# Examining Regional Differences in the Arkansas Early Care and Education Workforce

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## Introduction

High-quality early care and education (ECE) facilitates young children's cognitive development and social-emotional learning, which, in turn, prepare them for success later in life. Parents depend on high-quality ECE to support their children's development in a safe environment, making it possible for them to earn an income to support their families. As such, the ECE workforce is critically important to young children and their families.

The quality of care children receive is affected not only by the education and training of the ECE workforce, but also by its emotional and financial well-being (Whitebook, et al., 2018; Smith & Lawrence, 2019). Research suggests that many ECE teachers and caregivers in the United States face economic distress and lack workplace supports that facilitate effective teaching (e.g., professional development opportunities, a positive workplace environment, adequate compensation) (Whitebook, et al, 2018). While these challenges seem to affect the workforce nationwide, it is possible that experiences may vary regionally. For instance, regional differences in urbanicity, proximity to colleges and universities, and availability of workplace supports may be associated with the well-being of the ECE workforce.

To better understand whether the geographic location of the ECE workforce might be associated with variations in well-being, Child Trends examined differences in Arkansas's ECE workforce by region and by urbanicity. Measures of well-being were derived from a comprehensive statewide ECE workforce survey. For this study, Child Trends partnered with the University of Arkansas for Medical Sciences (UAMS).

The purpose of this brief is to examine specific characteristics of the ECE workforce to see whether they vary across the state of Arkansas.[1] The brief addresses two main questions:

1. Does the ECE workforce in Arkansas vary by region or by urbanicity with respect to what teachers and caregivers report about their well-being, the economic pressures they face, and their education levels?
2. What factors do stakeholders believe might contribute to variation in the characteristics of well-being, economic pressures, and education levels within the ECE workforce across Arkansas?

Several key findings emerged from this examination:

[1] Child Trends conducted a similar study that addressed the same research questions to examine regional differences in Nebraska's ECE workforce. Findings from that study can be found here https://www.childtrends.org/publications/examining-regional-differences-nebraska-early-care-and-education-workforce.

- There was significant variation by region or urbanicity on three measures of workforce well-being: teachers' and caregivers' risk of depression, their perceptions of decision-making power at their workplaces, and their likelihood of attaining an ECE credential.
- While there were not significant differences by region or urbanicity, the likelihood of teachers and caregivers holding a second job was moderately high across the state. Half of stakeholders surveyed also suggested that Arkansas ECE teachers and caregivers may underreport holding a second job, as positions like babysitting or farm work may not be considered a second job.
- Although there were not significant differences by region or urbanicity, the likelihood of teachers and caregivers experiencing food insecurity was relatively high across the state. Stakeholders identified low wages as the most likely explanation for this pattern.
- The likelihood of teachers and caregivers holding an ECE credential varied significantly by region and by urbanicity. Key stakeholders noted that access to specific universities and hiring preferences or requirements may have contributed to these geography-based differences.

# Methodology

To examine whether the well-being of the ECE workforce varied across the state of Arkansas, Child Trends employed a mixed methods approach. First, Child Trends researchers analyzed survey data from the 2017 Arkansas Workforce Study.[2] As part of the Workforce Study, the University of Arkansas for Medical Sciences (UAMS) administered a survey to current and recent ECE teachers and caregivers[3] to better understand the issues affecting the state's ECE workforce, and to ascertain the resources, supports, and training the workforce may need to effectively do their jobs.

Arkansas minimum licensing requirements state that ECE administrators and staff who provide direct care to children must be registered with the Division of Child Care and Early Childhood Education Professional Development Registry system. Arkansas ECE teachers and caregivers were asked to participate in the Arkansas ECE Workforce Survey if they had completed a professional development training via the Professional Development Registry within the prior six months, had an email address on file, and were not identified as trainers within the system. In total, 1,270 participants who were employed in the field at the time of administration completed the survey.[4] Using workforce population estimates provided by UAMS, the sample represents roughly 8 percent of ECE staff in Arkansas (McKelvey, et al., 2018, p.9).

Using data from the Arkansas ECE Workforce Survey, Child Trends analyzed and mapped well-being findings onto different geographic regions (see Figure 1) to examine whether workforce experiences varied across the state. Child Trends also interviewed stakeholders to learn more about the ECE landscape in Arkansas and better understand the findings related to geographic variation in ECE workforce experiences.

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[2] For a summary of study methodology and findings, see McKelvey, L., Forsman, A., Morrison-Ward, J. (2018). *Arkansas workforce study: Instructional staff in child care and early childhood education, 2017*. Little Rock, AR: University of Arkansas for Medical Sciences; Retrieved from https://familymedicine.uams.edu/wp-content/uploads/sites/57/2018/04/Staff-Workforce-Study-Report_FINAL.pdf

[3] The Arkansas Workforce Study refers to these survey respondents as instructional staff, which includes lead and assistant teachers within center-based or family child care home settings.

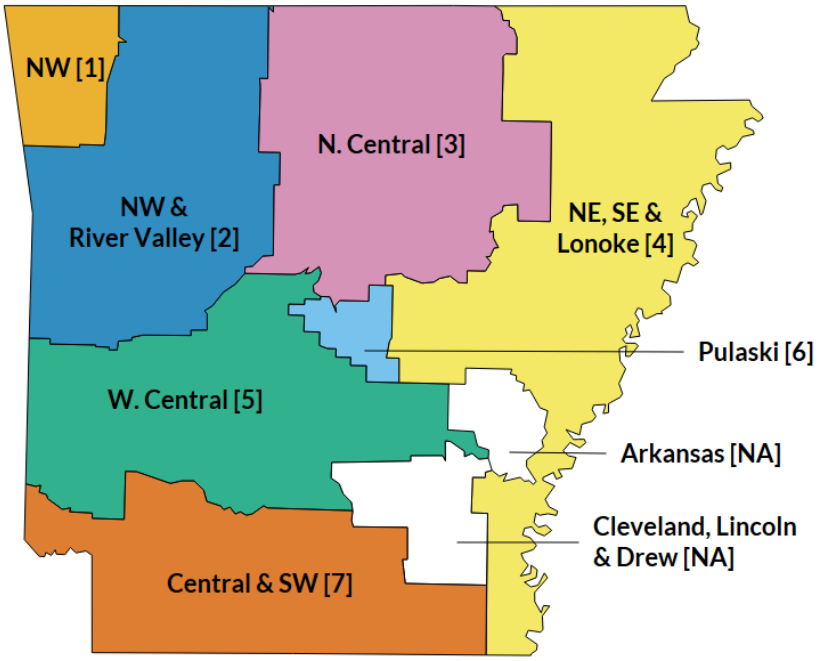
[4] The Arkansas ECE Workforce Survey also included respondents who were no longer employed in the ECE field, but their responses were not analyzed in the current study.

## Study sample

Child Trends partnered with researchers at UAMS to divide Arkansas into geographic regions meaningful to the ECE field. UAMS recommended using Child Care Resource and Referral (CCR&R) regions, as they existed at the time of survey administration, to define analysis regions.[5] CCR&R regions are geographic hubs that (1) provide training and technical support to teachers and caregivers, and (2) help families learn about and search for child care in their area. As such, the CCR&R regions provide a geographic grouping of members of the ECE workforce who may receive similar training and technical supports. A few minor modifications were made to the list of CCR&R regions to ensure each region was meaningfully differentiated. Appendix A details how the final analysis regions in this study differ from CCR&R regions in Arkansas.

Figure 1 reflects the analysis regions defined in partnership with UAMS, and Table 1 indicates the number of survey respondents in each region. As several regions are similarly named, the regions are also numbered from 1 to 7 for easier reference. Note that there are four counties missing from the analysis regions. Cleveland, Lincoln, and Drew counties were not included in this analysis because their region constituted a response sample size that was too small (n=11) to elicit meaningful comparisons. Additionally, UAMS noted that survey respondents over-identified Arkansas County as their home region, as the sample size was larger than the expected ECE workforce size given the population of that county. As it was not possible to decipher which respondents correctly identified Arkansas County as their home region, responses from Arkansas County were also removed from the analysis.

