

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

Tracy Gebhart, Kate Steber, Audrey Franchett, Dale Epstein and Rebecca Madill

## Introduction

A strong early care and education (ECE) workforce is critical to providing quality care and education for young children. Quality early care and education is essential for young children because it prepares them for success later in life by facilitating social and emotional learning and building cognitive skills. By providing parents with the opportunity to access reliable care for their children, the ECE workforce also enables these parents to earn an income to support their family and the U.S. economy.

Despite the ECE workforce's importance to young children and their families, teachers and caregivers across the country face challenges such as low wages, minimal benefits, and a lack of professional/career support (Whitebook, McLean, Austin, & Edwards, 2018). Research has linked these challenges to high rates of staff turnover in ECE centers and increased stress and anxiety among ECE teachers and caregivers—which some findings suggest may affect the quality of care children receive (Smith & Lawrence, 2019). While there is evidence that ECE teachers and caregivers share common challenges, it is not clear whether their challenges differ by geographic location. That is, are there any regional characteristics that may affect the ECE workforce differentially?

To better understand the pressures facing the ECE workforce and whether geographic location of the ECE workforce might be associated with variations in ECE workforce outcomes related to well-being, Child Trends examined the Nebraska ECE workforce using data from a comprehensive statewide ECE workforce survey; for this study, Child Trends partnered with the Buffett Early Childhood Institute at the University of Nebraska.

The purpose of this brief is to examine characteristics of the ECE workforce to see whether they vary regionally across the state of Nebraska. Specifically, this brief addresses two main questions:

1. Does the ECE workforce in Nebraska vary by region with respect to what teachers and caregivers report about their well-being, the economic pressures they face, and their education levels?
2. What contextual factors might be contributing to variation in the characteristics of well-being, economic pressures, and education levels within the ECE workforce across Nebraska?

# Methodology

To examine whether there was geographic variation in characteristics of the ECE workforce, Child Trends analyzed data from the Nebraska Early Childhood Workforce Survey.<sup>1</sup> Administered by the Buffett Early Childhood Institute in 2015 and 2016 to 1,640 ECE teachers and caregivers in the state, the Nebraska Early Childhood Workforce Survey asked questions about ECE workers' lives and working conditions. Survey respondents included teachers and caregivers working in licensed family child care homes, licensed public or private community-based child care centers, school-based state pre-kindergarten (pre-K) settings,<sup>2</sup> and kindergarten through third grade (K-3) classrooms in public or private elementary schools in Nebraska. The survey was distributed via stratified random sampling across six geographic regions of the state, and intentionally designed to include an oversampling of responses from teachers and caregivers who work in programs that receive state funding. A cash incentive of \$1 was included in each survey mailing.

Using data from the Nebraska Early Childhood Workforce Survey, this study analyzed and mapped findings onto different geographic regions across the state. Child Trends also conducted stakeholder interviews and combined this information with the mapping data to better understand the geographical variation in the Nebraskan ECE workforce experiences.

## Study sample

Child Trends collaborated with the Buffett Early Childhood Institute to determine the best way to examine geographic variation of the ECE workforce within the state of Nebraska. Discrete geographic regions of Nebraska were defined by the seven Early Learning Connection (ELC) partnerships. These seven regional partnerships provide geographically based training, support, and professional development for individuals who provide programs and services for children birth through age 8 in the state (Nebraska Department of Education, 2019). After determining the geographic regions in the state, Child Trends analyzed and mapped findings from survey respondents' data onto the specific region in which they were working.

Figure 1 indicates the total sample of survey respondents included in these analyses by regional ELC partnerships (i.e., region).<sup>3</sup> The sample included teachers and caregivers from three categories:

- **Home-based caregivers (n=371).** Individuals working in licensed family child care homes meeting Nebraska Department of Health and Human Services (DHHS) licensing definitions for Family Child Care Home I or Family Child Care Home II
- **Center-based teachers (n=350).** Individual classroom teachers in licensed public or private community child care centers, as determined by Nebraska DHHS licensing definitions for Child Care Center or Preschool
- **Pre-K teachers (n=254).** Individual classroom teachers in school-based pre-K settings (i.e., Nebraska Department of Education's Early Childhood Education Grant programs for pre-K children)

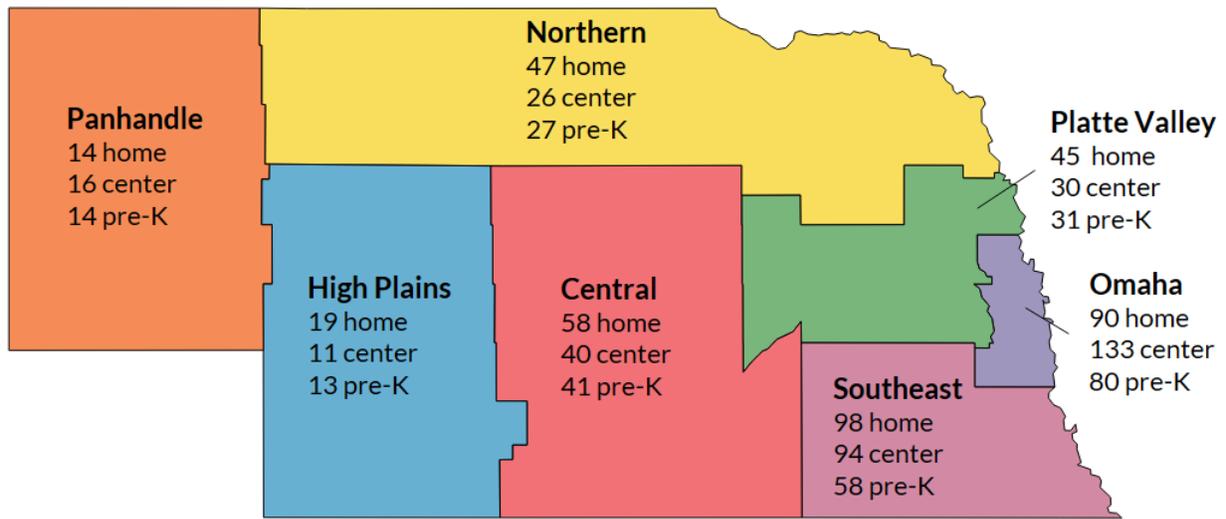
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<sup>1</sup> For a summary of survey methodology and findings, see Roberts, A. M., Iruka, I. U., & Sarver, S. L. (2017). *Nebraska Early Childhood Workforce Survey: A focus on providers and teachers*. Omaha, NE: Buffett Early Childhood Institute at the University of Nebraska. Retrieved from: <http://buffettinstitute.nebraska.edu/workforce-survey>.

<sup>2</sup> The Nebraska Early Childhood Education Grant Program provides financial support to pre-K classrooms serving children ages 3 to 5 in public schools or education service units that partner with center-based programs that receive financial support through district, federal, and/or tuition funds.

<sup>3</sup> The analytic sample did not include K-3 teachers and did not include respondents with missing data on the outcomes of interest.

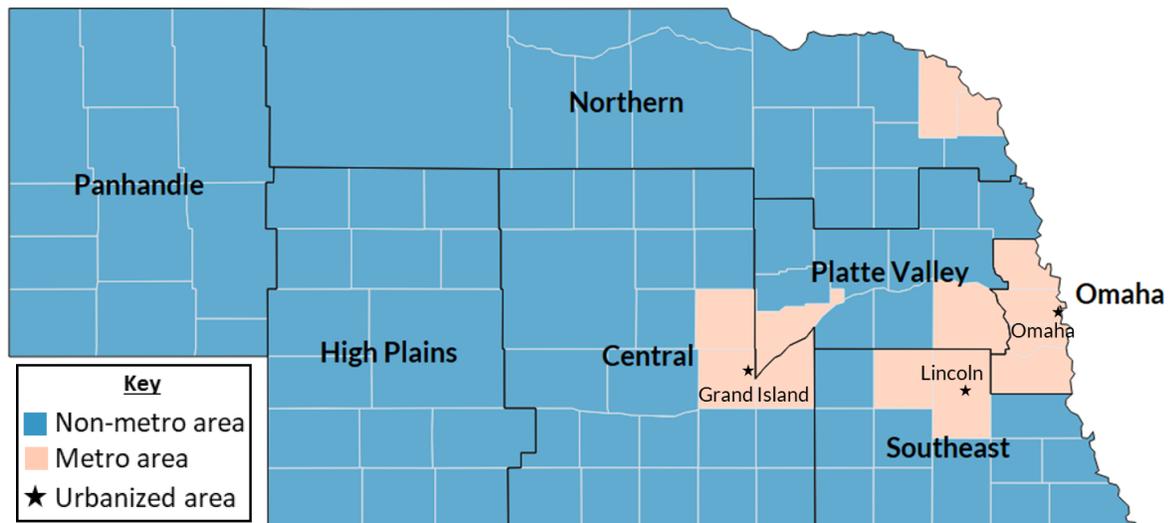
**Figure 1.** Nebraska Early Childhood Workforce Survey sample, reported by ELC partnership region and respondent type



Source: Nebraska Early Childhood Workforce Survey

To contextualize the urbanicity of each analysis region, Child Trends mapped the metropolitan statistical areas (metro areas) and urbanized areas within each ELC partnership region. Urbanized areas, as defined by the U.S. Census Bureau (2012), are areas with a population equal to or exceeding 50,000. Metro areas, as defined by the Office of Management and Budget (OMB; 2013), are densely settled counties that contain one or more urbanized areas. Additionally, counties without urbanized areas may also be defined as metro areas if they are economically or socially tied to an adjacent urbanized area. This study uses metro area classification as a proxy for the rural-urban continuum in Nebraska. As reflected in Figure 2, metro areas are consolidated on the eastern side of the state, whereas the western portion remains largely non-metro (rural).

