

The Financial Viability and Availability of Contractors and Subcontractors in Rural Communities

- Ethan Parsons and Dr. Weckler

Introduction and Framework

- The construction industry is a vital part of how communities are formed
- Rural communities experience lower growth rates relating to a undervalue of construction.

Research question: How successful can contractors be in rural communities?

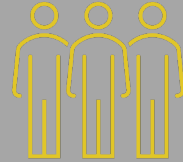
Methods

- 8 in-depth interviews with local General Contractors, Subcontractors, and a technical school professor.
- Interviews were audio recorded and then transcribed by a professional transcription software.
- Researcher summarized the main points of the interviews to ensure accuracy.
- Pseudonyms were assigned.
- A professional data analysis software was used to identify themes.

Benefits

Community Ties

"Obviously friends, family, I met my wife you know. That's where we wanna stay in this area."
– Electrical contractor, Micheal.



Employee Trust

"So, he was with us 26 years. And just like family to us."
– General contractor, Phil.



Financially

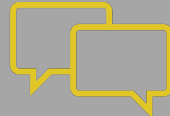
"Most of the contractors that I know, the ones that are, you know, honest and do a good job and all make a good living." – GC, Bob



Challenges

Community Opinion

"The local people didn't think I should charge much money because I was young."
– HVAC contractor, Jeff.



Technology

"Because if I want to invest in new software, I have to do it."
– General contractor, Lindsey.



Labor and Supplies

I mean, a lot of times we're close to an hour from supplies and basics."
- General contractor, Hank.



Conclusions

- Participants believed that a strong sense of community/family were a major benefits of running a business in rural communities
- Contractors agreed that the opportunities in rural areas can lead to a successful life in the construction industry.

Recommendations

- Improve youth interest in the construction industry through trade/tech schools.
 - "So, in total in the program? Somewhere around 20 to 25. " – Professor, Jack.
- Educate people about the construction opportunities in rural communities and increase competition.

Understanding Adverse Childhood Experiences in Rural Oklahoma: Prevalence and Impact

Thomas Lako

Background

- About 64% of U.S. adults reported they had experienced at least one type of ACE before age 18, and nearly 1 in 6 (17.3%) reported they had experienced four or more types of ACEs (Mersky et al., 2013).
- ACEs can have lasting, negative effects on health, wellbeing in childhood and life opportunities, such as education and job potential, well into adulthood (Cain et al., 2022).
By preventing ACEs, up to 1.9 million heart disease cases and 21 million depression cases potentially could have been avoided (Merrick et al., 2019).
- Understanding the prevalence of ACEs is essential for targeted interventions and policy development.

Objectives

- To compare the prevalence of two ACEs, abuse, and neglect, in Jackson, Greer, Harmon, and Tilman Counties in Oklahoma.
- To investigate the association between ACEs and mental health outcomes, emotional well-being, developmental consequences, and behavioral outcomes.
- To provide comprehensive insights into the implications of ACEs in rural Oklahoma, aiming to inform policy development, prevention strategies, and intervention programs that can better support individuals affected by ACEs and improve the overall well-being of the rural population.

Methodology

Part One: ACEs prevalence in Jackson, Greer, Harmon, and Tilman

- Procedure: Data was provided by the Oklahoma Department of Human Services (OKDHS), Child Protective Services.

Part Two: One or more adverse childhood experiences x Mental, emotional, developmental or behavioral problems

- Participants: Children aged 0-17 years. Percentages and population estimates (Pop. Est.) are weighted to represent the child population in the US.
- Procedures: Cross-sectional survey instrument.