**Figure 1.** Arkansas ECE Workforce Survey analysis regions




Source: Authors' defined analysis regions

[5] Child Care Aware of Arkansas revised the names and geographic grouping of CCR&R regions since UAMS administered the Arkansas ECE workforce survey. For information on how the regions are currently organized, visit http://ar.childcareaware.org/.

**Table 1.** Arkansas ECE Workforce Survey analysis regions and sample size

| # | Name | Abbreviation | Survey Sample |
|---|---|---|---|
| 1 | Northwest | NW | n=187 |
| 2 | Northwest Arkansas and River Valley | NW AR & River Valley | n=122 |
| 3 | Northcentral Arkansas | N. Central AR | n=131 |
| 4 | Northeast Arkansas, Southeast Arkansas, and Lonoke County | NE, SE, & Lonoke | |
| 5 | West Central Arkansas | W. Central AR | n=115 |
| 6 | Pulaski County | Pulaski | n=128 |
| 7 | Central Arkansas and Southwest Arkansas | Central & SW AR | n=71 |
| NA | Arkansas County | Arkansas | n=0 |
| NA | Cleveland, Lincoln, and Drew Counties | Cleveland, Lincoln & Drew | n=0 |

*Source*. Arkansas ECE Workforce Survey
*Note*. The sample size reflects the number of respondents in each region who provided information on their age, the child age group served in their primary classroom, and their ECE program's funding source.

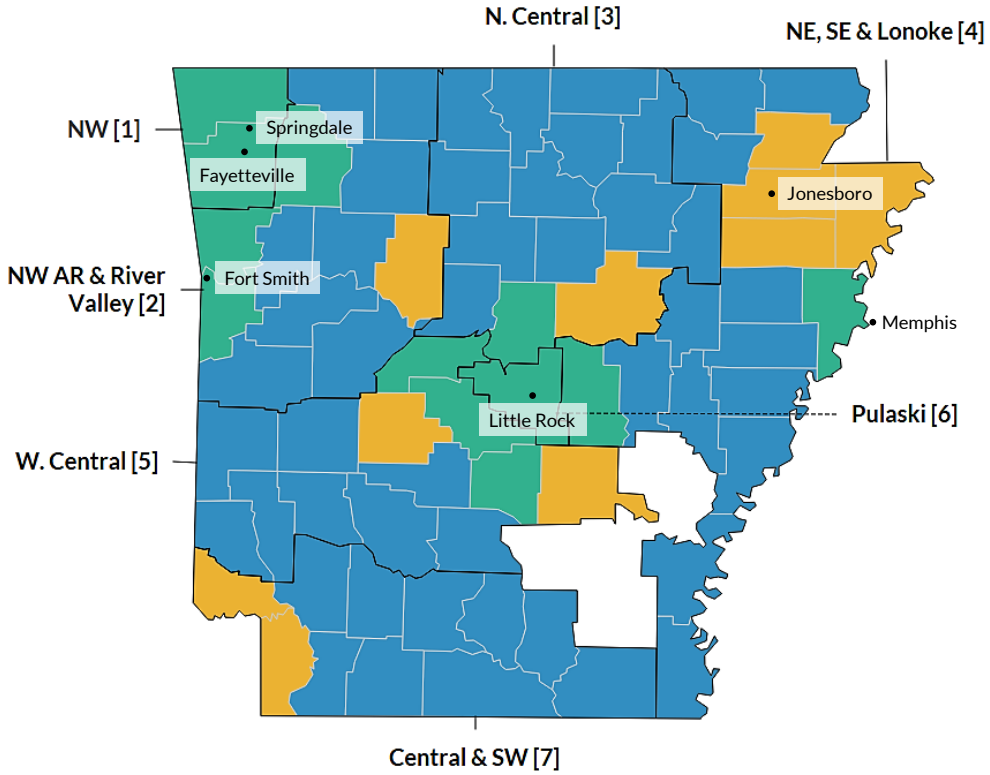
## Urbanicity

The level of urbanicity within each region, and how it differs across the state, is another important variable when examining regional variation in ECE workforce experiences. Past research suggests that the availability of ECE, as well as professional development and training opportunities for ECE staff, is more limited in rural communities than in urban areas (Malik et al., 2016; Williams & Mann, 2011). To better understand the urbanicity of Arkansas, Child Trends used rural-urban continuum codes from the United States Department of Agriculture Economic Research Service (USDA ERS; 2019) to classify counties by their level of urbanicity. The rural-urban continuum codes organize all United States counties into nine categories of urbanicity that consider both the total county population and adjacency to metropolitan areas. Using these codes, Child Trends classified counties as urban, suburban, and rural. Urban counties are identified as those with 250,000 or more residents in metropolitan areas (continuum codes 1 and 2), suburban counties as those with 20,000 to 250,000 residents in or adjacent to metropolitan areas (continuum codes 3 and 4), and rural counties as those with a population of less than 19,999 residents in nonmetropolitan areas (continuum codes 5 through 9).

As shown in Figure 2, most Arkansas counties are classified as rural. Little Rock, in the center of the state, serves as a primary metropolitan region for Arkansas. The northeastern corner of Arkansas features the city of Jonesboro and offers close proximity to Memphis, Tennessee. The Northwest corner of Arkansas includes the Fayetteville-Springdale-Rogers and Fort Smith metropolitan areas, bordering the states of Missouri and Oklahoma.

When examining the urbanicity of the regions identified for this study, the Northwest (1) and Pulaski County (6) regions are entirely urban. While the other regions in the state contain some suburban and urban counties, they can be considered predominantly rural.

**Figure 2.** Urbanicity of Arkansas counties, by analysis region




*Source.* Authors' analysis of USDA ERS rural-urban continuum codes; 2010 US Census

# Measures

For the purposes of this study, Child Trends used measures from the Arkansas ECE Workforce Survey to examine teachers' and caregivers' self-reported well-being, economic pressures, and educational attainment.

## Teacher and caregiver well-being

The Arkansas ECE Workforce Survey included the **Patient Health Questionaire-2** (**PHQ-2**; Kroenke et al., 2003) to identify teachers' and caregivers' self-reported **depressive symptoms**. Respondents answered, on a scale of 0 (*not at all*) to 3 (*nearly every day*), two questions about the frequency with which they experienced certain feelings (i.e., having little interest or pleasure in doing things; feeling down, depressed, or hopeless) in the two weeks prior to completing the survey. Respondents' answers are summed on a scale of zero to six, with higher scores indicating greater frequency of depressive symptoms. While the tool's authors developed a cut point score of three or higher to identify respondents at risk for depressive disorders, this study instead uses a cut point score of two or higher. The use of a lower score threshold increases the tool's sensitivity to include respondents who *may* have depression, but also decreases its specificity. The two-point threshold score is used by other research, including previous Arkansas ECE Workforce Survey analyses conducted by UAMS.

The survey also included 18 items from the **Early Childhood Work Environment Survey – Short Form** (**ECWES**; Bloom, 2010). The ECWES asks respondents to rate their level of agreement, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with statements about their physical and social workplace environment. A higher score indicates that respondents hold a more positive perception of their workplace

climate. The items are then grouped into 10 dimensions that constitute **a high-quality ECE organizational climate**, including collegiality, professional development, supervisor support, clarity, reward system, decision-making influence, goal consensus, task orientation, physical setting, and innovativeness.

Although the ECWES has 10 defined dimensions, the UAMS research team used a factor analysis to group the 18 items into 10 dimensions that varied slightly from the ECWES dimensions. To better match previous analyses of the Arkansas ECE Workforce Survey, Child Trends analyzed the dimensions as defined by UAMS. A full list of ECWES items and the UAMS-defined dimensions is available upon request.