**Figure 2.** Metropolitan statistical areas and urban areas in Nebraska, by ELC partnership region



Source: U.S. Census Bureau, 2010 Census

## Measures

Data from the Nebraska Early Childhood Workforce Survey were analyzed for this study to examine ECE workforce outcomes related to teachers' and caregivers' reported well-being, economic pressures, and educational attainment.

### Teacher and caregiver well-being

The Nebraska Early Childhood Workforce Survey included the **Center for Epidemiologic Studies Depression Scale–10 Item (CES-D-10; Radloff, 1977)** to estimate teachers' and caregivers' self-reported **depressive symptoms**. The measure asks respondents to use a three-point Likert scale to report the frequency with which they experienced 10 behaviors or feelings in the week prior completing the survey (e.g., I had trouble keeping my mind on what I was doing; I felt that everything I did was an effort). When summed, the items may reach a maximum score of 30 points; a score of 10 or more indicates clinically significant depressive symptoms.

The survey also utilized a 20-item version of the **Child Care Worker Job Stress Inventory (CCW-JSI; Curbow, Spratt, Ungaretti, McDonnell, & Breckler, 2000)**, a job stress inventory specific to child care settings, to measure the **workplace stress** of respondents. The inventory asks respondents to use five-point Likert scales to indicate the intensity of or frequency with which they experience feelings and behaviors in their workplace. Response items were averaged into four separate scales: job control, job resources, job demands, and job-specific demands.

The *job control* scale reflects the amount of control or autonomy respondents believe they have in their work. Respondents rate their level of control over five aspects of their job, including the availability of supplies and the number of children for whom they provide care. The overall job control score is an average of the five response items, with scores closer to 1 representing “very little” control and scores closer to 5 representing “very much” control in the workplace.

The *job resources* scale reflects how frequently respondents experience feelings of being respected for or satisfied with their work (e.g., getting praise from children's parents, seeing their work make a difference with a child). The overall job resources score is an average of the five response items, with scores closer to 1 indicating these feelings “never” occur and scores closer to 5 indicating that these feelings occur “most of the time”.

The remaining two scales in the CCW-JSI, job demands (which measures workplace stressors specific to the demands of working in child care) and job-specific demands (which measures stressors specific to individuals working in center-based child care settings), were analyzed in this study but did not result in significant findings, and therefore are not included in this brief. Please see Appendix A for more detailed information about each of the CCW-JSI scales.

### Economic pressures

The Nebraska Early Childhood Workforce Survey asked respondents to report (i.e., yes or no) whether they held another paying job in addition to their surveyed ECE position. The survey did not require respondents to elaborate on the nature of the job, for example indicating whether the second position was outside the education field (e.g., food, retail, ranching) or similar to their current position (e.g., after-school care, substitute teaching, nannying). In these analyses, the presence of a second job was used as an indicator of economic pressures for respondents.

## Education level

Respondents to the Nebraska Early Childhood Workforce Survey used an open-ended response item to report their educational experiences, including degree title, institution, and year of completion. The Buffett Early Childhood Institute coded these responses into a categorical measure reflecting the highest level of education for each respondent. Child Trends used the categorized response to create two additional measures: (1) whether respondents had completed an associate degree or higher post-secondary degree (yes or no), and (2) whether respondents had completed a bachelor's degree or higher post-secondary education (yes or no).

## Quantitative analyses

To determine whether characteristics of the ECE workforce varied geographically in Nebraska, Child Trends conducted a series of regressions that predicted respondents' workforce outcomes by analysis region. Because home-based and center-based teachers and caregivers operate under different workplace regulations and may experience different workplace challenges (Porter et al., 2010) that likely influence workforce outcomes, separate analytic models were conducted for (1) home-based respondents and (2) center-based respondents inclusive of the ECE workforce in both pre-K and center-based programs.

Each regression model tested the association between respondents' region and their workforce outcomes while controlling for respondent-reported marital status, age, and ages of children served by the respondent's program. Models for center-based respondents included an additional control for program setting (i.e., center-based or pre-K). All controls were derived from survey responses.

ECE workforce outcomes measured on a continuous scale (e.g., CES-D-10; CCW-JSI) were tested using analysis of covariance (ANCOVA). The ANCOVA provides the ability to test whether a respondent's ELC partnership region was a significant predictor of the workforce outcome after removing the influence of other covariates. From each model, the research team estimated the adjusted means for each region in the state—that is, the average workforce outcome score for each region while holding the covariates constant across all respondents. For models that indicated region was a significant predictor, pairwise comparisons of the adjusted means indicated which regions differed significantly from one another.

ECE workforce outcomes measured through a dichotomous response (e.g., whether a respondent had a second job; whether a respondent had an associate or bachelor's degree), were tested using logistic regression models. From each model, the research team calculated the predicted probability<sup>4</sup> (ranging from 0 to 100%) of the examined workforce outcome occurring for each region—for example, the probability that a teacher or caregiver in each region holds a second job after accounting for the effect of each covariate. For models that indicated region was a significant predictor, pairwise comparisons of the predicted probabilities indicated which regions differed significantly from one another.

As these analyses were exploratory and derived from a relatively small sample, significance was determined using a threshold of  $p < 0.10$ . Additionally, the analyses did not include a correction method for pairwise comparisons of adjusted means or predicted probabilities. While a correction method does reduce the occurrence of false positive significance comparisons (i.e., Type 1 errors), it does so at the expense of creating false negatives<sup>5</sup> (Perneger, 1998). Further research with larger samples is needed to confirm that the specific differences found in these analyses occur again.

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<sup>4</sup> Predicted probabilities were calculated using marginal standardization. This method creates a weighted average unique to each region by calculating and combining the predicted probability at each covariate value (Muller & MacLehose, 2014).

<sup>5</sup> Adjusting for multiple comparisons in the models led to regional differences being non-significant.

## Qualitative data and analyses

To supplement the quantitative findings obtained through the Nebraska Early Childhood Workforce Survey, Child Trends collected qualitative data through stakeholder interviews. The team worked with the Buffett Early Childhood Institute to identify stakeholders who represented different regions across the state in a variety of roles and professions. Stakeholders from four regions agreed to participate in the interviews: Omaha, Central, Panhandle, and Southeast. While not all regions were represented, the Buffett Early Childhood Institute also identified multiple stakeholders who could provide a whole-state perspective. Stakeholders included ECE teachers and caregivers, regional coaches, school district staff, and faculty from universities and community colleges familiar with issues facing the ECE workforce in Nebraska.

Eleven stakeholders participated in one-hour interviews. During the interviews, stakeholders were asked open-ended questions about each of the findings from the mapping analysis to help the Child Trends' research team better understand and interpret the findings, including helping the team to think about contextual factors that may be contributing to the findings. For example, questions included:

1. Analyses found some significant differences in responses to the CCW-JSI job control scale between some partnership regions among center-based respondents. Teachers and caregivers in Omaha had the lowest adjusted mean score, indicating lower levels of feeling in control, while teachers and caregivers in High Plains had the highest adjusted mean score. What might be contributing to these differences?
2. Among center-based respondents, analyses pointed to some significant differences in education levels by region. For instance, we see teachers and caregivers in the Panhandle have the lowest predicted probability of completing an associate or a bachelor's degree compared to other regions. Why do you think that may be?

After interviews were completed, the research team developed a set of codes to represent common themes from the interviews. Using Dedoose, a qualitative coding software, the codes were applied to relevant sections of the interview transcriptions.<sup>6</sup> To ensure codes were applied accurately, the research team reviewed the codes and discussed any discrepancies or disagreements before agreeing upon the final code.

## Findings

### Teacher and caregiver well-being

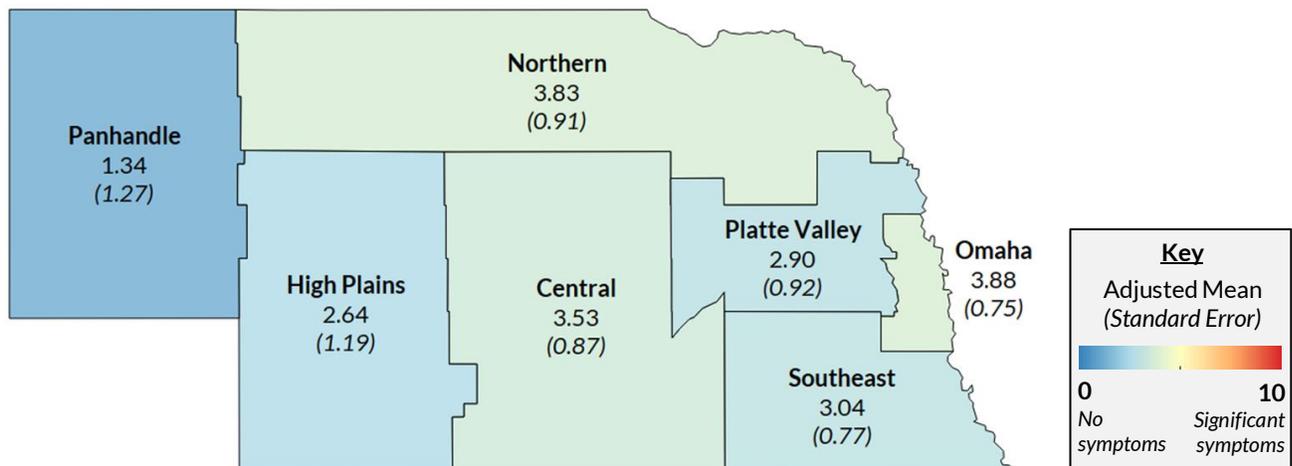
**No significant differences between ELC partnership regions were found in respondent-reported depressive symptoms for either home-based or center-based teachers and caregivers.**

Figures 3 and 4 report the adjusted mean CES-D-10 score (i.e., a measure of respondent-reported depressive symptoms) for each ELC partnership region among home-based (Figure 3) and center-based (Figure 4) respondents. The color scale of these figures progresses from blue to yellow to orange, with the color orange representing the threshold for clinically significant depressive symptoms (10 points). Analyses indicated that adjusted mean CES-D-10 scores were not significantly different by ELC partnership region for either home-based or center-based respondents.

