influenced the results, as might their employment with the Georgia Extension system—which operates within the scope of three program areas (agricultural and natural resources, 4-H youth development, and family and consumer sciences), and does not include a fourth (community and economic development), which is acknowledged formerly by the USDA-NIFA and many institutions across the land-grant system. Additionally, the author and primary coder of the data is from a suburban community in the Southeastern United States and has previously worked with extension and community development initiatives. These personal experiences may have influenced their interpretation of the data. Measures to reduce

bias, such as member checking, were employed to reduce bias according to recommendations in the literature (Lincoln & Guba, 1985).

The aim of this article is to facilitate the continued development of the state of Georgia by identifying and generating consensus around the most critical issues facing the state's residents. The results of this study carry significant implications for practice, primarily by providing the Georgia Cooperative Extension Service with a guideline for program development and resource allocation efforts. The use of the Delphi technique in conjunction with the community capitals framework enables valuable comparison with the existing strengths and capitals within Georgia communities. Knowledge of these capitals and their interactions with one another allows for greater efficiency in addressing these issues. While the results of this study may not be directly applicable to all states in the southeastern United States, they should serve as a foundation for strategic entry points within Georgia communities and be used to guide the efforts of Extension services in the near future.

CHAPTER 4

EXAMINING THE RELATIONSHIP BETWEEN GEOGRAPHIC GROUPINGS AND PERSPECTIVE OF CRITICAL COMMUNITY ISSUES: AN AUDIENCE SEGMENTATION ANALYSIS[2]

[2] Powell, A., Lamm, K. W., Borron, A., and Lamm, A. J. To be submitted to the *Journal of Human Sciences and Extension*

Abstract

As Extension personnel within Georgia prepare for the next century of progress, a critical concern is to identify needs of clientele across the state and ensure that they are being provided with relevant and needed information. The present study expands on previous research to provide a preliminary list of needs and recommendations that will aid Extension personnel in developing programs tailored to local needs. Using audience segmentation, the present study explored whether perspective of critical community issues would differ based on rurality, geographic region, or Extension district. Five critical community issue themes were analyzed including: 1) Youth and Family Development, 2) Civic Engagement and Community Development, 3) Agriculture and Economic Development, 4) Nutrition Education and Food Availability, and 5) Water. A total of 3,374 individuals across the state of Georgia were surveyed. Descriptive statistics were analyzed, and chi-square test of independence was used to test for significant relationships. Post-hoc tests were conducted to analyze the residuals and test for significant within-group differences. A major finding is that Youth and Family Development was perceived to be a critical community issue within the Blue Ridge and Coastal Plain geographic regions, as well as the Southwest Extension district. One implication is the initial development of a decision support tool that will aid Extension professionals in developing programs that meet the needs of the communities they support. A practical recommendation is for Extension personnel to use these results as a starting point and work collaboratively with local stakeholders to determine next steps.

Keywords: agricultural extension; audience segmentation; decision-making support

Introduction

"Geography determines destiny" (Verghese, 2009, p.9). Due to varying cultures, values, resources, and environmental factors (Kahle, 1986), the geographic region in which an individual lives has a considerable influence on certain life outcomes, including poverty (Tate, 2008), access to healthcare services (McDonald & Conde, 2010), and educational opportunities (Tate, 2008). Throughout its history, the Cooperative Extension Service has provided outreach and educational services to a large and varied population on behalf of the land-grant university system (Buys & Rennekamp, 2020). Initially, Extension was founded on delivering programs to rural communities, and efforts were aimed at disseminating research-based technologies to agricultural workers (Gould et al., 2014; Webster & Ingram, 2007; UGA Extension, n.d.). As the nation's population shifted toward urban areas, Extension personnel redefined traditional programming, emphasizing its applicability and meaning to urban contexts (Webster & Ingram, 2007; Schaefer et al., 1992).

The state of Georgia's branch of the Cooperative Extension Service has developed in a similar fashion to the national organization (UGA Extension, n.d.). At its inception, outreach efforts were primarily aimed at helping male agricultural workers and youth with farm demonstration work (UGA Extension, n.d.). To address the demand for expanded homemaking education, Extension agents in Georgia began offering demonstrations in cooking, canning, gardening, and sewing (UGA Extension, n.d.). Responding to the environmental movement of the 1960s-70s, UGA Extension increased their focus on environmental education, disseminating information related to invasive species, pollution prevention, and water conservation (UGA Extension, n.d.). Throughout its tenure, Georgia's Extension service has remained dynamic and

adaptive, “dedicated to serving citizens with the latest information and programs while addressing needs and technologies as they change over time” (UGA Extension, n.d., para. 3).

As Extension personnel within Georgia prepare for the next century of progress, a primary concern should be to ensure that local Extension offices are meeting stakeholder needs, by providing relevant and desired information and programming. This paper builds on the work of Powell and Lamm (In preparation), who identified five categories of critical issues facing Georgia residents, as determined by consensus building among Extension personnel and administration. The present study extends this work by surveying Georgia residents statewide and examining the distribution of critical issues according to geographic groupings. This work contributes to Extension efforts within Georgia by providing preliminary guidelines of how community issues are distributed across the state and practical recommendations for developing targeted programming to meet local needs.

Conceptual Framework

Audience Segmentation

Audience segmentation is a marketing technique that separates individuals into different groups based on shared characteristics (Newton et al., 2013), which may include behavioral, psychological, socio-economic, geographical, or demographic attributes (Kotler & Roberto, 1989). Audience segmentation is particularly useful when examining large diverse populations because it enables the researcher to establish subgroups with “shared characteristics relevant to the behavior to inform the design and delivery of more salient and targeted materials” (Warner et al., 2022, p.2). Moreover, audience segmentation facilitates communication strategies toward specific groups based on their unique needs or interests and has been found to increase efficiency of resource use and information delivery (Huang et al., 2016; Newton et al., 2013; Kotler & Lee,

2008). Successful use of audience segmentation in Cooperative Extension applications has been well-documented (see Gibson et al., 2020; Lamm et al., 2019; Warner et al., 2017; Huang et al., 2016).

Geographic segmentation is a subset of audience segmentation, where individuals are grouped according to geographic characteristics. Separation of individuals by geographic characteristics can be useful in determining the needs or values of individuals in a certain area and tailoring information accordingly (Qualtrics, n.d.; Kahle, 1986). For example, Rentfrow et al. (2013) identified distinct psychological profiles which clustered in different regions of the United States. The researchers used these geographical profiles to examine the connections between microlevel processes and macrolevel outcomes (Rentfrow et al., 2013). Furthermore, Lamm, Holder et al. (2021) utilized geographic segmentation to examine personality traits of agricultural leadership development program participants.

Rurality

In Georgia, there are 159 total counties. According to the Rural Hospital Organization Assistance Act of 2017, counties with a population less than 50,000 were designated as rural. In total, 120 counties were classified as rural, with two counties classified rural based on military installation exclusion clause (State Office of Rural Health, 2017). The remaining thirty-nine counties were designated as urban. Primarily, the urban counties are situated in the metro Atlanta region; however, there are other urban hubs across the state, near the metropolitan areas of Athens, Augusta, Savannah, Columbus, Valdosta, and Rome (State Office of Rural Health, 2017). The majority of rural counties in Georgia were classified as at-risk or distressed, while the majority of urban counties were designated as prosperous or comfortable.

In terms of economic development, there are also stark differences between rural and urban counties within Georgia. In 2014, urban counties in Georgia contained 78% of all jobs in the state, with Atlanta accounting for over half (55%) of all jobs (Bluestone & de Zeeuw, 2016). However, the unemployment rate was higher within urban areas (6.7%) than rural areas (5.8%) in Georgia (USDA-ERS, 2021). From 2007-2014, 90% of Georgia's population growth occurred within urban areas (Bluestone & de Zeeuw, 2016); whereas, rural areas in Georgia have experienced a population decrease, losing 4% of the total population between 2010-2020 (Tanner, 2021; Fennessy & Mador, 2021). In 2019, the poverty rate for rural areas in Georgia was 19.4%, while the poverty rate for urban areas was closer to the national average at 12.4% (USDA-ERS, 2021).

For this study, rurality was determined according to the guidelines published by the State Office of Rural Health (2017). Figure 2 depicts a map of rural and urban counties in Georgia according to the State Office of Rural Health (2017). Blue indicates rural, and white indicates urban.

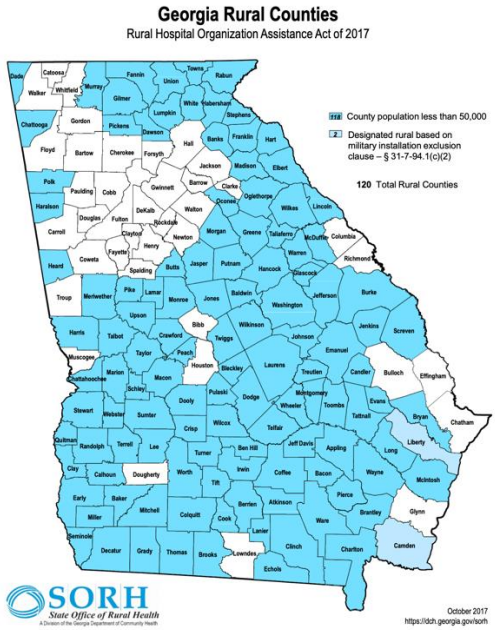


Figure 2. Map of Georgia's Urban and Rural Counties

Geographic Region

The state of Georgia is home to five geographic regions: the Appalachian Plateau, the Blue Ridge Mountains, Ridge and Valley, Piedmont, and the Coastal Plain (Usery, 2018). Located in the northwest corner of Georgia, the Appalachian Plateau is the smallest geographic region (Chowns, 2018a). Characterized by sandstone bluffs, this region possesses abundant soil and limestone deposits (Chowns, 2018a). The primary industries of this region include tourism and forestry (Dewolf, n.d.).

Neighboring the Appalachian Plateau is the Ridge and Valley region of Georgia. This region is characterized by long ridges separated by fertile valleys (Chowns, 2018b). Textiles and carpet manufacturing serve as the primary drivers of economic production in this region (Chowns, 2018b). Agricultural production occurs in the valleys and major outputs include corn, soybeans, wheat, cotton, and timber (Dewolf, n.d.). Finally, the region serves as a major transportation corridor to Tennessee and Alabama (Chowns, 2018b).

The Blue Ridge Mountain region is in the northeast corner of Georgia and is home to the southernmost portion of the Appalachian Mountain range (Seabrook, 2020). This region is rich in biological diversity (Seabrook, 2020) and is home to many of Georgia's premiere natural attractions (e.g., Blood Mountain, Brasstown Bald, Tallulah Gorge). The economy of this region is supported by tourism, mining, timber harvesting, and agriculture (Dewolf, n.d.).

Below the Ridge and Valley and Blue Ridge Mountain regions lies the Piedmont. This region comprises 30% of the state's surface area and is characterized by gently, rolling hills, major rivers, and red clay (Dewolf, n.d.; Golley, 2017). Additionally, the majority of urban counties are located within the Piedmont region, including the metro areas of Atlanta, Augusta,

Athens, Columbus, and Macon (Dewolf, n.d.). Beef and poultry processing, carpet milling, and aircraft and automobile manufacturing are a few of the dominant industries (DeWolf, n.d.).

The Coastal Plain is the largest geographic region in Georgia, accounting for 60% of the state's surface area (Frazier, 2019). This region is subdivided into the Upper Coastal Plain and the Lower Coastal Plain (Usery, 2018). The Upper Coastal Plain covers central and southwestern Georgia and is the center of the state's agricultural industry (Usery, 2018). Additionally, this region is home to many endangered species, including the gopher tortoise, longleaf pine, and wiregrass (Kirkman, 2020).

The Lower Coastal Plain is located across southeast Georgia and contains the coastal region and barrier islands (Usery, 2018). Prominent economic industries within this subregion include the pulp and paper industry, commercial fishing, seafood production, and tourism (Dewolf, n.d.; Seabrook, 2018). The cities of Savannah and Brunswick are home to international shipping ports and connect Georgia's economy to the global market (Dewolf, n.d.; Seabrook, 2018). Barrier islands off the coast provide recreation and tourism opportunities and perform important ecological services, such as protecting mainland Georgia from hurricanes (Dewolf, n.d.; Seabrook, 2018).

For this study, geographic region was determined according to county classification by the Georgia DNR (n.d.). For the purposes of this study, the Appalachian Plateau was combined with the Ridge and Valley region to form a singular Ridge and Valley region. Figure 3 below depicts a map showing Georgia's five geographic regions according to guidelines from the Georgia DNR. Yellow indicates counties in the Ridge and Valley region. Red indicates counties in the Blue Ridge Mountain region. Green indicates counties in the Piedmont region. Orange

indicates counties in the Upper Coastal Plain, and blue indicates counties in the Lower Coastal Plain.

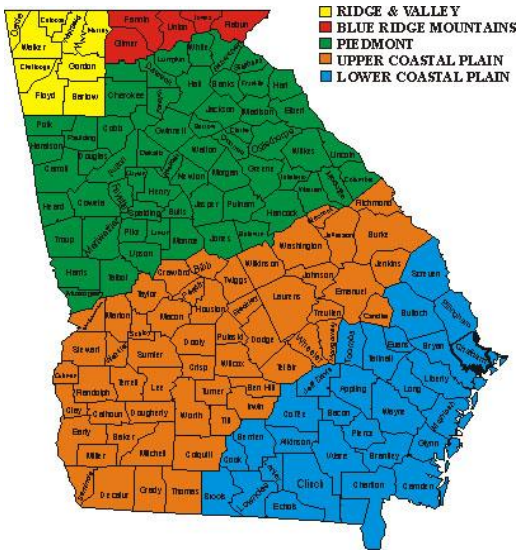


Figure 3. Georgia DNR Geographic Regions by County

Extension Region

Extension's county delivery system in Georgia is administratively organized into four geographical regions across the state: 1) Northeast, 2) Northwest, 3) Southeast, and 4) Southwest (UGA Extension, n.d.). The Northeast region is comprised of individuals living in the Ridge and Valley, Blue Ridge Mountains, and Piedmont regions (UGA Extension, n.d.). The Northwest district serves communities across the Appalachian Plateau, Ridge and Valley, and Piedmont regions (UGA Extension, n.d.). The Southwest region is located in the Upper Coastal Plain (UGA Extension, n.d.). The Southeast region contains the Lower Coastal Plains and portions of the Upper Coastal Plain (UGA Extension, n.d.). The majority of urban counties in Georgia are located in the Northeast and Northwest districts, with the exception of Lowndes County and the urban counties of coastal Georgia (UGA Extension, n.d.). The Southeast and Southwest districts consist primarily of rural counties (UGA Extension, n.d.).

Extension region was determined according to classification from UGA Extension (n.d.). Figure 4 depicts a map from UGA Extension, illustrating the four Extension districts and corresponding counties.

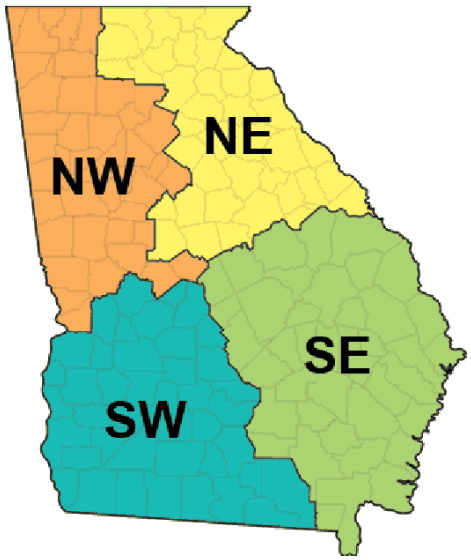


Figure 4. Extension Districts in Georgia

Purpose and Research Objectives

The purpose of this study was to determine if there are significant differences in perceptions of critical community issues based on rurality, geographic regions, and Extension districts. The study was motivated by the following research objectives:

1. Describe critical community issues based on geographic region/grouping
2. Determine whether rurality was significantly associated with perception of critical community issues.
3. Determine whether geographic region was significantly associated with perception of critical community issues.
4. Determine whether Extension district was significantly associated with perception of critical community issues.

Methods

A quantitative research design was employed. The population of interest was residents in the state of Georgia. A sampling frame was developed using a non-probability sampling approached designed by an online survey company as recommended within the literature (see Lamm & Lamm, 2019). Criteria for respondent inclusion were established based on corresponding data from the U.S. Census for each of the counties included in the study. Additionally, it is important to note that the data used within the present study were collected as part of a larger research study. We make these disclosures based on recommendations for clarity within the literature (see Kirkman & Chen, 2011).

Data were collected using an online questionnaire with attention filters. The instrument utilized in this study incorporated a community capitals framework-based scale which was developed to analyze perceptions of community capital stock at the county level. In addition to the perceptions of community capital stock, respondents were presented with a series of five questions to determine their perception of whether the issue presented in each question was relevant to their community. The five issues that were presented within this survey were informed by the themes generated during Article 1; however, the wording has been modified to align with the scope of the larger research study. The five issues were: 1) Agriculture and Economic Development, 2) Youth and Family Development, 3) Water, 4) Nutrition Education and Food Availability, and 5) Civic Engagement and Community Leadership. Respondents indicated their perception using a dichotomous scale with possible answer choices *Yes* or *No*.

Respondents self-reported demographic information, as well as their county of residence. The county of residence was used to determine rurality, geographic region, and extension region. A total of 3,374 respondents completed the online questionnaire. Respondents represented 152 of

the 159 counties in Georgia. The number of responses per county ranged from 1 to 308. Non-response bias was mitigated through the non-probability sampling procedure. To accomplish research objective one, absolute frequency counts and associated percentages were computed. To accomplish research objective two, a series of Chi-Square Test of Independence were used to examine the relationships between critical issue response and demographic characteristics. A significance level of $\alpha = .05$ was determined *a priori*.