Results

Figure 1

CHILD ABUSE & NEGLECT BY TYPE (NUMBER) - SFY 2019

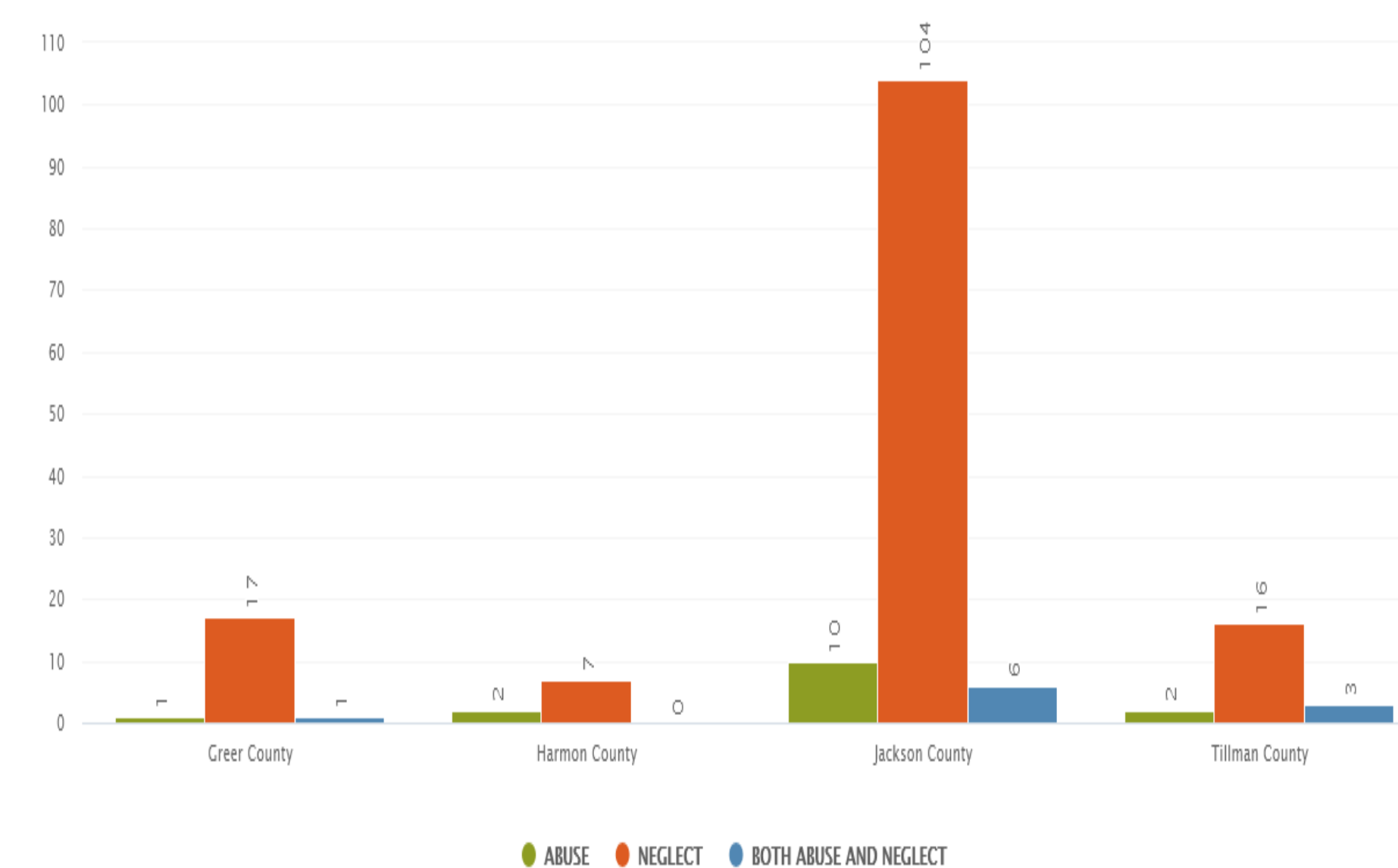


Figure 2

CHILD ABUSE & NEGLECT BY TYPE (NUMBER) - SFY 2018

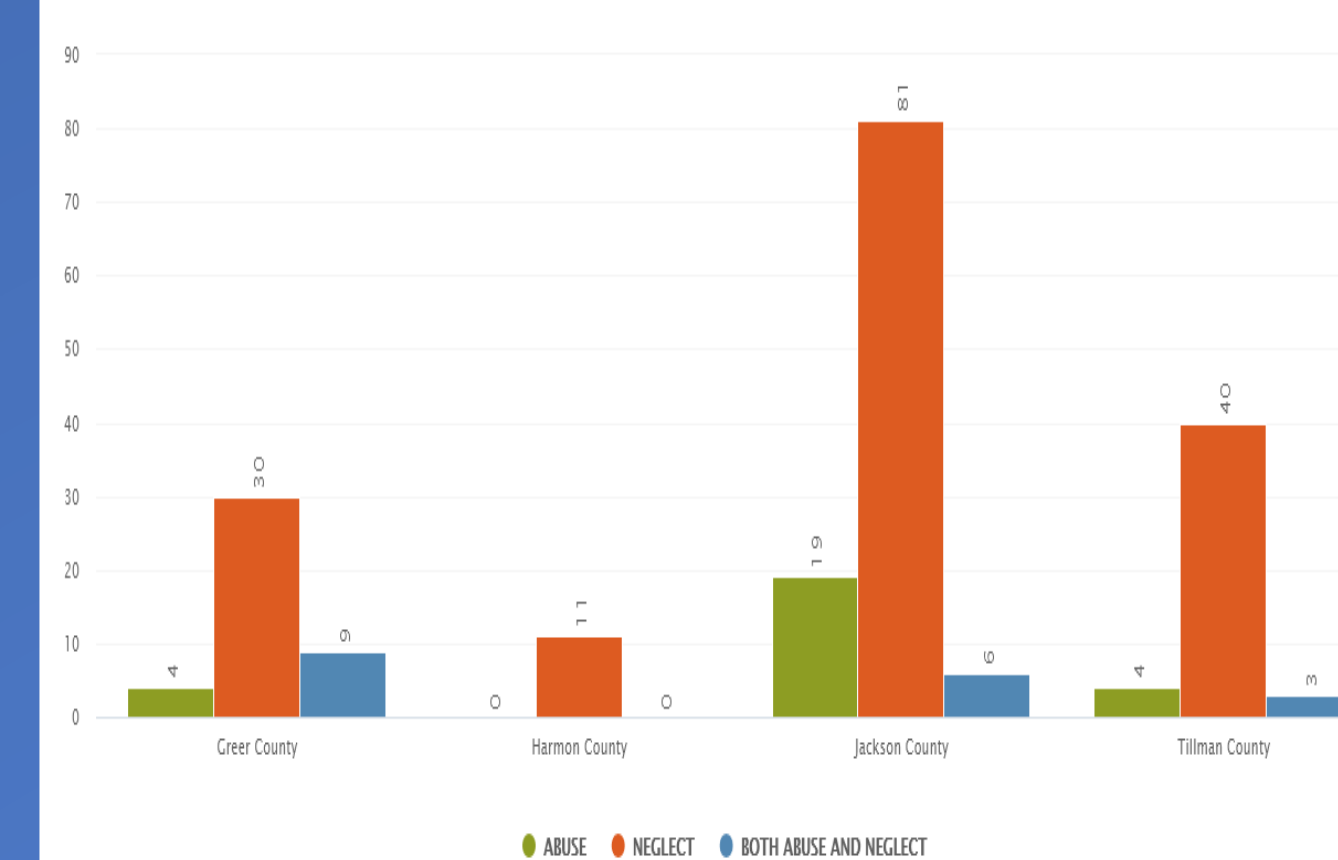


Figure 3

CHILD ABUSE & NEGLECT BY TYPE (NUMBER) - SFY 2017

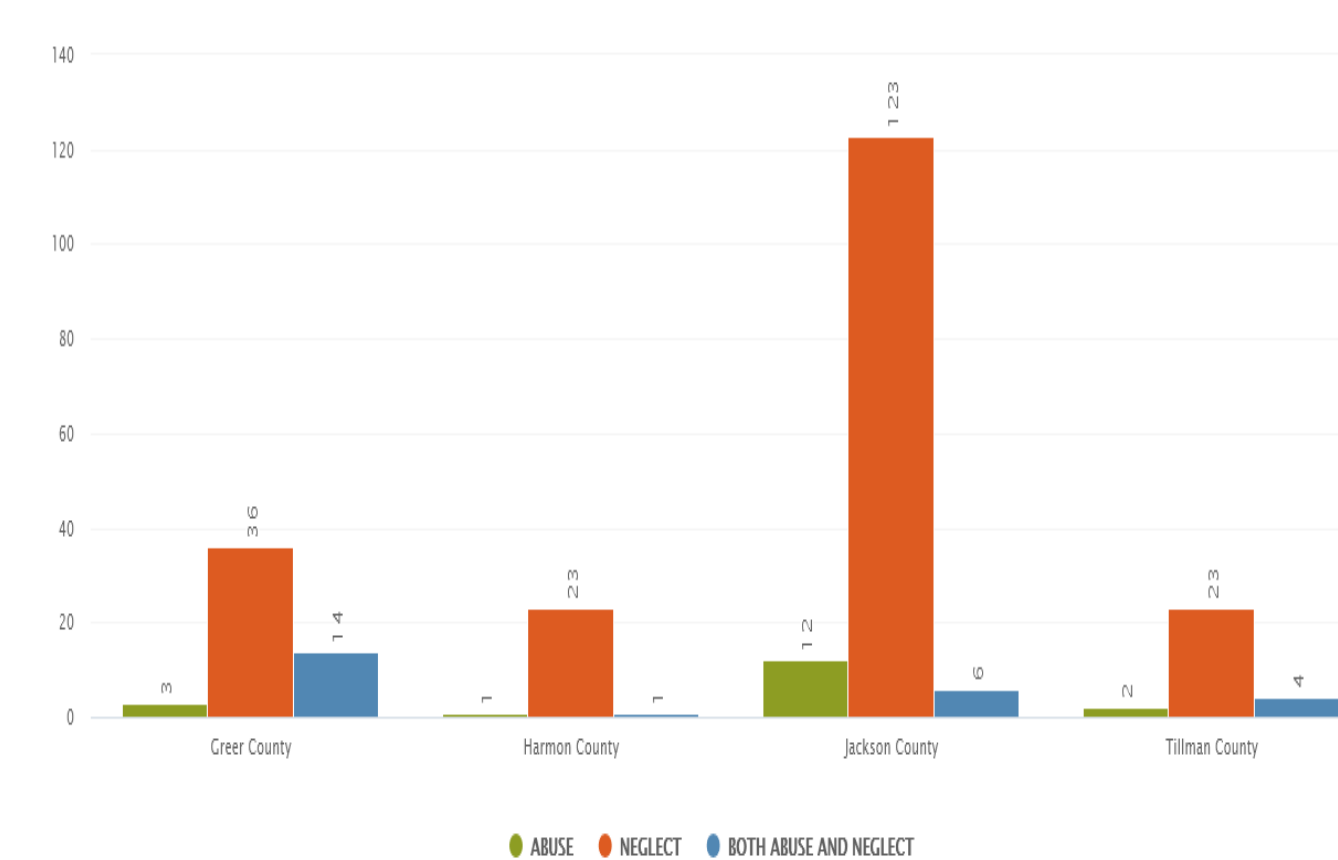


Figure 4: Child has two or more adverse childhood experiences

Children (aged 0-17) experienced one or more adverse childhood experiences x Mental, emotional, developmental or behavioral problems			
Oklahoma		Child has 1 or more reported MEDB problems, and/or qualifies on CSHCN screener emotional, behavioral	Child does not currently have mental, emotional, developmental, or behavioral problems
	%	43.1	21.7
	C.I.	33.0-53.8	16.4-28.0
	Sample Count	54	76
Nationwide		Child has 1 or more reported MEDB problems, and/or qualifies on CSHCN screener emotional, behavioral	Child does not currently have mental, emotional, developmental, or behavioral problems
	%	36.7	16.6
	C.I.	34.2-39.3	15.4-17.8
	Sample Count	2,194	2,784
	Pop. Est.	4,838,760	7,790,390

Discussion

Prevalence

- Greer County had varying ACE reports from 2017 to 2019, with a decreasing trend.
- Harmon County had lower ACE reports in 2017 and 2019, with a decrease in cases over the years.
- Jackson County saw fluctuating ACE reports over the three-year period.
- Tillman County also showed fluctuating ACE reports, with the highest numbers in neglect cases in 2018.