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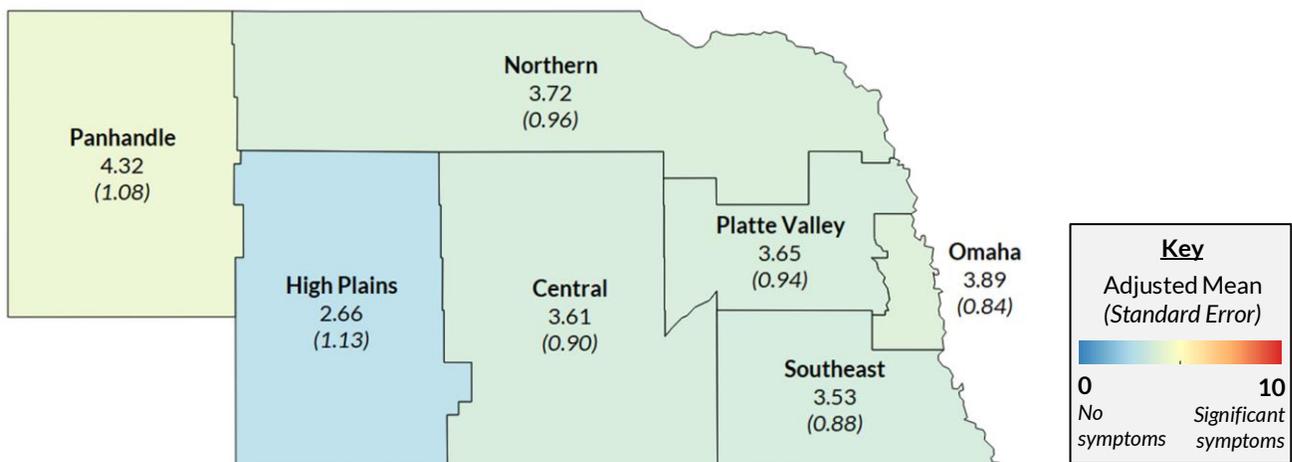
<sup>6</sup> <https://www.dedoose.com/>

**Figure 3.** Adjusted mean CES-D-10 score of home-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

**Figure 4.** Adjusted mean CES-D-10 score of center-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

Though both Figures 3 and 4 suggest relatively low rates of depressive symptoms among ECE teachers and caregivers in Nebraska, it is important to note that the predicted scores are adjusted regional averages, so they can mask both high and low scores of individual respondents. Other studies utilizing the CES-D to examine the prevalence of depressive symptoms among early childhood teachers and caregivers identified rates as high as 19 percent among center-based (Witherell, 2013) and 23 percent among home-based (Magerko, 2016) teachers and caregivers. Many of these studies also report higher rates of depression among ECE teachers compared to the general population (Witherell, 2013; Magerko, 2016; Linnan et. al, 2017; Whitaker, Becker, Herman, & Gooze, 2013).

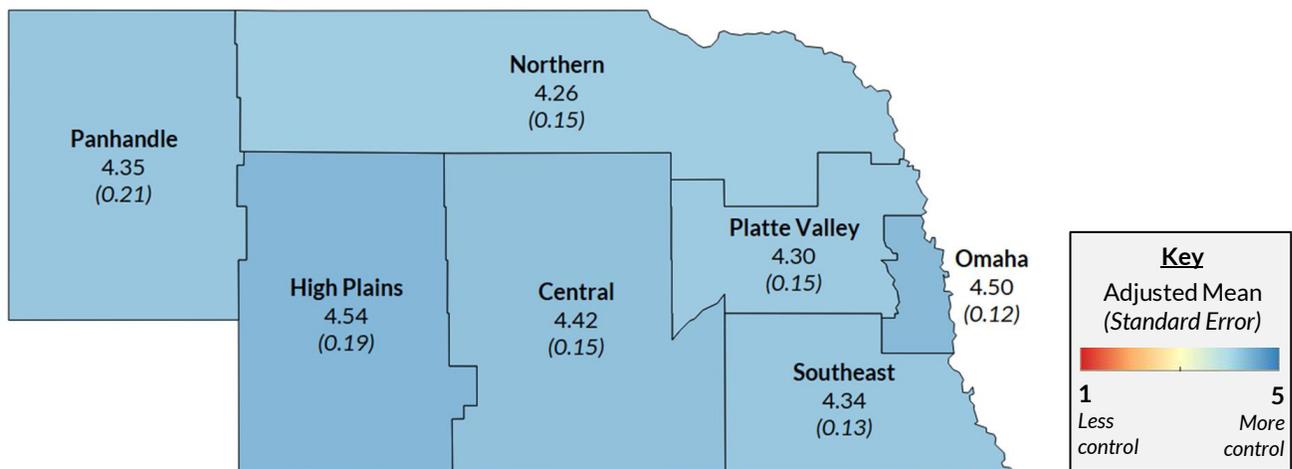
While no significant regional difference was found among home-based respondents (Figure 3), respondents in the Panhandle region had a lower adjusted mean score (i.e., lower reported rates of depressive symptoms) than respondents in other regions. When asked why that might be, stakeholders identified home-based teachers and caregivers in the Panhandle as having a stronger support network and sense of community, which some stakeholders thought positively influenced home-based teachers' and caregivers' well-being. For instance, home-based teachers and caregivers in the Panhandle meet monthly during the school year to share resources and learn from each other. These meetings are formally organized through Nebraska Family

Child Care Association’s (NFCCA)<sup>7</sup> Panhandle sector. While NFCCA is present in other regions of the state, multiple stakeholders across various regions specifically highlighted NFCCA’s Panhandle sector as a strong support network. The Panhandle also benefits from its connection with, and proximity to, Chadron State Community College, which provides career advancement opportunities. However, cost continues to be a barrier for teachers and caregivers in regularly using Chadron State’s resources.

**Regional differences were found in teacher- and caregiver-reported feelings of job control for center-based respondents, but not for home-based respondents.**

Figures 5 and 6 report the adjusted mean CCW-JSI job control scale (i.e., a measure of the level of control or autonomy a respondent believes she has over her workplace) score for each ELC partnership region among home-based (Figure 5) and center-based (Figure 6) respondents. The color scale of these figures progresses from orange to blue, representing increasing feelings of control and, therefore, well-being in the workplace. Results showed that adjusted mean job control scores were not significantly different by ELC partnership region for home-based respondents; however, the adjusted mean scores were significantly different by region for center-based respondents ( $p = 0.06$ ).

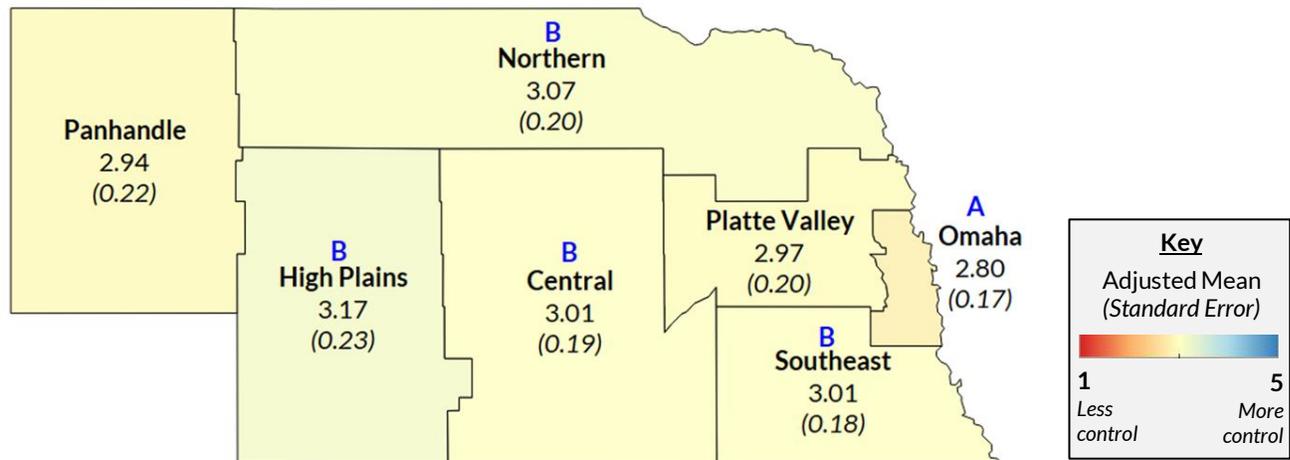
**Figure 5.** Adjusted mean CCW-JSI job control score of home-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

<sup>7</sup> <https://nfcca.us/>

**Figure 6.** Adjusted mean CCW-JSI job control score of center-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

Note: Regions marked with A differ significantly from regions marked with B at the  $p < 0.10$  level.