Results

At the state-level, the issue with the highest percentage of *Yes* responses was Youth and Family Development. The issue with the lowest percentage of *Yes* responses – at the state level – was Water. Absolute frequency counts and associated percentages for the state-level data are displayed in Table 4.

Table 4
Absolute Frequency Counts for Critical Community Issues

Issue	*Yes*		*No*		*N*
	f	%	*f*	%	
Youth and Family Development	1699	50.4%	1675	49.6%	3374
Civic Engagement and Community Leadership	1572	46.6%	1802	53.4%	3374
Agricultural and Economic Development	1152	34.1%	2222	65.9%	3374
Nutrition Education and Food Availability	852	25.3%	2522	74.7%	3374
Water	430	12.7%	2944	87.3%	3374

Inferential Analysis

A statistically significant relationship was observed between Youth and Family Development and rurality. A majority of residents in rural areas agreed that Youth and Family Development was a critical issue facing their community. Additionally, there was a significant relationship found between Youth and Family Development and geographic region. Residents in the Lower Coastal Plain region had the highest percentage of agreement that this was a critical issue facing their communities. Additionally, the majority of residents in the Blue Ridge region

and Upper Coastal Plain regions agreed that this was a critical issue. Finally, there was a significant relationship between Youth and Family Development and extension region. Residents in the southwest region had the highest percentage of agreement that this was a critical issue in their communities. Furthermore, the majority of residents in the Northeast and Southeast districts agreed that Youth and Family Development was a critical issue facing their communities. The effect size for each relationship was small (Cohen, 1988). The results are presented in Table 5.

Table 5
Critical Community Issues based on Geographic Groupings - Youth and Family Development

Characteristic	*Yes*		*No*		*N*	χ^2	Φ
	f	%	*f*	%			
Rurality						13.651***	.06
Rural	396	56.6%	304	43.4%	700		
Urban	1303	48.7%	1371	51.3%	2674		
Geographic Region						34.330***	.10
Blue Ridge	19	55.9%	15	44.1%	34		
Ridge and Valley	93	48.9%	97	51.1%	190		
Piedmont	1102	47.2%	1233	52.8%	2335		
Upper Coastal Plain	247	58.5%	175	41.5%	422		
Lower Coastal Plain	192	60.6%	125	39.4%	317		
Extension Region						33.408***	.10
Northeast	324	53.9%	277	46.1%	601		
Northwest	1021	47.0%	1153	53.0%	2174		
Southeast	178	56.3%	138	43.7%	316		
Southwest	176	62.2%	107	37.8%	283		

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

Regarding Civic Engagement and Community Leadership, there was a significant relationship with geographic region. Residents in the Upper Coastal Plain had the highest percentage of agreement that this was a critical issue in their community. The effect size of this relationship was small (Cohen, 1988). There was no significant relationship found between Civic Engagement and Community Leadership and rurality. Additionally, there was no significant relationship observed between Civic Engagement and Community Leadership and extension region. The results are presented in Table 6.

Table 6
Critical Community Issues based on Geographic Groupings - Civic Engagement and Community Leadership

Characteristic	*Yes*		*No*		*N*	χ^2	Φ
	f	%	*f*	%			
Rurality						0.369	.01
Rural	319	45.6%	381	54.4%	700		
Urban	1253	46.9%	1421	53.1%	2674		
Geographic Region						11.580*	.06
Blue Ridge	14	41.2%	20	58.8%	34		
Ridge and Valley	75	39.5%	115	60.5%	190		
Piedmont	1107	47.4%	1228	52.6%	2335		
Upper Coastal Plain	212	50.2%	210	49.8%	422		
Lower Coastal Plain	129	40.7%	188	59.3%	317		
Extension Region						5.423	.04
Northeast	262	43.6%	339	56.4%	601		
Northwest	1045	48.1%	1129	51.9%	2174		
Southeast	139	44.0%	177	56.0%	316		
Southwest	126	44.5%	157	55.5%	283		

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

Regarding Agriculture and Economic Development, there were significant relationships with rurality, geographic region, and extension region. When degrees of freedom were accounted for, the effect size of each relationship was small (Cohen, 1988). Rural residents had a higher percentage of agreement that Agricultural and Economic Development was a critical issue within their community than urban residents. However, the majority of residents in both rural and urban areas did not feel that this was a critical issue facing their community. Within geographic region, the Blue Ridge region had the largest percentage of residents who agreed that Agriculture and Economic Development was a critical issue facing their community. The results are displayed in Table 7.

Table 7
Critical Community Issues based on Geographic Groupings - Agriculture and Economic Development

Characteristic	*Yes*		*No*		*N*	χ^2	Φ
	f	%	*f*	%			
Rurality						42.715***	.11
Rural	312	44.6%	388	55.4%	700		

Urban	840	31.4%	1834	68.6%	2674		
Geographic Region						39.058***	.11
Blue Ridge	22	64.7%	12	35.3%	34		
Ridge and Valley	77	40.5%	113	59.5%	190		
Piedmont	737	31.6%	1598	68.4%	2335		
Upper Coastal Plain	180	42.7%	242	57.3%	422		
Lower Coastal Plain	100	31.5%	217	68.5%	317		
Extension Region						13.428**	.06
Northeast	237	39.4%	364	60.6%	601		
Northwest	696	32.0%	1478	68.0%	2174		
Southeast	115	36.4%	201	63.6%	316		
Southwest	104	36.7%	179	63.3%	283		

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

Concerning Nutrition Education and Food Availability, there was a significant relationship with rurality. Rural residents had a higher percentage of agreement that this was a critical issue facing their community than urban residents. However, the majority of residents in both rural and urban communities agreed that Nutrition Education and Food Availability was not a critical issue. Additionally, there was a significant relationship between Nutrition Education and Food Availability and geographic region. Residents in the Upper Coastal Plain had the highest level of agreement that this is a critical issue facing their community. Finally, there was a significant relationship between Nutrition Education and Food Availability and extension region. Residents in the southwest region had the highest percentage of agreement that this was a critical issue; however, the majority of residents in every extension region agreed that this was not a critical issue. The effect sizes for these relationships were small (Cohen, 1988). The results are presented in Table 8.

Table 8
Critical Community Issues based on Geographic Groupings - Nutrition Education and Food Availability

Characteristic	*Yes*		*No*		*N*	χ^2	Φ
	f	%	*f*	%			
Rurality						7.084**	.05
Rural	204	29.1%	496	70.9%	700		
Urban	648	24.2%	2026	75.8%	2674		

Geographic Region						35.521***	.10
Blue Ridge	10	29.4%	24	70.6%	34		
Ridge and Valley	39	20.5%	151	79.5%	190		
Piedmont	545	23.3%	1790	76.7%	2335		
Upper Coastal Plain	154	36.5%	268	63.5%	422		
Lower Coastal Plain	83	26.2%	234	73.8%	317		
Extension Region						24.006***	.08
Northeast	180	30.0%	421	70.0%	601		
Northwest	490	22.5%	1684	77.5%	2174		
Southeast	94	29.7%	222	70.3%	316		
Southwest	88	31.1%	195	68.9%	283		

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

Regarding Water, there was a significant relationship with rurality. The effect size of this relationship was small (Cohen, 1988). Rural residents had a higher percentage of agreement that water was a critical issue facing their communities than urban residents; however, the majority of residents in both rural and urban areas agreed that this was not a critical issue. No significant relationships were found between water and geographic region or water and extension region. The majority of residents across all geographic and extension regions agreed that water was not a critical issue facing their communities. The results are presented in Table 9.

Table 9
Critical Community Issues Based on Geographic Groupings - Water

Characteristic	*Yes*		*No*		*N*	χ^2	Φ
	f	%	*f*	%			
Rurality						7.005**	.05
Rural	110	15.7%	590	84.3%	700		
Urban	320	12.0%	2354	88.0%	2674		
Geographic Region						8.948	.05
Blue Ridge	4	11.8%	30	88.2%	34		
Ridge and Valley	16	8.4%	174	91.6%	190		
Piedmont	291	12.5%	2044	87.5%	2335		
Upper Coastal Plain	58	13.7%	364	86.3%	422		
Lower Coastal Plain	54	17.0%	263	83.0%	317		
Extension Region						4.407	.04
Northeast	77	12.8%	524	87.2%	601		
Northwest	262	12.1%	1912	87.9%	2174		
Southeast	50	15.8%	266	84.2%	316		
Southwest	41	14.5%	242	85.5%	283		

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

To summarize the results presented above, a comprehensive summary matrix was developed (see Table 10). The percentage of *Yes* responses associated with each critical community issue are reported by geographic grouping.

Table 10
Summary Matrix

Characteristic	*Issue*				
	Youth and Family Development	Civic Engagement and Community Development	Agricultural and Economic Development	Nutrition Education and Availability	Water
Rurality					
Rural	56.6%	45.6%	44.6%	29.1%	15.7%
Urban	48.7%	46.9%	31.4%	24.2%	12.0%
Geographic Region					
Blue Ridge	55.9%	41.2%	64.7%	29.4%	11.8%
Ridge and Valley	48.9%	39.5%	40.5%	20.5%	8.4%
Piedmont	47.2%	47.4%	31.6%	23.3%	12.5%
Upper Coastal Plain	58.5%	50.2%	42.7%	36.5%	13.7%
Lower Coastal Plain	60.6%	40.7%	31.5%	26.2%	17.0%
Extension Region					
Northeast	53.9%	43.6%	39.4%	30.0%	12.8%
Northwest	47.0%	48.1%	32.0%	22.5%	12.1%
Southeast	56.3%	44.0%	36.4%	29.7%	15.8%
Southwest	62.2%	44.5%	36.7%	31.1%	14.5%

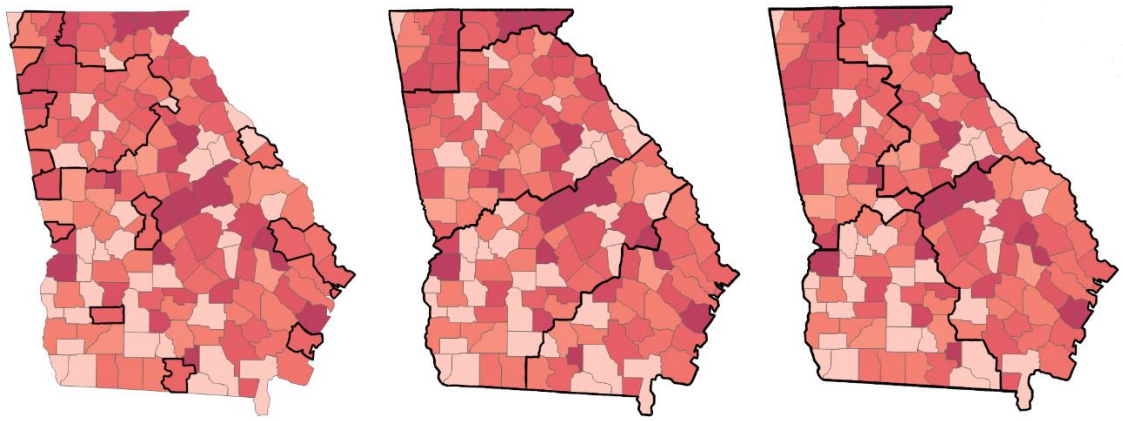
Conclusions, Recommendations, and Limitations

At a composite level, Youth and Family Development received the highest percentage (50.4%) of individuals who agreed that this was a critical issue facing their communities. Civic Engagement and Community Development received the second highest percentage of agreement

(40.6%), followed by Agriculture and Economic Development (34.1%), Nutrition Education and Food Availability (25.3%), and Water (12.7%).

Youth and Family Development

The majority of individuals (56.6%) living in rural counties regarded Youth and Family Development as a critical community issue. Additionally, a majority of residents in the Upper Coastal Plain (60.6%), Lower Coastal Plain (58.5%), and the Blue Ridge (55.9%) believed that Youth and Family Development was a critical community issue. Furthermore, a majority of individuals living in the Southwest (66.2%), Southeast (56.3%), and Northeast (53.9%) Extension districts felt that Youth and Family Development was a critical community issue. Figure 5 displays the distributions of perception of Youth and Family Development as a critical community issue across rurality, geographic regions, and Extension districts.



Rural/Urban Geographic Region Extension District

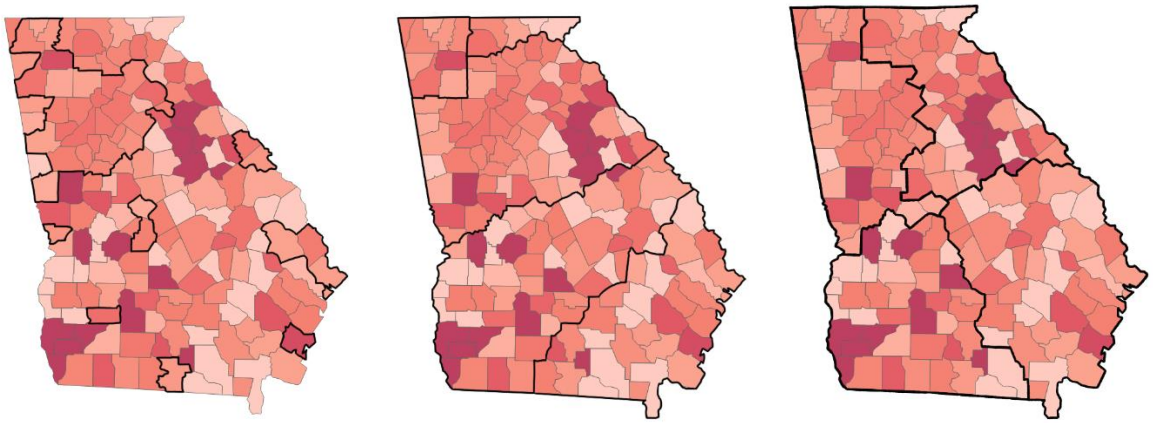
Figure 5. Distributions – Youth and Family Development

According to the Distressed Communities Index, almost every county within the Blue Ridge and Coastal Plain geographic regions is classified as distressed, at-risk, or mid-tier (Economic Innovation Group, n.d.). The majority of distressed and at-risk counties in Georgia are located within the Upper and Lower Coastal Plains (Economic Innovation Group, n.d.).

These counties are characterized by increased poverty, increased rates of adults not working and adults without a high school diploma, and low median household incomes (Economic Innovation Group, n.d.). UGA Extension already provides many programs related to youth and family development, including 4-H, training on healthy relationships, teen and child development, and quality childcare and education (UGA FCS, n.d.). While these programs are already in place, the results of the current study and previous research (see Powell & Lamm, In preparation) underscore the importance of continuing these programs. An associated recommendation would be to increase visibility of available programs and resources, particularly within rural areas of the Coastal Plain and Blue Ridge Mountains. Additionally, we recommend that Extension agents within these geographic regions collaborate with community members to determine whether existing programs should be modified to meet stakeholder needs (Elmore et al., 2019).

Civic Engagement and Community Development

For rural and urban areas, a majority of residents did not regard Civic Engagement and Community Development as a critical community issue. Similarly, across almost all geographic regions, the majority of residents did not regard Civic Engagement and Community Development as a critical community issue. However, a slight majority of residents in the Upper Coastal Plain (50.2%) believed that it was a critical community issue. Additionally, the majority of residents across all Extension districts did not believe that Civic Engagement and Community Development was a critical community issue. Figure 6 displays the distributions of perception of Civic Engagement and Community Development as a critical community issue across rurality, geographic regions, and Extension districts.



Rural/Urban Geographic Region Extension District

Figure 6. Distributions – Civic Engagement and Community Development

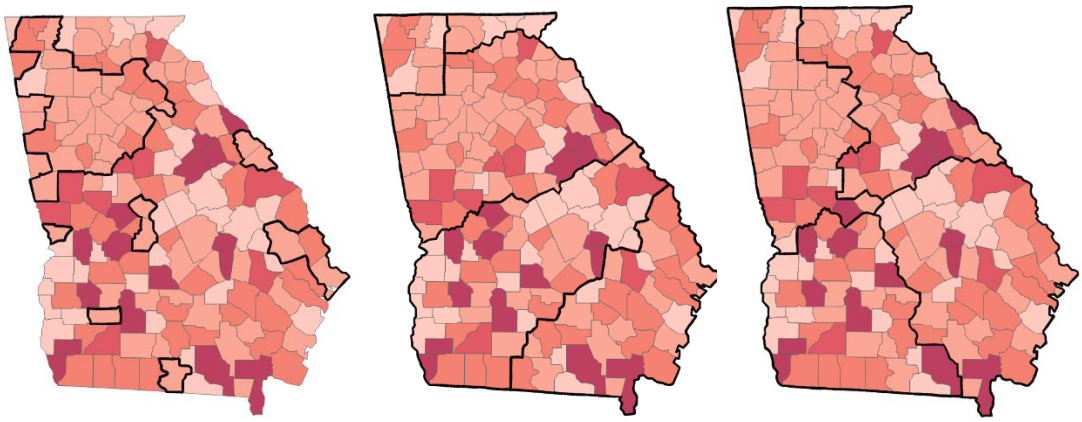
Specifically, there are moderate to high levels of perception of Civic Engagement and Community Development as a critical community issue among the Ridge and Valley, Piedmont, and Upper Coastal Plain regions. Within the Upper Coastal Plain and Ridge and Valley regions, a majority of counties are classified as distressed, with higher levels of poverty, housing vacancy, and unemployment (Economic Innovation Group, n.d.). There are many small towns across these regions, dependent on agriculture and manufacturing (Southwest Georgia Regional Commission, 2019; Middle Georgia Regional Commission, 2016). Additionally, among the Piedmont regions, the counties that had higher perceptions of Civic Engagement and Community Development as a critical community issue were primarily rural counties. Odeyemi and Skobba (2021) posit that small towns are typically rich in social capital but lack the administrative capacity or human resources to possess strong stakeholder-led governance models.