Impact

- 43.1% of children in Oklahoma have encountered two or more ACEs, and these children either report 1 or more problems in mental, emotional, developmental, or behavioral aspects.
- Data in Oklahoma includes a 95% confidence interval ranging from 33.0% to 53.8%, with a sample size of 54 and an estimated population of 86,039 children
- Nationwide, roughly 36.7% of children have faced two or more ACEs, similar to Oklahoma's findings, and the national confidence interval ranges from 34.2% to 39.3% with a sample size of 2,194 and an estimated population of 4,838,760 children

Conclusions

- Varying ACE prevalence across Oklahoma counties indicates a need for targeted policies and interventions tailored to the specific challenges faced by each county.
- Harmon County's effective reduction of ACE reports and cases indicates the potential for its local policies and initiatives to serve as a replicable model for other areas.
- The substantial prevalence (43.1%) of children reporting two or more ACEs and the resulting issues in mental, emotional, developmental, and behavioral domains emphasize the urgency of implementing holistic policies that focus on ACE prevention and treatment/intervention.
- The wide confidence intervals in the data indicate some uncertainty in the estimates, emphasizing the importance of collecting more comprehensive and accurate data. Policies should focus on improving data collection methods to better understand the true extent of ACEs and their impact.

References

- Cain, K. S., Meyer, S. C., Cummer, E., Patel, K. K., Casacchia, N. J., Montez, K., Palakshappa, D., & Brown, C. L. (2022). Association of food insecurity with mental health outcomes in parents and children. *Academic Pediatrics*, 22(7), 1105–1114.
- Merrick, M. T., Ford, D. C., Ports, K. A., Guinn, A. S., Chen, J., Klevens, J., Metzler, M., Jones, C. M., Simon, T. R., Daniel, V. M., Otley, P., & Mercy, J. A. (2019). *vital signs*: estimated proportion of adult health problems attributable to adverse childhood experiences and implications for prevention — 25 states, 2015–2017. *MMWR. Morbidity and Mortality Weekly Report*, 68(44), 999–1005.
- Mersky, J. P., Topitzes, J., & Reynolds, A. J. (2013). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the U.S. *Child Abuse & Neglect*, 37(11), 917–925.



Building Sustainable Rural Healthcare Services:

An interview study with local healthcare professionals in Tillman and Harmon County on identifying healthcare barriers and needs of rural Oklahoma residents

Rose Wangari Njoroge¹ Xuewei Chen, Ph.D., MCHES², Tao Hu, Ph.D.³

1. Public Health, MPH, Oklahoma State University.

2. School of Community Health Sciences, Counseling and Counseling Psychology, Oklahoma State University

3. Department of Geography, Oklahoma State University

Background

- The health disparities between **rural and urban** access to healthcare in the U.S. have grown substantially over time.
- There is a critical need to develop improved strategies to alleviate health disparities among rural populations.

Objectives

The purpose of this work-in-progress study is to **identify healthcare barriers and needs of rural Oklahoman** and **seek for potential solutions** to increase healthcare access in the local communities.

Methodology

- **Data Collection Method:** 20-30 minutes one-on-one semi-structured interviews comprising of **eight open ended questions**. We conducted the interviews person, via phone, or virtual platforms such as Zoom.
- **Inclusion Criteria:** Must work as a healthcare providers, health professional, or healthcare administrator in Tillman / Harmon County of Oklahoma.
- **Data collection Time:** April – July 2023
- **Sample Size:** $N=20$
- **Data analysis :** After transcription, the text data formed the foundation for analysis, where thematic analysis brought out the underlying themes. Emerging concepts were gathered and compared as themes were recognized.

Results

- Since April 2023, we have interviewed **24 participants** (17 females and 7 males). Their age ranged from **26 to 65** ($M=51$, $SD=11$). Most of them were **white** ($n=19$) and worked at a **Federally Qualified Health Center, clinics, or hospitals** as providers.
- We identified significant barriers to healthcare access among rural Oklahomans. They are illustrated in the table :

Healthcare Barriers	Illustrative Quotes
Lack of transportation	“because a lot of people don't have a vehicle , they don't have any kind of family members. And lots of times, they won't go with us, because they don't have a ride back home.” “I'd say transportation is probably the biggest in this area because Hollis and Altus are smaller towns so there's really not a whole lot of public transportation options here.”
Long Distance to Healthcare facilities	“ Distance is the biggest thing . So there is a cardiologist that comes to Altus, I believe twice a week. And so he's full when he does get there. So a lot of our patients are needing a cardiologist before that. So Lawton is the closest that they can go, and a lot of our patients either can't drive that far due to their age or don't have family or assistance to take them that far.”
Unaffordable healthcare cost	“I think out here the biggest barrier is probably a low incomes combined with a poor payer mix . So, if you're lower income, but you're not over 65, you might not have insurance at all. Certainly we do have Medicare and Medicaid patients, but just because you're eligible for Medicaid doesn't mean that you always have it.”
Misconception (e.g., low reliability and confidence in covid-19 vaccine)	“I'd say on the mental health side there are some misconceptions that people generally think that they have to have all this money to receive therapy or that it's super expensive. I think a lot of people may not realize that it is based on your income level to receive the services here.”
Shortage of healthcare workers such as specialists (e.g., radiologists, cardiologists, pulmonologists, endocrinologists, and behavioral health)	“I think the main thing is specialty , because as I told you, we don't have any specialist. So anytime you need to see a cardiologist, need to see an orthopedic, they need to go out of town. Of course the town here, we don't do OB, we don't deliver babies. So any pregnant woman for care, she need to go to Altus at least, or Childress, which is the closest to city has OB GYN care.”



- Many participants were in favor of using **telehealth/telemedicine** to increase healthcare access in rural communities, especially for **behavioral health**. They also recognized the benefits of using mobile clinics to overcome the transportation barrier.

Conclusion

Intervention strategies reducing these identified barriers (e.g., using mobile health clinics and telehealth/telemedicine) should be developed to increase healthcare access in rural Oklahoma.



(Interview & Survey Questions and references)

Stakeholder Perceptions of High School Fire/EMS CTE Programs

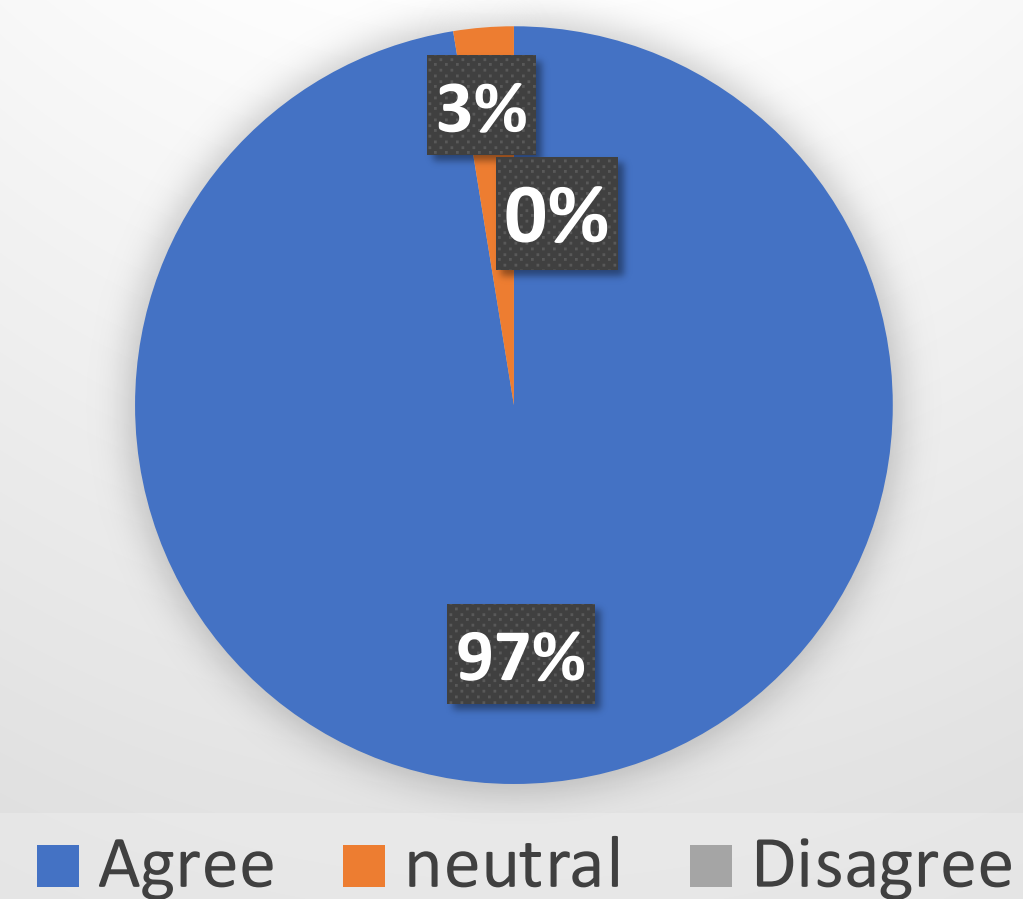
Robert W. Dusenbery – Rural Scholar / FEMP PhD Student