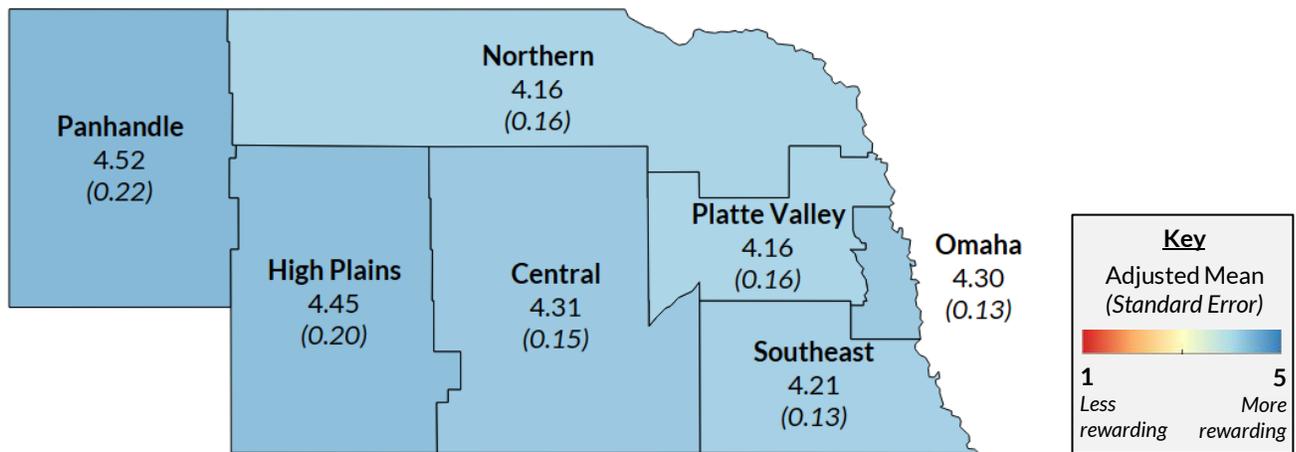
As noted above, significant differences between regions were found for center-based respondents. Pairwise comparisons of the adjusted means of each region revealed that center-based teachers and caregivers in the Omaha region (denoted with an A in Figure 6) had a significantly lower adjusted mean job control score than center-based teachers and caregivers in the High Plains, Northern, Central, and Southeast regions (denoted with a B in Figure 6). This suggests center-based teachers and caregivers in the Omaha region experience lower feelings of control in their day-to-day work than their peers in the regions denoted with a B.

While there were no significant differences between regions for home-based respondents, analyses indicate that, on average, home-based respondents appear to have higher reported levels of control over their work life than center-based respondents. When asked about differences in well-being, about half of stakeholders ( $n = 5$ ) identified home-based respondents as having more control over their work, potentially contributing to higher levels of well-being. As one stakeholder explained, *“Home based providers have more control because [the child care program] is in their home, it’s in their control and privately owned. Center-based providers tend to be working with a group of people. Most center-based programs have a board to report to. Some decisions are out of your control.”*

**Regional differences were found in teacher- and caregiver-reported feelings of job satisfaction for center-based respondents, but not for home-based respondents.**

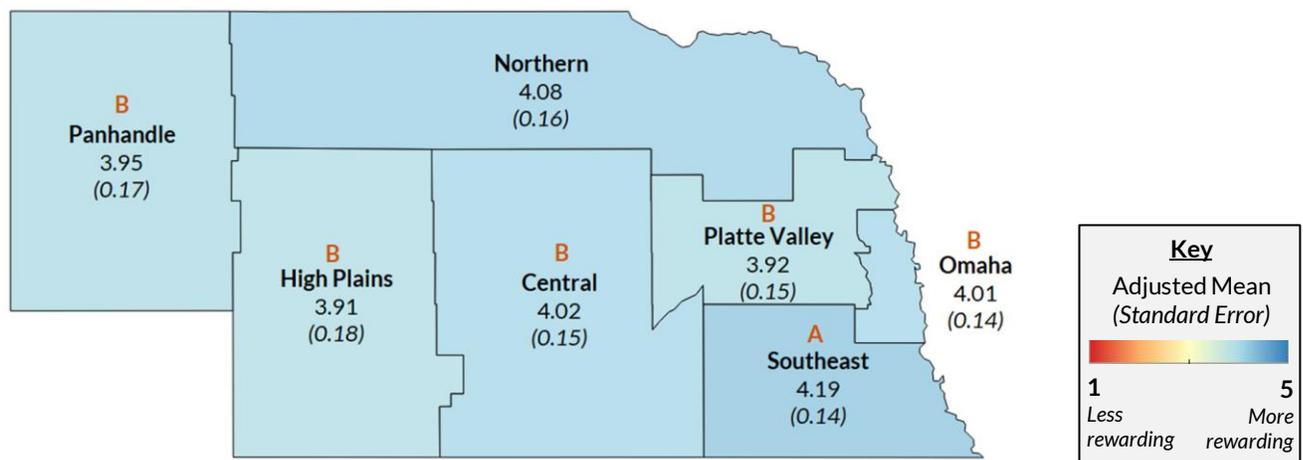
Figures 7 and 8 report the adjusted mean CCW-JSI job resources scale (i.e., a measure of a respondent’s feelings of respect or satisfaction in her child care setting) score for each ELC partnership region among home-based (Figure 7) and center-based (Figure 8) respondents. The color scale of these figures progresses from orange to blue, representing increasing feelings of respect and satisfaction and, therefore, well-being in the workplace. Results showed that adjusted mean job resources scores were not significantly different by ELC partnership region for home-based respondents; however, the adjusted mean scores were significantly different by region for center-based respondents ( $p = 0.03$ ).

**Figure 7.** Adjusted mean CCW-JSI job resources score of home-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

**Figure 8.** Adjusted mean CCW-JSI job resources score of center-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

Note: Regions marked with A differ significantly from regions marked with B at the  $p < 0.10$  level.

As noted above, significant differences between regions were found for center-based respondents, but not home-based respondents. Pairwise comparisons of the adjusted means for each region revealed that center-based respondents in the Southeast region (denoted with an A in Figure 8) had a significantly higher adjusted mean job resources score than center-based respondents in the Omaha, Platte Valley, Central, High Plains, and Panhandle regions (denoted with a B in Figure 8). A higher job resources score suggests greater feelings of respect and satisfaction in the workplace.

### Additional stakeholder perspectives on well-being

To provide additional context for the analyses presented above, Child Trends asked stakeholders to reflect on what the findings as a whole suggest about the well-being of the ECE workforce.

### **Stakeholders expressed surprise at the reported levels of stress and well-being overall.**

Most stakeholders (n = 9) reported being surprised by the lack of significant differences between regions in the findings above, and by the high levels of reported well-being among Nebraska's ECE workforce. Based on their experiences working with ECE teachers and caregivers, coaches, and administrators, stakeholders reported expecting findings to show higher levels of reported depressive symptoms, lack of control, and lack of job resources. When stakeholders were asked why the data might not show more significant findings, about half (n = 5) indicated that teachers and caregivers might be under-reporting their levels of stress or depression. Stakeholders pointed to a cultural factor in Nebraska, noting that the "*hard-working, resilient nature of Nebraskans*" may lead ECE teachers and caregivers to under-report indicators of stress or low well-being. Furthermore, stakeholders mentioned that a cultural aspect of the ECE profession—ECE teachers and caregivers' inherent expectation of stress—potentially leads respondents to under-report their levels of stress. One stakeholder explained: "*I know that stress levels are high, but maybe it's expected, and they are just used to it. . . I think people that work in early childhood expect it to be stressful because it always is, and you know what you're getting into.*"

Comparatively, some stakeholders (n = 2) felt that reported well-being levels accurately reflected Nebraska's ECE workforce, and about half (n = 5) identified Nebraska's strong ECE support system as a factor that supports well-being. Stakeholders described the ECE system as having an informal cross-state connection, where teachers and caregivers feel more connected due to the state's small population. One stakeholder further elaborated, noting that Nebraska has a "*small-town feeling.*"

### **Stakeholders identified additional barriers to the well-being of the ECE workforce and supports to promote well-being.**

To provide further context on factors that influence well-being, stakeholders identified additional factors that might negatively affect the well-being of the ECE workforce. About half of respondents (n = 5) felt that rural areas<sup>8</sup> may experience lower levels of well-being due to a lack of professional opportunities, including coaching and mentoring, career relevant trainings, and other supports. Some respondents also identified the need to maintain compliance with new quality standards and regulations (n = 2), feeling unequipped to handle work challenges (n = 2), and cost of living (n = 1) as additional factors contributing to stress among the ECE workforce. Most stakeholders (n = 9) also discussed the negative impact of low wages on teachers' and caregivers' well-being. Stakeholders felt that the economic stress teachers and caregivers experience due to a lack of sufficient wages and benefits affects their well-being across all types of child care settings and across all regions of the state.