To increase civic engagement and contribute to meaningful community development, communities require significant human and social capital (Skobba & Tinsley, 2016; Etuk et al., 2013). The Cooperative Extension Service has four categories related to programming outreach, including Agriculture and Natural Resources, 4-H Youth Development, Family and Consumer

Sciences, and Community Development (Raison, 2014). However, within Georgia, the Extension system does not have personnel specifically assigned to offer programs and outreach related to Community Development (UGA Extension, 2021a). Although UGA Extension does offer programming and outreach related to civic engagement and community development (see Healey, 2021), there are no Community Development personnel within UGA Extension. A primary recommendation would be for Extension personnel to perform a needs assessment to determine the specific needs of clientele related to Civic Engagement and Community Development. Additionally, a further recommendation would be to include Community Development as a programming domain within UGA Extension and create county agent and program development coordinator positions within this domain.

Agriculture and Economic Development

A majority of residents in both rural (55.4%) and urban (68.6%) counties did not regard Agriculture and Economic Development as a critical community issue. Across all Extension districts, the majority of residents did not regard this as a critical community issue. Additionally, a majority of residents across almost all geographic regions did not regard Agriculture and Economic Development as a critical community issue. The exception was the Blue Ridge region, where 64.7% of residents felt that this was a critical issue facing their communities. Figure 7 displays the distributions of perception of Agriculture and Economic Development as a critical community issue across rurality, geographic regions, and Extension districts.



Rural/Urban Geographic Region Extension District

Figure 7. Distributions – Agriculture and Economic Development

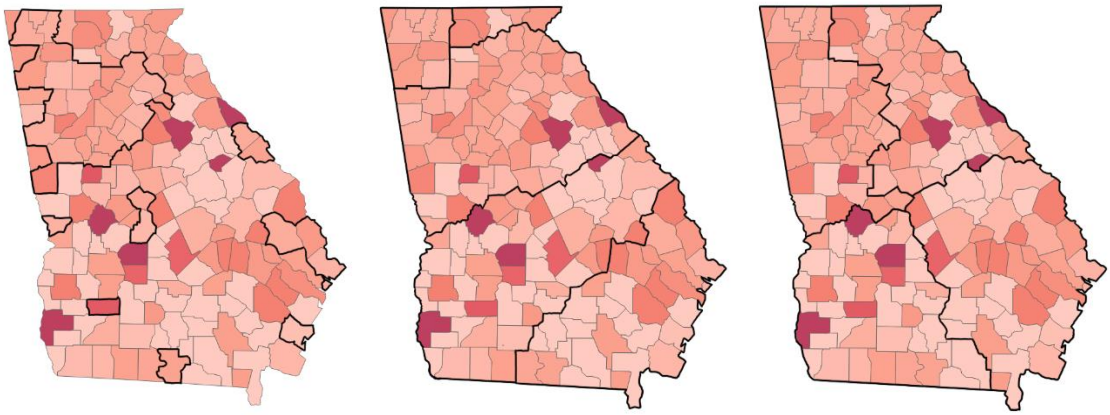
Recent data from the U.S. Bureau of Economic Analysis indicates that every county in the Blue Ridge region, except for Union County, reported a decrease in gross domestic product from 2019-2020 (Bureau of Economic Analysis, 2021). The primary industries in this region include retail trade, manufacturing, hospitality, health care and social services, and private-sector companies (Georgia Labor Market Explorer, 2021). On average, individuals in the Blue Ridge region earn $680-827 per week (Georgia Labor Market Explorer, 2021). While Georgia's unemployment rate has dropped in 2021 (Georgia DOL, 2021), much of the economic growth has been disproportionately concentrated in Atlanta and its suburbs (Coe et al., 2019). Individuals living outside the metro Atlanta area, particularly in rural parts of Northeast, are disconnected from available job opportunities (Coe et al., 2019; Wingfield, 2017).

An associated recommendation would be for Extension personnel to increase awareness of career preparation programming. Investing in human capital and reskilling workers with skills related to employer demands may contribute to increased economic development within this region (Coe et al., 2019). Furthermore, the Blue Ridge region is rich in natural capital stock (Seabrook, 2020). We recommend that Extension personnel leverage these resources and

collaborate with local stakeholders to develop an asset-based economic development plan for the region (Read, 2012). This economic development approach may contribute to long-term, sustained economic growth, job creation, and strengthening of regional networks (Read, 2012).

Nutrition Education and Food Availability

The majority of residents in rural and urban counties did not regard Nutrition Education and Food Availability as a critical community issue. Likewise, the majority of residents across all geographic regions did not regard this as a critical community issue. Moreover, across all Extension districts, the majority of residents did not perceive Nutrition Education and Food Availability as a critical issue facing their communities. Figure 8 displays the distributions of perception of Nutrition Education and Food Availability as a critical community issue across rurality, geographic regions, and Extension districts.



Rural/Urban Geographic Region Extension District

Figure 8. Distributions – Nutrition Education and Food Availability

These results are surprising given Georgia's recent nutrition, physical activity, and obesity profile (see Center for Disease Control, 2016). Among Georgia adults, 65.7% are considered overweight or obese (Center for Disease Control, 2016). Additionally, 43.2% of adults report consuming less than one serving of fruit per day, while 23.7% report consuming

less than one serving of vegetables per day (Center for Disease Control, 2016). Only half of Georgia adults (50.8%) are achieving the recommended 150 minutes of moderate intensity physical activity per week (Center for Disease Control, 2016). Among adolescents in Georgia, 29.8% are considered overweight or obese (Center for Disease Control, 2016). Additionally, 43.1% of adolescents report consuming less than one serving of fruit per day, and 45.2% of adolescents report consuming less than one serving of vegetables per day (Center for Disease Control, 2016). Less than one-quarter of adolescents report being physically active for at least 60 minutes per day on all seven days in the past week (Center for Disease Control, 2016).

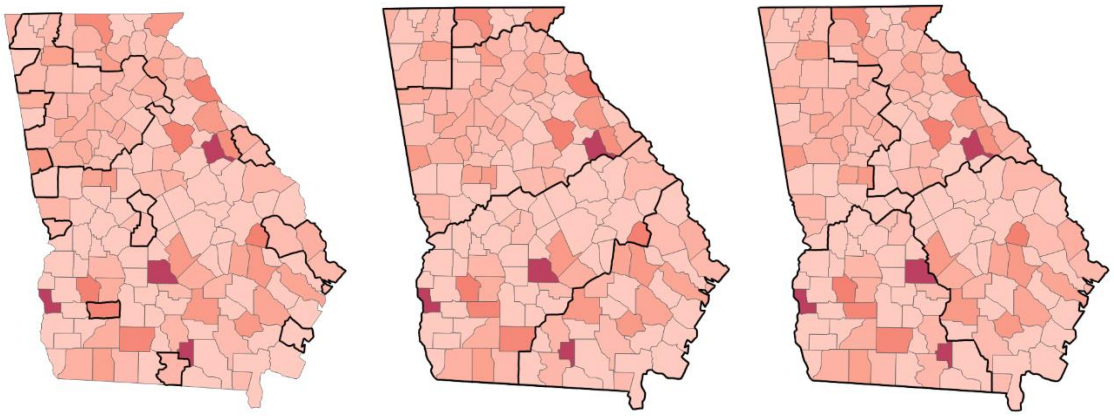
Thus, it is clear there is a disconnect between the perception of nutrition education as a critical issue and the actual reality of this issue. Nutrition education and physical activity are a significant public health issue among Georgia residents (Georgia DPH, 2017). Therefore, an associated recommendation for Extension personnel would be to examine why clients do not consider nutrition education to be a critical community issue. The results of this assessment may be used to increase effectiveness of nutrition education programs offered by UGA Extension, e.g., Supplemental Nutrition Assistance Program Education (Stotz et al., 2019), Expanded Food and Nutrition Education Program (Cox et al., 2020).

In terms of adolescent nutrition education, UGA Extension offers the Eat Healthy, Be Active program, which teaches nutrition and physical activity concepts to early childhood ages (UGA Extension, 2021b). Additionally, UGA Extension provides school garden-based curriculum that align nutrition education with education standards for K-8 students (UGA Extension, 2021c). We recommend Extension personnel conduct a program evaluation of these two programs to determine the effectiveness of improving adolescent nutrition and dietary behaviors. The results of this assessment may aid Extension agents in determining whether

adolescents make unhealthy dietary choices because they lack nutritional knowledge or because they do not have access to fresh, nutrient-dense foods. Additionally, complementing these programs with tours to local farms and information on local food banks may bridge the gap between learning about nutrition and implementing healthy dietary behaviors.

Water

The majority of residents in rural and urban counties did not perceive Water to be a critical community issue. Additionally, across all geographic regions, the majority of residents did not regard Water as a critical issue facing their communities. Furthermore, the majority of residents across all Extension districts did not believe that Water was a critical community issue. Figure 9 displays the distributions of perception of Waters as a critical community issue across rurality, geographic regions, and Extension districts.



Rural/Urban Geographic Region Extension District

Figure 9. Distributions – Water

These results contradict previous research conducted by Evans et al. (2011). Forty percent of respondents reported a low likelihood that their local water supply would be able to meet all water resource needs in tens years (Evans et al., 2011). Additionally, 35% of respondents had a positive perception of groundwater quality in Georgia, while only 27% of

respondents had a positive perception of surface water quality (Evans et al., 2011). The two principal water supplies for Georgia are groundwater, e.g., the Floridian aquifer (EPA, 2013), and surface water, e.g., Lake Lanier (Elliott, 2020). Furthermore, recent reports from Elliott (2020) and Gaffney (2019) indicate that water use and supply quantity are becoming significant issues for Georgia and their neighboring states.

Following a severe drought from 2007-2008, UGA Extension launched a water conservation program, which features education on indoor water conservation through Every Drop Counts and outdoor water conservation through WaterSmart (Risse et al., 2009). Additionally, the youth development of UGA Extension created a Drought in Georgia curriculum for use in formal education settings and 4-H programming (Risse et al., 2009). Furthermore, in 2010 the Environmental Protection Division of Georgia's Department of Natural Resources released a report on best management practices for water use related to agricultural irrigation, golf courses and landscaping, industrial and commercial facilities, and domestic operations (Barnes & Keyes, 2010). Therefore, individuals may not perceive Water as a critical community issue because water conservation programs have been a focus of UGA Extension and the Georgia state government over the past 14 years.

Although respondents in this study did not perceive Water as a critical community issue, it is important to continue raising awareness about the work UGA Extension has done to increase water conservation practices within Georgia. Additionally, it is important for Georgia residents to be aware of how their water use affects water supplies for residents in Alabama and Florida. The headwaters of two major river basins (the Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa) are located in Georgia (Atlanta Regional Commission, 2021). Although the U.S. Army Corps of Engineers has implemented a plan to ensure that water use in Georgia does

not limit water supplies in Florida and Alabama (Atlanta Regional Commission, 2021), we recommend that Extension personnel highlight the interrelations between our water supplies. It may be the case that these conversations are already happening; however, the results of this study demonstrate that continuing these efforts is warranted.

Limitations and Recommendations

There are several limitations associated with the study design that must be addressed. First, the data was collected using a non-probability sampling procedure and distributed via an online survey platform. Therefore, the resulting sample may not necessarily be representative of the entire population of the state of Georgia. For example, the online nature of the survey limited the respondent pool to those who had access to internet-based applications. Additionally, the variable of interest was binary, which limited the resulting analysis. A continuous variable of interest may provide more analytical power. Therefore, we recommend that future research focus on examining audience segmentation of Extension clientele using a continuous variable of interest. Finally, the data collected are representative of a single point in time. Since the data collection occurred prior to the COVID-19 pandemic, the needs of Extension clientele may have changed and the applicability of the results in the present study may be limited.

Implications

A significant implication of this study is the initial development of a decision support tool that gives Extension practitioners insight into critical issues as deemed by local clientele. The results of the present study will aid Extension professionals in developing programming and focusing resource use to meet the needs of the communities they support. For example, Extension agents serving rural areas of the Upper Coastal Plain may want to focus programming and resources toward addressing issues related to Youth and Family Development or Civic

Engagement and Community Development. While the results of the present study provide a starting point for program development, a practical recommendation would be for Extension personnel to work collaboratively with local clientele and stakeholders to determine the best solutions to address issues within these larger content areas.

Furthermore, the results of this study may be used to guide meetings between all personnel within an Extension district. For example, the Northwest District serves a unique combination of individuals within Atlanta, metro Atlanta, and rural areas within Northeast Georgia. Additionally, the District covers the Piedmont and Ridge and Valley geographic regions. Communities across the Northwest District may have different needs depending on their rurality condition or geographic region. Therefore, a practical recommendation would be to form coalitions across Extension districts to better serve communities that fall into the same subgroups based on rurality or geographic regions. For example, Extension personnel serving communities in the Ridge and Valley region of the Northeast district may benefit from meeting periodically with Extension personnel serving communities in the Blue Ridge region of the Northwest district. It may be the case that these meetings and coalitions are already taking place, but the results of the present study underscore the importance of continuing such relations.

Overall, the present study provides a preliminary set of recommendations for program development and resource allocation within UGA Extension. We encourage Extension personnel to use these results as a starting point for continuing needs assessments and engaging collaboratively with the communities they serve. In doing so, we believe that UGA Extension can contribute to increased resilience of communities and help Georgia residents thrive throughout the next century of Cooperative Extension.

CHAPTER 5

CONCLUSIONS

Introduction

As the Cooperative Extension Service in Georgia progresses in its second century of operation, it is imperative to reevaluate how stakeholder needs have been affected by the events and global trends of the 21st century. The contemporary Extension service has expanded to serve a more diverse population than the rural, agrarian-based communities of the early 20th century. To ensure the continued provision of relevant information and desired programming, it is important for Extension personnel within Georgia to evaluate the critical needs of the communities they serve. The intent of this study was to identify critical needs of Georgia residents and determine how perceptions of these issues varied across different populations in the state. This chapter is structured into five sections. Sections one and two address research articles one and two, respectively. Section three discusses the implications of this research. Section four addresses the limitations associated with this research and the study designs employed in the two research articles. Section five provides recommendations for practice and future research regarding effective program development within the Cooperative Extension Service.

Article One: Critical Issues Facing Georgians

The purpose of research article one was to identify critical issues facing Georgia communities according to the perceptions of an expert panel comprised of UGA Extension leadership. In total, 21 critical community issues were identified and coalesced into five major themes: 1) Investment in Youth and Adults; 2) Resource Access and Availability; 3) Agricultural

and Rural Economic Development; 4) Agriculture and Food Safety Information; and 5) Social and Personal Economic Concerns. Every community can be enhanced through their available capital assets or hindered through lack of such assets (Emery & Flora, 2006). Utilizing the community capitals framework provides a more nuanced perspective of how capital assets can contribute to macro-level outcomes (Borron et al., 2019). Each of the identified critical issue themes corresponded to at least one community capital, but often numerous capitals overlapped within these themes.

Oftentimes, community development issues are not the result of a singular root cause (Morgan, 2005). Furthermore, there is generally no one "right" solution to these issues (Morgan, 2005). To effectively approach critical community issues, it is important to examine the underlying factors and associated outcomes through a systems-thinking approach (Atiles, 2019; Morgan, 2005). The community capitals framework is a complex web of interrelated connections that contribute to multiple outcomes. Therefore, it is important to understand how existing capital assets intersect and how such interactions are formed. Knowledge of these interactions may enable Extension practitioners to address the resulting issues with greater efficiency.

While examining the interactions between multiple community capitals is important, analyzing these capitals separately provides useful insights into "how each is associated with community assets and liabilities" (Borron et al., 2020, p.45). Analysis at the individual level may provide Extension personnel with entry points to engage with community members. In doing so, community development strategies can shift from the traditional "outside-in" approach to an "inside-out" one (Borron et al., 2019). Approaching community development from an "inside-out" approach ensures that perspective of community members is placed at the forefront of these

discussions (Borron et al., 2019). Therefore, resulting solutions may be more effective because the needs and desires of local residents are prioritized (Borron et al., 2019).

Article Two: Examining the Relationship Between Geographic Groupings and Perception of Critical Community Issues

The purpose of research article two was to determine how perception of critical community issues differed by geographic segmentation (i.e., rural/urban counties, geographic region, Extension district). The results of the study indicate that Youth and Family Development received the highest percentage of perception as a critical community issue. To further explore differences in perception based on geographic grouping, data visualizations were created showing how each issue was perceived according to rural/urban condition, geographic region, and Extension district. Dark red indicates a higher perception of a critical community issue, while light red indicates a low perception. The following five sections summarize the findings associated with the data visualizations generated for each critical community issue.

Youth and Family Development

This issue had a high perception of being a critical community issue in communities across the state. Perception of Youth and Family Development as a critical community issue was higher within rural counties. However, there is a notable exception. Urban counties located in Northwest Georgia (e.g., Whitfield, Gordon, Floyd, and Bartow) also had a high perception of Youth and Family Development as a critical community issue. Figure 10 below depicts the distribution of perception across rurality.