## Economic pressures

To examine respondents' economic pressures, Child Trends analyzed two survey questions from the Arkansas ECE Workforce Survey. First, the survey asked respondents to report whether they held another paying job in addition to their surveyed ECE position. Respondents were able to identify whether they had a **second job** (i.e., yes/no). Child Trends used the presence of a second job as an indicator of economic pressure on the workforce respondent.

To identify respondents' level of **food insecurity**, the Arkansas ECE Workforce Survey included two questions from the **Household Food Security Survey Module** from the Current Population Survey (CPS; USDA ERS, 2012). Respondents identified the extent to which two statements applied to their lives (i.e., never true, sometimes true, often true) over the previous 12 months: (1) "The food that you bought just didn't last and you didn't have money to get more"; and (2) "You or others in your household cut the size of your meals or skipped meals because there wasn't enough money for food." Child Trends created a food insecurity variable that indicated whether the respondent found either or both statements to be sometimes true or often true.

## Education level

The Arkansas ECE Workforce Survey asked respondents to identify their **highest level of education** through a closed-response question. Possible answers included (a) high school, but no diploma; (b) high school diploma or General Education Development (GED); (c) some college courses, but not a degree; (d) associate degree related to education, early childhood, child development, or human services; (e) bachelor's degree related to education, early childhood, child development, or human services; (f) Master's degree related to education, early childhood, child development, or human services; (g) doctoral degree related to education, early childhood, child development, or human services; or (h) college degree, unrelated field.

Child Trends recoded responses into three dichotomous (i.e., yes, no) responses: (1) whether the respondent had any college degree, regardless of major; (2) whether the respondent had an associate or higher post-secondary degree in an ECE-related field; and (3) whether the respondent had a bachelor's or higher post-secondary degree in an ECE-related field.

Respondents to the Arkansas ECE Workforce Survey also identified whether they held an Arkansas Birth through Prekindergarten Teaching Credential and whether they held a Child Development Associate (CDA) certificate (i.e., yes, no).[6] Child Trends created a dichotomous measure indicating whether each respondent had either the **state credential and/or the CDA** (i.e., yes, no).

[6] The Arkansas Birth though Prekindergarten Teaching Credential is a state credential that signifies specialized knowledge in the ECE field. Through a variety of educational pathways, certified individuals complete specific credit hours focused on core teaching competencies and pass the National Occupational Competency Testing Institute's (NOCTI) ECE assessment test. The credential is maintained through 30 hours of annual professional development and renewed every five years. For more information, visit: https://humanservices.arkansas.gov/about-dhs/dccece/programs-services/services-details.

## Quantitative analyses

To determine whether workforce outcomes varied by region in Arkansas, Child Trends conducted a series of regression analyses that predicted respondents' workforce outcomes by analysis region. Each regression model controlled for respondent age, the child age group served in the respondent's primary classroom, and the funding source of the respondent's ECE program. Program funding was defined as whether the program receives state or federal funding from programs such as Arkansas Better Beginnings or Head Start. All controls were derived from survey responses. Analytic samples for each model did not include respondents with missing data on control variables or the outcomes of interest.

ECE workforce outcomes measured on a continuous scale (e.g., ECWES subscale measured on a scale of 1 to 5) were analyzed using analysis of covariance (ANCOVA). From each model, Child Trends estimated the adjusted mean score for each region in the state—that is, the average predicted outcome score in each region while holding the controls constant across all respondents. For models in which region was significantly associated with the workforce outcome, Child Trends conducted pairwise comparisons to determine whether the adjusted mean scores were significantly different by region.

When the workforce outcome was measured with a dichotomous variable (e.g., a yes or no response for whether the respondent held an associate or higher post-secondary degree), Child Trends conducted logistic regressions. From each model, the average probability of respondents providing an affirmative response was predicted for each region while holding the controls constant across all respondents. For models in which region was significantly associated with the workforce outcome, Child Trends conducted pairwise comparisons to determine which regions had significantly different predicted probabilities of an affirmative outcome.

Understanding that the urbanicity of respondents' home counties may play a key role in geographic differences in ECE workforce experiences, Child Trends also conducted regression analyses that predicted respondents' workforce outcomes by county urbanicity (as defined in Figure 2). These analyses used the same workforce outcomes and controls as the regional analyses, but instead tested whether workforce outcomes were significantly different by urbanicity. As county urbanicity is not grouped by geographically similar locations, predicted probabilities and adjusted mean scores are reported on a graph rather than a map.

All regression models were exploratory and conducted on relatively small samples. As such, Child Trends used a significance threshold of $p < 0.10$ and did not include a correction method (e.g., Bonferroni, Tukey) for comparisons of adjusted means or predicted probabilities. While a correction method may adjust for Type I error (i.e., false positive significance), it may also overcorrect and obscure significant findings (Perneger, 1998). Future research with a large sample is needed to confirm the differences found in this study.

For all analyses, estimates reflect regions' *average* workforce outcome, which can obscure differences between individual respondents. Reporting one mean probability or adjusted mean score for each region or urbanicity setting may mask individuals who have particularly positive or negative workforce outcomes.

## Qualitative data and analyses

To supplement the quantitative findings obtained through the Early Childhood Workforce Survey, Child Trends collected qualitative data through stakeholder interviews. Child Trends worked with research partners at UAMS to identify stakeholders with a robust knowledge of Arkansas's ECE workforce. While Child Trends did not interview stakeholders from each region, research partners from UAMS identified stakeholders who could provide a statewide perspective. Stakeholders included independent consultants,

staff members for a statewide ECE professional development initiative, and a government employee familiar with the landscape of the ECE workforce in Arkansas.

Five stakeholders participated in one-hour interviews. During the interviews, Child Trends researchers asked stakeholders open-ended questions about findings from the mapping analysis to better understand and interpret the quantitative findings. The stakeholders' responses helped reveal contextual factors that may have contributed to the findings. For instance, interview questions included:

1. We found a significant difference on the decision-making dimension of the ECWES, which asks teachers to respond about how much they feel that they can make decisions about things that directly affect them. We found that the adjusted mean score for teachers in suburban counties were significantly higher than the adjusted mean score for teachers in urban counties. Can you think of any reasons why teachers in suburban settings might feel more of a sense of autonomy than teachers in urban settings in Arkansas?
2. We did not find significant differences by region of the likelihood of respondents to hold degrees in ECE, or to hold any post-secondary degree, regardless of major. Why do you think that may be?

Child Trends developed a set of codes to represent common themes from the interviews. These codes were applied to relevant sections of interview transcriptions using qualitative coding software called Dedoose.[7] Child Trends reviewed the applications of the codes to ensure that they were applied correctly, and any discrepancies or disagreements were resolved to agree on a final code. Finally, Child Trends analyzed the codes to identify patterns across the stakeholder interviews.

# Findings

## Teacher and caregiver well-being

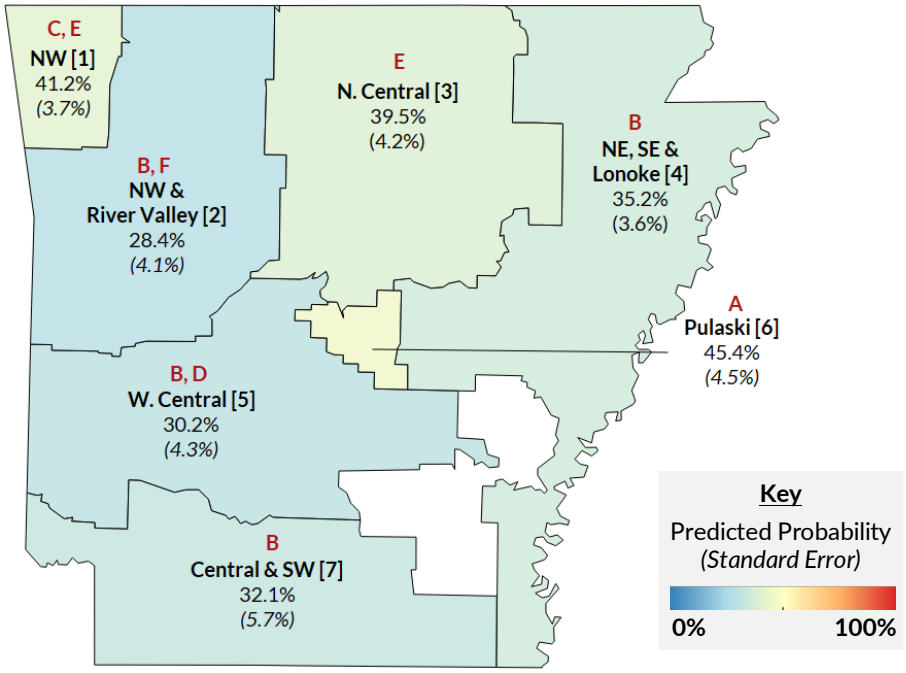
### Personal well-being

In 2017, the year in which UAMS administered the Arkansas ECE Workforce Survey, roughly 7 percent of adults ages 18 and older in the United States experienced a major depressive episode (National Institute of Mental Health, 2017). Research has found rates of depression to be higher among ECE providers than among the general population (Smith & Lawrence, 2019).