When asked what supports or resources would be most helpful to promote well-being among the ECE workforce, stakeholders primarily reported supports that should be addressed statewide, rather than in specific regions. For instance, stakeholders discussed a need for more professional supports in the form of higher wages (n = 4), more peer support groups (n = 4), and paid coaching and training time (n = 5). However, some stakeholders (n = 2) felt that when new policies or programs are implemented, regional differences should be considered; for example, it would be important to offer more online trainings and professional development supports, versus in-person trainings, in rural areas compared to in urban areas.<sup>9</sup> Doing so would address access issues that home-based caregivers often experience in rural areas.

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<sup>8</sup> Rural regions may be approximated using the metro and urbanized area classifications in Figure 2. The Panhandle and High Plains regions are predominantly rural, as are large portions of the Northern, Central, Platte Valley, and Southeast regions.

<sup>9</sup> Urban regions may be approximated by the metro and urbanized area classifications in Figure 2. The Omaha region is predominantly urban, as are smaller portions of the Southeast, Central, Platte Valley, and Northern regions.

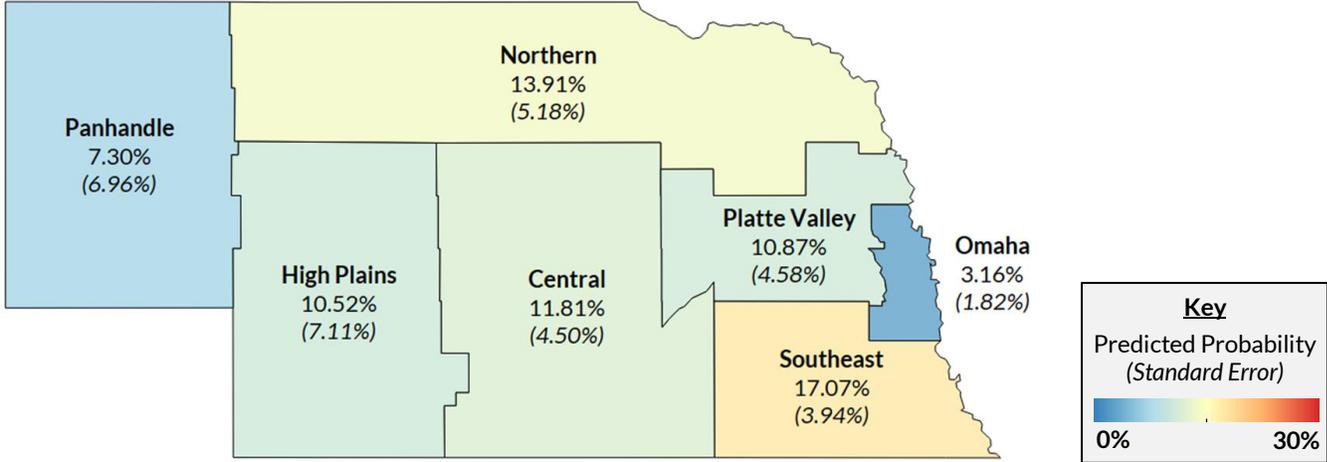
# Economic pressures

No significant differences between ELC partnership regions were found in the predicted probability of teachers and caregivers holding a second job for either home-based or center-based respondents.

Figures 9 and 10 report the predicted probability of teachers and caregivers holding a second job among home-based (Figure 9) and center-based (Figure 10) respondents in each ELC partnership region. The predicted probabilities of respondents holding a second job range from 3.16 percent to 28.5 percent. The color scale of these figures progresses from blue to orange, representing an increasing probability of teachers and caregivers holding a second job from 0 to 30 percent. An endpoint of 30 percent, rather than 100 percent, was selected to provide more visual differentiation to signify which regions have nearly a one-in-three chance of a respondent holding a second job.

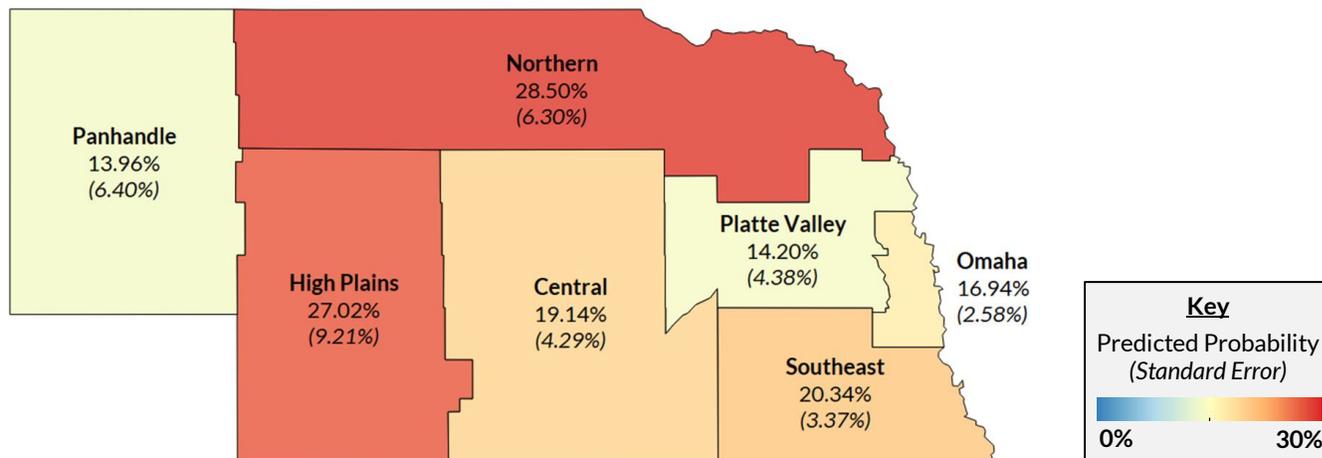
Results suggest that teachers' and caregivers' likelihood of holding a second job was not significantly different by partnership region for home-based or center-based respondents. Within each region, respondents varied greatly in whether they had a second job, as indicated by a large standard error. The standard error is a measure that shows how accurately the reported mean reflects the true mean of the population. Additionally, while the truncated color scale creates dynamic color differentiation between the regions, it is important to note that the analyses did not identify significant differences in the predicted probabilities between regions.

**Figure 9.** Predicted probability of holding a second job for home-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

**Figure 10.** Predicted probability of holding a second job for center-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

Nationally, the Bureau of Labor Statistics (2018) reports about 5 percent of workers age 16 and older hold a second job. In 2015, as much as 8.5 percent of workers age 16 and older in Nebraska held a second job — one of the highest state averages. Analysts point to a strong work ethic, the region’s low wages, and a large farm presence as main drivers of such a high state average (Podsada, 2015).

Nationwide, teachers nationwide hold a second job at nearly three times the rate of their similarly aged peers. 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 2015-2016 school year (Schaeffer, 2019). The Buffet Early Childhood Institute reported similarly high unadjusted rates of holding a second job among home-based (11.6%), center-based (18.5%), and pre-K (20.4%) teachers and caregivers in their analysis of the Nebraska Early Childhood Workforce Survey (Roberts, Iruka, & Sarver, 2017).<sup>10</sup>

**Stakeholders suggested potential reasons for under-reporting of second job status among ECE teachers and caregivers.**

While the analyses on second job status did not indicate any statistically significant regional differences, stakeholders shared interesting comments that provide context for what the maps show. Some stakeholders (n = 2) were surprised by the overall low percentages of ECE teachers and caregivers who reported having a second job and provided possible explanations for why this finding might reflect some under-reporting. For instance, stakeholders thought that teachers and caregivers may not perceive certain types of work as second jobs. About half of stakeholders (n = 6) reported that many teachers and caregivers might not view working on their family’s farm as a second job, but instead just part of their daily life. Stakeholders offered this as a possible explanation for under-reporting of second job status, particularly in the Panhandle region, which is largely rural. One stakeholder explained, *“People may not be considering helping on the family farm as their second job. They help on the farms or ranches because that’s their life.”* Relatedly, one stakeholder reported that ECE teachers and caregivers may have home-based businesses (e.g., Mary Kay, Norwex) that they may not consider a second job although the business provides a second source of income.

<sup>10</sup> Roberts and colleagues’ findings, also derived from the Nebraska Early Childhood Workforce Survey, reflect the unadjusted rate of holding a second job among all survey respondents. This study reflects the predicted probability of teachers and caregivers in each region holding a second job among respondents after controlling for individual and program characteristics. Further, as noted in the methodology section, the Child Trends research team combined pre-K and center-based responses into a larger analysis category.

Some stakeholders (n = 2) were not surprised that home-based respondents generally had lower rates of holding a second job than center-based respondents, given that they might have less ability to fit a second job into their day. As one stakeholder commented, *“Their (home-based caregivers) hours are so much longer anyways, they would just extend their hours rather than get a second job if they needed more income. Even if they are not open, we still have to count all the hours they are doing grocery shopping, or planning, or cleaning their house. The amount of hours they are working for just one job is high.”*

## Stakeholder perspectives on other economic pressures

While second job status is one indicator of economic pressures facing the ECE workforce, other economic pressures also affect ECE teachers and caregivers across Nebraska. We asked stakeholders about other economic pressures and whether those pressures might vary regionally across the state.