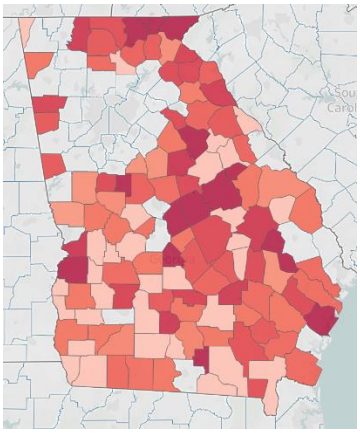
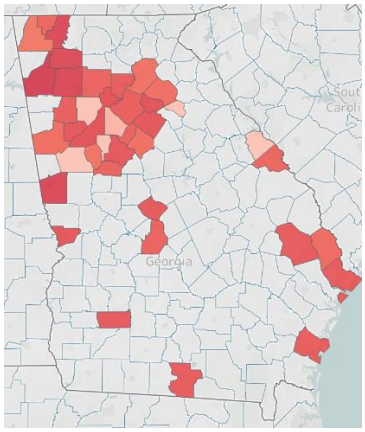
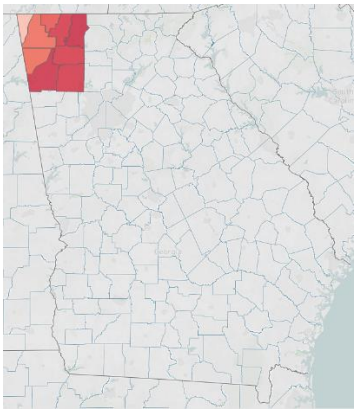
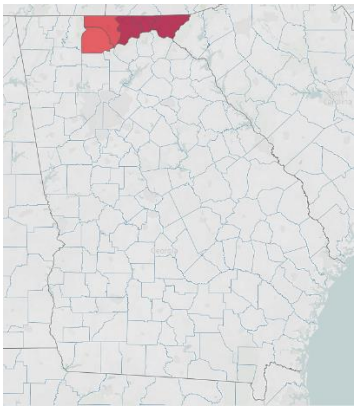
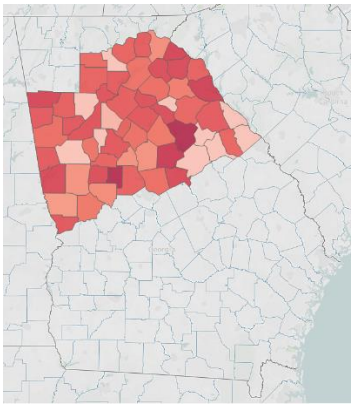
a)  b) 

Figure 10. Rurality – Youth and Family Development
Note. a – Urban; b - Urban

Looking at the distribution of perception according to geographic region indicates that there is a high perception of Youth and Family Development as a critical community issue within the Blue Ridge Mountain, Ridge and Valley, and Lower Coastal Plain regions. Additionally, there are individual counties within the Piedmont and Upper Coastal Plain that reported high perception of Youth and Family Development as a critical community issue. Figure 11 below depicts the distribution of perception across geographic region.

a)  b)  c) 

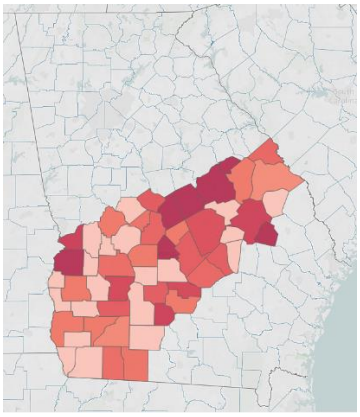
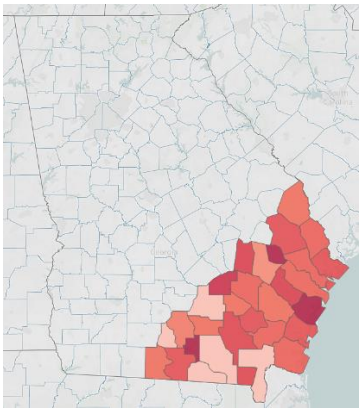

d)

e)

Figure 11. Geographic Region – Youth and Family Development
Note. a – Ridge and Valley; b – Blue Ridge; c – Piedmont; d – Upper Coastal Plain; e – Lower Coastal Plain

Across Extension districts, there was a high perception of Youth and Family Development as a critical community issue within the Northwest, Northeast, and Southeast districts. Figure 12 below depicts this distribution below.

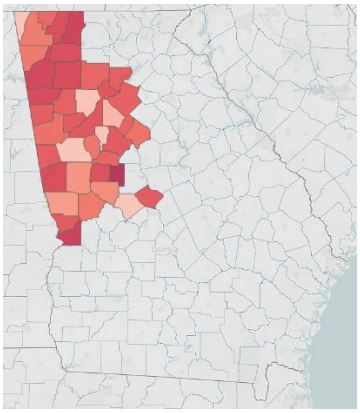
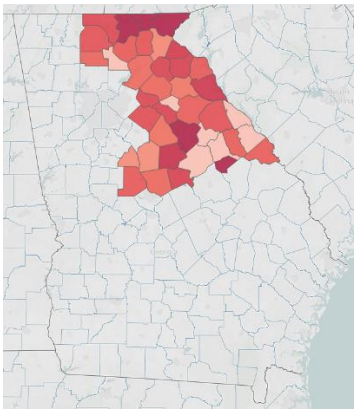
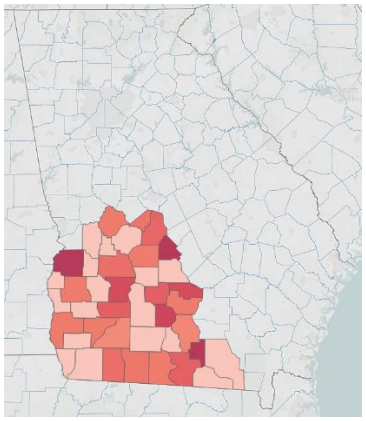
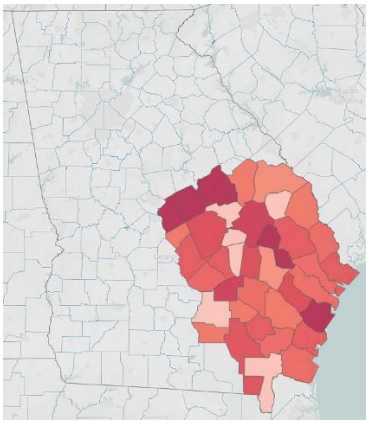

a)

b)

c)

d)

Figure 12. Extension District – Youth and Family Development

Note. a – Northwest; b – Northeast; c – Southeast; d – Southwest

Overall, there was a high perception of Youth and Family Development as a critical community issue across the state. The highest perceptions were concentrated within rural counties in the Blue Ridge Mountain, Upper Coastal Plain, and Lower Coastal Plain regions, as well as within urban counties in the Ridge and Valley region. According to the 2020 Census, children and adolescents make up 24% of Georgia's total population (U.S. Census Bureau, 2021). During the 2020-2021 school year, approximately 84% of Georgia youth graduated from high school, representing a 14% increase since 2012 (Frick, 2021).

However, significant challenges facing Georgia youth exist. Overall, Georgia ranked 38th in the nation for child and family well-being according to the 2021 Kids Count Data Book (Georgia Family Connection Partnership, 2021). Recent educational advancements have slowed, with proficiency in math and reading scores dropping from previous years (Georgia Family Connection Partnership, 2021). Additionally, the COVID-19 pandemic has impacted the rate of children living in poverty dramatically, with some counties reporting child poverty levels exceeding 30% (Georgia Family Connection Partnership, 2021; Miller, 2021). Furthermore, 14% of adults with children in their homes reported not having access to health insurance during the COVID-19 pandemic (Georgia Family Connection Partnership, 2021). Advocates for Youth (2016) reported that Georgia youth face higher rates of teen pregnancy, HIV diagnoses, and sexually transmitted infections (STIs) than the national average. Children of color represent 56% of Georgia's youth population, yet they experience disproportionate higher levels of adverse health outcomes than their white counterparts (Georgia Family Connection Partnership, 2021; Advocates for Youth, 2016). Furthermore, rural Georgians have limited access to healthcare,

particularly prenatal care, and these trends are much more severe for mothers and children of color (Georgia Family Connection Partnership, 2021).

It is evident that there is a serious need for increased investment in Youth and Family Development programs within Georgia. While Extension services within Georgia offer programs to address Youth and Family Development issues, the results of this study indicate that the current availability of programs may not be sufficient to meet the needs of the population. Therefore, we recommend conducting a needs assessment among counties with the highest perception levels to determine areas of need related to Youth and Family Development. The results of this assessment may be useful in informing the development of new programming or inform how to increase awareness and knowledge of existing programs.

Civic Engagement and Community Development

At the composite level, this issue received the second highest percentage of individuals who perceived it as a critical issue facing their communities. Overall, Civic Engagement and Community Development had the highest percentage of perception as a critical community issue within rural counties. However, it is important to note that some urban counties, such as those clustered within the metro Atlanta region, also reported a high perception of Civic Engagement and Community Development as a critical community issue. Figure 7 depicts the distribution of perception across rural/urban classification.

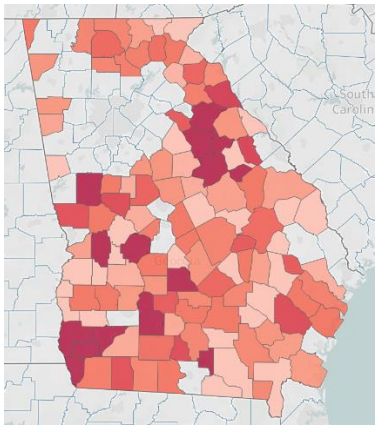
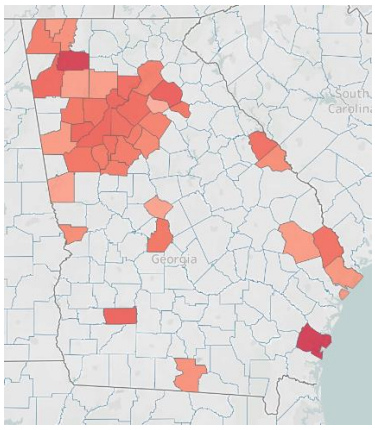
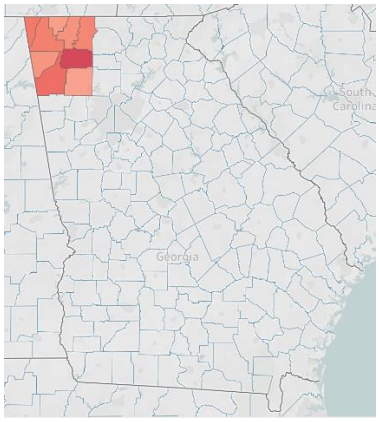
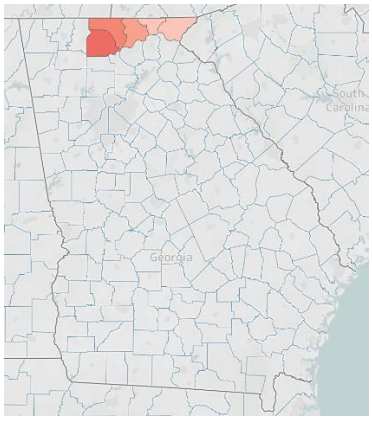
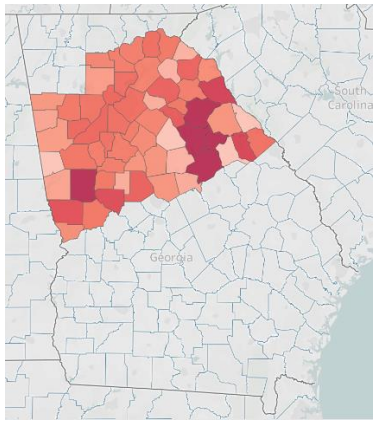
a)  b) 

Figure 13. Rurality – Civic Engagement & Community Development
Note. a – Rural; b – Urban

Looking at geographic regions, there is a higher perception of Civic Engagement and Community Development as a critical community issue within the Piedmont and Upper Coastal Plain. Figure 14 shows the distribution across geographic regions.

a)  b)  c) 

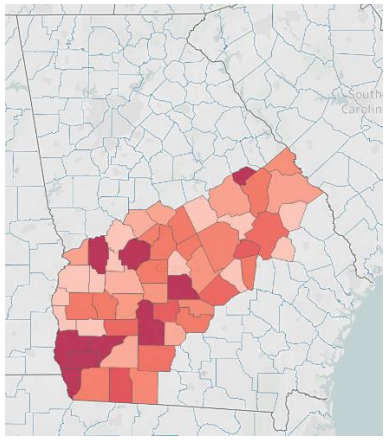
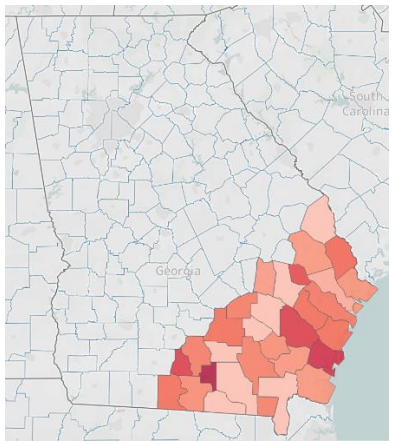
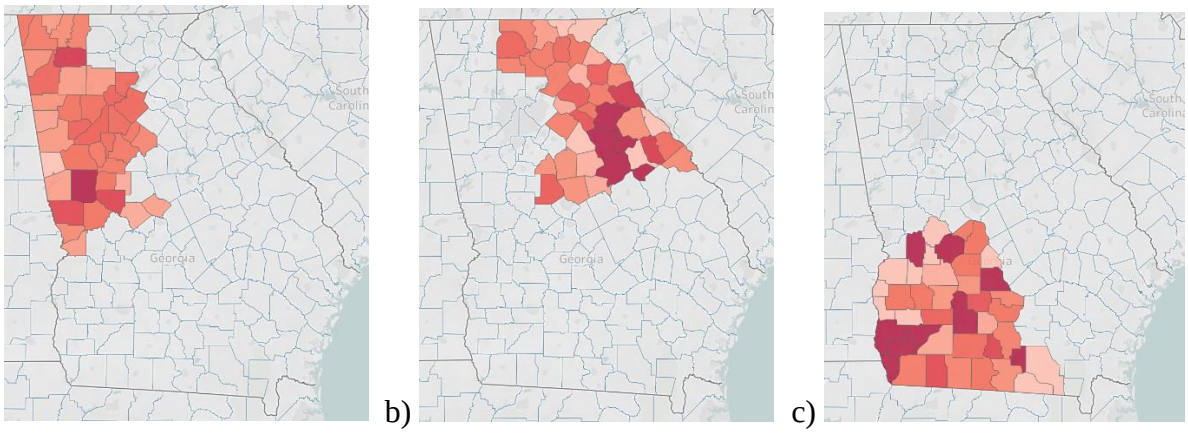
d)  e) 

Figure 14. Geographic Region – Civic Engagement & Community Development

Note. a – Ridge and Valley; b – Blue Ridge; c – Piedmont; d – Upper Coastal Plain; e – Lower Coastal Plain

When examining the distribution across Extension district borders, it is evident that there is a high perception of Civic Engagement and Community Development as a critical community issue within the Southwest, Northeast, and Northwest districts. Figure 15 shows the distribution across Extension districts.

a) b) c)



d)

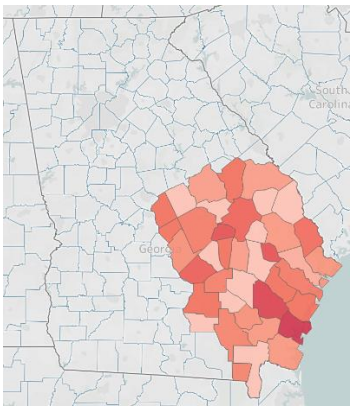


Figure 15. Extension District – Civic Engagement & Community Development
Note. a – Northwest; b – Northeast; c – Southeast; d – Southwest

Overall, the greatest perception of Civic Engagement and Community Development as a critical community issue occurred within rural counties located in the Upper Coastal Plain and Piedmont regions. These counties were located mostly within the Southwest and Northeast Extension districts. Typically, rural communities possess a close social network between residents (Odeyemi & Skobba, 2021). However, community members may need to be

empowered before they can leverage existing social capital into collective action (Warren et al., 2002). Additionally, rural towns may lack the administrative capacity or human capital necessary to develop strong stakeholder-led governance models (Odeyemi & Skobba, 2021).

Therefore, we recommend that Extension personnel working in these counties contribute to the development of social capital among community members by facilitating local and regional commissions or coalitions. It may be the case that such efforts are already occurring in these areas; however, the results of the present study indicate continued investment in empowering local residents to collectively determine community development strategies. Additionally, we recommend for the Extension system within Georgia to include Community Development as a programming outreach domain (see Raison, 2014) and establish agent and program development coordinator positions to specifically serve clients in this area. Currently, UGA Extension does not include Community Development as a programming outreach domain, which may be contributing to the disconnect between Extension personnel and addressing Civic Engagement and Community Development concerns.

Agriculture and Economic Development

For Agriculture and Economic Development, there was a higher perception of this issue as a critical community issue within rural counties. Figure 16 depicts this distribution below,

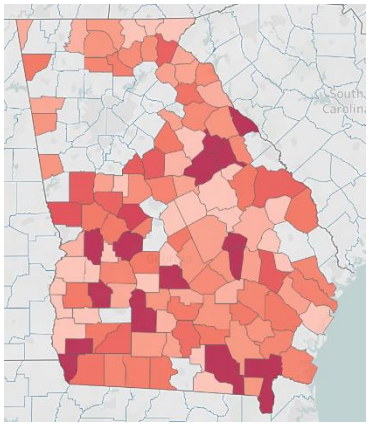
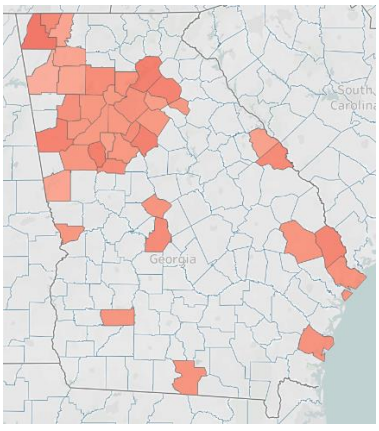
a)  b) 

Figure 16. Rurality – Agriculture & Economic Development

Note. a – Rural; b – Urban

Across geographic regions, there is a higher perception of Agriculture and Economic Development as a critical community issue within the Lower and Upper Coastal Plain regions. Additionally, there is a higher perception of this issue as a critical community issue among counties located in the southern portion of the Piedmont region. Figure 11 depicts this distribution.

