TRLECE
The Role of Licensing in Early Care and Education

Licensing Violations and Program Characteristics in Child Care and Early Education

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Introduction

Child care and early education[1] (CCEE) **licensing** is a key part of state/territory CCEE systems because it establishes **regulations** (i.e., rules) for CCEE programs to legally operate within a state or territory. It also monitors (or inspects) programs to ensure that they meet those regulations. Licensing regulations set minimum standards of operation to ensure the health, safety, and well-being of children (Morgan, 2003). Licensing may also support quality practices (Maxwell & Starr, 2019) and be a requirement for providers to participate in other state initiatives, like quality improvement systems (The BUILD Initiative & Child Trends, 2024).

This study is part of the project The Role of Licensing in Early Care and Education (TRLECE). TRLECE is funded from 2019-2024 by the Office of Planning, Research, and Evaluation in the Administration for Children and Families. The project team includes staff from Child Trends and ICF. The team has conducted a variety of activities to strengthen the field's understanding of child care and early education licensing.

Licensing affects many CCEE providers and children. A 2019 national survey estimates that there are over 200,000 providers serving over seven million children, birth through age 5 in the United States (Datta et al., 2021a; 2021b). Many of these providers are regulated by their state's/territory's **licensing agency**. Despite licensing's central role in each state's/territory's CCEE system, licensing has received little research attention. This study starts to fill the gap in licensing research by investigating associations between program characteristics and licensing **violations**.

CCEE licensing regulations and violations

Regulations are a core component of licensing that warrant further study. Each state and territory establishes its own regulations, which can vary in the content covered as well as the number of regulations.[2] States/territories also determine their own approach to **monitoring** CCEE programs to ensure they meet licensing regulations. This means that there is variation across states and territories in what regulations are monitored, how providers are monitored, the data collected during monitoring or **inspection** visits, and the terms and definitions used in licensing regulations and inspection reports (see Miranda et al., 2022a for additional information about licensing approaches to monitoring).

When **licensing staff** inspect CCEE programs, they determine whether the program does or does not meet (i.e., is in violation of) licensing regulations. Some states and territories may designate certain types of violations as "high-risk" because they place children at greater risk of harm (e.g., illness, injury, death)—though the terminology, definition, and designation of regulations as "high-risk" varies across states. A "high-risk" violation might include, for example, a lack of supervision or hazardous materials accessible to children.

Licensing violations are an important area of study, in part because of their potential impact on providers. Providers in violation of licensing regulations must correct the violations, and may face enforcement actions like fines. In extreme situations, a licensing agency may revoke a provider's license, thereby affecting the provider and the families they serve (see Miranda et al., 2022b for additional information about licensing enforcement). Because a license is required for many providers to legally operate—and may be required to receive resources (e.g., grants may be limited to only licensed providers)—violations can have serious consequences for providers and communities. The consequences of licensing violations could be especially hard for providers and communities who have been marginalized (e.g., violations may be expensive to fix,

[1] The first time we use a term that is defined in the glossary, it will appear in bold purple text. View the glossary section toward the end of this document for definitions.
[2] Although each state/territory sets its own regulations, the Child Care and Development Fund (CCDF, 45 C.F.R. §98,2016) regulations include some requirements that guide state/territory licensing, such as health and safety topics for programs serving children receiving CCDF subsidies.

may impact enrollment, may make it harder to receive grants, may contribute to program closures). Violations are also important to study because they help us understand the implementation of licensing regulations (e.g., which licensing regulations are most likely to have violations), which can inform efforts to support providers.

Past research on CCEE licensing violations

There is little public research[3] about CCEE licensing violations. The Child Care Licensing Study periodically surveys all state licensing agencies and reviews licensing regulations to summarize information about some topics (e.g., nutrition, fire safety, group size) that each state includes in CCEE licensing regulations (National Center on Early Childhood Quality Assurance, 2022a, 2022b, 2022c). It does not, however, provide data about violations of regulations, such as the number of licensing violations by setting type within a state or the regulations providers are most likely to violate within a state. This information is best summarized by analyzing state licensing **administrative data** on licensing violations.

A few studies have examined the relationship between CCEE licensing violations and other program factors, like accreditation (Crowley et al., 2013; Winterbottom & Jones, 2014), quality (Fiene, 2017; Wang, 2018), program size (Fiene, 2017), length of time in operation (Wang, 2018), and public funding (Doromal et al., 2018); or community factors, such as community income level (Rosenthal et al., 2016). For additional information about these studies, see the TRLECE literature synthesis (Maxwell et al., in press). Though these studies provide valuable information regarding licensing violations, all of them have been conducted within a single state, and some have focused on a single setting type (i.e., **CCEE centers** or **family child care** homes [FCC] homes). More research is needed to better understand factors that might influence violations, as well as the relationship between licensing violations and outcomes, such as program quality.

Equity within CCEE licensing

The 2021 White House Executive Order 13985 on **equity** highlighted the importance of identifying possible inequities in programs and policies so that they can be addressed. Lloyd and colleagues (2021) described the history of racism and sexism in the CCEE system, including a strong reliance on the underpaid labor of women, especially Black women. This history of racism, sexism, and low wages may influence licensing violations through, for example, bias on the part of the inspectors, discriminatory housing policies, and inadequate resources to meet and maintain compliance with licensing regulations. To help states and territories consider possible inequities within CCEE licensing, the National Center on Early Childhood Quality Assurance (NCECQA) published a resource presenting various questions for licensing staff to consider. Examples of questions include: "Do patterns of violations (for example, number and severity) differ across priority subgroups[4] of providers? If so, how might licensing staff be contributing to these differences (for example, **implicit bias**)? How could the licensing unit help all providers have fewer violations?" and "Do patterns of compliance differ across subgroups of providers? If so, how might the licensing unit be contributing to these differences? How can the licensing unit help all providers comply?" (NCECQA, 2021, p. 4).