Christopher J. Eck, PhD – Agricultural Education

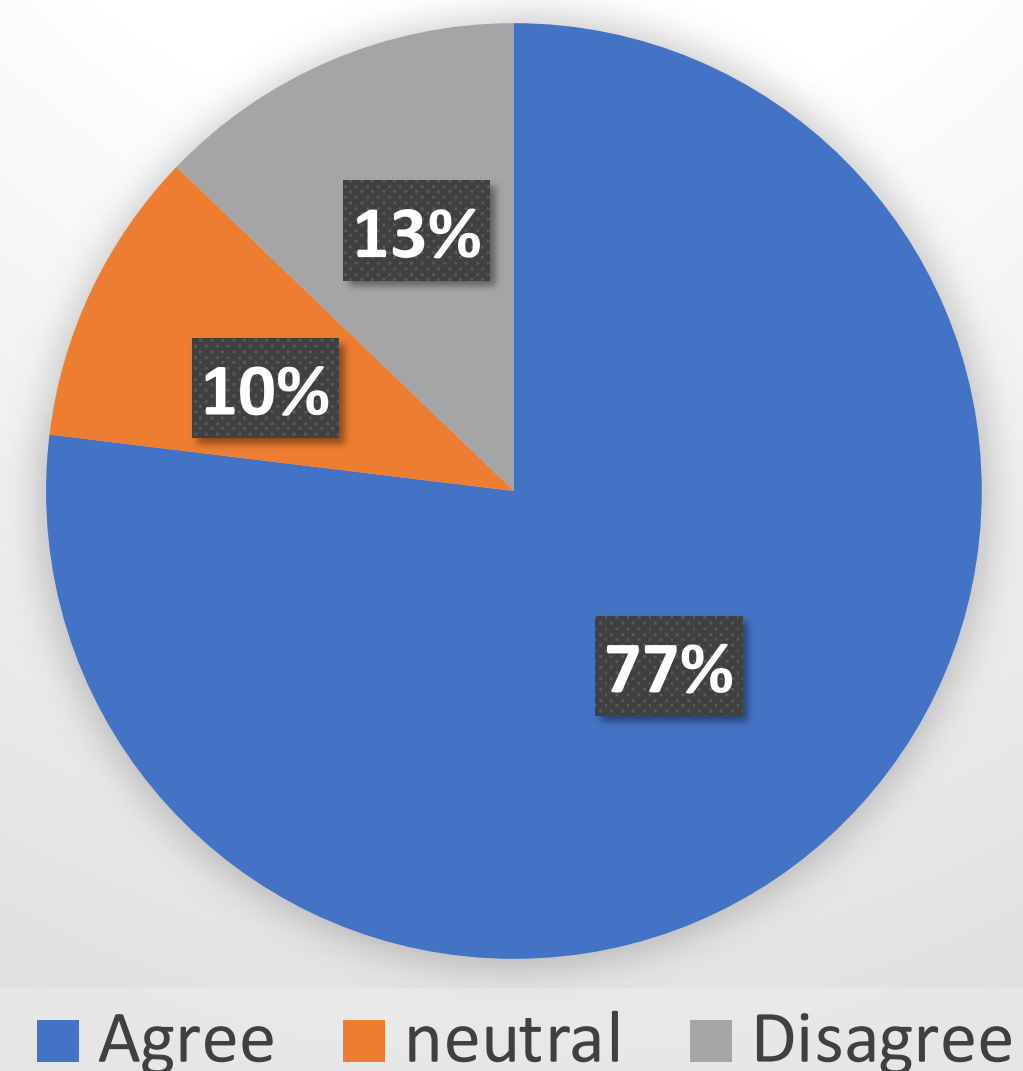


“A strong vocational program that prepares students to enter the workplace or to move on to further education and training benefits not only the individual students, but the entire economy those students will eventually support” (Kraemer & Craw, 2020, para. 7).

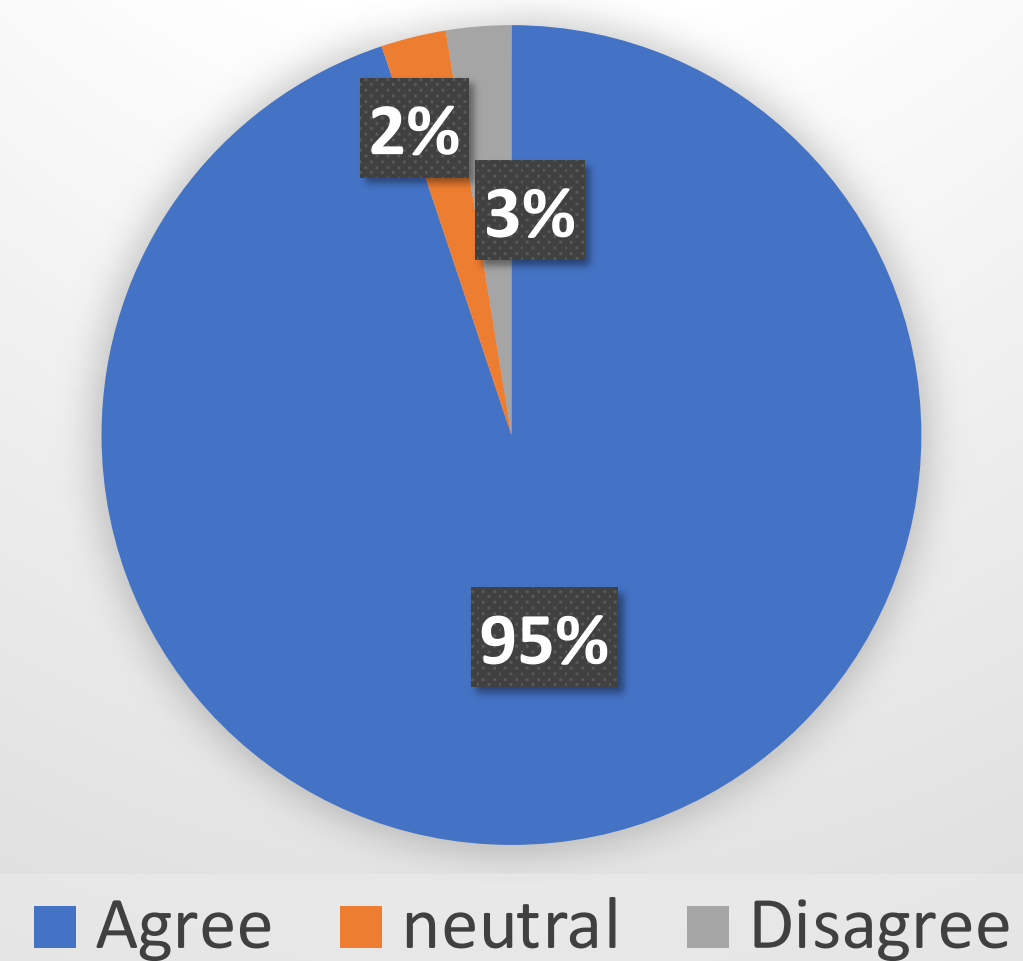
Additional CTE Programs are Needed in High Schools