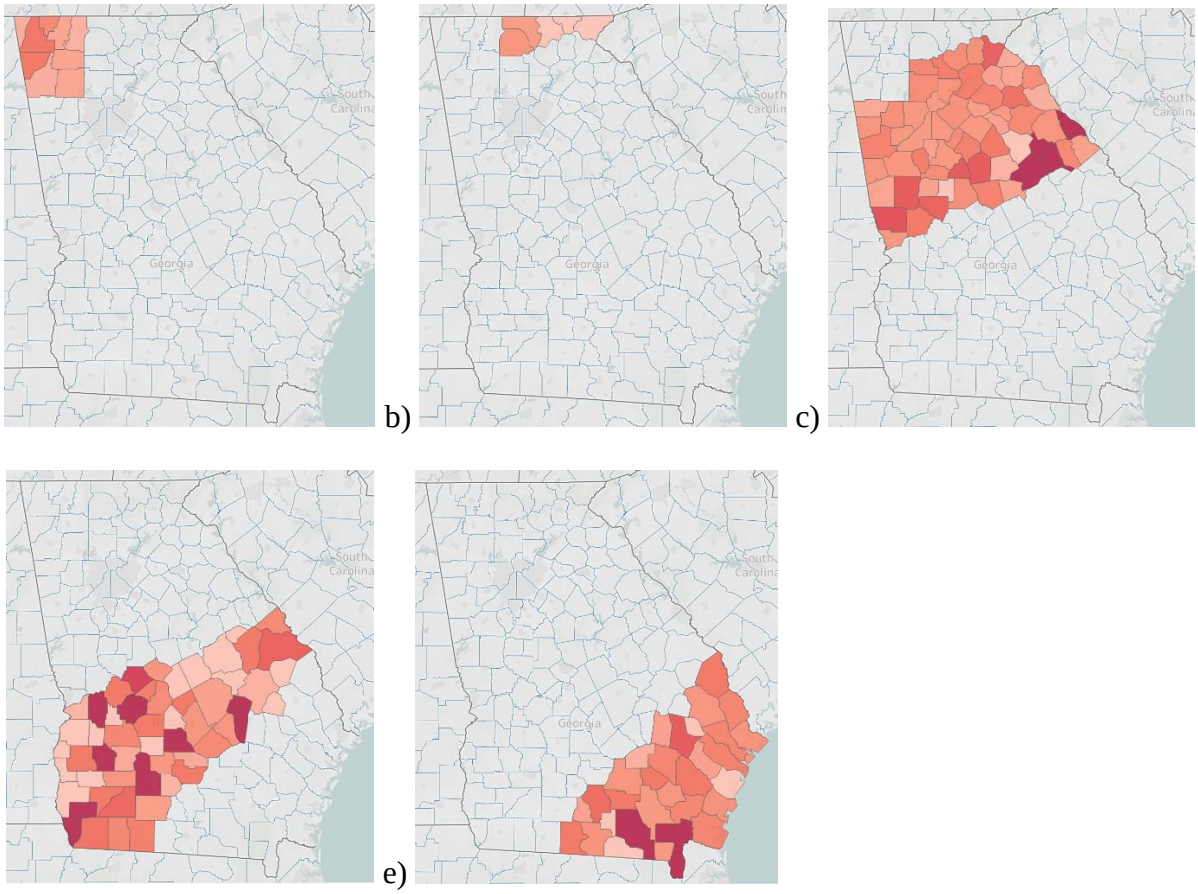
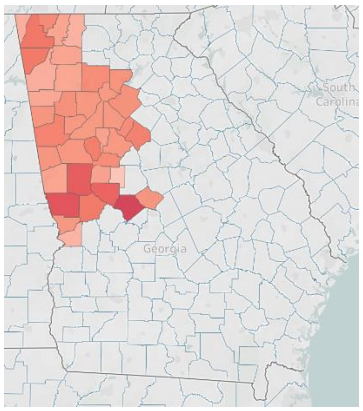
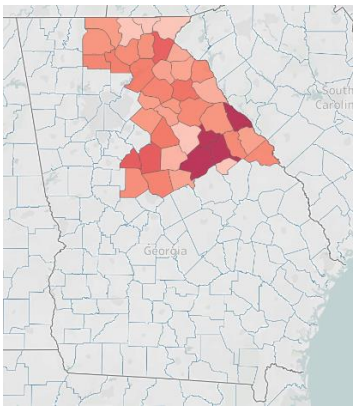
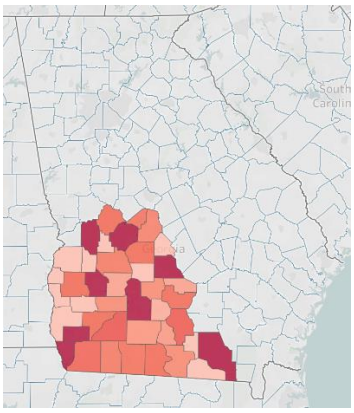


Figure 17. Geographic Region – Agriculture & Economic Development
Note. a – Ridge and Valley; b – Blue Ridge; c – Piedmont; d – Upper Coastal Plain; e – Lower Coastal Plain

Finally, looking at Extension districts, there was a higher perception of Agriculture and Economic Development as a critical community issue within the Northeast, Southwest, and Southeast districts. Figure 18 depicts the distribution below.

a)  b)  c) 

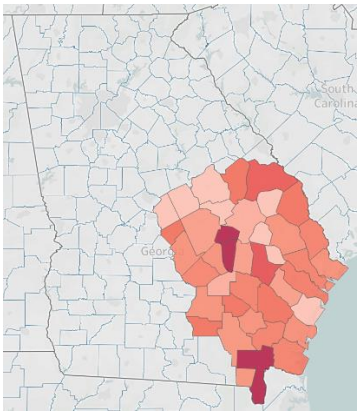
d) 

Figure 18. Extension District – Agriculture & Economic Development
Note. a – Northwest; b – Northeast; c – Southeast; d – Southwest

At a composite level, the highest perception of Agriculture and Economic Development as a critical community issue occurs within rural counties located in the Piedmont, Upper Coastal Plain, and Lower Coastal Plain regions. Primarily, economic growth has been concentrated within Atlanta and the surrounding suburbs (Coe et al., 2019; Bluestone & de Zeeuw, 2014). Economies outside of the metro Atlanta hub have suffered (Coe et al., 2019; Bluestone & de Zeeuw, 2014). There are several factors contributing to this phenomenon, including decreased accessibility to available jobs (Coe et al., 2019), mismatch between labor market needs and workforce skills (Coe et al., 2019), and the continued impacts of the COVID-19 pandemic (Ajilore, 2020).

Additionally, rural economies within the Upper/Lower Coastal Plain and Piedmont regions are primarily driven by agricultural production and manufacturing (Flatt, 2020; Coe et al., 2019; Dewolf, n.d.). However, the manufacturing industry in Georgia has experienced significant decline over the past 10 years, a trend which has been observed nationwide (Coe et al., 2019). Furthermore, while the agricultural industry in Georgia contributes billions of dollars to the state's economy annually, less than 10% of the population works in this field (Flatt, 2020). The majority of available job openings are for highly skilled positions in healthcare, computer science, and mathematics (Coe et al., 2019). However, the available workforce in rural Georgia consists primarily of low- and mid-skilled workers (Coe et al., 2019). An associated recommendation would be for Extension agents to leverage existing career preparation programs to retrain low- and mid-skilled workers with employer-demanded skills. Additionally, we recommend that 4-H educators continue providing experiential learning opportunities that nurture skills in highly demanded STEM disciplines.

Nutrition Education and Food Availability

For Nutrition Education and Food Availability, there was a higher perception of this issue as a critical community issue within rural counties. Dougherty County, which is classified as urban, is a notable exception. Figure 19 depicts this distribution below.

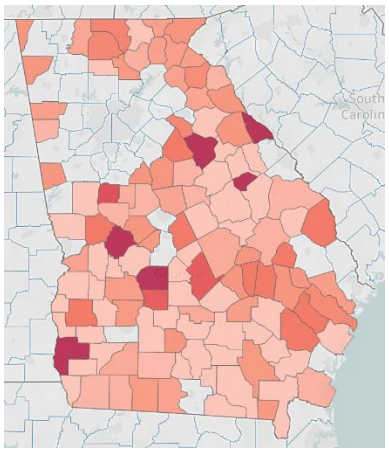
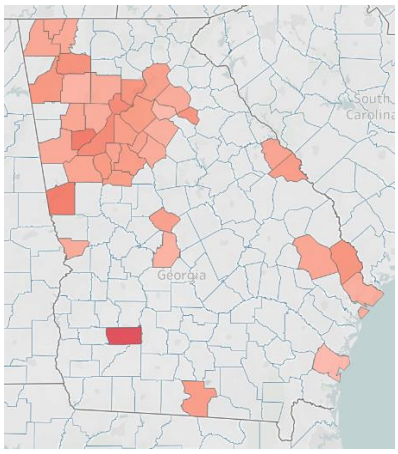
a)  b) 

Figure 19. Rurality – Nutrition Education & Food Availability
Note. a – Rural; b – Urban

Across geographic regions, there was a higher perception of Nutrition Education and Food Availability within the Piedmont, Ridge and Valley, and Upper Coastal Plain regions. Figure 20 depicts this distribution below.

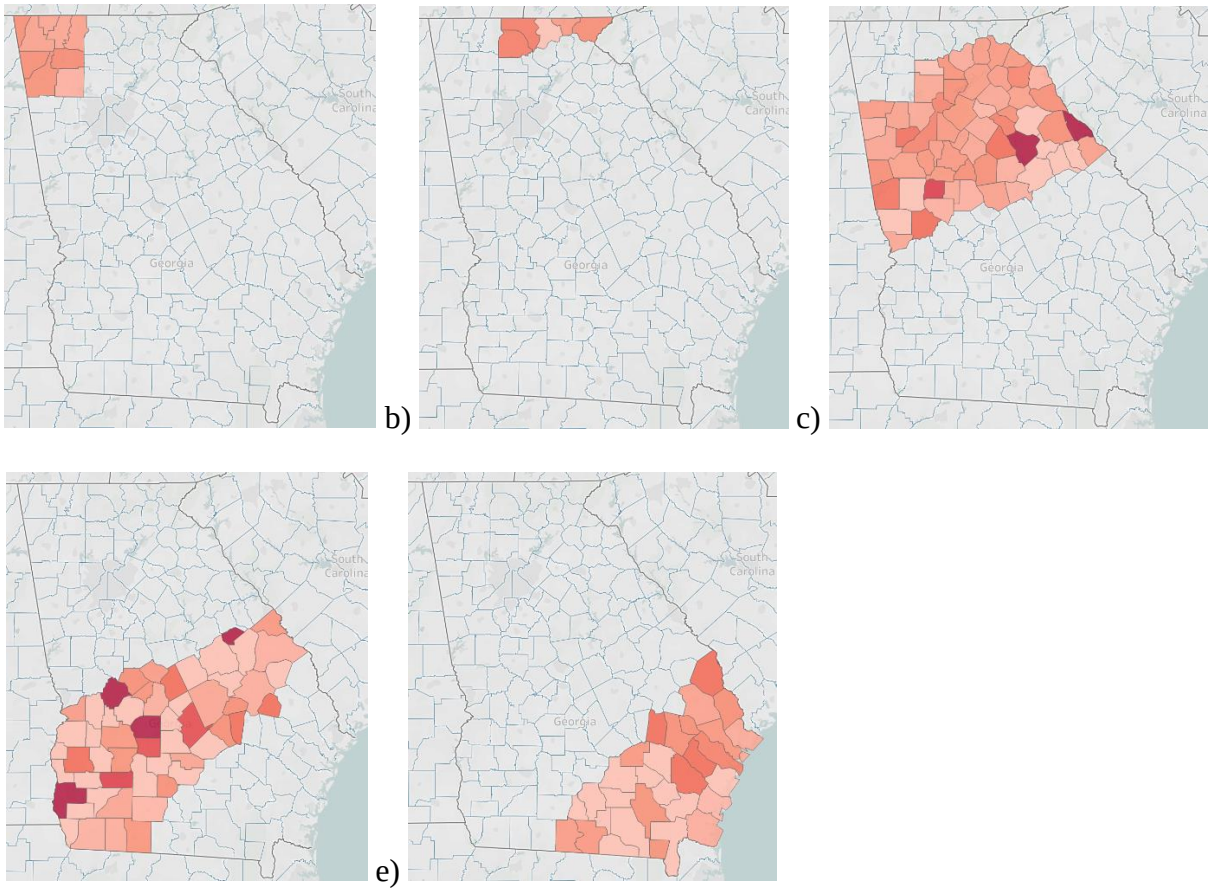
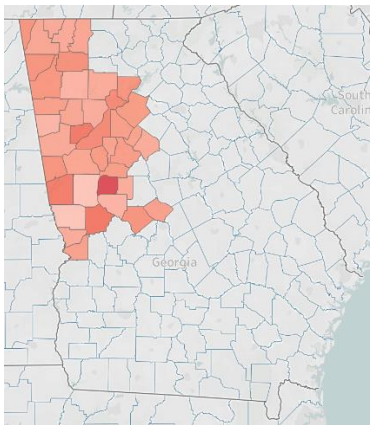
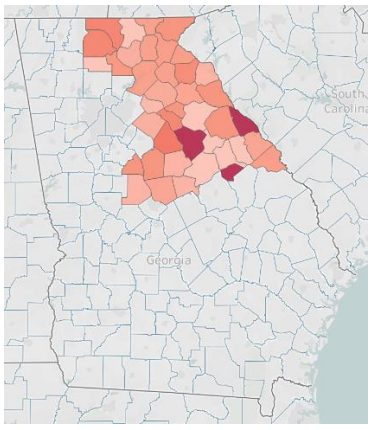
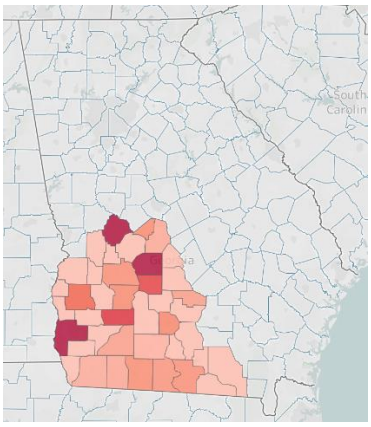


Figure 20. Geographic Region – Nutrition Education & Food Availability
Note. a – Ridge and Valley; b – Blue Ridge; c – Piedmont; d – Upper Coastal Plain; e – Lower Coastal Plain

Across Extension districts, there was a higher perception of Nutrition Education and Food Availability as a critical community issue within the Northwest, Northeast, and Southwest districts. Figure 21 depicts the distribution below.

a)  b)  c) 

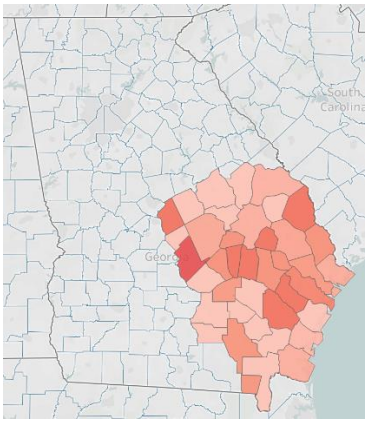
d) 

Figure 21. Extension District – Nutrition Education & Food Availability
Note. a – Northwest; b – Northeast; c – Southeast; d – Southwest

Overall, rural counties located within the Upper Coastal Plain and Piedmont regions reported higher perception of Nutrition Education and Food Availability. These counties were primarily located in the Southwest and Northeast Extension districts. In 2019, over 1.3 million residents in Georgia were classified as food insecure (Georgia Food Bank Association, 2021). Additionally, rural counties in Georgia reported higher rates of food insecurity, ranging between 15-24% (Feeding America, 2019). Food insecurity concerns in rural areas are more severe due to increased likelihood of food deserts, low-wage job opportunities, and higher rates of unemployment and underemployment (Georgia Food Bank Association, 2022). The COVID-19 pandemic has exacerbated food insecurity, with food banks across Georgia reporting a nearly 50% increase in food assistance need since March 2020 (Georgia Food Bank Association, 2021).

While programs to alleviate food insecurity in these areas are already in place (see CTC Harvest Solutions, n.d.), the findings of this study indicate a substantial need for increased investment in such services, particularly in the aftermath of the COVID-19 pandemic. For example, we recommend that Extension agents in rural communities of the Piedmont and Upper Coastal Plain regions collaborate with agents in metro Atlanta and the Ridge and Valley region to discuss strategies for alleviating food insecurity and promoting access to fresh foods.

Water

Overall, there was a not a high perception of Water as a critical community issue. In fact, Water received the lowest composite percentage of perception as a critical community issue. Figure 22 displays the distribution of perception according to rural/urban classification. In general, the counties with a higher perception of Water as a critical community issue were rural. However, Dougherty County is a notable exception.