The Executive Order and NCECQA resource highlight the importance of considering equity within programs and policies, including CCEE licensing, and this study is a preliminary step in providing research in this emerging area. This study focuses on equity in licensing violations because of the important implications of violations on providers, licensing, and the broader CCEE system. The study explores various aspects of

[3] It is possible that states have examined licensing violations data and developed internal reports on this topic, but the publicly available research is limited.
[4] Because the number of possible subgroups of providers is large, states/territories likely need to identify a few subgroups of greatest interest.

equity, including poverty, CCEE **subsidy** participation, race/ethnicity,[5] and whether or not the program was located in an urban area.

Purposes of the study

We partnered with six states to design and implement a study to explore possible relationships between licensing violations and program characteristics. This study had multiple purposes.

- We explored CCEE program characteristics that might be related to violations, largely because there is little current research about CCEE licensing violations but also because we wanted to consider issues of equity within licensing.
- We explored relationships between licensing violations and program characteristics across multiple states, whereas previous research has generally focused on a single state. Despite wide variation across states, we wanted to see if any preliminary research findings would be similar across multiple states, which might suggest areas for future research.
- This study provides information about how best to use state CCEE licensing administrative data and provides an example of how CCEE researchers could partner with states to analyze licensing data. We hope the description of this work, along with the findings, fosters future state-researcher partnerships that address questions about licensing.

Research Questions

We explored five research questions in this study using data from six states. Due to differences in data sources, licensing systems, and the availability of data needed across the states, we addressed some research questions in all six states and other questions in only a subset of states. Table 1 summarizes the research questions and indicates which ones we were able to answer for which states. Throughout this report we label states as A – F to maintain their anonymity.

Although we wanted to focus on the characteristics of CCEE programs and the children and families they serve, program-level data were not available for family income or race and ethnicity of program staff or enrolled children. Thus, we used community-level data (i.e., census tract data), as a proxy for these characteristics (see Data Sources section more information), assuming that CCEE program, child, and family characteristics may be similar to the characteristics of the communities where they are located.

[5] Race and ethnicity are two separate constructs used to categorize groups of people. In this study, we developed a combined race/ethnicity variable that includes the following categories: Asian, Black, Hispanic/Latino, and White. Individuals who identified as a member of two or more race/ethnicity groups were counted in each group.

Table 1. Research Questions and States with Data to Address Each Question

Research question	State A	State B	State C	State D	State E	State F
1a. Do programs in communities with higher poverty have more (or fewer) violations than those in communities with lower poverty levels?	✓	✓		✓	✓	✓
1b. Are programs in communities with higher poverty more (or less) likely to have **high-risk violations** than those in communities with lower poverty levels?			✓	✓	✓	
2a. Do programs that accept child care subsidies have more (or fewer) licensing violations than programs that don't accept subsidies?	✓	✓		✓	✓	✓
2b. Are programs that accept child care subsidies more (or less) likely to have high-risk violations?			✓	✓	✓	
3a. Do programs with a higher percentage of children receiving child care subsidies have more (or fewer) licensing violations?				✓	✓	✓
3b. Are programs with a higher percentage of children receiving child care subsidies more (or less) likely to have high-risk violations?				✓	✓	
4a. Do programs in communities with a higher proportion of Asian, Black, Hispanic or Latino, or White residents have more (or fewer) licensing violations?	✓	✓		✓	✓	✓
4b. Are programs in communities with a higher proportion of Asian, Black, Hispanic or Latino, or White residents more (or less) likely to have high-risk violations?			✓	✓	✓	
5a. Do programs located in urban areas have more (or fewer) violations than those in non-urban areas?	✓	✓		✓	✓	✓
5b. Are programs located in urban areas more (or less) likely to have high-risk violations that those in non-urban areas?			✓	✓	✓	

Note: See Description of the Variables section for more information detailing why some questions were only answered using data from a subset of states.

Data and Analysis

State selection

The six states included in this project are located across the United States, from five different Administration for Children and Families (ACF) regions (Regions 1, 4, 5, 6, and 8). We sought representation across geographic areas because of wide regional variation in population demographics. The six states were selected because each had the types of data required for the analyses and the required data were either publicly available (e.g., on the licensing or consumer education website) or the state was willing to share them with us. All six states required child care centers and FCC homes[6] to be licensed. In some states, other types of programs were licensed in addition to centers and FCC homes (e.g., summer day camps). We excluded these programs from our analyses because they are subject to different rules and inspection schedules.

See Appendix A for a detailed description of the steps we took to identify states and partner with them to access and interpret the data.

Partnering with States

We worked closely with six states to successfully complete this study. This required multiple discussions throughout the life of the project, including:

- Discussing possible research questions with each state and determining which were feasible and of interest to them.
- Discussing licensing administrative data to ensure that we selected the appropriate variables and understood their meaning.
- Sharing preliminary descriptive information about the sample with each state to check for possible errors in our analyses (e.g., values out of the expected range).
- Offering opportunities to discuss the preliminary research findings with each state to further understand state-specific contexts that may help in interpreting results.
- Asking each state to review a draft of this report to correct any factual errors about their state prior to publication.