### **Stakeholders reported low wages, limited flexibility in raising child care costs, and staff turnover as economic pressures facing the ECE workforce.**

About half (n = 6) of stakeholders discussed the challenges that ECE teachers and caregivers face when deciding how much to charge families for child care. Stakeholders commented that many ECE teachers and caregivers, particularly in rural areas, face constraints in how much they can charge because while most families need child care, they cannot afford to pay tuition that equates to a livable wage for ECE teachers and caregivers. As a result, teachers and caregivers struggle to set a cost for their care that meets both the needs of the families in their community and the needs of their program and their own family. As one stakeholder observed, *“They [ECE teachers and caregivers] can’t charge the families any more. It’s the whole flawed business model we have with early childhood across the country right now. They [ECE teachers and caregivers] need to make more, but they [families] don’t have money to give them.”*

Relatedly, about half of stakeholders (n = 6) discussed low wages as a major economic pressure facing the ECE workforce in many communities. Stakeholders shared that this is a challenge for ECE teachers and caregivers across Nebraska, but especially in rural areas. Stakeholders commented that urban, center-based ECE teachers and caregivers in the eastern part of the state often have access to higher wages due to the higher cost of living and more employment opportunities (i.e., there are many centers where teachers and caregivers can work, compared to often only one option in rural communities).

Most stakeholders (n = 10) discussed the challenge of staff turnover and the economic pressure it can put on ECE teachers and caregivers, particularly center-based teachers and caregivers, across the state. Stakeholders shared that the ECE workforce in Nebraska experiences high levels of turnover as teachers and caregivers leave for jobs with higher pay, seek out jobs that include health insurance and other benefits, or leave when they cannot afford child care for their own children. Additionally, stakeholders discussed how ECE teachers and caregivers, particularly in center-based programs, struggle to find qualified staff who are willing to accept the low wages and lack of insurance benefits.

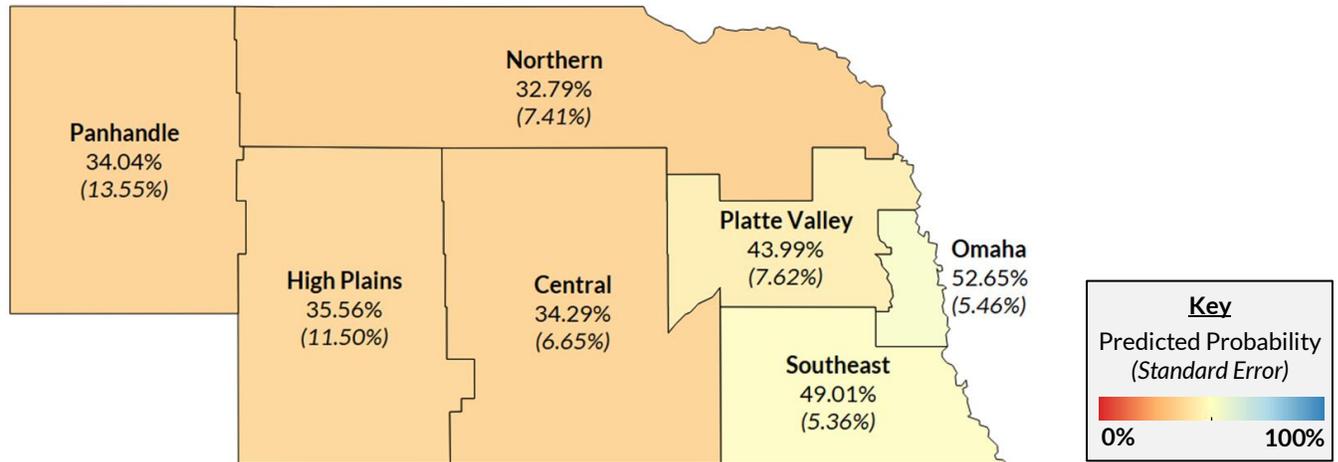
## Education level

### **Regional differences were found in the predicted probability of teachers and caregivers holding an associate or higher post-secondary degree for center-based respondents, but not for home-based respondents.**

Figures 11 and 12 report the predicted probability of teachers and caregivers having an associate or higher post-secondary degree in each ELC partnership region among home-based (Figure 11) and center-based (Figure 12) respondents. The color scale of these figures progresses from orange to blue, representing an increasing probability of teachers and caregivers holding at least an associate degree from 0 to 100 percent. Results indicated that the likelihood of obtaining an associate degree or higher was not significantly

different by partnership region for home-based respondents; however, the probability was significantly different by partnership region for center-based respondents ( $p = 0.05$ ).

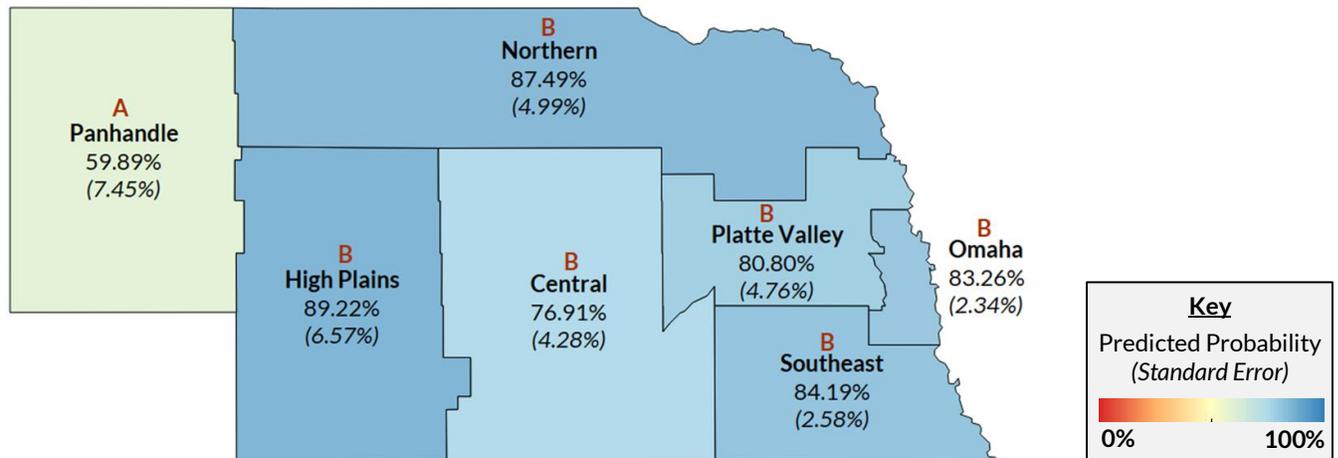
**Figure 11.** Predicted probability of having an associate degree or higher post-secondary degree for home-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

There were no significant differences in the probability of associate degree attainment between ELC partnership regions among home-based respondents. The Buffett Institute’s analysis of the Nebraska Early Childhood Work Survey indicated that a lower proportion of home-based respondents (44%) held an associate or higher post-secondary degree compared to center-based (69%) and pre-K (99%) respondents (Roberts et al., 2017). It is important to note that Nebraska’s required qualifications for ECE providers varies based on child care setting (Sarver, Huddleston-Casas, Charlet & Wessels, 2020). These differing regulations could contribute to the low predicted probabilities of degree attainment among home-based respondents reflected in Figures 11 and 13.

**Figure 12.** Predicted probability of having an associate degree or higher post-secondary degree for center-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

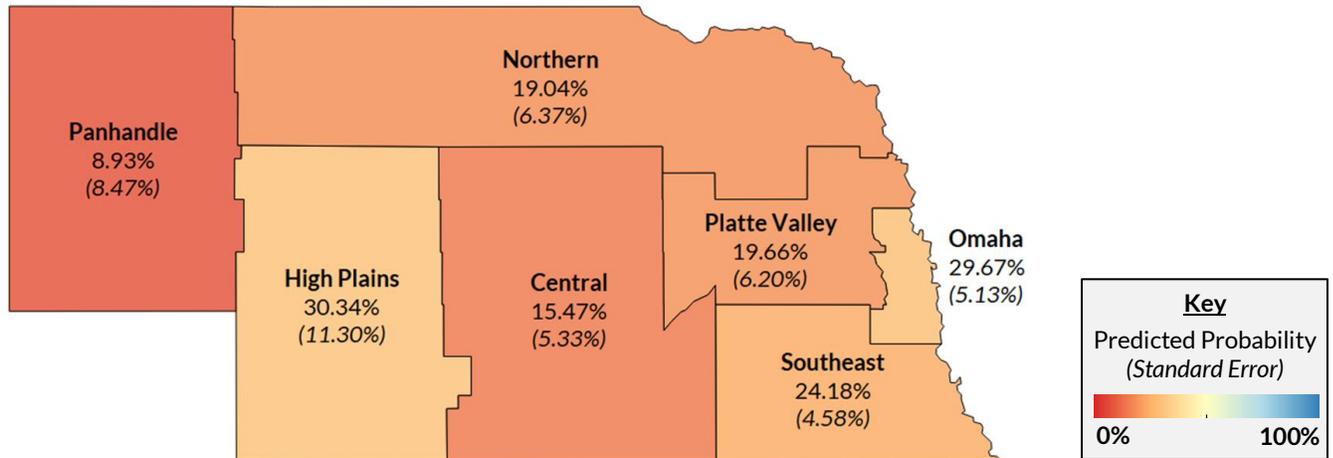
Note: Regions marked with A differ significantly from regions marked with B at the  $p < 0.10$  level.

Pairwise comparisons suggest that center-based respondents in the Panhandle region (denoted with an A in Figure 12) had a significantly lower likelihood of having an associate degree or a higher post-secondary degree compared to center-based respondents in other regions (i.e., Northern, High Plains, Central, Platte Valley, Southeast, and Omaha).