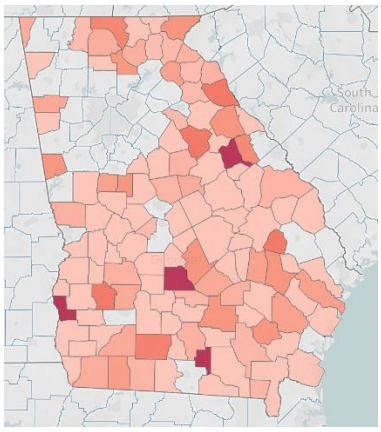
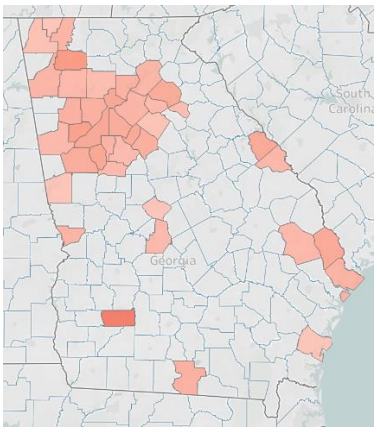
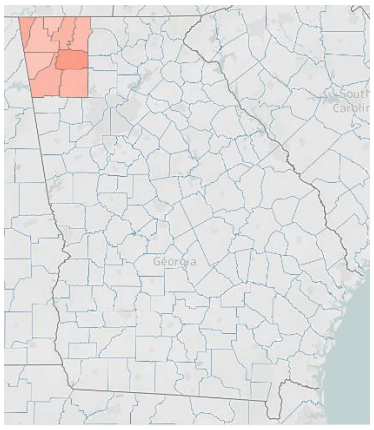
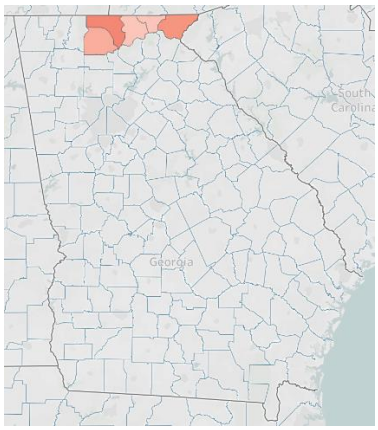
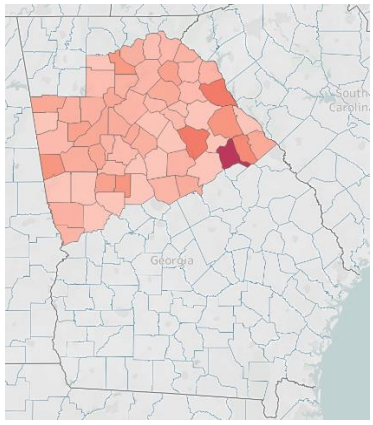
a)  b) 

Figure 22. Rurality – Water
Note. a – Rural; b – Urban

Looking at geographic region, the counties with the highest perception of Water as a critical community issue are located within the Upper Coastal Plain, Lower Coastal Plain, and Piedmont regions. Figure 23 displays this distribution below.

a)  b)  c) 

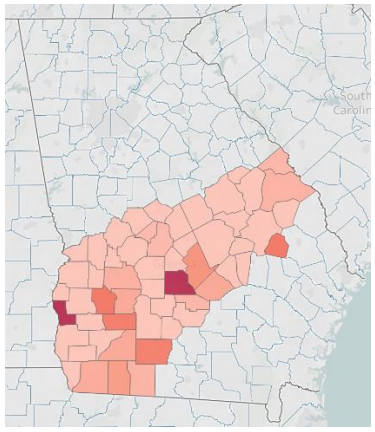
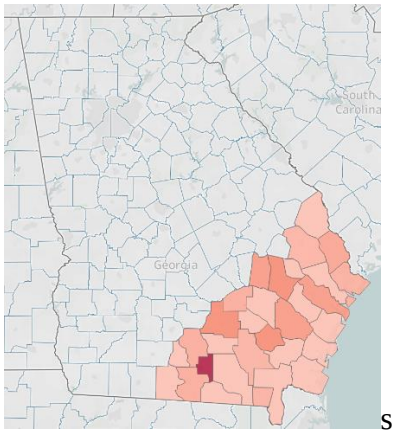
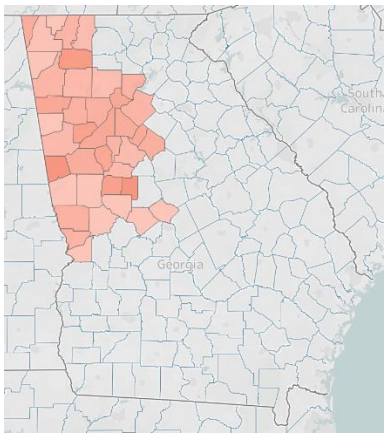
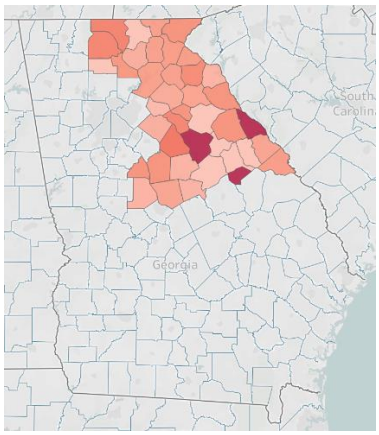
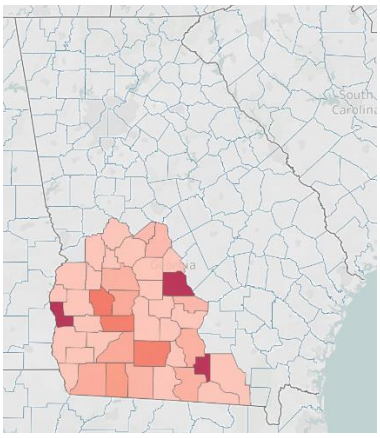
d)  e)  s

Figure 23. Geographic Region – Water
Note. a – Ridge and Valley; b – Blue Ridge; c – Piedmont; d – Upper Coastal Plain; e – Lower Coastal Plain

Across Extension districts, the counties with the highest perception of Water as a critical community issue are located in the Southwest and Northeast districts. Figure 24 depicts this distribution below.

a)  b)  c) 

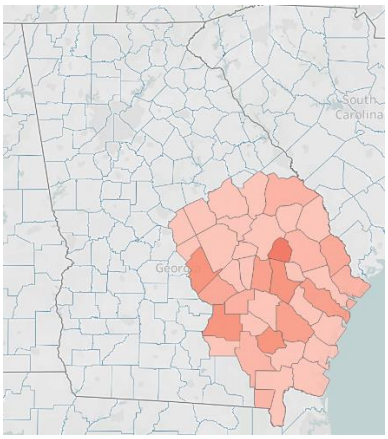
d) 

Figure 24. Extension District – Water
Note. a – Northwest; b – Northeast; c – Southeast; d – Southwest

Overall, the majority of Georgia residents did not perceive Water as a critical community issue. Within urban counties, such as Cobb County in metro Atlanta, there has been a concerted effort to promote water conservation through the waterSmart[SM] education program (Risse et al., 2009). Additionally, 4-H educators develop curriculum materials, using the 2007-2008 drought as a case study, to teach youth about the importance of water resources and conservation (Risse et al., 2009). Furthermore, the success of such programs may have contributed to lower perceptions of Water as a critical community issue within metro areas around the state.

However, some rural counties in the Upper Coastal Plain, Lower Coastal Plain, and Piedmont reported high perceptions of Water as a critical community issue. These counties were located in the Northeast and Southwest Extension Districts. Farms in Southwest Georgia contain more than 640,000 acres of irrigated land and pump as much as 584 million gallons of water from the Flint River, its tributaries, and the underlying Floridian aquifer (Georgia Water Coalition, 2021). Residents in Southwest Georgia have "experienced extended droughts, ongoing political battles with neighboring states over water use, and a devastating hurricane" (Chapman, 2021, para. 4). Therefore, their perception of Water as a critical issue may be higher than other communities across Georgia because of their reliance on this resource to support the region's

extensive agricultural industry (Chapman, 2021; Georgia Water Coalition, 2021). Additionally, as population increases, the ability of the Floridian aquifer supply to meet these growing needs may decrease (Hundemer & Monroe, 2021).

While efforts within this region to promote water conservation awareness, e.g., Mitchell County's 4-H2O camp (Chapman, 2021), and practice, e.g., use of precision agriculture technologies to increase water input efficiency (Hundemer & Monroe, 2021), have been successful, residents still perceive water availability as a threat to their communities. An associated recommendation would be for Extension agents within this region to continue promoting water conservation practices and aiding agricultural producers in adopting technologies that increase efficiency of water inputs. Additionally, we recommend that Extension agents within the Northeast and Northwest districts continue to highlight the interrelations between use of water in these districts and availability of water resources for individuals located downstream.

Implications

Overall, the results of this study hold significant implications for future practice within the Cooperative Extension Service in Georgia. Primarily, the findings of this study support the initial development of a decision support tool, which may help Extension practitioners to develop programming and allocate resources more effectively. For example, within the Southwest and Northeast Extension districts, there were several community issues that respondents from these areas perceived as critical. Therefore, Extension personnel who serve rural counties in these districts may want to focus programming efforts on addressing issues associated with Nutrition Education and Food Availability or Civic Engagement and Community Development. Additionally, Extension agents who work in rural counties within the Upper and Lower Coastal

Plain regions may want to direct programming and resources towards addressing issues related to Agriculture and Economic Development. Overall, the findings of this study offer a macro-level view of how perception of critical community issues is distributed across the state. Extension personnel may use these visual resources to quickly identify areas of need within their districts.

A second implication of this study is the existing opportunities for collaboration among various geographic groups. For example, Extension agents in the Southwest and Northeast districts may find it helpful to collaborate with one another to address issues associated with Nutrition Education and Food Availability. Additionally, agents in these districts may consult with agents who serve communities where this issue is not perceived as critical, such as the Northwest and Southeast Extension districts, as well as the metro hubs surrounding Atlanta, Savannah, and Chattanooga. Furthermore, Extension agents within the Southwest and Southeast districts may form a working group that meets bi-annually to discuss economic development strategies within these regions. While it may be the case that such coalitions and working groups are already occurring, the results of this study underscore the need for continued collaboration and support.

Limitations

This study has several limitations associated with the study design and data collection methods. Research article one employed a three-round Delphi process with an expert panel consisting of members of the UGA Extension leadership board. The scope of results generated using the Delphi process are inherently limited by the insights and perspectives of expert panel members. Although measures were taken to reduce bias and assemble a heterogenous panel with statewide expertise, the panelists' personal experiences and employment with the UGA Extension system may limit the generalizability of the results. An associated recommendation

would be to replicate the study with county Extension agents to determine whether the insights of Extension leadership personnel align with the insights of practitioners in these communities. Additionally, the primary coder of the data is from a suburban community in the Southeastern United States and has previously been involved with Extension and community development research. According to recommendations in the literature (see Lincoln & Guba, 1985), member checking and peer-debriefing were utilized to reduce biases resulting from personal experiences.

Furthermore, there are several limitations associated with the study design of research article two. Data were collected using a non-probability sampling procedure; therefore, the resulting sample may not be entirely representative of the state population. Additionally, the questionnaire was distributed via an online survey platform, which limits the respondent pool to individuals with access to Internet-based applications. Broadband access across the state varies, particularly in rural areas. Therefore, the perspectives of individuals in areas without access to internet may not have been captured. Additionally, the variable of interest in this study (i.e., perception of critical community issues) was binary. A continuous variable of interest may provide more analytical power. Therefore, the resulting analysis of the binary variable was limited. Accordingly, we recommend that future research consider measuring perception of critical community issues using a continuous variable. Furthermore, the data were collected prior to the COVID-19 pandemic and are representative of a single point in time. The COVID-19 pandemic has elicited significant impacts across the state; therefore, the concerns and needs of all stakeholders may not be accurately represented by the results of this study. An associated recommendation would be to replicate the study in a post-COVID-19 context to determine whether the pandemic altered perception of critical issues and whether the pandemic precipitated the rise of new critical issues.

Conclusion

This study provides insight into the issues currently facing Georgia residents. The findings within this study provide practical recommendations to increase effectiveness of Extension programming and information delivery. The capitals inherent within each community illustrate the existing resources that can be leveraged to promote positive community development and prosperity. Additionally, these capital stocks highlight areas of need and offer preliminary entry points to facilitate participatory problem-solving among community members. Community capitals represent crucial resources for community development initiatives and acknowledging the interactions among capitals can aid in determining sustainable solutions that address community needs. Leveraging perspectives of critical needs along with available resources enables Extension personnel to engage in an inside-out process, which prioritizes the voices of community members and uses these insights to effectively develop programming and direct resources.

While each community is unique, communities within certain regions possess similar characteristics and may face similar challenges. As a result, examining the distribution of perception of critical community issues across geographic groupings provides increased insight into the community factors that contribute to these problems. Overall, determining how perception of a critical community issue relates to the rurality, geographic region, or Extension district of a community enables the development of materials and programming targeted to address the community's most relevant needs. Extension personnel are encouraged to use the results of this study as an initial guideline to determine stakeholder needs and inform program development. Additionally, Extension personnel may use the results of this study to identify

counterparts within different geographic regions or Extension districts that may be facing the same critical issues.

Overall, the results of this study provide a foundation for improving Extension program development and delivery. Understanding the needs of communities in relation to their capital assets and geographic characteristics enables Extension personnel to continue offering relevant programming. This study has completed the initial stages of a state-level needs assessment and provides a general baseline for determining subsequent actions. Extension personnel have a responsibility to provide information and resources that translate the science of everyday living and foster a healthy and prosperous Georgia (UGA Extension, n.d.). Developing targeted community development approaches that address the identified critical community issues fulfills the mandate of Extension and ensures that Georgia communities will continue to thrive in the face of 21st century challenges.

REFERENCES

Abumhadi, N., Todorovska, E., Assenov, B., Tsonev, S., Vulcheva, D., Vulchev, D., Atanasova, L., Savova, S., Atanassov, A. (2012). Agricultural research in 21st century: Challenges facing the food security under the impacts of climate change. *Bulgarian Journal of Agricultural Science, 18*(6), 801-818.

Advocates for Youth. (2016, October 18). Fact sheet: Young people in Georgia. Retrieved from https://www.advocatesforyouth.org/resources/fact-sheets/fact-sheet-young-people-in-georgia/

Aglanta. (2021). Fresh food access report: City of Atlanta 2020. Retrieved from https://static1.squarespace.com/static/5810d4f2d482e9e1f1211dfa/t/60be80f98a021b7d192bbbb0/1623097595549/Fresh+Food+Access+Report+2020-digital.pdf

Ajilore, O. (2020, October 28). Rural America has been forgotten during the coronavirus crisis. *Center for American Progress*. Retrieved from https://www.americanprogress.org/article/rural-america-forgotten-coronavirus-crisis/

Anglin, A. (2015). Facilitating community change: The community capitals framework, its relevance to community psychology practice, and its application in a Georgia community. *Global Journal of Community Psychology Practice, 6*(2). https://doi.org/10.7728/0602201504

Apaliyah, G. T., Martin, K. E., Gasteyer, S. P., Keating, K., & Pigg, K. (2017). Community leadership development education: Promoting civic engagement through human and

social capital. In N. Walzer & S. Cordes (Eds.), *Innovative community change practices* (pp.30-47). Taylor & Francis.

Armstrong, D., Fowler, S., & Liang, S. (2021, July 30). How Georgia's redistricting process falls short on transparency. *The Current*. Retrieved from https://thecurrentga.org/2021/07/30/how-georgias-redistricting-process-falls-short-on-transparency/

Atiles, J. H. (2019). Cooperative extension competencies for the community engagement professional. *Journal of Higher Education Outreach and Engagement, 23*(1), 107-127. Retrieved from https://openjournals.libs.uga.edu/jheoe/article/view/1431/1428

Atlanta Regional Commission. (2021, September 23). Tri-State water wars overview. Retrieved from https://atlantaregional.org/natural-resources/water/tri-state-water-wars-overview/

Barnes, F. A., & Keyes, A. M. (2010). Georgia's water conservation implementation plan. Georgia Department of Natural Resources Environmental Protection Division. https://epd.georgia.gov/watershed-protection-branch/water-conservation

Beasley, K. L., & Beasley Jr., J. P. (2014). Sowing a bountiful harvest: The methods of Cooperative Extension Service promotion in Georgia, 1914-1924. *Journal of the National Association of County Agricultural Agents, 7*(2). Retrieved from https://www.nacaa.com/file.ashx?id=8e283d52-6b83-425d-9db3-4a83dfff9312

Bluestone, P., & de Zeeuw, M. (2016). Jobs in Georgia's urban and rural regions and counties: Changes in distribution, type, and quality from 2007 to 2014. Georgia State University. Retrieved from https://cslf.gsu.edu/files/2016/09/Georgia-Jobs-in-Urban-and-Rural-Regions_September-2016.pdf

Bongomin, G. O. C., Ntayi, J. M., Munene, J. C., Nabeta, I. N. (2016). Social capital: Mediator of financial literacy and financial inclusion in rural Uganda. *Review of International Business and Strategy, 26*(2), 291-312. https://doi.org/10.1108/RIBS-06-2014-0072

Borron, A., Lamm, K. W., & Atkins, K. (2020). The development and validation of a personal agency scale based in the community capitals framework. *Journal of International Agricultural and Extension Education, 27*(3), 43-58. https://doi.org/10.5191/jiaee.2020.27343

Borron, A., Lamm, K., Darbisi, C., & Randall, N. (2019). Social impact assessment in the cooperative extension system: Revitalizing the community capitals framework in measurement and approach. *Journal of International Agricultural and Extension Education, 26*(2), 75-88. https://doi.org/10.5191/jiaee.2019.26206

Boslaugh, S. E., Kreuter, M. W., Nicholson, R. A., & Naleid, K. (2005). Comparing demographic, health status, and psychosocial strategies of audience segmentation to promote physical activity. *Health Education Research, 20*(4), 430-438. https://doi.org/10.1093/her/cyg138

Bowers, A. W., Monroe, M. C., & Adams, D. C. (2016). Climate change communication insights from cooperative Extension professionals in the US Southern states: Finding common ground. *Environmental Communication, 10*(5), 656-670. https://doi.org/10.1080/17524032.2016.1176947

Buchecker, M., & Hunziker, M. (2006). The effect of consensus building on regional collaboration. *Agricultural Economics Review, 7*(1), 72-83.