Data sources

We used CCEE licensing administrative data to identify program-level characteristics such as physical address, setting type (i.e., center, FCC home), ages of children served, and the count and type of violations. Five states directly shared the data with us.[7] For the remaining state, we utilized a web scraping[8] program to automate the process of extracting or "scraping" data from the state website where licensing reports are published (see Table 2 for more information about the data sources).

For data regarding community-level poverty, race, and ethnicity, we drew data from the 5-year (2016 – 2020) Census Bureau American Community Survey (ACS). To merge the administrative data and the ACS data, we

[6] Some states have multiple types of licensed home-based settings (e.g., small family child care, large family child care, group child care homes). We refer to all home-based settings as FCC homes in this report.
[7] Two of the five states required a data sharing agreement to share their administrative data. The study team obtained fully executed agreements with these states.
[8] Web scraping is the process of extracting data from web pages and organizing the information into a structured data set for analysis. This process may be manual or automated (Zhao, 2022).

matched each program's address to a census tract, and assigned each program the ACS data for their census tract.[9]

Sample in each state

We only included data from routine, in-person licensing inspections conducted at licensed child care centers and FCC homes[10] during which all licensing regulations were monitored (i.e., full inspections)[11]. This means we excluded other types of inspections such as pre-licensing or initial reviews, inspections conducted following complaints, and follow-up inspections after a violation. In most states, these routine, full inspections take place at least annually. In one of the six participating states, routine full inspections were conducted less frequently. In that state, we requested multiple years of data collected prior to the COVID-19 pandemic (i.e., between January 2017 and March 2020) to ensure we had a sufficient number of programs with routine full inspection data for the analyses. Due to rapidly changing health and safety requirements and state licensing inspection protocols caused by the COVID-19 pandemic, we sought to avoid inspections that took place during the pandemic. For that reason, in three states, we included inspections that took place prior to the COVID-19 pandemic (i.e., between January 2019 and February 2020 with one exception described above). In the remaining three states, we included inspections that took place between July 2021 and June 2022, after temporary COVID-19 related changes (e.g., virtual inspections) were lifted and in-person inspections resumed (see Table 2).

[9] State C publishes FCC home zip codes rather than complete street addresses. As such, we were unable to assign a single census tract to each FCC home. For State C, community-level measures were created from an average of the measure for all census tracts in the identified zip code and standard errors were clustered at the zip code rather than the census tract level. However, because urbanicity may vary within zip code (i.e., both urban and non-urban areas are sometimes located within a zip code), we were unable to include State C FCC homes in analyses related to urbanicity.

[10] Licensed CCEE programs may have participated in quality rating and improvement systems, state pre-K, Early Head Start, and Head Start. We excluded any program settings that were exempt from licensing or monitored using a different set of regulations than full-day centers and FCC homes (e.g., summer camps, drop-in care, residential facilities). In states D, E and F, we also excluded programs that only cared for school-aged children. Additionally, in one state, child care homes that cared for five or fewer children, including in-home care providers (i.e., providers who care for children in the child's home), are required to be registered and monitored by the licensing agency. Because there were only a few registered homes, we excluded them based on the state licensing representative's recommendation.

[11] When a program had multiple routine inspection visits during the study periods, we selected the most recent visit except for one state. In this state, we included the first inspection visit programs received within a calendar year as all licensed programs received these visits.

Table 2. Administrative Data Sources, Study Period, and Programs Included in the Analytic Sample

	State A	State B	State C	State D	State E	State F
Data source for licensing inspections						
Provided by state	✓	✓		✓	✓	✓
Scraped from state website			✓			
Study period						
Prior to the COVID-19 pandemic				✓	✓	✓
After in-person inspections resumed (July 2021-June 2022)	✓	✓	✓			
Number of programs in the analytic sample						
Licensed child care centers[a]	1400	3600	300	1100	2700	1600
Licensed FCC homes[a]	3000	1100	600	200	1300	3200

[a] The total number of licensed programs in each state's data set was rounded to the nearest hundred to protect state confidentiality.

The characteristics of each sample varied by state and setting type (see Appendix C1 and C2). As expected, **licensed capacity** was larger among centers (state average range: 66-116) compared to FCC homes (state average range: 6-14). The percentage of programs that served infants ranged from 40% to 100%, and FCC homes were more likely than centers to serve infants. The average percentage of programs that accepted child care subsidies varied widely across states, ranging from 33% to 95% among centers and 24% to 97% among FCC homes. The percentage of programs located in urban areas also varied widely across states, ranging from 48% to 92% for centers and 32% to 92% for FCC homes. Although there was variation across states in the racial/ethnic composition of communities where programs were located, the largest groups tended to be White, followed by Black, Hispanic, and Asian. Finally, the poverty level (percentage of individuals with incomes below 185% FPL) in communities where programs were located ranged from 19% to 39%.

Description of the variables

In this section, we provide the rationale for selecting variables of interest and describe how we defined them in our analyses. The number of states included in each research question varied for two reasons. First, some administrative data variables were only available for a subset of states (e.g., percentage of children receiving child care subsidies). Second, some racial/ethnic groups were excluded for certain states because the percentage of these groups in some participating states was too low to examine.