**Regional differences were found in teachers' and caregivers' risk for depression.** Figure 3 reports the predicted probability of respondents in each region scoring two or higher on the PHQ-2, which suggests that individuals may be at risk for depression. The color scale for this figure progresses from blue to yellow to orange, with blue representing a 0 percent predicted probability and orange representing a 100 percent probability of being at risk for depression, as measured by the PHQ-2.

[7] Dedoose is a web-based application that can be found at: https://www.dedoose.com/

**Figure 3.** Predicted probability of ECE teachers and caregivers being at risk for depression, by analysis region




*Source*. Arkansas ECE Workforce Survey
*Notes*. Regions denoted with an A have a significantly higher estimate than regions denoted with a B. Regions denoted with a C have a significantly higher estimate than regions denoted with a D. Regions denoted with an E have a significantly higher estimate than regions denoted with an F.

Pairwise comparisons of the predicted probability in each region revealed a few significant differences, including:

- Teachers and caregivers in the Pulaski County region (6; denoted with an A in Figure 3) were **more likely** to score as being at risk for depression than teachers and caregivers in Northwest Arkansas and River Valley (2); Northeast Arkansas, Southeast Arkansas, and Lonoke County (4); West Central Arkansas (5); and Central Arkansas and Southwest Arkansas (7) regions (denoted with a B in Figure 3).
- Teachers and caregivers in the Northwest region (1; denoted with a C in Figure 3) were **more likely** to score as being at risk for depression than teachers and caregivers in the West Central Arkansas region (5; denoted with a D in Figure 3).
- Teachers and caregivers in the Northwest (1) and Northcentral Arkansas (3) regions (denoted with an E in Figure 3) were **more likely** to score as being at risk for depression than teachers and caregivers in the Northwest Arkansas and River Valley region (2; denoted with an F in Figure 3).

In total, these comparisons suggest that the ECE workforce in Pulaski County (6), Northwest (1), and Northcentral Arkansas (3) regions may be at greater risk for depression as reported by the PHQ-2 scale, compared to at least some portion of the rest of the state.

**There were no significant differences when examining the risk for depression by county urbanicity.** This is true even though the workforces in Pulaski County (6) and Northwest (1) regions, which are comprised entirely of urban counties, were more likely to be at risk for depression than the workforces in other regions.

## Workplace well-being

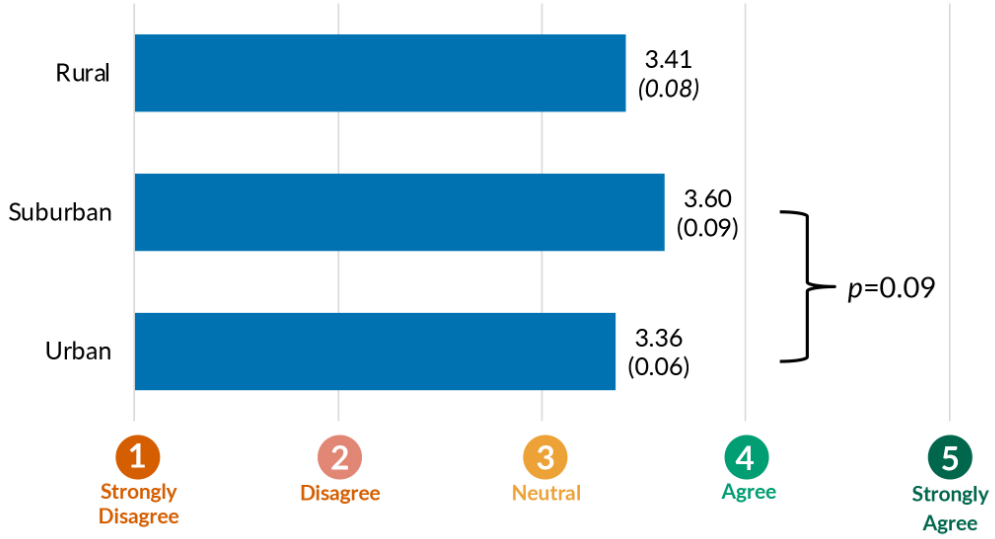
**No significant regional differences were found when examining perceptions of the quality of the ECE workplace environment; however, there were significant differences between urbanicity related to perceptions of decision making.**

Child Trends conducted regression analyses on all 10 dimensions of the ECWES, which examine perceptions of the ECE workplace environment. The dimensions examine perceptions of workplace collegiality, professional development, supervisor support, clarity, reward systems, decision-making influence, goal consensus, task orientation, physical setting, and innovativeness (more information on the ECWES domains is available upon request). There were no significant differences between regions for any of the adjusted mean ECWES dimension scores.

For most ECWES dimensions, adjusted mean scores also did not differ by urbanicity. However, the ECWES decision-making dimension—which asks respondents to identify the extent to which they agreed that teachers in their program were able to help make decisions about things that directly affect them in their ECE program—was significantly different by urbanicity. Figure 4 shows, on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*), the adjusted mean ECWES decision-making dimension score for rural, suburban, and urban settings.

**Figure 4.** Adjusted mean ECWES decision-making score, by urbanicity

**Teachers help make decisions about things that directly affect them.**




*Source*. Arkansas ECE Workforce Survey

The adjusted mean score among suburban respondents was significantly higher than that of urban respondents, suggesting that the latter felt they had less ability to make decisions about things that directly affect them. The differences in adjusted mean ECWES decision-making scores were not significant between rural and urban or suburban settings.

## Stakeholder perspectives on well-being

To better understand the patterns revealed by quantitative analyses, Child Trends conducted supplementary interviews with five stakeholders who are knowledgeable about Arkansas's ECE workforce. In the interviews, stakeholders identified potential reasons for regional differences and suggested additional supports to bolster well-being of the ECE workforce.

**Stakeholders believed that reported levels of depressive symptoms accurately reflect the Arkansas workforce.**

Overall, most stakeholders agreed that the relatively high levels of depressive symptoms reported in the Workforce Survey accurately represent Arkansas's ECE workforce. All stakeholders attributed higher levels of depressive symptoms to receiving low wages, and most attributed high levels to the lack of professional development, training, and supervisory supports and the lack of recognition or appreciation for teachers' and caregivers' work.

| Number of responses | Quantifying term used |
|---|---|
| 1 | One |
| 2 | Some |
| 3 | Over half |
| 4 | Most |
| 5 | All |

**Regional differences related to the impact of low wages and professional control influence the well-being of Arkansas's ECE workforce.**

Stakeholders provided further regional context for Figure 3, which shows higher levels of depressive symptoms in Northwest (1) and Pulaski County (6), explaining that, while the cost of living is higher in these regions, ECE teachers and caregivers are still paid low wages. Some stakeholders identified the low wages of teachers and caregivers in these regions as factors contributing to turnover and further negatively impacting well-being. One stakeholder explained, *"I can go to McDonald's and make more than I would working in a child care program. The turnover is also detrimental to the staff that remain … [when] turnover is higher, it creates an additional strain for those programs and staff."* When asked about additional well-being supports, some stakeholders identified the ECE workforce's need for higher wages and more professional development and training specific to early care and education (i.e., child development).