Bureau of Economic Analysis. (2021, December 8). Gross domestic product by county, 2020. Retrieved from https://www.bea.gov/news/2021/gross-domestic-product-county-2020

Buys, D. R., & Rennekamp, R. (2020). Cooperative extension as a force for healthy, rural communities: Historical perspectives and future directions. *American Journal of Public Health, 110*(9), 1300-1303. Retrieved from https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2020.305767

Cammarano, D., & Tian, D. (2018). The effects of projected climate and climate extremes on a winter and summer crop in the southeast USA. *Agricultural and Forest Meteorology, 248*, 109-118. https://doi.org/10.1016/j.agrformet.2017.09.007

Capelouto, J. D. (2021, July 16). Fresh food within reach of more Atlantans, but disparity remains, report finds. *The Atlanta Journal Constitution*. Retrieved from https://www.ajc.com/news/atlanta-news/fresh-food-within-reach-of-more-atlantans-but-disparities-remain-report-finds/X2XVBREJXZFAXPLLHVZTCVMTKY/

Carpenter, A. M. (2014, November 6-8). Critical infrastructure resilience: A baseline study for Georgia [Paper presentation]. International Conference on Sustainable Infrastructure, Long Beach, CA, United States. https://doi.org/10.1061/9780784478745.017

Carter, S. (2007). Living inside the Bible (Belt). *College English, 69*(6), 572-595. https://doi.org/10.2307/25472240

Catherman, C. (2019, June 14). Study: Georgia's uninsured, lack of health care access rank state 42nd nationwide. *Georgia Public Broadcasting*. Retrieved from https://www.gpb.org/news/2019/06/14/study-georgias-uninsured-lack-of-health-care-access-rank-state-42nd-nationwide

Center for Disease Control. (2016). Georgia – State nutrition, physical activity, and obesity profile. https://www.cdc.gov/nccdphp/dnpao/state-local-programs/profiles/pdfs/georgia-state-profile.pdf

Chakraborty, I., & Maity, P. (2020). COVID-19 outbreak: Migratsion, effects on society, global environment, and prevention. *Science of the Total Environment, 728*. https://doi.org/10.1016/j.scitotenv.2020.138882

Chapman, S. W. (2021, October 27). Mitchell County Extension honored for water conservation, 4-H2O camp. *CAES Newswire*. Retrieved from https://newswire.caes.uga.edu/story/8777/clean-water-hero.html

Chaskin, R. J., Brown, P., Venkatesh, S., & Vidal, A. (2001). *Building community capacity*. Aldine de Gruyter.

Chin, T., Kahn, R., Li, R., Chen, J. T., Krieger, N., Buckee, C. O., Balsari, S., & Kiang, M. V. (2020). U.S. county-level characteristics to inform equitable COVID-19 response. *National Institutes of Health Preprint*. https://dx.doi.org/10.1101%2F2020.04.08.20058248

Chowns, T. (2018a). Appalachian plateau geologic province. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/science-medicine/appalachian-plateau-geologic-province/

Chowns, T. (2018b). Valley and ridge geologic province. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/science-medicine/valley-and-ridge-geologic-province/

City of Atlanta. (2021). Hartsfield-Jackson: Atlanta International Airport. Retrieved from https://www.atl.com/

Coe, E., Gandhi, N., Kelly, G., Prince, S., & Reis, S. (2019, May 16). Expanding the economic pie in the Peach State. *McKinsey & Company*. Retrieved from

https://www.mckinsey.com/industries/public-and-social-sector/our-insights/expanding-the-economic-pie-in-the-peach-state

Coffman, D. L., & BeLue, R. (2009). Disparities in sense of community: True race differences or differential item functioning? *Journal of Community Psychology, 37*(5), 547-558. https://dx.doi.org/10.1002%2Fjcop.20312

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Erlbaum.

Cox, G. O., Rotberg, B., Ng, M. K., Henes, S. T., & Giraudo, S. Q. (2020). Examining the effectiveness of a nutrition education intervention for Hispanic participants. *Journal of the Georgia Public Health Association, 8*(1), 58-68. Retrieved from https://digitalcommons.georgiasouthern.edu/jgpha/vol8/iss1/9/

CTC Harvest Solutions. (n.d.). Needs assessment and strategic plan to alleviate hunger in South Georgia. https://feedingsga.org/wp-content/uploads/2018/02/RuralHungerStudyforWeb.pd

Davis, K. (2016). How will extension contribute to the sustainable development goals? A global strategy and operational plan. *Journal of International Agricultural and Extension Education, 23*(1), 7-13. https://doi.org/ 10.5191/jiaee.2016.23101

Davis, K., Snider, A., Archibald, T., Grove, B., & Babu, S. (2021). Organizational innovation in times of crises: The case of extension and advisory services. *Journal of International Agriculture and Extension Education, 28*(1), 6-14. https://doi.org/10.5191/jiaee.2021.28101

Davoodi, M., Velni, J. M., & Li, C. (2018). Coverage control with multiple ground robots for precision agriculture. *Mechanical Engineering, 140*(6), S4-S8. https://doi.org/10.1115/1.2018-JUN-4

Detenber, B., Rosenthal, S., Liao, Y., & Ho, S. S. (2016). Audience segmentation for campaign design: Addressing climate change in Singapore. *International Journal of Communication, 10*, 4736-4758. Retrieved from https://ijoc.org/index.php/ijoc/article/view/4696/1797

Dewolf, C. J. (n.d.). GSE SS8G1: Geography and climate. *Exceed the Standard*. Retrieved from http://www.exceedthestandard.com/gsess8g1.html

Diaz, J. M., Jayaratne, K. S. U., & Chaudhary, A. K. (2020). Evaluation competencies and challenges faced by early career extension professionals: Developing competency model through consensus building. *The Journal of Agricultural Education and Extension, 26*(2), 183-201. https://doi.org/10.1080/1389224X.2019.1671204

Economic Innovation Group. (n.d.). Distressed communities index: Interactive map. https://eig.org/dci/interactive-map?path=state/GA&view=county&sub-category=other

Elbert, C. D., & Alston, A. J. (2004). An evaluative study of the United States Cooperative Extension Service's role in bridging the digital divide [Paper presentation]. Association of International Agricultural and Extension Education 20th Annual Conference, Dublin, Ireland. Retrieved from https://www.aiaee.org/attachments/article/1115/095.pdf

Elliott, D. (2020, January 7). A 3-decade-long water dispute heads to the Supreme Court. *NPR*. Retrieved from https://www.npr.org/2020/01/07/790136973/a-3-decade-long-water-dispute-heads-to-the-supreme-court

Elmore, K. C., Sumner, R., Tifft, M., Forstrom, M. A., & Burrow, A. L. (2019). Building collaborative youth development research-practice partnerships through Cooperative Extension. *Children and Youth Services Review, 105*. https://doi.org/10.1016/j.childyouth.2019.104413

Emery, M., & Flora, C. (2006). Spiraling up: Mapping community transformation with community capitals framework. *Community Development, 37*(1), 19-35. https://doi.org/10.1080/15575330609490152

Etuk, L. E., Rahe, M. L., Crandall, M. S., Sektnan, M., & Bowman, S. (2013). Rural leadership development: Pathways to community change. *Community Development, 44*(4), 411-425. https://doi.org/10.1080/15575330.2012.761639

Evans, J., Calabria, J., Brown, W., Keyes, A. M., & Risse, M. (2011). Water issues in Georgia: A survey of public perceptions and attitudes about water (Bulletin 1385). University of Georgia Cooperative Extension. https://extension.uga.edu/publications/detail.html?number=B1385&title=Water%20Issues%20in%20Georgia:%20A%20Survey%20of%20Public%20Perceptions%20and%20Attitudes%20about%20Water

Feeding America. (2019). Map the meal gap: Food insecurity in the United States before COVID-19. Retrieved from https://map.feedingamerica.org/county/2019/overall/georgia

Fennessy, S., & Mador, J. (2021, October 1). Georgia today: Why rural Georgia is emptying out – And why it could lose political power. *Georgia Public Broadcasting*. Retrieved from https://www.gpb.org/news/2021/10/01/georgia-today-why-rural-georgia-emptying-out-and-why-it-could-lose-political-power

Flatt, W. P. (2020). Agriculture in Georgia. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/business-economy/agriculture-in-georgia-overview/

Flora, C. B. (2004). Social aspects of small water systems. *Journal of Contemporary Water Research and Education, 128*(1), 6-12. https://doi.org/10.1111/j.1936-704x.2004.mp128001002.x

Flora, C. B., & Flora, J. L. (2013). *Rural communities: Legacy and change* (4th ed.). Westview Press.

Flora, C. B., Flora, J. L., & Gasteyer, S. P. (2016). *Rural communities: Legacy and change* (5th ed.). Routledge.

Forthofer, M. S., & Bryant, C. A. (2000). Using audience segmentation techniques to tailor health behavior change strategies. *American Journal of Health Behavior, 24*(1), 36-43. https://doi.org/10.5993/AJHB.24.1.6

Franz, N. K., & Townson, L. (2008). The nature of complex organizations: The case of cooperative extension. *New Directions for Evaluation, 120,* 5-14. https://doi.org/10.1002/ev.272

Frazier, W. J. (2019). Coastal plain geologic province. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/science-medicine/coastal-plain-geologic-province/

French, C., & Morse, G. (2015). Extension stakeholder engagement: An exploration of two cases exemplifying 21st century adaptions. *Journal of Human Sciences and Extension, 3*(2), 108-131. Retrieved from https://www.jhseonline.com/article/view/688

Frick, M. (2021). Georgia's 2021 graduation rate holds steady at 83 percent. *Georgia Department of Education*. Retrieved from https://www.gadoe.org/External-Affairs-and-Policy/communications/Pages/PressReleaseDetails.aspx?PressView=default&pid=904#:~

:text=October%2021%2C%202021%20%E2%80%93%20Georgia's%20high,to%2083.8%20percent%20in%202020.

Gaffney, A. (2019, October 29). Needing water, Georgia stirs up a 200-year-old dispute with its northern neighbor. *Natural Resources Defense Council*. Retrieved from https://www.nrdc.org/stories/needing-water-georgia-stirs-200-year-old-dispute-its-northern-neighbor

Gaolach, B., Kerns, M., & Sanders, C. (2017). Urban extension: Aligning with the needs of urban audiences through subject-matter centers. *Journal of Human Sciences and Extension, 5*(2), 126-144. Retrieved from https://www.jhseonline.com/article/view/713

Garforth, C. (2010, October 26-28). Adapting to new challenges: Extension theory and practice for the 21st century [Keynote paper]. International Conference on Agricultural Extension, Serdang, Selangor, Malaysia. Retrieved from http://centaur.reading.ac.uk/20026/1/Agrex2010_paper_CGarforth_final.pdf

Garst, B. A., & McCawley, P. F. (2015). Solving problems, ensuring relevance, and facilitating change: The evolution of needs assessment within cooperative extension. *Journal of Human Sciences and Extension, 3*(2), 27-47. Retrieved from https://www.jhseonline.com/article/view/684

Georgia Conservancy. (n.d.). Water policy. Retrieved from https://www.georgiaconservancy.org/policies/water

Georgia Department of Economic Development. (2021). Demographics. Retrieved from https://www.georgia.org/demographics

Georgia Department of Human Services. (2017). State fiscal year 2017: Just the facts.

Georgia Department of Labor [Georgia DOL]. (2021, December 16). Georgia employs highest number of Georgians ever. Retrieved from https://dol.georgia.gov/press-releases/2021-12-16/georgia-employs-highest-number-georgians-ever

Georgia Department of Natural Resources [Georgia DNR]. (n.d.). Georgia's natural resources. Retrieved from https://gadnr.org/resources

Georgia Department of Public Health [Georgia DPH]. (2017, August 31). Nutrition and physical activity. Retrieved from https://dph.georgia.gov/chronic-disease-prevention/nutrition-and-physical-activity

Georgia Family Connection Partnership. (2021, June 21). Georgia ranks 38th in the nation for child and family well-being. Retrieved from https://gafcp.org/2021/06/21/georgia-ranks-38th-in-the-nation-for-child-and-family-well-being-2/

Georgia Labor Market Explorer. (2021). Local area labor profiles. Retrieved from https://explorer.gdol.ga.gov/vosnet/gsipub/documentView.aspx?enc=LoPwrh505OR7kXapbY9GJQ==

Georgia Municipal Association (n.d.). Capital needs of Georgia's cities, 2020-2024. Retrieved from https://www.gacities.com/What-We-Do/Advocacy/Federal-Issue/Capital-Needs-of-Georgia-Cities.aspx

Georgia Ports. (n.d.). Our port. Retrieved from https://gaports.com/our-port/

Georgia Water Coalition. (2021). Georgia's Clean 13. https://www.gawater.org/wp-content/uploads/2021/10/2021Clean13Report.pdf

Gibson, K. E., Lamm, A. J., Lamm, K. W., & Warner, L. A. (2020). Communicating with diverse audiences about sustainable farming: Does rurality matter? *Journal of Agricultural Education, 61*(4), 156-174. http://doi.org/10.5032/jae.2020.04156

Glaser, B. G. (1965). The constant comparative method of qualitative analysis. *Social Problems, 12*(4), 436-445.

Gloy, B., & Widmar, D. (2020, January 6). Economists lay out critical issues facing farmers. *Successful Farming*. Retrieved from https://www.agriculture.com/news/business/economists-lay-out-critical-issues-facing-farmers

Golley, F. B. (2017). Piedmont geographic region. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/geography-environment/piedmont-geographic-region/

Goodman, C. M. (1987). The delphi technique: A critique. *Journal of Advanced Nursing, 12*(6), 729-734. https://doi.org/10.1111/j.1365-2648.1987.tb01376.x

Gould, F. I., Steele, D., & Woodrum, W. J. (2014). Cooperative extension: A century of innovation. *Journal of Extension, 52*(1). Retrieved from https://archives.joe.org/joe/2014february/comm1.php

Hains, K. D., Young, J., Reinhard, A., & Jains, B. J. (2021). Reconsidering extension: Defining urban extension in Kentucky. *Journal of Human Sciences and Extension, 9*(2), 191-205. Retrieved from https://www.jhseonline.com/article/view/1011

Härkönen, J., Bernardi, F., & Boertien, D. (2017). Family dynamics and child outcomes: An overview of research and open questions. *European Journal of Population, 33,* 163-184. https://dx.doi.org/10.1007%2Fs10680-017-9424-6

Harvey, M. H. (2013). Consensus-based community development, concentrated rural poverty, and local institutional structure: The obstacle of race in the lower Mississippi Delta.

Community Development, 44(2), 257-273. https://doi.org/10.1080/15575330.2012.734840

Healey, L. S. (n.d.). Civic engagement and community service. *University of Georgia Extension*. Retrieved from https://extension.uga.edu/about/our-impact/impact-stories/impact-statement/3926/civic-engagement-and-community-service.html

Henning, J., Buchholz, D., Steele, D., & Ramaswamy, S. (2014). Milestones and the future for Cooperative Extension. *Journal of Extension, 52*(6). Retrieved from https://archives.joe.org/joe/2014december/comm1.php

Hernandez, J. (2022, January 1). U.S. COVID cases continue to skyrocket, and disruptions abound as 2022 begins. *NPR*. Retrieved from https://www.npr.org/sections/coronavirus-live-updates/2022/01/01/1069647633/covid-us-travel-flights-canceled-colleges

Hine, D. W., Reser, J. P., Morrison, M., Phillips, W. J., Nunn, P., & Cooksey, R. (2014). Audience segmentation and climate change communication: Conceptual and methodological considerations. *WIREs Climate Change, 5*(4), 441-459. https://doi.org/10.1002/wcc.279

Hogler, R. L., Hunt III, H. G., & Weiler, S. (2015). Killing unions with culture: Institutions, inequality, and the effects of labor's decline in the United States. *Employee Responsibilities and Rights Journal, 27*, 63-79. https://doi.org/10.1007/s10672-014-9257-y

Huang, P., Lamm, A. J., & Dukes, M. D. (2016). Informing extension program development through audience segmentation: Targeting high water users. *Journal of Agricultural Education, 57*(2), 60-74. https://doi.org/10.5032/jae.2016.02060

Innes, J. E., & Booher, D. E. (1999). Consensus building and complex adaptive systems: A framework for evaluating collaborative planning. *Journal of the American Planning Association, 65*(4), 412-423. https://doi.org/10.1080/01944369908976071

Jones, C. A. L. (2021). Examining rural community resilience and health during COVID-19 using the community capitals framework [Master's thesis, University of Georgia].

Kahle, L. R. (1986). The nine nations of north America and the value basis of geographic segmentation. *Journal of Marketing, 50*(2), 37-47. https://doi.org/10.1177%2F002224298605000203

Keeney, S., Hasson, F., & McKenna, H. (2011). *The delphi technique in nursing and health research*. Wiley.

Kelsey, K. D. (2020). The sharpening stone: A phenomenological study of the impact of a 4-H state-level leadership role on youth leadership and life skills development. *Journal of Human Sciences and Extension, 8*(1), 1-16. Retrieved from https://www.jhseonline.com/article/view/997

King, L., & Stutka, M. (2021, July 7). 'Digital divide': In Georgia, many still lack broadband access. *The Augusta Chronicle*. Retrieved from https://www.augustachronicle.com/story/news/2021/07/07/gda-broadband-local-ga-naug/47205331/

Kirkman, B. L., & Chen, G. (2011). Maximizing your data or data slicing: Recommendations for managing multiple submissions from the same data set. *Management and Organization Review, 7*(3), 433-446. https://doi.org/10.1111/j.1740-8784.2011.00228.x

Kirkman, L. K. (2020). Upper coastal plain. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/geography-environment/upper-coastal-plain/

Kotler, P., & Lee, N. R. (2008). *Social marketing: Influencing behaviors for good* (3rd ed). Sage Publications.

Kotler, P., & Roberto, E. L. (1989). *Social marketing: Strategies for changing public behavior*. The Free Press.

Kretzman, J. P., & McKnight, J. L. (1993). *Building community from the inside out: A path toward finding and mobilizing a community's assets*. ACTA Publications.