Licensing violations

Rationale. We focused our research on CCEE licensing violations because there was little research on this topic. We also wanted to examine questions that could be answered using administrative data across multiple states.

Definition. We measured violations in two ways—total number of violations and, when available, whether the program had one or more high-risk violations.

- The *total number of violations* was the number of violations the program received during the full, routine licensing inspection included in the study. This information was available in five states. State C only publishes high-risk violations, therefore we were only able to use State C's data to answer research questions about the presence of high-risk violations and were unable to answer questions about the total number of licensing violations.
- Three states (States C, D, and E) also designate a subset of their regulations as high-risk. These regulations are considered critical to children's health and safety, and, if violated, pose a greater risk of harm to children's health and safety. Though the list of high-risk regulations varies by state, some examples include inappropriate staff-to-child ratio, lack of supervision, and hazardous materials that are accessible to children. One of the three states also considered repeated violations high-risk. For the three states that designate a subset of their regulations as high-risk, we developed a variable indicating whether or not the program had *one or more high-risk violations*.

Key program and community characteristics

The research questions for this study focused on four key program and community characteristics: child care subsidies, community poverty level, community racial and ethnic composition, and whether or not the program was in an urban area.

Child care subsidies

Rationale. The **Child Care and Development Fund** (CCDF) supports subsidies that help families with low incomes[12] pay for CCEE. CCEE programs that accept subsidies provide an important service to families with low incomes, and we were interested in exploring whether programs that did (or did not) participate in the subsidy program differed in their licensing violations. The Office of Child Care has recommended CCDF lead agencies set their subsidy payment rates at least at the 75th percentile of their most recent market rate survey to ensure families receiving child care subsidies have equal access to CCEE (Child Care and Development Fund, 2016).[13] The 75th percentile refers to the value at or below which 75% of CCEE slots are priced. For example, if the 75th percentile falls at $500 per week, 75% of CCEE slots are priced at $500 or less. As of 2019, only four states set their subsidy rates at or above the 75th percentile of the market rate; by 2022, the number increased to 13 states (Schulman, 2019; Schulman 2023). These data indicate that, in most states, subsidy payments are less than what non-subsidy families pay for child care. In fact, states that are paying subsidies at the recommended 75th percentile of the market are still not covering the full cost of child care, leaving providers and families to fill the gap (Davis et al., 2017). Therefore, programs that receive subsidy payments could receive fewer financial resources to support their compliance with costly licensing

[12] Subsidy income eligibility requirements are set by states and territories. Federal guidelines require that states and territories set the eligibility limits at or below 85 percent of the state/territory median income (Minton et al., 2020).
[13] We cite the CCDF regulations that were in place at the time this product was developed. The CCDF regulations were updated in 2024 (Child Care and Development Fund, 45 C.F.R. § 98, [2024]), and we encourage readers to review those for the most up-to-date information about CCDF guidelines.

regulations (e.g., safe playground structures, adequately maintained buildings, sufficient staff to meet required staff-child ratios), compared to programs that are supported entirely by parent payments.

Definition. In all six states, we created a variable indicating whether the program accepted child care subsidies.[14] In three states (States D, E, and F), that variable reflected whether the program currently served one or more children who received subsidies. Therefore, in these states, we do not know if programs that were *not* serving children receiving subsidies at that time were or were not willing to accept subsidies. In the remaining three states (States A, B, and C), we did not have data indicating how many children received subsidies, therefore the variable reflected whether the program was willing to accept child care subsidies.

Additionally, in three states (States D, E, and F), we also had information about the number of children enrolled in the program who received subsidies. In those states, we created a variable reflecting the percentage of children who received subsidies by dividing the number of children with subsidies by the program's licensed capacity, which we refer to as subsidy density.

Community poverty level

Rationale. Some licensing regulations may be costly for programs to meet (e.g., safe playground structures, adequate square footage). Programs located in communities with higher levels of poverty may have fewer financial resources to help them meet licensing regulations because they are likely serving families with lower incomes, and this may limit programs' revenue. Rosenthal et al. (2016) found that, in Connecticut, FCC homes in communities with the lowest quartile of income were less likely to be compliant with indoor safety regulations and more likely to receive a follow-up inspection (which could be due to severity of violations, repeated violations, or other factors considered by the licensing inspector).

Definition. Because most state licensing agencies do not collect information about the incomes of families served by licensed CCEE programs, we used community-level information as a proxy for family income. We defined community poverty level as the percentage of individuals with incomes below 185 percent of the federal poverty level (FPL) in the census tract where the program is located. Programs located in the same census tracts had the same community poverty level.

Community racial and ethnic composition

Rationale. Previous studies have found that Black and Hispanic/Latino children have lower access to high-quality CCEE programs compared to their White peers (Latham et al., 2020; Gillispie, 2019; Rothwell, 2016; Valentino, 2018). Some studies have also found positive associations between CCEE quality and compliance with licensing regulations (Fiene, 2017; Winterbottom & Jones, 2014). Taken together, this suggests that Black and Hispanic/Latino children might be less likely than their White peers to attend a CCEE program with higher compliance rates (i.e., fewer licensing violations). Race and ethnicity may be related to quality and compliance with licensing regulations, because of racism, historical underinvestment in Black or Hispanic/Latino communities, and other disparities experienced by people in particular racial or ethnic groups. Thus, we are interested in examining race and ethnicity to help identify whether it is related to licensing violations and, if so, what might be the root cause (Malawa et al., 2021) and how might policies better support groups of people who have been historically discriminated against. See Iruka et al. (2022) for a review of the effects of racism on child development.