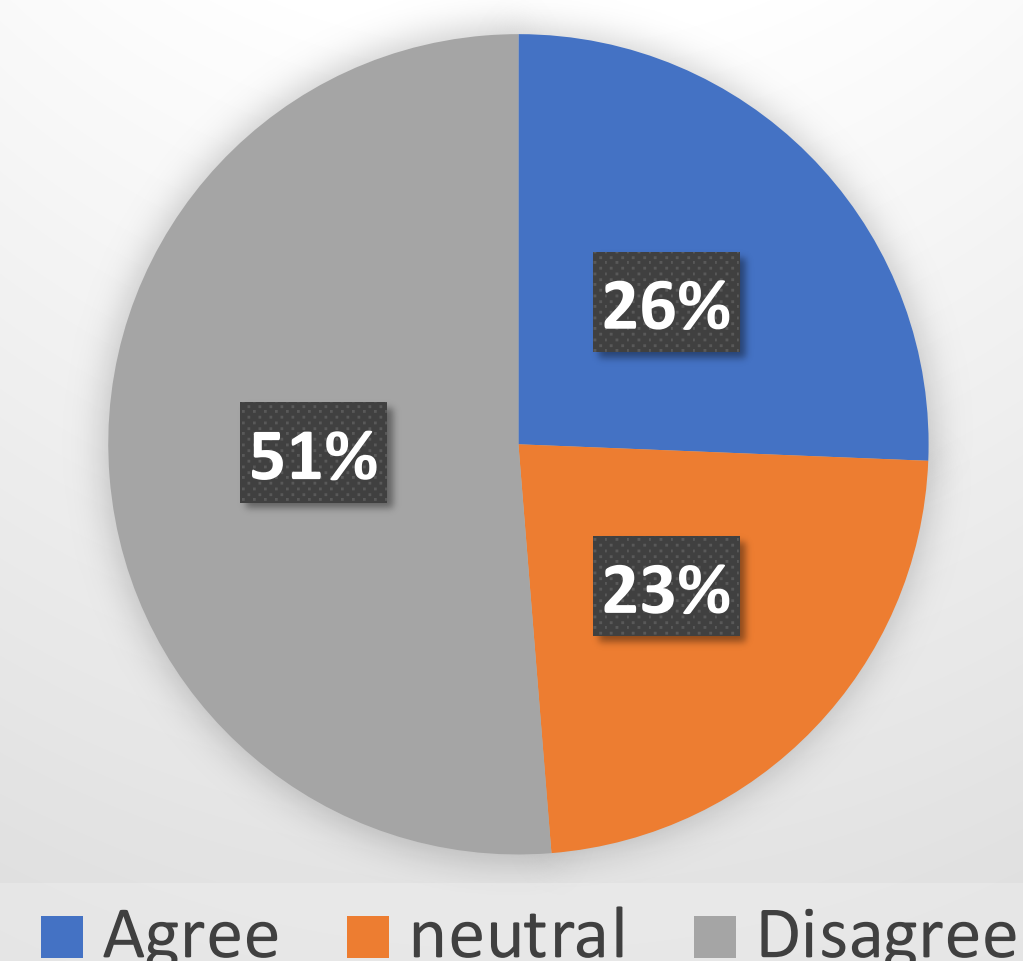
CTE Programs Should be Mandatory



CTE Programs as important as Core Classes



High school Administrators Support CTE Programs



Introduction/Purpose

“The demand for a skilled workforce is growing faster than the supply of workers with BA degrees.” (Hendricks et al., 2021, p.2).

Career and Technical Education is more necessary now than ever before. Its time to take a closer look at building rigorous CTE pathways in secondary and post-secondary education.

Research Questions

RQ1 - How can high school CTE programs in the field of Fire and Emergency Response bolster community resilience, thus reducing the recovery time following a natural or manmade disaster?

RQ2 - What is the best way to connect high school CTE curriculum with national standards in emergency response to elevate community resilience?



Theoretical Base

The research behind this project was completed in the Summer of 2023 in Tillman County, Oklahoma to evaluate through human capital theory, how to best serve high school student and build safer communities. While the results are pragmatic in that they are operational now, the philosophy is interpretivist at its core. Even though this was a mixed-methods research project, a qualitative model has been followed.

Employing the grounded theory strategy, the results are, and were designed to be inductive, as the path forward will become clearer as more research is done. And while the summer research project dealt with only one sample set, and interviewees were drawn from the same group that had been previously surveyed, the broader research is longitudinal, and will be continued using additional research subjects over time.

Conclusions

- Participants hold a positive view of CTE programs.
- CTE program offerings in high schools need to be expanded.
- CTE partnerships should be established between secondary, post-secondary and industry partners.
- Literature supports the need for increasing the number of Career and Technical Education programs nationwide.
- Additional research is needed to further expand the scope of this study and to evaluate the barriers and unintended consequences with CTE program expansion.

Results/Findings

- Among those surveyed:

- Not a single negative response to increasing the number of CTE classes in high schools.
- A vast majority agreed with some CTE classes being mandatory before graduation.
- Most felt that CTE classes are as important for high school students as their core classes (English, math, etc.)
- Additionally, most felt that students would sign up for more classes if they were available to them.
- The majority felt that CTE was undervalued by high school administrators and counselors.
- There was a positive response to partnerships between high schools and junior colleges and technical centers.
- Likewise, industry professionals would unquestionably agree to partner with high schools to provide learning opportunities (market value assets).
- Most also felt that more CTE programs would help reduce high school dropout rates by reaching more students.
- Though surveys were split on whether high school CTE programs would increase college enrollment.
- Unanimously agreed that CTE is a great pathway to well-paying jobs in the 21st century.

- Among those interviewed:

- Only adults were interviewed (four were still teenagers).
- The average age is 48 years old.
- The mode age is 57 years old.
- Most said that CTE classes weren't available when they were in high school or were limited to AG classes that they felt weren't rigorous academically.
- Most felt that enrollment should be limited to juniors and seniors.
- Agreed that CTE programs in high school should be advertised/promoted to middle schoolers.
- Were split on whether dual-credit college classes should be available to high school students.
- Most agreed that industry certifications should be available to high school students.
- Agreement with the partnership between community colleges and technical centers with high schools for CTE education programs.
- Similarly, agreed that industry professionals should work closely with high school CTE programs to ensure that students are being taught relevant information.
- The majority believed that a “fun” career day to middle schoolers, followed by “introductory” classes to freshmen and sophomores would be the best way to get more students involved in CTE.
- The majority felt that dual-credit college classes should be reserved for high school juniors and seniors.
- None felt that dual-credit classes were completely inappropriate at the high school level entirely.

The Rural Narrative of the Hispanic Community in Southwest Oklahoma

Laura Ruiz, Dr. Lauren Lewis Cline, & Dr. Audrey E. H. King

Department of Agricultural Education, Communications & Leadership - Oklahoma State University



Purpose & Research Question

- The purpose of this study was to empower the leadership perspectives of rural Southwest Oklahoma through the lens of the local Hispanic community.
- What are the leadership narrative of rural Southwest Oklahoma Hispanic community members?

Background

- The theoretical framework of concentrated rural living, foreign-born Latinos and the pattern of Ehtnoracial dynamics embeds a cluster of expectations for rural living Latino/Hispanic populations (Turner, 2014).
- American agriculture and surrounding rural communities have seen increasing integration from Latino and Hispanic populations (Turner, 2014).
- Increasing Hispanic population in rural areas is attributed to the increasing need for low-wage labor in the natural resource sector (Sandoval, 2020).