**Regional differences were found in the predicted probability of teachers and caregivers holding a bachelor's or higher post-secondary degree for center-based respondents, but not for home-based respondents.**

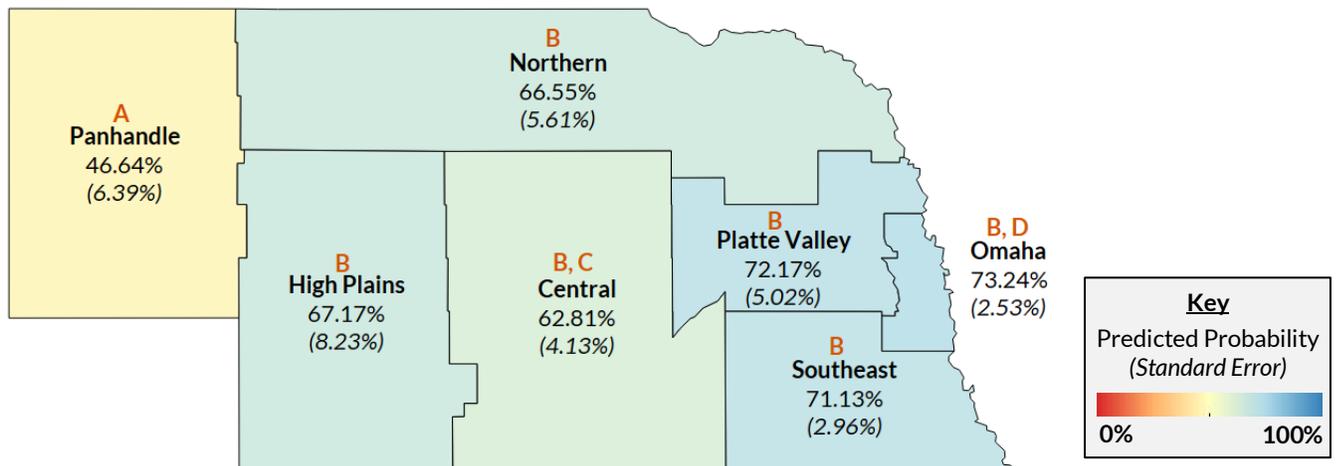
Figures 13 and 14 below report the predicted probability of teachers and caregivers having a bachelor's degree or higher post-secondary degree in each ELC partnership region among home-based (Figure 13) and center-based (Figure 14) respondents. The color scale of these figures progresses from orange to blue, representing an increasing probability of teachers and caregivers holding a bachelor's degree from 0 to 100 percent. Results indicated that the likelihood of obtaining a bachelor's degree or higher was not significantly different by partnership region for home-based respondents; however, the probability was significantly different by partnership region for center-based respondents ( $p = 0.04$ ).

**Figure 13.** Predicted probability of having a bachelor’s degree or higher post-secondary degree for home-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

**Figure 14.** Predicted probability of having a bachelor’s degree or higher post-secondary degree for center-based respondents, by ELC partnership region



Source: Nebraska Early Childhood Workforce Survey

Note: Regions marked with A differ significantly from regions marked with B at the  $p < 0.10$  level. Regions marked with C differ significantly than regions marked with D at the  $p < 0.10$  level.

Pairwise comparisons suggest that center-based respondents in the Panhandle region (denoted with an A in Figure 14) had a significantly lower likelihood of having a bachelor’s degree or a higher post-secondary degree than center-based respondents in other regions (i.e., Northern, High Plains, Central, Platte Valley, Southwest, and Omaha). Additionally, center-based respondents in the Central region had a significantly lower predicted probability of obtaining a bachelor’s degree or higher when compared to their peers in the Omaha region.

## Stakeholder perspectives on education levels

**Stakeholders reported long travel distances and language barriers as challenges to accessing post-secondary degrees for ECE teachers and caregivers in the Panhandle region.**

Stakeholders shared a variety of perspectives regarding why the western part of Nebraska, especially the Panhandle, had the lowest levels of associate and bachelor's degrees among ECE teachers and caregivers. About half of the stakeholders (n = 5) suggested that while there is at least one community college in each region, ECE teachers and caregivers in the Panhandle may have to travel farther than those in other regions to attend post-secondary classes. Comparatively, ECE teachers and caregivers in more urban areas in the eastern part of the state may live in proximity to more options for post-secondary education. Two stakeholders reported an increase in online course offerings, which they hope will create more equitable access to associate and bachelor's degrees across the state. One stakeholder also suggested that language barriers may be contributing to the educational differences, noting that there is a lack of trainings and coursework offered in Spanish, which the stakeholder indicated is the primary language of many ECE teachers and caregivers in the Panhandle.

**Stakeholders reported regional differences in incentives to pursue post-secondary education.**

Another factor that stakeholders identified as contributing to regional differences in education levels was an overall lack of incentives to pursue post-secondary education. Most stakeholders (n = 9) discussed this challenge and how it might be contributing to lower levels of advanced degrees in the Panhandle region. For example, some stakeholders (n = 4) reported that, in many cases, an ECE teacher or caregiver does not receive an increase in pay after achieving an advanced degree; therefore, ECE teachers and caregivers may not see the benefit of investing their time and money in further education. In the more urban, eastern areas of the state, it might be possible for an ECE teacher or caregiver to find a new job with higher wages after obtaining an associate or bachelor's degree; however, teachers and caregivers in the Panhandle and other rural parts of the state may be less likely to increase their pay by obtaining a higher degree. Some stakeholders (n = 3) noted regional differences in what ECE employers require of their teachers and caregivers. Specifically, stakeholders reported that there may be fewer ECE employers in the Panhandle that require their staff to have an associate or bachelor's degrees, so ECE teachers and caregivers may have less incentive to work toward obtaining these degrees. Relatedly, one stakeholder commented on requirements of participation in Nebraska's Quality Rating and Improvement System (QRIS), Step Up to Quality, pointing out that to move up the levels of quality, ECE teachers and caregivers need higher levels of education. This stakeholder mentioned that more ECE programs in the eastern part of the state participate in the Step Up to Quality program, which potentially contributes to the regional differences in education levels.

## Limitations

While this study offers a preliminary examination of possible geographic differences in ECE workforce characteristics, it has a few limitations. First, the regions analyzed in the study included small respondent sample sizes representing each region, particularly in the Panhandle and High Plains regions. These small samples make it difficult to determine whether significant differences were the result of true differences in respondents' experiences, or whether the small samples affected these findings. Furthermore, the Nebraska Early Childhood Workforce Survey sampled only licensed early childhood programs. Since most Head Start programs in the state are not licensed, their perspectives were not represented in the survey.

Methodologically, the maps created for this study reflect the adjusted means and the predicted probability for each region after controlling for key respondent and program characteristics. For center-based respondents, these adjusted predictions account for the average prevalence of center-based programs

versus pre-K programs as indicated by response rates in each region (see Figure 1). However, some regions are more likely to have pre-K programs than center-based programs, which could affect the workforce outcomes examined in the study. Since the research team did not know whether the representativeness of center-based versus pre-K programs was correct in each region, it was included as a control in center-based analyses. Additionally, as noted previously, the exploratory nature of these analyses and the study's small sample size prompted the research team to use a significance threshold of  $p < 0.10$  and not adjust for the Type 1 error rate for pairwise comparisons. A larger sample size is needed to confirm these initial findings.

Finally, the qualitative analyses in this study included a small sample of interviewees reflecting on state-wide trends of the ECE workforce. Despite the team's attempts to speak with teachers and caregivers directly, the final sample of stakeholders interviewed included only one ECE home-based caregiver. Due to these limitations, contextual findings should be interpreted as exploratory, but not confirmatory, of trends in the experiences of Nebraska's ECE workforce.

## Conclusion

Findings from this mixed methods study suggest that while several universal factors may pose challenges to ECE teachers and caregivers regardless of their geographic location (e.g., low wages), the specific needs and challenges of Nebraska's ECE workforce vary based on geographic location in the state. Though the mapping analyses did not find significant regional differences in workforce outcomes among home-based respondents, four workforce outcomes varied across regions among center-based respondents:

- **Reported feelings about level of control.** Center-based respondents in the Omaha region reported lower feelings of autonomy in their work than their peers in the High Plains, Northern, Central, and Southwest regions.
- **Reported feelings of work satisfaction.** Center-based respondents in the Southeast region reported higher frequencies of feeling rewarded by their ECE work when compared to their peers in the Panhandle, High Plains, Central, Platte Valley, and Omaha regions.
- **Likelihood of obtaining an associate degree or higher.** Center-based respondents in the Panhandle region had a lower predicted probability of obtaining an associate or higher post-secondary degree when compared to their peers in the High Plains, Northern, Central, Southeast, Platte Valley, and Omaha regions.
- **Likelihood of obtaining a bachelor's degree or higher.** Center-based respondents in the Panhandle region had a lower predicted probability of obtaining a bachelor's or higher post-secondary degree when compared to respondents in the High Plains, Northern, Central, Southeast, Platte Valley, and Omaha regions. Additionally, center-based respondents in the Central region had a lower predicted probability of bachelor's degree completion than their peers in the Omaha region.

Interviews with stakeholders suggested additional regional differences among both home-based and center-based teachers and potential factors that contribute to those differences.

Overall, findings from this study suggest that it is important to study and consider regional differences and contextual factors that may have an impact on the ECE workforce when developing policies and strategies to strengthen and support the workforce.