Definition. We used the community-level information on race and ethnicity as a proxy for the racial and ethnic composition of providers and families. We measured the community racial and ethnic breakdown by the percentage of individuals who identify as one of four groups—Asian, Black, Hispanic or Latino of any

[14] Subsidies could be federal- or state-funded.

race, and White[15]—in the program's community. Programs in the same census tract had the same values for each of the racial and ethnic groups. We were not able to conduct analyses related to exploring whether the percentage of Asian individuals in State C and D and the percentage of Black individuals in States C were associated with licensing violations because the percentage of these racial groups in these states were too small.

Urbanicity

Rationale. Previous studies show mixed findings on the associations between urbanicity and program quality. Compared to urban areas, non-urban areas tend to have a higher proportion of publicly funded CCEE centers, such as Head Start and public pre-K programs, that are associated with higher quality (Morrissey et al., 2022; Paschall et al., 2020). However, Paschall et al. (2020) found that FCC providers in rural areas reported participating in less professional development compared to FCC providers in urban areas, which might affect their program quality.

Definition. We categorized each program as being in an urban or non-urban area based on its address. In the 2016-2020 ACS data, the Census Bureau classified areas as urbanized (i.e., a population of 50,000 people or more), urban clusters (i.e., with 2,500 to less than 50,000 people), and rural (i.e., less than 2,500 people). We combined urban clusters and rural areas into non-urban areas. We were not able to conduct the analyses related to urbanicity for FCC homes in State C because the state only publishes zip codes for FCC homes (rather than complete addresses) and urbanicity can vary within a zip code (i.e., both urban and non-urban areas are sometimes located within a zip code).

Other program and community characteristics

When available, all of the analytic models controlled for the variables listed below (see Appendix B for the rationale and definition for each variable):

- Number of regulations inspected
- Licensed capacity
- Whether the program is licensed to serve infants
- Whether the program accepts subsidies
- Community poverty level
- The percentage of individuals who identify as White in the community.

Note that by including the percentage of individuals who identify as White in the community as a control variable, we are also accounting for the percentage of individuals who are people of color in the community, which helps account for racial bias and historic and ongoing racial disparities between predominately White communities and those made up of mostly people of color. We did not control for each racial/ethnic group separately because that would reduce our statistical power, decreasing the likelihood that we would detect effects that exist. While this approach works well for the purposes of our analyses, we acknowledge that it does not account for the varying experiences of individuals across and within different racial and ethnic groups.

[15] We selected these four racial/ethnic groups because they are the largest ones in both the United States and in the states participating in the study. Estimates from the ACS are unreliable for smaller groups (e.g., American Indian and Alaska Native) making their inclusion in statistical models difficult or impossible. These racial/ethnic variables denote the percentage of individuals in the community who indicated that they are members of that group, regardless of if they are also members of other racial/ethnic groups. Therefore, some individuals are included in more than one group and the totals can sum to over 100.

Some of these variables (e.g., community poverty level) are also key variables of interest for the research questions. We only considered these variables as controls when they were not the key variable of interest for that specific research question.

There are some cases where control variables were not included because the data were not available in the state (e.g., number of regulations inspected). See Appendix B for details regarding which variables were available in each state or Appendix D for detailed results tables that specify which variables were included in each analysis.

The incidence of having a violation in State D FCC homes and a high-risk violation in States C centers and State D FCC homes was very low. Therefore, due to reduced power, we conducted bivariate analyses instead of conducting regression models with control variables (see Appendix D for detailed results tables).

Summary of analytic strategies

We set out to address common questions across multiple states. Because of the variability across states in CCEE licensing regulations and how violations are assessed and recorded, we could not combine data across states into a single data set. Instead, we conducted parallel analyses in each state. To the extent possible, we defined the variables in the same way across states and included the same control variables in all models; however, data limitations prevented the analyses from being identical in each state. Licensing regulations also vary by setting type. To address this inconsistency, we conducted separate models for centers and FCC homes for each research question within each state.

We started our analysis by examining descriptive statistics for each variable of interest within each state to examine the sample sizes, identify potential outliers, and consider the need to address any abnormal distributions (see Tables C1 and C2 for state-specific descriptive statistics). We shared these descriptive analyses with licensing representatives in each state to identify and clarify any unusual or unexpected values. At this stage, we also explored correlations among our variables of interest to flag potential issues with multicollinearity and identify whether our intended controls were associated with our examined outcomes.

For most states (States A, B, D, E, and F), we used ordinary least squares (OLS) regressions to examine how program and community characteristics were related to the total number of violations received in an inspection. In addition to OLS regressions, we also conducted negative binomial regressions which are appropriate for examining count data, which do not include negative values and are often not normally distributed. The results were consistent across the OLS and negative binomial regression models. Therefore, for ease of interpretation, we report the OLS results.

For States C, D, and E, we used logistic regressions to explore how program and community characteristics were related to whether a program had any high-risk violations.

We extrapolated measures of community poverty and community racial composition from the census tract where programs were located. As such, there were situations in which multiple programs existed in the same neighborhood and were assigned identical community-level measures. We clustered standard errors at the census tract level[16] to account for this nested structure. Additionally, because our analyses are exploratory and not confirmatory, we did not make statistical adjustments for multiple comparisons.