Additionally, over half of stakeholders perceived ECE teachers and caregivers in urban regions as having lower levels of professional well-being as a result of having less control over their work environment. Consistent with the above analyses, stakeholders explained that child care programs in urban regions tend to be larger, while programs in suburban or rural regions are smaller; this may allow teachers and caregivers in non-urban settings to be more involved in administrative decision making. One stakeholder explained that *"suburban and rural [areas] have smaller programs where there might just be a director and teachers, making teachers in essence sort of part of the administrative team"*—as opposed to *"urban areas, where the programs are larger, with more administrative staff who make most decisions."* Over half of stakeholders also described a need for increased well-being supports that focus on the mental health of teachers and caregivers. One stakeholder explained, *"We spend a lot of time around childhood mental health and supporting young children and their families. But making sure that speaks to teachers and caregivers, that they know they have care for themselves. I think we could continue to focus on the transformation around mental health and how to connect people to those services. Make it specifically about the caregivers."*

# Economic pressures

## Second job

Nationwide, about 5 percent of workers ages 16 and older hold multiple jobs (U.S. Bureau of Labor Statistics, 2017). In 2015, the most recent year of available data, roughly 4 percent of workers ages 16 and older in Arkansas held multiple jobs (Campolongo, 2017).

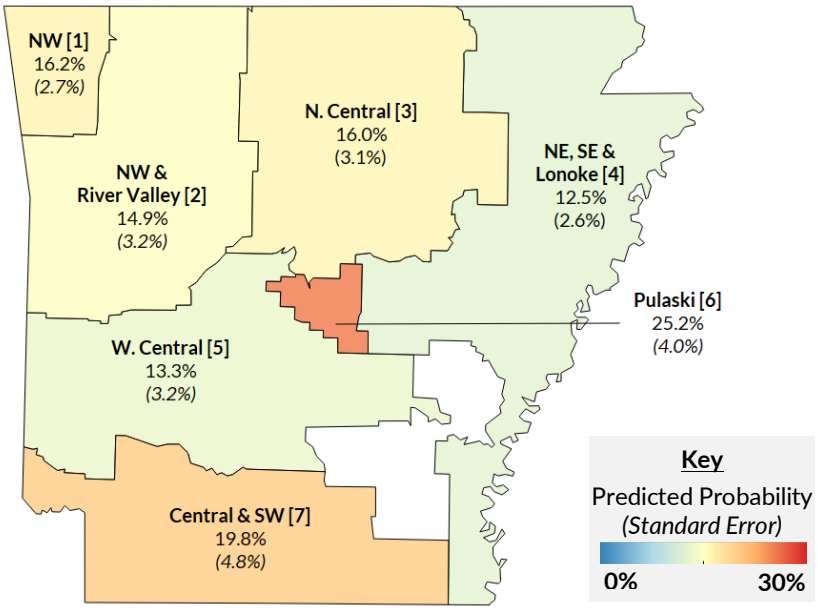
Teachers tend to hold second jobs at much higher rates than other professions. The 2015-2016 National Teacher and Principal Survey reported that about 18 percent of public elementary and secondary school teachers held a second job during the school year (Schaeffer, 2019). There is not a comparable national data set to estimate the rate for ECE teachers and caregivers, although a statewide ECE workforce survey in Nebraska identified that roughly 11 percent of home-based teachers and caregivers held second jobs, along with 18.5 percent of center-based and 20.4 percent of pre-K teachers and caregivers (Roberts, Iruka, & Sarver, 2017).

**There were no significant regional differences in the predicted probability of teachers and caregivers holding a second job.**

Figure 5 shows the predicted probability of respondents in each region holding a second job, ranging from 12.5 percent (Northeast Arkansas, Southeast Arkansas, and Lonoke County; 4) to 25.2 percent (Pulaski County; 6). The color scale on this figure progresses from blue to orange, representing an increasing probability of maintaining a second job. This figure has a color scale endpoint of 30 percent, rather than 100 percent, to provide more visual differentiation to show when regions approach a nearly a one-in-three chance of respondents holding a second job.

Results suggest that the likelihood of holding a second job for teachers and caregivers in Arkansas does not vary significantly by region. While the truncated color scale creates a dynamic color differentiation between the regions, there were not significant differences in the predicted probabilities between each region.

**Figure 5.** Predicted probability of teachers and caregivers holding a second job, by analysis region




*Source*. Arkansas ECE Workforce Survey

**There were not significant differences in the probability of holding a second job by urbanicity setting.**

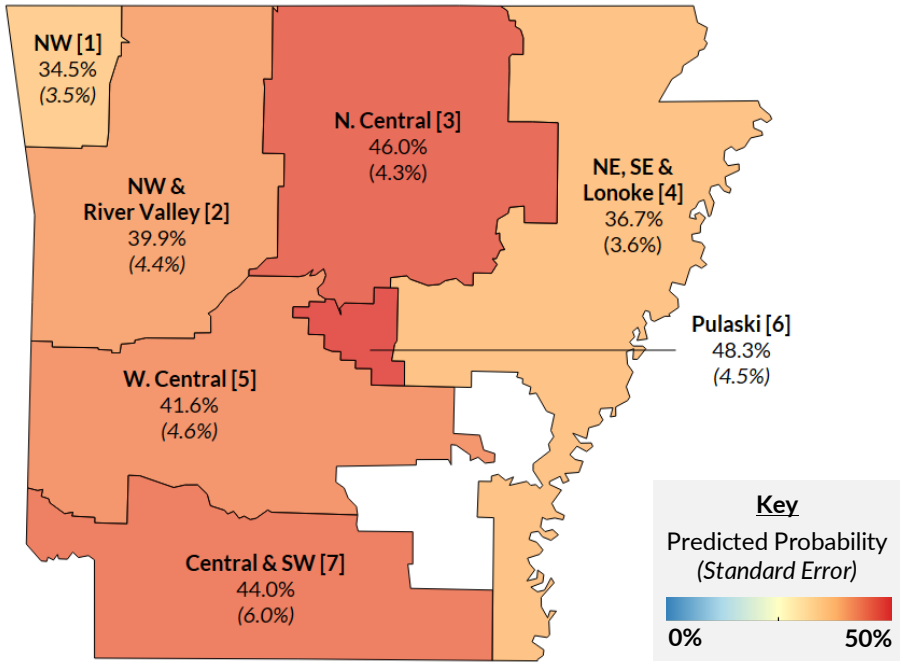
Respondents' likelihood of holding a second job was not significantly higher or lower whether they were located in an urban, suburban, or rural counties.

## Food insecurity

**There were no significant differences by region or urbanicity in the predicted probability of teachers and caregivers being food insecure.**

Figure 6 shows the predicted probability of respondents being food insecure, as defined by the food security measure. As a reminder, respondents were categorized as experiencing food insecurity if they self-reported either experiencing a food shortage or having to cut down the size of their meals because of a lack of money to get more food. The likelihood ranges from 35 to 48 percent of respondents by region. Figure 6 has a color scale endpoint of 50 percent, rather than 100 percent, to provide more visual differentiation to signify which regions have nearly a one-in-two chance of respondents being food insecure. While there are no significant differences between regions, teachers and caregivers across Arkansas had high predicted probabilities of being food insecure. Respondents' likelihood of being food insecure was also not significantly higher or lower based on the urbanicity of their home county.

**Figure 6.** Predicted probability of teachers and caregivers being food insecure, by analysis region




*Source*. Arkansas ECE Workforce Survey

The American Community Survey asks comparable questions to the Arkansas ECE Workforce Survey to identify food insecurity in the United States. Nationally, about 11 percent of households in the United States are considered food insecure (Coleman-Jensen et al., 2019). That rate varies by state, with Southern states having significantly higher prevalence of food insecurity (12 percent) than other regions. According to estimates from the USDA, food insecurity affects about 15 percent of households in Arkansas (Coleman-Jensen et al, 2019). These rates, paired with analyses from UAMS, suggest that the ECE workforce in Arkansas is at higher risk of food insecurity than the average Arkansas household (McKelvey et al., 2017).