## Acknowledgments

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## References

- Curbow, B., Spratt, K., Ungaretti, A., McDonnell, K., & Breckler, S. (2000). Development of the child care worker job stress inventory. *Early Childhood Research Quarterly*, 15(4), 515–536. [https://doi.org/10.1016/S0885-2006\(01\)00068-0](https://doi.org/10.1016/S0885-2006(01)00068-0)
- Hamre, B.K., and Pianta, R.C. (2004). Self-reported depression in nonfamilial caregivers: Prevalence and associations with caregiver behavior in child-care settings. *Early Childhood Research Quarterly*, 19, 297–318.
- Linnan L., Arandia G., Bateman L.A., Vaughn A., Smith N., & Ward D. (2017). The health and working conditions of women employed in child care. *International Journal of Environmental Research and Public Health*. 2017;14:283. doi: 10.3390/ijerph14030283
- Magerko, K.A. *Healthy hearts in family child care: what is the current state of provider health?* [dissertation]: University of Illinois; 2016.
- Mueller, C. J., & MacLehose, R.F. (2014). Estimating predicted probabilities from logistic regression: different methods correspond to different target populations. *International Journal of Epidemiology*, 43(3), 962-970. Doi:10.1093/ije/dyu029
- Nebraska Department of Education. (2019). *Early Learning Connection*. Web. Retrieved from <https://www.education.ne.gov/oec/early-learning-connection/>.
- Perneger T. V. (1998). What's wrong with Bonferroni adjustments. *BMJ (Clinical research ed.)*, 316(7139), 1236–1238. doi:10.1136/bmj.316.7139.1236
- Podsada, J. (2015, August 9). *Meet some of the Midlanders who work more than one job – and learn why*. Omaha World-Herald. Retrieved from [https://www.omaha.com/money/meet-some-of-the-midlanders-who-work-more-than-one/article\\_591900a0-5761-5d4a-a574-c3a42726162a.html](https://www.omaha.com/money/meet-some-of-the-midlanders-who-work-more-than-one/article_591900a0-5761-5d4a-a574-c3a42726162a.html)
- Radloff, L. S. (1977). The CES-D Scale: A Self-Report Depression Scale for Research in the General Population. *Applied Psychological Measurement*, 1(3), 385–401. <https://doi.org/10.1177/014662167700100306>
- Roberts, A. M., Iruka, I. U., & Sarver, S. L. (2017). *Nebraska Early Childhood Workforce Survey: A focus on providers and teachers*. Omaha, NE: Buffett Early Childhood Institute at the University of Nebraska. Retrieved from: <http://buffettinstitute.nebraska.edu/workforce-survey>.
- Schaeffer, K. (2019). About one-in-six U.S. teachers work second jobs - and not just in the summer. About one-in-six U.S. teachers work second jobs - and not just in the summer. Pew Research Center. Retrieved from <https://www.pewresearch.org/fact-tank/2019/07/01/about-one-in-six-u-s-teachers-work-second-jobs-and-not-just-in-the-summer/>
- Sarver, S.L., Huddleston-Casas, C., Charlet, C., & Wessels, R. (2020). *Elevating Nebraska's Early Childhood Workforce: Report and Recommendations of the Nebraska Early Childhood Workforce Commission*. Omaha, NE: Buffett Early Childhood Institute at the University of Nebraska. Retrieved from: <https://buffettinstitute.nebraska.edu/-/media/beci/docs/workforce-commission-report-pages-final.pdf>.

- Smith, S., & Lawrence, S. M. (2019). Early care and education teacher well-being: Associations with children's experience, outcomes, and workplace conditions: A research-to-policy brief. *Child Care & Early Education Research Connections*. Retrieved from <https://academiccommons.columbia.edu/doi/10.7916/d8-ngw9-n011>
- U.S. Bureau of Labor Statistics; Current Population Survey (2018). *Table 36: Multiple jobholders by selected characteristics*. Retrieved from: <https://www.bls.gov/cps/cpsaat36.htm>
- U.S. Census Bureau (2012). *2010 Census Summary File 1 - Technical Documentation*. Retrieved from: <https://www.census.gov/prod/cen2010/doc/sf1.pdf#page=504>.
- U.S. Office of Management and Budget (2013). *Revised Delineations of Metropolitan Statistical Areas, Micropolitan Statistical Areas, and Combined Statistical Areas, and Guidance on Uses of the Delineations of These Areas* (Bulletin No. 13-01). Executive Office of the President, Office of Management and Budget. <https://obamawhitehouse.archives.gov/sites/default/files/omb/bulletins/2013/b-13-01.pdf>.
- Whitaker, R. C., Becker, B. D., Herman, A. N., & Gooze, R. A. (2013). The physical and mental health of Head Start staff: the Pennsylvania Head Start staff wellness survey, 2012. *Preventing chronic disease*, 10, E181. <https://doi.org/10.5888/pcd10.130171>
- Whitebook, M., McLean, C., Austin, L.J.E., & Edwards, B. (2018). *Early Childhood Workforce Index – 2018*. Berkeley, CA: Center for the Study of Child Care Employment, University of California, Berkeley. Retrieved from <http://csce.berkeley.edu/topic/early-childhood-workforce-index/2018/>.
- Witherell, S.L. (2013). *Work-related stress and mental health of child care center workers* [dissertation]. Detroit: Wayne State University.

## Appendix A: CCW-JSI Scales

CCWJSI Scale	Response Items	Response Range	Indication of Better Workplace Well-Being
<b>Job Demands</b>	<p>How often do the following things happen in your program...?</p> <ul style="list-style-type: none"> <li>• <i>Parent's don't let me know where they are during the day.</i></li> <li>• <i>Parents blame their children's bad behavior on child care.</i></li> <li>• <i>Children have behavior problems that are hard to deal with.</i></li> <li>• <i>I feel like I have to be a parent and a teacher to the children.</i></li> <li>• <i>All of the children need attention at the same time.</i></li> </ul>	Never (1) to Most of the time (5)	A <b>lower</b> job demands scale score indicates <b>less stress</b> in the workplace.
<b>Job Control</b>	<p>How much control do you have over the following things in your program...?</p> <ul style="list-style-type: none"> <li>• <i>The availability of supplies that you need.</i></li> <li>• <i>Getting the parents to work with you on behavior problem.</i></li> <li>• <i>Getting parents to be consistent with you on how to deal with a child.</i></li> <li>• <i>The number of children you have to care for.</i></li> <li>• <i>When the parents pick up their children.</i></li> </ul>	Very Little (1) to Very Much (5)	A <b>higher</b> job control scale score indicates <b>greater control</b> over day-to-day work.

CCWJSI Scale	Response Items	Response Range	Indication of Better Workplace Well-Being
<b>Job Resources</b>	<p>How often do the following things happen in your program...?</p> <ul style="list-style-type: none"> <li>• <i>I get praise from the parents for the work that I do.</i></li> <li>• <i>I feel respected for the work that I do.</i></li> <li>• <i>I feel like I am helping the children grow and develop.</i></li> <li>• <i>I see that my work is making a difference with a child.</i></li> <li>• <i>I feel the satisfaction of knowing that I am helping parents.</i></li> </ul>	<p>Never (1) to Most of the time (5)</p>	<p>A higher job resources scale score indicates a greater sense of reward for the work the respondent does.</p>
<p><b>Job-Specific Demands</b>  (center-based programs only)</p>	<p>How often do the following things happen in your program...?</p> <ul style="list-style-type: none"> <li>• <i>I have problems doing my work because of staffing.</i></li> <li>• <i>I feel that my director/principal is never around when I need help.</i></li> <li>• <i>Other teachers cause extra work for me because they are not doing their jobs.</i></li> <li>• <i>I disagree with the policies at my center/school.</i></li> <li>• <i>I disagree with the way other teachers work with the children.</i></li> </ul>	<p>Never (1) to Most of the time (5)</p>	<p>A <b>lower</b> job-specific demands scale score indicates <b>less stress</b> in a center-based setting.</p>

## Appendix B: Qualitative response scale

Number of responses (n)	Frequency categorization
2 - 4	Some
5 - 6	About half
7 - 8	More than half
9 - 10	Most
11	All

## Appendix C: Summary of Findings

Workforce Outcome	Home-Based Caregivers	Center-Based Teachers	Regional Comparisons
<b>CES-D-10: self-reported depressive symptoms</b>	NS	NS	
<b>CCW-JSI Control: having control over things that happen at work</b>	NS	p=0.06	Omaha < High Plains; Northern; Central; Southwest
<b>CCW-JSI Demands: experiencing stressful situations or demands at work</b>	NS	NS	
<b>CCW-JSI Resources: feeling respected or influential at work</b>	NS	p=0.03	Southeast > Panhandle; High Plains; Central; Platte Valley; Omaha
<b>CCW-JSI Specific Demands: experiencing stressful situations or demands in center-based settings</b>	n/a	NS	
<b>Second Job Status: Holding a second job</b>	NS	NS	
<b>Associate Degree: Holding an associate's or higher post-secondary degree</b>	NS	p=0.05	Panhandle < High Plains; Northern; Central; Southeast; Platte Valley; Omaha
<b>Bachelor's Degree: Holding an associate's or higher post-secondary degree</b>	NS	p=0.04	Panhandle < High Plains, Northern; Central; Southeast; Platte Valley; Omaha  Central < Omaha