[16] State C publishes FCC home zip codes rather than complete street addresses. As such, we were unable to assign a single census tract for each FCC home. For models in State C, community-level measures were created from an average of the measure for all census tracts in the identified zip code and standard errors were clustered at the zip code rather than the census tract level.

Research Findings

We start the presentation of research findings by describing the average number of CCEE licensing violations and percentage of programs with one or more high-risk violations. We follow that section with the findings regarding each research question. We summarize the findings for each research question and indicate (in a table) the number of states in which we conducted the analyses and the number of positive, negative, and non-significant results per state. See Appendix D for detailed tables of findings.

Violations across states

Across states, the average number of violations per program ranged from 0 to 8 for centers (Standard deviation [SD] ranging from 1 to 7) and from 1 to 6 for FCC homes (SD ranging from 2 to 5). In states where we also examined whether programs had high-risk violations, 10 percent or less of all programs (both centers and FCC homes) had high-risk violations in States C and D, while in State E, 58 percent of all centers and 38 percent of all FCC homes had high-risk violations. See Appendix C for detailed information about the number of violations and percentage of programs with high-risk violations in each state, as well as descriptive information for each key variable and control variable.

Relationship between community poverty level and licensing violations

Our first research question examined whether programs in communities with higher poverty had more or fewer violations that those in communities with lower poverty levels. We also examined whether programs in communities with higher poverty were more or less likely to have high-risk violations. Overall, our findings for the first research question suggest there is no consistent relationship between community poverty level and total number of licensing violations or the probability of having a high-risk violation, after accounting for program and community characteristics.

The tables under each research question summarize the findings across states. The second column in each table indicates the number of states where we were able to conduct the analyses. The next three columns indicate how many of those analyses showed a signficant and positive relationship, significant and negative relationship, or non-signficant relationship for centers, followed by three comparable columns for FCC homes. A positive association means that when the key variable (e.g., community poverty level) was higher, the number of violations or odds of a high-risk violation was also higher. A negative assocation means that when the key variable was higher, the number of violations or the odds of a high-risk violation was lower. All analyses controlled for several program and community characteristics (e.g., whether the program served infants, licensed capactiy; see Appendix B).

Table 3. Community Poverty Level as a Predictor of Total Licensing Violations and Incidence of High-risk Violation(s)

		Centers			FCC Homes		
	Number of states in analysis	Significant and Positive	Significant and Negative	Non-significant	Significant and Positive	Significant and Negative	Non-significant
Total number of licensing violations	5	0	0	5	0	1	4
Presence of a high-risk violation	3	0	0	3	0	0	3

Source: TRLECE Project Team analysis of administrative child care and early education licensing data from 6 U.S. states.

Relationship between subsidy acceptance and licensing violations

Our second research question examined whether programs that accept child care subsidies have more or fewer licensing violations than programs that don't accept subsidies. We also examined whether programs that accept subsidies are more or less likely to have high risk violations. Overall, our findings suggest that in a few states, programs that accepted subsidies tended to have more licensing violations and a higher probability of having a high-risk violation, after accounting for program and community characteristics.

Table 4. Programs That Accepted Subsidies as a Predictor of Total Licensing Violations and Incidence of High-risk Violation(s)

		Centers			FCC Homes		
	Number of states in analysis	Significant and Positive	Significant and Negative	Non-significant	Significant and Positive	Significant and Negative	Non-significant
Total number of licensing violations	5	2	0	3	2	0	3
Presence of a high-risk violation	3	1	0	2	1	0	2

Source: TRLECE Project Team analysis of administrative child care and early education licensing data from 6 U.S. states.

Relationship between subsidy density and licensing violations

Our third research question examined whether programs with a higher percentage of children receiving child care subsidies (i.e., subsidy density) tended to have more or fewer licensing violations than those with a lower percentage of children receiving subsidies. We also examined whether programs with a higher percentage of children receiving child care subsidies were more or less likely to have high-risk violations. Overall, our results indicated that in some states, programs that served a larger percentage of children who received subsidies (i.e., subsidy density) tended to have more licensing violations and a higher probability of having one or more high-risk violations, after accounting for program and community characteristics.

These are exploratory analyses. Therefore, we do not have data to help us understand why child care subsidies and licensing violations are related in some states but not others. As noted previously, state subsidy payment rates tend to be lower than the market rate paid by families who do not receive subsidies (Schulman, 2019; Schulman 2023). This means that programs serving more children receiving subsidies may receive less revenue from tuition than programs serving fewer children receiving subsidies. This could make it harder for subsidy-participating programs to have the funds available to meet licensing regulations. Anecdotally, the state where there was a significant relationship between violations and both subsidy status and subsidy density, for centers and FCC homes, had the lowest subsidy payment rate of all the states in our study. Similarly, the state where the relationship between violations and subsidy density was significant for centers but not for FCC homes had a very low subsidy rate for centers, but not for FCC homes. This does not mean that subsidy payment rates caused the increase in violations; our study was not designed to examine this. These exploratory findings suggest that it may be useful to conduct more research to better understand the relationship between child care subsidies and licensing violations.

Table 5. Percentage of Children who Received Subsidy as a Predictor of Total Licensing Violations and Incidence of High-risk Violation(s)

		Centers			FCC Homes		
	Number of states in analysis	Significant and Positive	Significant and Negative	Non-significant	Significant and Positive	Significant and Negative	Non-significant
Total number of licensing violations	3	2	0	1	1	0	2
Presence of high-risk violation	2	2	0	0	1	0	1

Source: TRLECE Project Team analysis of administrative child care and early education licensing data from 3 U.S. states.