## Stakeholder perspectives on economic pressures

Child Trends asked stakeholders to reflect on the ways in which the ECE workforce in Arkansas may experience economic difficulties, and how those challenges might differ regionally.

**Stakeholders suggested differential views on second job status among ECE teachers and caregivers.**

| Number of responses | Quantifying term used |
|---|---|
| 1 | One |
| 2 | Some |
| 3 | Over half |
| 4 | Most |
| 5 | All |

Although Figure 5 does not indicate any statistically significant regional differences in whether ECE teachers and caregivers were likely to hold a second job, stakeholders shared that respondents may in fact engage in other work that they do not consider to be a job. Over half of stakeholders shared that respondents may not consider jobs that pay in cash, such as babysitting or selling crafts, to be a second job, which might indicate that the rates of holding a second job are underreported. Some stakeholders also reported that work for a family farm or a family business may not be considered a second job by some respondents. One stakeholder stated, *"For farm work, you go out and do that because it's the expectation."* Additionally, all stakeholders reported that the kinds of work respondents may be more likely to view as a second job, such as retail or food service work, are more readily available in the urban region of Pulaski County (6)—which had a higher predicted probability of the workforce reporting a second job, but was not statistically higher than other regions.

**Stakeholders reported low wages to be the driving force behind food insecurity.**

All stakeholders identified low wages as the most likely explanation for why ECE teachers reported food insecurity at high rates. Over half of stakeholders reported that in rural areas, low wages—coupled with living in a remote area in which grocery stores can be scarce—might mean choosing between paying for transportation or paying for food. One stakeholder stated, *"If I have to drive 20 miles to Walmart and I run out of gas, then I simply won't be able to get to the grocery store."* ECE providers who live in urban areas of Arkansas may have easier access to grocery stores; however, one stakeholder explained that urban teachers and caregivers may struggle with the higher costs associated with living in a city, while still receiving minimum wage pay. Although not significantly different from the rest of the regions in this study, the Northwest region (1) was identified by one stakeholder as having the highest wages for ECE providers in the state; this may contribute to the fact that the predicted probability of food insecurity is lowest in this region. This stakeholder attributed higher wages in the Northwest region to a concentration of wealth leading to a greater number of families able to pay higher prices for child care.

## Education level

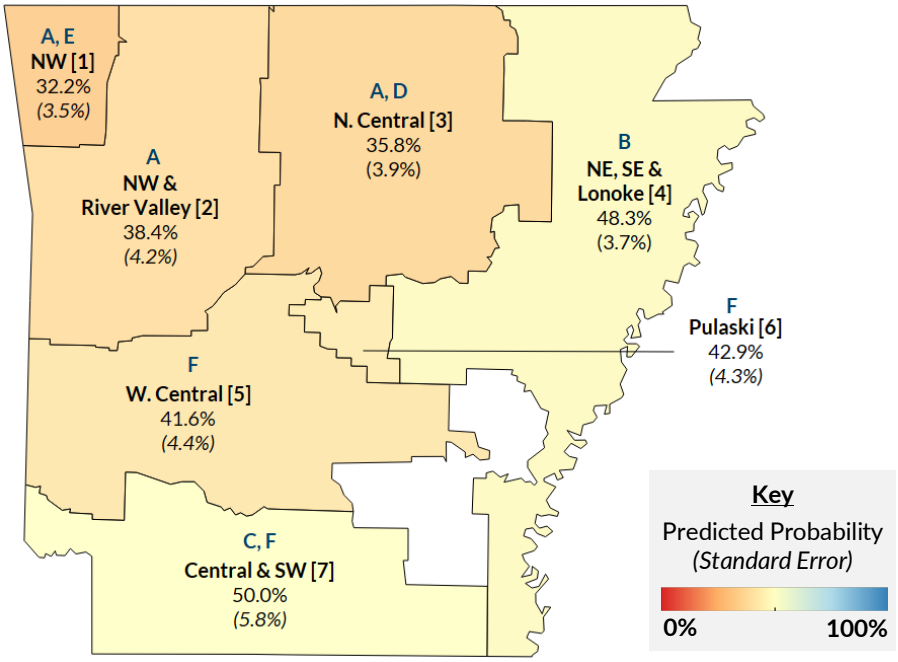
**There were no significant differences in the probability of attaining specific degrees by regionality or by urbanicity.**

Child Trends researchers estimated the predicted probability of teachers and caregivers in each region holding a college degree of any major, an associate or higher post-secondary ECE-related degree, and a bachelor's or higher post-secondary ECE-related degree. There were not significant regional differences in the predicted probability of obtaining each specified degree, nor were there significant differences in the likelihood of obtaining each specified degree by urbanicity.

**There were significant regional differences in the predicted probability of teachers and caregivers holding an ECE credential.**

Figure 7 shows the predicted probability of teachers holding an Arkansas Birth through Prekindergarten Teaching Credential and/or a Child Development Associate (CDA) Credential.

**Figure 7.** Predicted probability of teachers and caregivers holding an ECE teaching credential, by analysis region




*Source*. Arkansas ECE Workforce Survey
*Note.* Regions denoted with an A have significantly lower estimates than regions denoted with a B. Regions denoted with a D have significantly lower estimates than regions denoted with a C. Regions denoted with an E significantly lower estimates than regions denoted with an F.

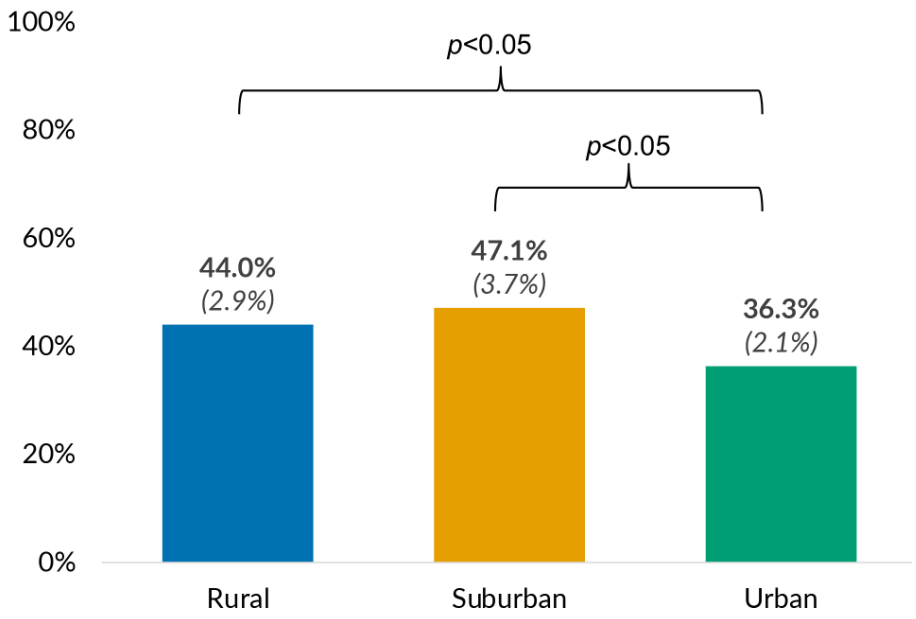
Pairwise comparisons revealed significant differences:

- Teachers and caregivers in the Northwest (1), Northwest Arkansas and River Valley (2), and Northcentral Arkansas (3) regions (denoted with an A in Figure 7) were **less likely** to obtain an ECE credential than teachers and caregivers in the Northeast Arkansas, Southeast Arkansas, and Lonoke County regions (4; denoted with a B in Figure 7).
- Teachers and caregivers in Northcentral Arkansas (3, denoted with a D in Figure 7) were **less likely** to obtain an ECE credential compared to teachers and caregivers in Central Arkansas and Southwest Arkansas (7; denoted with a C in Figure 7).
- Teachers and caregivers in the Northwest region (1; denoted with an E in Figure 7) were **less likely** to obtain an ECE credential than those in the West Central Arkansas (5), Pulaski County (6), and Central Arkansas and Southwest Arkansas (7) regions (denoted with an F in Figure 7).