Findings

- **Overlooked and undervalued**
 - Participants felt their contributions to their rural communities were overlooked and undervalued by most.
 - *"There are many hard-working people. And the güeros(whites) they take advantage of that they are working people."*
 - *"I have never been out of work in the United States. Yes, it has always been hard work."*
- **"It's [leadership] not for me"**
 - Participants had an awareness of the need for representation in local leadership but were skeptical of systems.
 - *"Nothing (in leadership) will change until those in power step aside and give others opportunity."*
 - *"It is a Republican state."*
- **Lived experiences of racism**
 - Most participants shared many examples of their own personal experiences with racism and microaggressions within their rural communities.
 - *"Oh, you speak English?, There's work for you"*
 - *"They say they are not racist, the güeros, but they are."*
- **This community is my home**
 - Participants were appreciative of opportunities and quality of life in their community.
 - *"Community is very friendly another thing I liked about Oklahoma" (in comparison to other state have lived in)*
 - *"This community really rallies for their own."*
- **Setting the record straight**
 - Participants wanted to be sure that stereotypes and misconceptions about the Hispanic community in their area were addressed and corrected.
 - *"I was never receiving aid from the government. There has always been work."*
- **There is no present or future**
 - Participants were concerned about the future vitality of their rural community.
 - *"Land of close to zero opportunities."*
 - *"May there be more here, may it grow a little more, may there be more things, especially more jobs as well."*

Methods

- Nine (9) qualitative personal interviews with Hispanic members of Greer, Harmon, Jackson and Tillman counties.
- Participants were purposively selected through various recruitment efforts: a) networking with the local county Extension office, b) attending local churches, and c) community volunteer efforts.
- Data were collected and transcribed in Spanish to maintain the voice of participants (Halai, 2007), then translated to English and verified for accuracy before coding. Transcription incorporated all words with notes of volume, tone, and speech.
- Transcriptions were in-vivo coded to categorize data, followed by thematic analysis to generate emergent themes (Saldaña, 2021).

Conclusions & Recommendations

- There is a commonality in social, economical, and educational challenges affecting Hispanic rural residents in Southwest Oklahoma.
- Research related to the rural narrative of Hispanic community members should be shared with leaders and decision-makers to inform more equitable, representative, and empowering leadership.



The Rural Narrative of Minority Populations

Karen Kotey and Shane Robinson
Oklahoma State University

Methodology

- The study employed a convergent parallel, mixed methods design (Creswell, 2012)
- Data collection occurred from June 7, 2023 to July 30, 2023.
- Qualitative interviews with 32 community members
- Survey consisting of Livert’s (1932) sense of belonging scale
- Survey data were analyzed using descriptive statistics
- 239 Respondents
- Reasons for their migration into Hollis, their level of community involvement etc.

Emerging Themes

Theme 1: Social Interaction

“Sometimes I feel the opinions of the black community is sidelined. I wish my opinions would be heard and valued in this community.”

Although community members find solace and connection in places of worship, there is a collective yearning for more avenues for social interaction.

Theme 2: Safety

“I feel safe living in Hollis, yet the growing crime rates bothers me a little bit.”

201 respondents felt a sense of belonging living in their community, yet a huge fraction of this number felt their opinions are undervalued.

Findings

Minority populations move to the County for its agricultural landscape. Some people are attracted to the natural beauty and slower pace of life in Hollis while others moved for job opportunities, and to escape urban congestion and high living costs in urban areas and their hometowns. White population are mostly retirees seeking a peaceful retirement, while in other cases, they are young families seeking a safer environment to raise their children.

A substantial number of respondents strongly agree that there are barriers limiting minority participation in leadership positions, and political participation. The findings revealed that community members have strong support for initiatives aimed at increasing minority participation in leadership positions.

Consensus exists among respondents that policies promoting inclusion and integration of minority populations are important for rural communities, particularly in the county featured in this study.

Introduction

Migration to rural communities has been a significant trend in the United States over the past few decades (Litcher, 2012). However, little research has been conducted on the experiences, perceptions, and challenges of minority populations who migrate to rural areas, particularly in the state of Oklahoma. This indicates that these individuals may face various challenges that may be overlooked. One study by DeCroix (1991) found that Latino and African American migrants in rural Oklahoma experienced social isolation, discrimination, and limited access to healthcare, education, and other services. Another study by Showlter et al. (2017) found that rural communities in Oklahoma often lack the infrastructure and resources needed to support minority populations, such as bilingual education programs, affordable housing, and public transportation.

This issue is important because understanding the experiences of minority populations in rural areas can help policymakers and community leaders develop more effective policies and strategies to improve the well-being of these communities. This gap in knowledge is especially relevant in Harmon County Oklahoma, where rural communities have experienced significant demographic shifts (with a high influx of Hispanic and Black American populations) in recent years. Hence, research is needed to be done, to fully understand these challenges and to develop effective strategies for supporting minority populations in rural communities.

Objective

The purpose of the study was to . . .

- 1.Describe the perceptions of why minority populations choose to live in their rural community.
- 2.Identify barriers that prevent minority populations from engaging in leadership positions and community activities.

Table 1. Sense of Belonging Scale	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
I'm glad to live in this community	20 (8.36%)	0 (0.0%)	18 (7.53%)	16 (6.69%)	12 (5.02%)	65 (27.21%)	108 (45.19%)
I am unhappy living in this community	38 (15.90%)	80 (33.47%)	9 (3.77%)	13 (7.95%)	30 (12.55%)	4 (1.67%)	48 (20.08%)
I feel lucky to be a member of this community	6 (2.51%)	9 (3.76%)	12 (5.02%)	32 (13.39%)	24 (10.04%)	69 (28.87%)	87 (36.40%)
If I had the chance, I would choose to move to another community	19 (7.95%)	39 (16.32%)	29 (12.13%)	39 (16.32%)	6 (2.51%)	44 (18.41%)	50 (20.92%)
Members of the community take my opinions seriously	24 (10.04%)	98 (41.00%)	55 (23.01%)	0 (0.0%)	6 (2.51%)	24 (10.04%)	32 (13.39%)
I feel safe when I am in this community	6 (2.51%)	6 (2.51%)	9 (3.77%)	25 (10.46%)	57 (23.85%)	64 (26.79%)	72 (30.13%)
I can really be myself in this community	0 (0.0%)	13 (5.43%)	15 (6.28%)	19 (7.95%)	31 (12.97%)	77 (32.22%)	84 (35.15%)
I am included in a lot activities in this community	19 (7.95%)	21 (8.79%)	6 (2.51%)	55 (23.01%)	6 (2.51%)	51 (21.34%)	62 (25.94%)
I feel like a valued member in this community	6 (2.51%)	27 (11.30%)	8 (3.35%)	36 (15.06%)	0 (0.0%)	67 (28.03%)	79 (33.05%)

Conclusions & Recommendations

- Build partnerships with local organizations and stakeholders, including businesses, non-profits, and community leaders (Phillips and Pittman, 2008)
- Develop initiatives to attract and retain diverse
- Invest in infrastructure and amenities that can make rural areas more appealing to a diverse range of residents (Lubka, 2001).

References

- Creswell, J. W. (2012). Research design: Qualitative, quantitative, and mixed methods approaches. SAGE.
- DeCroix Bane, S. (1991). Rural minority populations. *Generations: Journal of the American Society on Aging*, 15(4), 63–65.
- Lichter, D. T. (2012). Immigration and the new racial diversity in rural America. *Rural sociology*, 77(1), 3–35.
- Lubka, L. (2001). Housing in Rural America: Building affordable and Inclusive Communities. American Planning Association. *Journal of the American Planning Association*, 67(1), 118.
- Phillips, R., & Pittman, R. (2008). An introduction to community development. Routledge.