Relationship between community racial and ethnic composition and licensing violations

Our fourth set of research questions examined whether communities with a higher proportion of Asian, Black, Hispanic or Latino, or White residents have more or fewer violations and whether they were more or less likely to have high-risk violations. Overall, our findings were not consistent across states. In some states, having a higher percentage of residents who identify as Black in the community where programs were located was associated with more licensing violations and a higher likelihood of having a high-risk violation. Conversely, in a few states, having a higher percentage of White and Asian residents in the community where programs were located was associated with fewer licensing violations.

As a reminder, these are exploratory analyses that point to some important preliminary research findings but are only a first step in understanding the myriad of factors that may affect licensing violations. These findings emphasize the need for more in-depth research to explore why these racial inequities exist in some states (e.g., historic and persistent underinvestment in Black or Hispanic/Latino communities, implicit biases, inequitable supports for CCEE providers). It is important to consider race as a proxy for or by-product of racism when interpreting these findings so that the discussion about the implications of these findings focuses on systemic, rather than personal, issues (Iruka et al., 2022; Lett et al., 2022). Future research could also help identify ways licensing practices and policies can be improved to address these inequities.

Table 6. Percentage of Community That Identifies as Asian as a Predictor of Total Licensing Violations and Incidence of High-risk Violation(s)

		Centers			FCC Homes		
	Number of states in analysis	Significant and Positive	Significant and Negative	Non-significant	Significant and Positive	Significant and Negative	Non-significant
Total number of licensing violations	4	0	1	3	0	2	2
Presence of a high-risk violation	1	0	0	1	0	0	1

Source: TRLECE Project Team analysis of administrative child care and early education licensing data from 4 U.S. states.

Table 7. Percentage of Community That Identifies as Black as a Predictor of Total Licensing Violations and Incidence of High-risk Violation(s)

		Centers			FCC Homes		
	Number of states in analysis	Significant and Positive	Significant and Negative	Non-significant	Significant and Positive	Significant and Negative	Non-significant
Total number of licensing violations	5	3	0	2	2	0	3
Presence of a high-risk violation	2	2	0	0	0	0	2

Source: TRLECE Project Team analysis of administrative child care and early education licensing data from 5 U.S. states.

Table 8. Percentage of Community That Identifies as Hispanic/Latino as a Predictor of Total Licensing Violations and Incidence of High-risk Violation(s)

		Centers			FCC Homes		
	Number of states in analysis	Significant and Positive	Significant and Negative	Non-significant	Significant and Positive	Significant and Negative	Non-significant
Total number of licensing violations	5	0	0	5	1	0	4
Presence of a high-risk violation	3	0	0	3	1	0	2

Source: TRLECE Project Team analysis of administrative child care and early education licensing data from 6 U.S. states.

Table 9. Percentage of Community That Identifies as White as a Predictor of Total Licensing Violations and Incidence of High-risk Violation(s)

		Centers			FCC Homes		
	Number of states in analysis	Significant and Positive	Significant and Negative	Non-significant	Significant and Positive	Significant and Negative	Non-significant
Total number of licensing violations	5	0	2	3	0	2	3
Presence of a high-risk violation	3	0	2	1	0	1	2

Source: TRLECE Project Team analysis of administrative child care and early education licensing data from 6 U.S. states.

Relationship between urbanicity and licensing violations

The last set of research questions examined whether programs located in urban areas have more or fewer violations than those in other areas and whether they were more or less likely to have high-risk violations. Our findings suggest there was no relationship between being in an urban area and the total number of licensing violations or the probability of having a high-risk violation, after accounting for program and community characteristics.

Table 10. Urbanicity as a Predictor of Total Licensing Violations and Incidence of High-risk Violation(s)

	Centers				FCC Homes			
	Number of states in analysis	Significant and Positive	Significant and Negative	Non-significant	Number of states in analysis	Significant and Positive	Significant and Negative	Non-significant
Total number of licensing violations	5	0	0	5	5	0	0	5
Presence of a high-risk violation	3	0	0	3	2	0	0	2

Source: TRLECE Project Team analysis of administrative child care and early education licensing data from 6 U.S. states.

Summary of research findings

The findings from this exploratory study were mixed. In one state, FCC homes in communities with higher poverty levels tended to have fewer licensing violations. Although this was not a consistent finding across the states in our study, some studies have found that the median household income where programs are located was positively associated with compliance (Crowley et al., 2013; Rosenthal et al., 2016). For subsidies, findings varied by state. In some states, programs that accepted subsidies tended to have more licensing violations and a higher likelihood of having a high-risk violation. Similarly, in some states, programs with a higher subsidy density (i.e., those that served a larger percentage of children who received subsidies) tended to have more licensing violations and a higher likelihood of having at least one high-risk violation. As noted previously, state subsidy payment rates tend to be lower than the market rate paid by families who do not receive subsidies (Schulman, 2019; Schulman 2023). Therefore, programs receiving subsidies may receive less revenue than programs that do not receive subsidies, which could make it more difficult to comply with licensing regulations due to financial restrictions.