In total, teachers and caregivers from the regions in the Northwestern portion of Arkansas (i.e., regions 1, 2, 3) tended to be significantly less likely to obtain an ECE credential than those in the rest of the state (i.e., regions 4, 5, 6, 7).

**There were significant differences in the predicted probability of teachers and caregivers obtaining an ECE credential by urbanicity.**

**Figure 8.** Predicted probability of teachers and caregivers holding an ECE teaching credential, by urbanicity




*Source*. Arkansas ECE Workforce Survey

Analyses reveal that teachers and caregivers in urban counties were **less likely** to obtain an ECE credential than those in rural and suburban counties. The difference between the predicted probabilities for rural and suburban counties was not significant.

## Stakeholder perspectives on education differences

Child Trends asked stakeholders to share their thoughts on findings related to educational attainment among ECE teachers and caregivers in Arkansas.

**Stakeholders reported that access to post-secondary education is not dependent on region.**

Stakeholders shared a variety of reasons for why they believed there were no significant regional differences in the likelihood that members of Arkansas's ECE workforce would attain a two- or four-year college degree. Over half of stakeholders noted that two-year colleges are available in each region of the state. Additionally, some stakeholders discussed how online courses have increased access to post-secondary education across the state, allowing ECE providers to obtain degrees from institutions that are not geographically close to where they live. One stakeholder praised the state's community colleges for their support of students majoring in early childhood education: *"We have a really strong two-year college network across the state, where you're really connected to your cohort in early childhood education. Those institutions are in every region, they've been there and they're well established, the early childhood programs are strong in recruitment, retention, and support of students."*

| Number of responses | Quantifying term used |
|---|---|
| 1 | One |
| 2 | Some |
| 3 | Over half |
| 4 | Most |
| 5 | All |

**Stakeholders reported access to Arkansas State University and hiring preferences or requirements as the main reasons for higher rates of credentials in certain regions of the state.**

Most stakeholders identified the presence of Arkansas State University in the Northeast, Southeast, and Lonoke County (4) region as an influence on this region's higher rate of credentialing, when compared to the Northwest (1), Northwest Arkansas & River Valley (2), and Northcentral Arkansas (3) regions. Stakeholders noted that respondents who hold a CDA or Arkansas Birth through Prekindergarten Teaching Credential may be concentrated in the northeast corner of the state, close to Arkansas State University. Stakeholders also mentioned that Arkansas State University is well-known for offering necessary coursework to receive a teaching credential, and that nearby providers might feel particularly supported in pursuing the credential. Some stakeholders mentioned that the Arkansas Birth through Prekindergarten Teaching Credential was developed relatively recently, with input from ECE leaders affiliated with Arkansas State University; they also believed that, as a result, the credential might not yet be well-integrated in areas of the state that are farther from the university.

Stakeholders identified another potential contributing factor to regional differences in credentialing: that ECE teachers and caregivers in urban areas might prefer to pursue an associate or bachelor's degree, bypassing the credential altogether. Over half of stakeholders reported that ECE providers in suburban or rural areas might end their pursuit of post-secondary education after attaining a teaching credential, while teachers and caregivers in urban areas might skip the credentialing step to obtain an associate or bachelor's degree. One stakeholder suggested that urban areas might have a higher concentration of child care program directors and owners who hold degrees in ECE and who might value those qualifications more when making hiring decisions. Relatedly, over half of stakeholders noted that the areas with lower rates of credentialing—including the Northwest (1), Northwest Arkansas & River Valley (2), and Northcentral Arkansas (3) regions—may have more private and family child care programs, which do not require that teachers have a credential; on the other hand, the Northeast, Southeast, and Lonoke County (4) and Central and Southwest (7) regions may have more state-funded programs, such as Arkansas Better Chance (ABC) schools, which have more strict credentialing requirements for teachers.

# Limitations

While this study offers an initial exploration into geographic differences in the well-being and education of the Arkansas ECE workforce, it does have a few limitations. First, both the quantitative and qualitative analyses are derived from a small sample size. In particular, the regression models did not include responses from four counties in the state (Cleveland, Lincoln, Drew, and Arkansas). Furthermore, this study included only select stakeholders who could provide perspectives and knowledge of the statewide ECE workforce. This group of stakeholders did not include current teachers or caregivers, who might have different perceptions of findings from the Workforce Survey. Additionally, as a result of the COVID-19 pandemic, not all stakeholders who were originally identified were able to be interviewed for this study. Despite an attempt to reach all identified stakeholders, Child Trends was not able to interview an administrator for a community outreach program for ECE teachers and caregivers, or an ECE project director for a state university. Qualitative analyses included in this study should be interpreted as exploratory.

The Arkansas ECE Workforce Study examined the needs of center-based and home-based teachers and caregivers collectively and did not include a measure that identified program setting. As center-based and home-based programs operate under different regulations, it is likely that their workforces also experience different challenges. Additionally, stakeholder responses suggest that program size may be relevant for contextualizing workforce well-being. Future research may want to analyze center-based and home-based samples separately or include a control for program setting and program size.

Finally, as previously noted, the quantitative analyses used a significance threshold of $p < 0.10$, and pairwise comparisons did not include a correction for Type I error. Additional analyses with a larger sample size are needed to confirm these initial findings.

# Conclusion

This study examined whether and how the ECE workforce's well-being, economic pressures, and education and training varied across the state of Arkansas. Findings suggest that some challenges associated with the ECE workforce may be universal, such as low wages and lack of access to dedicated mental health services, while others differ based on region or urbanicity. Although the analyses presented in this brief do not show significant regional differences in every domain examined, three workforce outcomes did vary significantly across regions and as a function of urbanicity:

- **Reported depressive symptoms.** Respondents in the Pulaski County (6), Northwest (1), and Northcentral Arkansas (3) regions were more likely to receive a PHQ-2 score that suggests being at risk for depression than respondents in other regions of the state.
- **Reported decision-making abilities at work.** Suburban respondents were more likely to report being involved in the decision-making process at work than their peers in urban areas.
- **Likelihood of holding an ECE credential.** Respondents in the Northwest (1), Northwest Arkansas and River Valley (2), and Northcentral Arkansas (3) regions had significantly lower predicted probabilities of holding an Arkansas Birth through Prekindergarten Teaching Credential or a CDA than those in the rest of the state. Additionally, teachers and caregivers in urban counties had a significantly lower predicted probability of holding an ECE credential than their suburban or rural counterparts.

Interviews with stakeholders offered additional insight on factors that might contribute to differences by region and urbanicity. Overall, findings from this study suggest a need for a varied approach in offering supports to teachers and caregivers in Arkansas. When developing policies and strategies to strengthen and sustain the ECE workforce, it is important to consider the contextual factors (e.g., cost of living, proximity to universities) that may vary by geographic region.