Lamm, A. J., & Lamm, K. W. (2019). Using non-probability sampling methods in agricultural and extension education research. *Journal of International Agricultural and Extension Education, 26*(1), 52-59. https://doi.org/10.5191/jiaee.2019.26105

Lamm, K. W., Borron, A., Atkins, K. D. (2021). The development and validation of an empirical scale to inform community diagnostics and change. *The Journal of Agricultural Education and Extension, 27*(3), 287-306. https://doi.org/10.1080/1389224X.2020.1851270

Lamm, K. W., Borron, A., Holt, J., & Lamm, A. J. (2019). Communication channel preferences: A descriptive audience segmentation evaluation. *Journal of Applied Communications, 103*(3). http://dx.doi.org/10.4148/1051-0834.2238

Lamm, K. W., Holder, M., Randall, N. L., Edgar, D. W., & Lamm, A. J. (2021). Agricultural leadership development program participant personality and demographic characteristics: An empirical analysis. *SAGE Open, 11*(4). https://doi.org/10.1177%2F21582440211061577

Lamm, K. W., Randall, N. L., & Diez-Gonzalez, F. (2021). Critical issues facing the food industry: A delphi analysis. *Journal of Food Production, 84*(4), 680-687. https://doi.org/10.4315/JFP-20-372

Landers, G., Richie, C. S., Sjoquist, D., Wallace, S., & Viceisza, A. (2006). Georgia's aging population: What to expect and how to cope? Georgia State University. Retrieved from https://cslf.gsu.edu/files/2014/06/georgias_aging_population_what_to_expect_and_how_to_cope.pdf

Lerer, L., & Fausset, R. (2020, November 8). How Georgia turned from reliably republican to political ground zero. *The New York Times*. Retrieved from https://www.nytimes.com/2020/11/08/us/politics/georgia-politics.html

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.

Lindsey, R., & Dahlman, L. (2021, August 12). Climate change: Global temperature. *National Oceanic and Atmospheric Administration*. Retrieved from https://www.climate.gov/news-features/understanding-climate/climate-change-global-temperature

Maibach, E. W., Leiserowitz, A., Roser-Renouf, C., & Mertz, C. K. (2011). Identifying like-minded audiences for global warming public engagement campaigns: An audience segmentation analysis and tool development. *PLoS ONE, 6*(3). https://doi.org/10.1371/journal.pone.0017571

Maibach, E. W., Maxfield, A., Ladin, K., & Slater, M. (1996). Translating health psychology into effective health communication: The American healthstyles audience segmentation project. *Journal of Health Psychology, 1*(3), 261-277. https://doi.org/10.1177%2F135910539600100302

McDonald, J. T., & Conde, H. (2010). Does geography matter? The health service use and unmet health care needs of older Canadians. *Canadian Journal on Aging, 29*(1), 23-37. https://doi.org/10.1017/S0714980809990389

Megehee, C. M., & Spake, D. F. (2007). Decoding southern culture and hospitality. *International Journal of Culture, Tourism and Hospitality Research, 2*(2), 97-101. http://dx.doi.org/10.1108/17506180810880674

Melancon, M. (n.d.). University of Georgia researchers look to increase the pace of sustainable crop innovation with the help of the lowly bladderwort. Georgia Crop Improvement Association. Retrieved from http://www.georgiacrop.com/university-of-georgia-researchers-look-to-increase-the-pace-of-sustainable-crop-innovation-with-the

Michaux, S. (2019, September 27). Farming for the future: UGA leads the way in precision agriculture. UGA Research. Retrieved from https://research.uga.edu/news/farming-for-the-future-uga-leads-the-way-in-precision-agriculture/

Middle Georgia Regional Commission. (2016). 2016-2036 plan for a thriving middle Georgia: Regional assessment. https://dca.ga.gov/sites/default/files/regional_assessment_update_111315_0.pdf

Miller, A. (2021, February 25). How COVID and poverty have ravaged rural Georgia. *Georgia Public Broadcasting*. Retrieved from https://www.gpb.org/news/2021/02/25/how-covid-and-poverty-have-ravaged-rural-georgia

Morgan, P. (2005). The idea and practice of systems thinking and their relevance for capacity development. European Centre for Development Policy Management. Retrieved from https://ecdpm.org/wp-content/uploads/2005-Idea-Practice-Systems-Thinking-Relevance-Capacity-Development.pdf

Moss, H. B., Kirby, S. D., & Donodeo, F. (2009). Characterizing and reaching high-risk drinkers using audience segmentation. *Alcoholism: Clinical and Experimental Research, 33*(8), 1336-1345. https://doi.org/10.1111/j.1530-0277.2009.00963.x

MSF Agriculture. (2020, September 3). Ten biggest issues being faced by farmers in 2020. Retrieved from https://msfagriculture.com/2020/09/23/10-biggest-issues-farmers-2020/

National Institute of Food and Agriculture [NIFA]. (n.d.). History. Retrieved from https://nifa.usda.gov/history

Narine, L., & Meier, C. (2020). Responding in a time of crisis: Assessing extension efforts during COVID-19. *Advancements in Agricultural Development, 1*(2), 12-23. https://doi.org/10.37433/aad.v1i2.35

NBC News. (2021, March 6). Georgia election results 2020. Retrieved from https://www.nbcnews.com/politics/2020-elections/georgia-results

Newton, D., Newton, J. J., Turk, T., & Ewing, M. T. (2013). Ethical evaluation of audience segmentation in social marketing. *European Journal of Marketing, 47*(9), 1421-1438. https://doi.org/10.1108/EJM-09-2011-0515

Nolin, J. (2019, July 7). Aging Georgia: State studies care for a growing elder population. *The Moultrie Observer*. Retrieved from https://www.moultrieobserver.com/news/local_news/aging-georgia-state-studies-care-for-a-growing-elder-population/article_675d8dd2-a03b-11e9-8e38-afe227f65c2b.html

Odeyemi, E., & Skobba, K. (2021). Who is at the table? Civic engagement in small town housing decision-making. *Local Government Studies, 47*(6), 1014-1036. https://doi.org/10.1080/03003930.2020.1864334

Öz, B., Unsal, F., & Movassaghi, H. (2018). Consumer attitudes toward genetically modified food in the United States: Are millennials different? *Journal of Transnational Management, 23*(1), 3-21. https://doi.org/10.1080/15475778.2017.1373316

Parker, K., Horowitz., J. M., Brown, A., Fry, R., Cohn, D., & Igielnik, R. (2018). What unites and divides urban, suburban, and rural communities? *Pew Research Center*. Retrieved from https://www.pewresearch.org/social-trends/2018/05/22/what-unites-and-divides-urban-suburban-and-rural-communities/

Pechar, E., Bernauer, T., & Mayer, F. (2018). Beyond political ideology: The impact of attitudes towards government and corporations on trust in science. *Science Communication, 40*(3), 291-313.

Penn, A. (n.d.) Identifying critical issues. University of Arkansas Cooperative Extension. Retrieved from https://www.uaex.edu/publications/pdf/dist06/section3-5-identifying-critical-issues.pdf

Pew Research Center. (n.d.). Political ideology among adults in Georgia. Retrieved from https://www.pewforum.org/religious-landscape-study/state/georgia/political-ideology/#social-and-political-views

Phillips, S. (2022, January 5). Why 2022 is the year we learn to live with COVID-19. *Time*. Retrieved from https://time.com/6133110/2022-the-year-we-live-with-covid-19/

Pittman, J. B. (2014). Southern families. In M.J. Coleman & L. H. Ganong (Eds.), *The social history of the American family: An encyclopedia* (Vol. 1, pp.1255-1258). Sage.

Powell, A., and Lamm, K. W. (2021). Critical issues facing Georgians: An application of the delphi technique and community capitals framework [Manuscript in preparation].

Department of Agricultural Leadership, Education, and Communication, University of Georgia.

Prabhu, M. T. (2021, October 5). Senate panel targets Georgia's food deserts. *The Atlanta Journal Constitution*. Retrieved from https://www.ajc.com/politics/senate-panel-targets-georgias-food-deserts/VCCMVQAHTBASPFXXL6O7R3WKYQ/

Pruitt-Young, S. (2021, November 6). Thousands protest in Glasgow and around the world for action against climate change. *NPR.* Retrieved from https://www.npr.org/2021/11/06/1053218525/cop26-glasgow-global-climate-action-protests

Qualtrics. (n.d.). What is geographic segmentation and how to put it to work. Retrieved from https://www.qualtrics.com/experience-management/brand/geographic-segmentation/

Raison, B. (2014). Doing the work of Extension: Three approaches to identify, amplify, and implement outreach. *Journal of Extension, 52*(2). Retrieved from https://archives.joe.org/joe/2014april/a1.php

Ranjan, R., Chan, N. G., & Ahmed, Q. N. (2014). A delphi study to determine sustainability factors: The case of rice farming in Bangladesh. *Journal of Sustainability Science and Management, 9*(1), 56-68.

Rasmussen. C., Armstrong, J., Chazdon, S. (2009). Measuring the impact of leadership development using the community capitals framework. University of Minnesota Extension Service. Retrieved from https://conservancy.umn.edu/handle/11299/58530

Rentfrow, P. J., Gosling, S. D., Jokela, M., Stillwell, D. J., Kosinski, M., & Potter, J. (2013). Divided we stand: Three psychological regions of the United States and their political,

economic, social, and health correlates. *Journal of Personality and Social Psychology, 105*(6), 996-1012. https://doi.org/10.1037/a0034434

Risse, L. M., Bowie, M., Davis, D., & Navarro, M. (2009, April 27-29). Georgia's water conservation efforts: Cooperative Extension's banner effort [Paper presentation]. 2009 Georgia Water Resources Conference, Athens, GA, United States. Retrieved from https://smartech.gatech.edu/handle/1853/47005

Ruemenapp, M. A. (2017). America's changing urban landscape: Positioning extension for success. *Journal of Human Sciences and Extension, 5*(2), 6-21. Retrieved from https://www.jhseonline.com/article/view/706

Ruppert, J., & Duncan, R. G. (2017). Defining and characterizing ecosystem services for education: A delphi study. *Journal of Research in Science Teaching, 54*(6), 737-763. https://doi.org/10.1002/tea.21384

Saegert, S. (2006). Building civic capacity in urban neighborhoods: An empirically grounded analysis. *Journal of Urban Affairs, 28,* 275-294.

Schaefer, J. M., Huegel, C. N., & Mazzotti, F. J. (1992). Expanding into the urban arena. *Journal of Extension, 30*(2). Retrieved from https://archives.joe.org/joe/1992summer/a2.php

Seabrook, C. (2018). Lower coastal plain and coastal islands. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/geography-environment/lower-coastal-plain-and-coastal-islands/

Seabrook, C. (2020). Blue ridge mountains. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/geography-environment/blue-ridge-mountains/

Settle, Q., Rumble, J. N., McCarty, K., & Ruth, T. K. (2017). Public knowledge and trust of agricultural and natural resources organizations. *Journal of Applied Communications, 101*(2), 86-98. https://doi.org/10.4148/1051-0834.1007

Skobba, K., & Tinsley, K. (2016). Addressing housing and neighborhood revitalization needs in Georgia's rural and small towns: A study of the Georgia Initiative for Community Housing. *Community Development, 47*, 449-463. https://doi.org/10.1080/15575330.2016.1205117

Smith, E. S. (1999). The effects of investments in the social capital of youth on political and civic behavior in young adulthood: A longitudinal analysis. *Political Psychology, 20*(3), 553-580.

Smolen, M. D., Mittelstet, A., Harjo, B. (2017). Whose water is it anyway? Comparing the water rights framework of Arkansas, Oklahoma, Texas, New Mexico, Georgia, Alabama, and Florida. Oklahoma State University Extension. Retrieved from https://extension.okstate.edu/fact-sheets/whose-water-is-it-anyway.html

Southeastern Environmental Law Center. (n.d.). Tri-state water wars: Alabama, Georgia, Florida. Retrieved from https://www.southernenvironment.org/topic/tri-state-water-wars-alabama-georgia-florida/

Southwest Georgia Regional Commission. (2019). Southwest Georgia comprehensive economic development strategy (CEDS) 2017-2022: 2019 Update. http://www.swgrcplanning.org/uploads/6/1/8/4/61849693/ceds_2019_ceds_update.pdf

Sseguya, H., Mazur, R. E., & Flora, C. B. (2018). Social capital dimensions in household food security interventions: Implications for rural Uganda. *Agriculture and Human Values, 35*, 117-129.

Stotz, S. A., Thompson, J. J., Bhargava, V., Scarrow, A., Capitano, K., & Lee, J. S. (2019). A supplemental produce and eLearning nutrition education program for Georgians who use safety-net clinics for their health care. *Journal of Nutrition Education and Behavior, 51*(9), 1099-1106. https://doi.org/10.1016/j.jneb.2019.06.018

Suttles, K. M., Singh, N. K., Vose, J. M., Martin, K. L., Emanuel, R. E., Coulston, J. W., Saia, S. M., & Crump, M. T. (2018). Assessment of hydrologic vulnerability to urbanization and climate change in a rapidly changing watershed in the Southeast U.S. *Science of the Total Environment, 645*, 806-816. https://doi.org/10.1016/j.scitotenv.2018.06.287

Tanner, D. (2021). Rural Georgia in focus. University of Georgia Carl Vinson Institute of Government. Retrieved from https://www.house.ga.gov/Documents/CommitteeDocuments/2021/Rural_Development_Council/CVIOG%202020%20Census%20Data.pdf

Tate IV, W. F. (2008). 'Geography of opportunity': Poverty, place, and educational outcomes. *Educational Researcher, 37*(7), 397-411. https://doi.org/10.3102%2F0013189X08326409

University of Georgia College of Family and Consumer Sciences [UGA FCS]. (n.d.). Family. https://www.fcs.uga.edu/extension/family

University of Georgia [UGA] Extension. (n.d.). Our history. Retrieved from https://extension.uga.edu/about/our-history.html

University of Georgia [UGA] Public Service and Outreach. (n.d.). History. Retrieved from https://outreach.uga.edu/about/history/

U.S. Bureau of Labor Statistics. (2021, March 31). May 2020 state occupational employment and wage statistics: Georgia. Retrieved from https://www.bls.gov/oes/2020/may/oes_ga.htm#00-0000

U.S. Census Bureau. (n.d.). QuickFacts: Georgia, United States. https://www.census.gov/quickfacts/fact/table/GA,US/PST045219

U.S. Department of Agriculture Economic Research Service [USDA ERS]. (2021). State fact sheets: Georgia. Retrieved from https://data.ers.usda.gov/reports.aspx?StateFIPS=13&StateName=Georgia&ID=17854

Usery, E. L. (2018). Geographic regions of Georgia. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/geography-environment/geographic-regions-of-georgia-overview/#:~:text=Georgia%20encompasses%20parts%20of%20five%20distinct%20geographic%20regions%3A%20the%20Appalachian,Piedmont%2C%20and%20the%20Coastal%20Plain.

Verghese, A. (2009). *Cutting for stone*. Knopf.

Vernon, W. (2009). The delphi technique: A review. *International Journal of Therapy and Rehabilitation, 16*(2), 69-76.

Vollset, S. E., Goren, E., Yuan, C., Cao, J., Smith, A. E., Hsiao, T., Bisignano, C., Azhar, G. S., Castro, E., Chalek, J., Dolgert, A. J., Frank, T., Fukutaki, K., Hay, S. I., Lozano, R., Mokdad, A. H., Nandakumar, V., Pierce, M., Pletcher, M., Robalik, T.…, Murray., C. J. L. (2020). Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: A forecasting analysis for the Global Burden of Disease Study. *The Lancet, 296*, 1285-1306. https://doi.org/10.1016/S0140-6736(20)30677-2

Warner, L. A., Diaz, J. M., Osborne, E. W., Oi, F., & Reed, C. N. (2022). Evaluating connections between personal well-being and adoption of landscape best management practices: An

audience segmentation study. *Journal of Environmental Management, 302*(A). https://doi.org/10.1016/j.jenvman.2021.113959

Warner, L. A., Chaudhary, A. K., Rumble, J. N., Lamm, A. J., & Momol, E. (2017). Using audience segmentation to tailor residential irrigation water conservation programs. *Journal of Agricultural Education, 58*(1), 313-333. https://doi.org/10.5032/jae.2017.01313

Warren, M. R., Thompson, J. P., & Saegert, S. (2002). The role of social capital in combating poverty. In J.P. Thompson, M. R. Warren, & S. Saegert (Eds.). *Social capital and poor communities* (pp. 1-28). Russell Sage.

Way, A. (2019). Longleaf pine ecosystem. *New Georgia Encyclopedia*. Retrieved from https://www.georgiaencyclopedia.org/articles/geography-environment/longleaf-pine-ecosystem/

Webster, N., & Ingram, P. (2007). Exploring the challenges for extension educators working in urban communities. *Journal of Extension, 45*(3). Retrieved from https://archives.joe.org/joe/2007june/iw3.php

Weigel, D. (2020, September 27). The six political states of Georgia. The Washington Post. Retrieved from https://www.washingtonpost.com/graphics/2020/politics/georgia-political-geography/

Weiskopf, S. R., Rubenstein, M. A., Crozier, L. G., Gaichas, S., Griffis, R., Halofsky, J. E., Hyde, K. J. W., Morelli, T. L., Morisette, J. T., Muñoz, R. C., Pershing, A. J., Peterson, D. L., Poudel, R., Staudinger, M. D., Sutton-Grier, A. E., Thompson, L., Vose, J., Weltzin, J. F., & Whyte, K. P. (2020). Climate change effects on biodiversity,

ecosystems, ecosystem services, and natural resource management in the United States. *Science of the Total Environment, 733*. https://doi.org/10.1016/j.scitotenv.2020.137782

Wingfield, K. (2017, August 25). Opinion: Why Georgia's companies can't always find the workers they need. *The Atlanta Journal Constitution*. Retrieved from https://www.ajc.com/news/opinion/opinion-why-georgia-companies-can-always-find-the-workers-they-need/jnjmkqvi6KgMWpGat5oALP/

Zemtsov, A. A., & Osipova, T. Y. (2015). Financial wellbeing as a type of human wellbeing: Theoretical review. *The European Proceedings of Social and Behavioral Sciences.* http://dx.doi.org/10.15405/epsbs.2016.02.49