Stakeholder Perceptions of Drought Impacts in Southwest Oklahoma

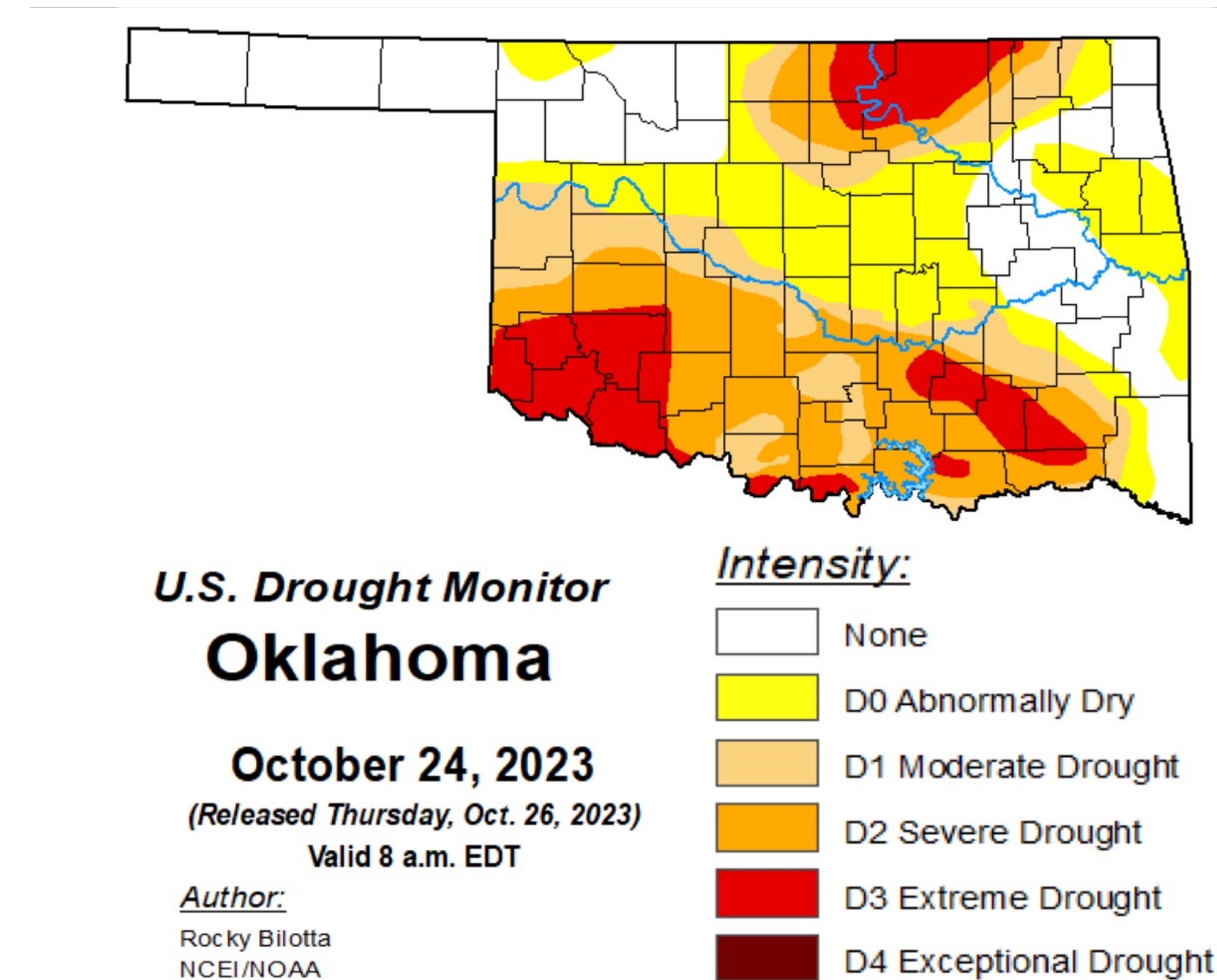
John Clemmons, Hoyt Nebgen, Dr. Dayton Lambert, Dr. Tyson Ochsner
Oklahoma State University

BACKGROUND

Dust Bowl visions persist throughout the generations of farmers in Southwestern Oklahoma. A century of agriculture in a semi-arid environment forged its people into resourceful stewards of thousands of acres of wheat, cotton, and cattle. This region's climate, amongst others, is predicted to become more hot and dry in the 21st century (Dixon et al., 2020), a long-term challenge to a largely agriculture-based economy. Understanding how residents perceive and adapt to their environment, and what forms of resiliency they develop, are crucial to better meet their current and future needs.

OBJECTIVES

- **Assess the short and long-term challenges caused by drought in the region's communities.**
- **Identify the direct and indirect economic impacts of drought.**
- **Identify methods of drought resiliency that residents pursue or value.**



METHODS

Prior to the start of the study, extension educators and project partners in the area provided an initial number of stakeholder contacts as candidates for interviews. Using the snowball method, additional contacts were made from the initial group. Beginning late May through July 2023, 21 semi-structured interviews were conducted with willing participants to understand their perspectives on drought, its impacts on their communities, and the region's economy. Interview audio was recorded to ensure accuracy.

Qualitative analysis was conducted through MAXQDA coding and by grouping together statements made by participants that are of similar nature, allowing for the analysis of common themes and views held.

RESULTS

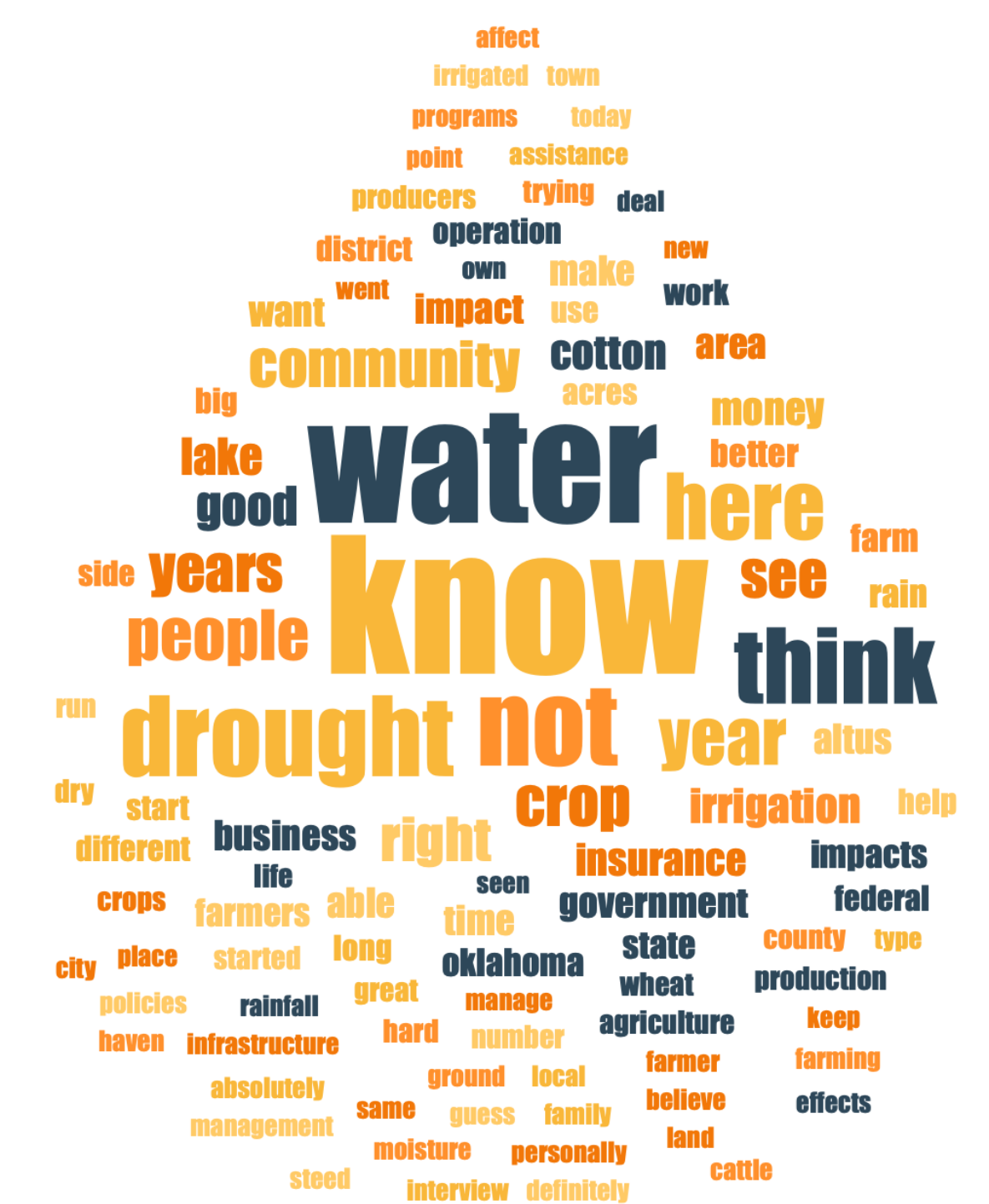
Some notable themes:

- **Bottom-Up Drought Economics:** Drought directly affects agricultural producers, but damages are felt all the way up the local supply chain, hitting everyone's pocket.
- **Drought Dread:** An atmosphere of uncertainty hangs low in communities during extended drought.
- **Gaps in the Support:** While farmers can access insurance, gins and co-ops receive little aid, despite their dependence on the seasonal crop.
- **Farm Methods Evolve:** Within the last two decades, farms have rapidly moved to no-till and drip irrigation to conserve every drop of water.
- **Where to Invest:** Water infrastructure improvements are paramount, but differing perspectives emerge about how:
1) Make distribution more efficient by lining irrigation ditches, replacing piping, Altus-Lugert Dam repair; easier to approve and cheaper.
2) Build additional reservoirs to capture more water; future-proofing but expensive.