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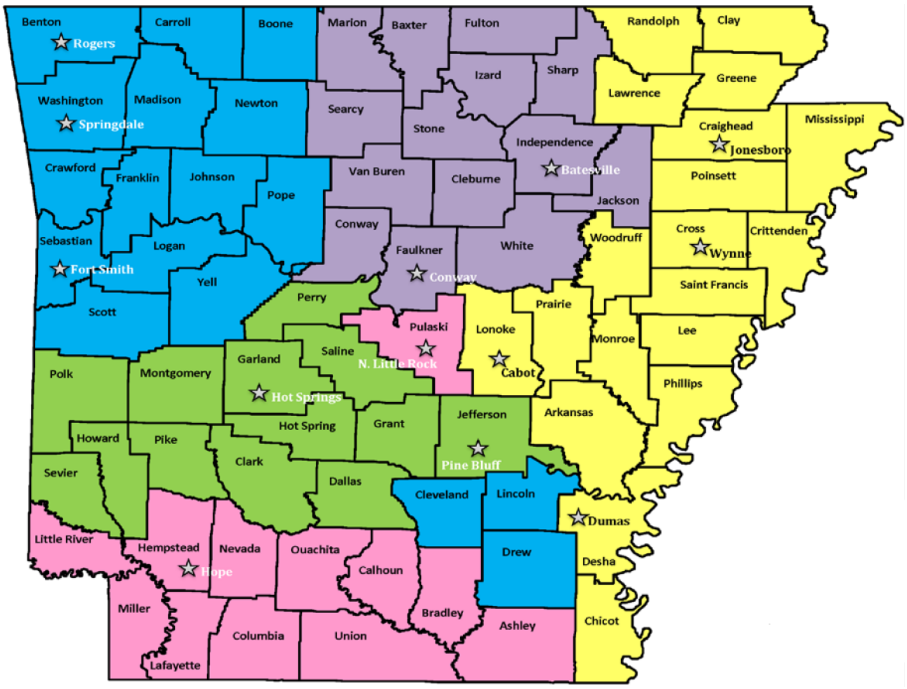
# Appendix A. Analysis regions

To create meaningful geographic regions for analysis (Figure A2), this study made modifications to CCR&R regions as they existed at the time of survey administration (Figure A1). These modifications included:

1. **Separating geographically distinct counties.** Two CCR&R regions provided support to counties that are geographically distinct from the rest of the region.[8] Though these offset counties were a part of the same CCR&R network as their parent regions, we separated them into different regions to preserve the geographic integrity of our groupings**.**
2. **Creating the Northwest region.** We re-classified Benton and Washington counties (in the Northwest corner of the state) as a new region called Northwest. Beyond being the some of the most populated counties in the state (and a substantial proportion of the respondent sample), the location of Walmart Inc., headquarters in Benton County has a strong economic influence on the area. Further, research from UAMS suggests these two counties have a substantially higher child care prices than the surrounding area (McKelvey et al., 2019). These contributing factors led us to believe Benton and Washington counties are distinct enough from their neighboring counties to necessitate creating an additional region when analyzing the data.
3. **Removing counties from analysis.** Since Cleveland, Lincoln, and Drew counties are located in a geographically distinct area from the rest of the counties in their CCR&R region, they were originally classified as a separate analysis region (see modification note 1 above). However, the resulting sample size for those three counties was ultimately too small (n=11) to include in our analysis, and therefore was removed from the sample. We also discovered survey respondents over-identified Arkansas county as their home, given the expected ECE workforce population of that county. As we could not decipher which respondents correctly identified Arkansas County as their home region, we also removed that county from the analysis.

[8] For example, Cleveland, Lincoln, and Drew counties (in the Southeast corner of the state) are geographically separated from the Norwest Arkansas and River Valley region (in the Northwest corner of the state). Similarly, Pulaski County (in the center of the state) is separated from its parent region (Central and Southwest Arkansas region, at the Southern border).

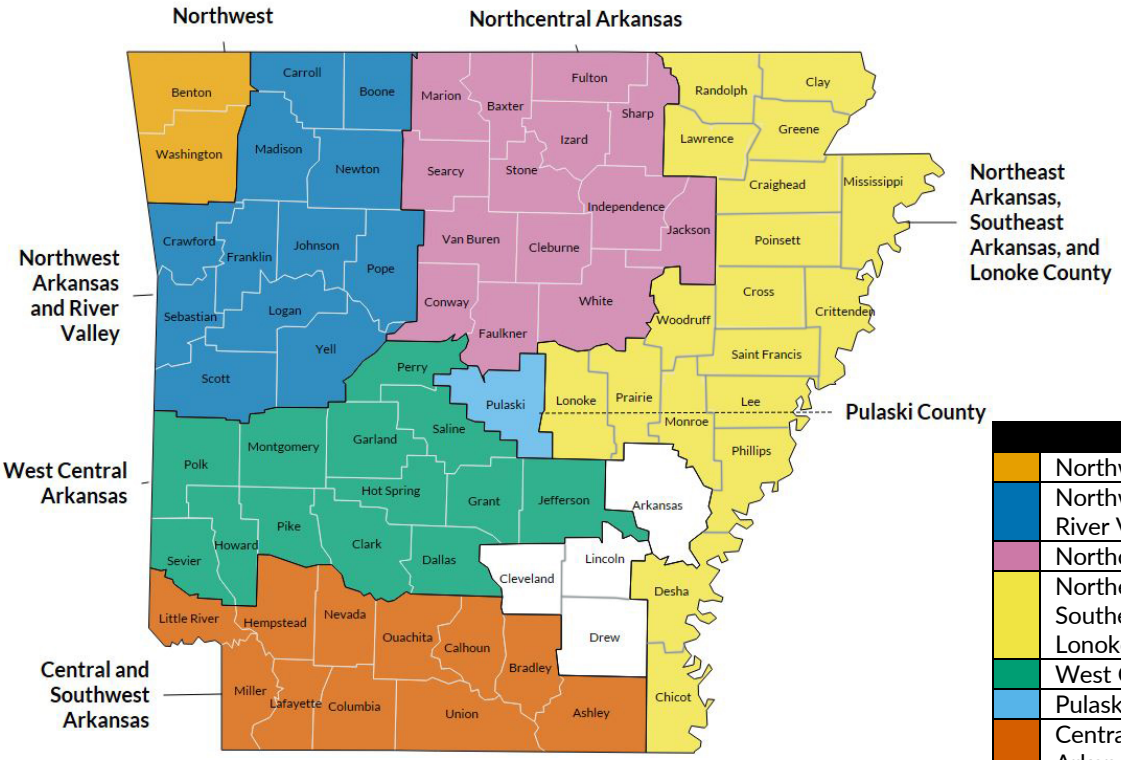
**Figure A1.** Child Care Aware of Arkansas Resource & Referral Network, 2018




| Key |
|---|
| Northwest Arkansas and River Valley |
| Northcentral Arkansas |
| Northeast Arkansas, Southeast Arkansas, and Lonoke County |
| Central and Southwest Arkansas |
| West Central Arkansas |

*Source.* Child Care Aware of Arkansas Resource & Referral Network, 2018

**Figure A2.** Analysis regions used in study




| Key |
|---|
| Northwest |
| Northwest Arkansas and River Valley |
| Northcentral Arkansas |
| Northeast Arkansas, Southeast Arkansas, and Lonoke County |
| West Central Arkansas |
| Pulaski County |
| Central and Southwest Arkansas |

*Source.* Authors' defined analysis regions

# Appendix B. Summary of Results

**Table B1.** Summary of regression models

| ECE Workforce Outcome | Region | Urbanicity | Individual Comparisons |
|---|---|---|---|
| **PHQ-2** – depressive symptoms | *p*=0.06 | NS | Pulaski > NW & River Valley; NE, SE & Lonoke; W. Central; Central & SW<br><br>NW > NW & River Valley; W. Central<br><br>N. Central > NW & River Valley |
| **ECWES** – collegiality, professional growth, supervisor support, clarity, reward system goal consensus, task orientation, physical setting, innovation dimensions | NS | NS | |
| **ECWES** – decision dimension | NS | *p*=0.09 | Urban < Suburban |
| **Second Job** – holds second job | NS | NS | |
| **Food insecurity** – could not afford or skipped meals | NS | NS | |
| **College Degree –** has any post-secondary degree | NS | NS | |
| **ECE-Related College Degree** – has associate or bachelor's degree in an ECE-related field | NS | NS | |
| **Credential** – has AR 0-5 teaching credential or CDA | *p*=0.02 | *p*=0.02 | NW & River Valley; N. Central; NW < NE, SE & Lonoke<br><br>N. Central < Central & SW<br><br>NW < W. Central; Central & SW; Pulaski<br><br>Urban < Rural; Suburban |