“Just about every Sunday, it's 'Pray for rain.'”
– Interviewee

CONCLUSION

Although the interviews indicate a growing sense of uncertainty about the future of the region's climate, nearly all participants were steadfast in their belief of their community to adapt. Developing both structural and mental resiliency to climate stress is key for the survival of these communities, and for many others like them.



REFERENCES

- Bauman, A. C. Goemans, J. Pritchett, D. Thilmany McFadden. 2013. Estimating the Economic and Social Impacts from the Drought in Southern Colorado. *Journal of Contemporary Water Research & Education*, 151:61-69.
- Dixon, K. W., A. M. Wootten, M. J. Nath, J. Lanzante, D. J. Adams-Smith, C. E. Whitlock, C. F. Gaitán, and R. A. McPherson. (2020). South Central Climate Projections Evaluation Project (C-PrEP). South Central Climate Adaptation Science Center. Norman, Oklahoma, USA. <https://doi.org/10.21429/12gk-dh47>
- Nicole M. Colston, Jacqueline M. Vadjunec & Todd Fagin (2019). It is Always Dry Here: Examining Perceptions about Drought and Climate Change in the Southern High Plains, *Environmental Communication*, 13:7, 958-974, DOI: 10.1080/17524032.2018.1536071

Use of Soil Moisture Data in Agricultural Water Management: Perceptions from Producers



RURAL RENEWAL
INITIATIVE

Hoyt Nebgen, B.S.¹, Tyson Ochsner, Ph.D.², Audrey King, Ph.D.³, Paul Weckler, Ph.D.⁴

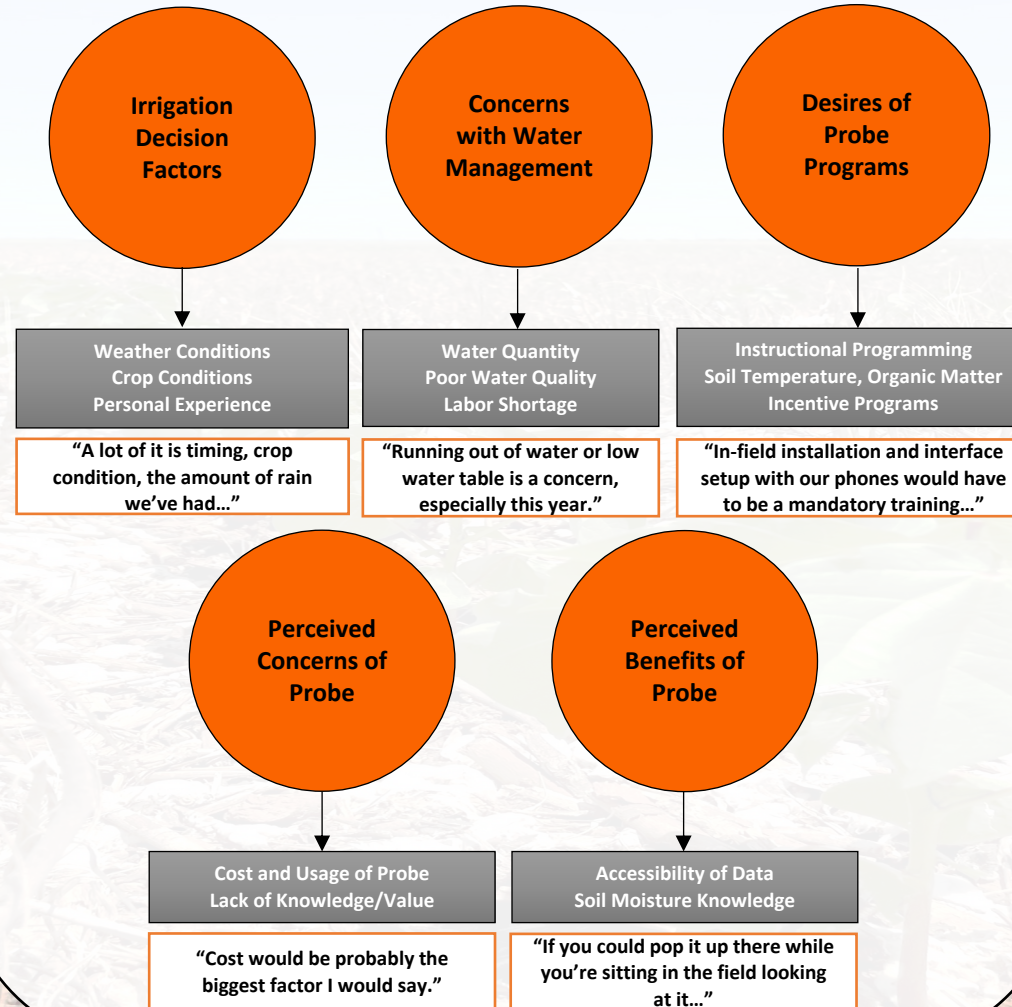
Introduction

Resiliency is an attribute that producers in Southwest Oklahoma have become familiar with. The annual rainfall in the past few years has fallen to around 25 inches/year (OCS), creating a multitude of challenges for those in the agricultural industry. Technological changes have given producers the opportunity to have vital information about their operations, including soil moisture measurements. Only 5% of producers mentioned utilizing these methods in the 2018 USDA Survey (Mehata & Taghvaeian, 2020). Making decisions around this data can reduce water usage up to 38% relative to traditionally-based decisions (Datta & Taghvaeian, 2023). However, there is a gap in existing literature defining producers' real experiences integrating and utilizing these soil moisture probes. The purpose of this study is to understand opinions, concerns, and ideas regarding water management practices among agriculturalists in Southwest Oklahoma.

Methods

Semi-structured interviews were conducted with producers in Southwest Oklahoma in 2020 and 2021. Nine total individuals from Tillman County and Harmon County were interviewed face-to-face. The interviews were recorded, transcribed verbatim, and made anonymous. The transcripts were analyzed on a thematic approach.

Themes and Results



Discussion and Conclusion

Participants often recognized the low quantity of water available in reference to the "exceptional drought" the region has been in for the past decade (NOAA US Drought Monitor, 2022). Responses to expected benefits of utilizing the probe capabilities varied from "We're all for anything that would save our water," to "I don't know if it would help, to be honest with you." Participants acknowledged the benefits that soil moisture probes can offer their operations, but more often noted their concerns with the probes and water management practices in general.

Producers in Southwest Oklahoma have and will continue to face adversity through the water management spectrum. Although technological advances have been developed to aid in guiding these decisions, producers seem skeptical about fully integrating them into their operations.

Recommendations

- Connect gap of perceptions and quantitative soil moisture probe readings.
- Utilize alternative soil moisture measurement systems in future perception analysis.

I acknowledge the support from the Rural Scholars Program of the Rural Renewal Initiative, as well as Ali Meek, Luke Muller, and Gabby Barber – former scholars who collected the data.



SCAN ME