Community race and ethnicity was related to licensing violations in some, but not all, states. Programs in communities with a higher percentage of Black residents tended to have more licensing violations and a higher likelihood of having a high-risk violation in some states across both setting types. In other states, programs in communities with a higher percentage of White and Asian residents tended to have fewer licensing violations across both setting types. These exploratory findings highlight the importance of conducting more in-depth research to examine why these racial disparities exist (e.g., implicit biases of inspectors, historic and persistent underinvestment in Black communities). Being located in an urban area was not related to licensing violations in any setting in any of the six participating states. See Table 11 for a summary of the analyses examining the relationship between program characteristics and total licensing violations.

Table 11. Program Characteristics as Predictors of Total Licensing Violations

		Centers			FCC Homes		
	Number of states in analysis	**Significant and Positive**	**Significant and Negative**	**Non-significant**	**Significant and Positive**	**Significant and Negative**	**Non-significant**
Accepted subsidies	5	2	0	3	2	0	3
Percentage of children who received subsidies	3	2	0	1	1	0	2
Community poverty level	5	0	0	5	0	1	4

		Centers			FCC Homes		
Percentage of individuals in the community who identified as …							
Asian	4	0	1	3	0	2	2
Black	5	3	0	2	2	0	3
Hispanic/Latino	5	0	0	5	1	0	4
White	5	0	2	3	0	2	3
Urbanicity	5	0	0	5	0	0	5

Study Limitations

As noted throughout this report, this study is exploratory and the findings should be interpreted with caution. We cannot know from these analyses if the associations between violations and program and community characteristics are causal and there are many possible interpretations for the findings. Because these are preliminary findings, we need additional research to explain why the associations we observed exist in some states.

Besides the correlational nature of this study, there are a few limitations of the study data that we would like to acknowledge. First, although we attempted to construct similar variables across the participating states, the state-by-state variation in both licensing and available data meant that there are some inconsistencies. For instance, some states had a variable indicating whether a program was willing to accept subsidies (yes/no), regardless of if they were currently serving any children with a subsidy. In other states, we were able to learn how many children in the program were receiving a subsidy and created a variable indicating whether a program served at least one child who received subsidies. Therefore, our "accepts subsidies" variable is a combination of those two types of data.

Second, we aimed to control the same variables in all models, but there were cases where some information was not available. For instance, some states did not publish or document the total number of regulations monitored during a licensing inspection. Therefore, we were only able to control this variable in some of our statistical analyses. This was not ideal because we expect the total number of regulations monitored to vary across inspections because some regulations only apply to a subset of programs (e.g., programs that have a pool, serve infants, or provide transportation) and when more regulations are monitored there are more opportunities for violations.

Finally, in working with these states to prepare for these analyses we learned that states vary in exactly what is meant by "violation," with some states recording each time a regulation is not met even if that infraction can be remedied during the licensing visit, and others only noting more serious breaches of the regulations. This is reflected in the wide variation in the average number of violations per inspection (average of 0 in centers State D and 8 in centers in State F; see Table C1).

Taken together, these limitations reinforce our caution that these analyses are only a first step in unpacking licensing violations and much deeper work will be required to fully understand how program and community characteristics might relate to violations.

Considerations

This exploratory study examined six states' CCEE licensing administrative data to better understand the relationship between licensing violations and characteristics of licensed programs and their communities. The findings were mixed. We did not find relationships that were consistent across all states, for both setting types, or for every characteristic we tested. Even when there were statistically significant findings, the limitations of the study mean that we need to interpret the findings cautiously. However, the findings highlight areas for further study. We hope this report sparks future research that explores these issues more deeply and poses considerations for CCEE licensing staff as they work to strengthen licensing and support programs. It is important to build a more robust body of research to understand licensing policies and procedures and how licensing supports providers, families, and children. While licensing violations are not the only outcome of interest to explore, they affect CCEE providers, families, and children—and every state collects some data about them on every licensed program.

We offer considerations related to future research, licensing administrative data, and partnerships between states and researchers.

Future research

Further research is needed to better understand the possible relationships between licensing violations and program characteristics. We list a few ideas below.

This study found that CCEE licensing violations were sometimes, but not always, associated with the racial/ethnic composition of the community. To better understand possible relationships between race/ethnicity and licensing violations, it could be helpful to design future research studies to address questions like:

- What is the racial/ethnic and linguistic match between licensors and CCEE program staff?
- To what extent does linguistic match (or mismatch) influence relationships between licensing staff and program staff?
- To what extent does linguistic match (or mismatch) influence licensing inspections and violations?
- How might implicit bias in licensing relate to licensing violations?
- How might community investment (or underinvestment) relate to licensing violations?

This study found that, in two of five states, centers and FCC homes that participated in the subsidy system were more likely to have more licensing violations than providers who did not participate in the subsidy system. Future research could address questions such as:

- How might subsidy payment rates relate to licensing violations?
- Would we find relationships between subsidy and licensing violations in states with payment rates above the 75th percentile of the market rate, as recommended by the Office of Child Care?
- How does the type and stringency of licensing regulations influence the relationship between violations and subsidy participation?

This study examined only some of the possible factors that might be related to licensing violations. Future research could explore other factors. For example:

- Are licensing staff with more years of experience more (or less) likely to cite violations?
- Are violations related to how long the CCEE program has been operating?
- Are violations related to whether the program is part of a chain or stand-alone program?

Licensing agencies' use of data

This study might spur licensing administrators and staff to examine their own data and discuss factors that might be related to licensing violations. They might consider questions such as:

- How might the characteristics of licensing staff (e.g., years of experience, education level, previous CCEE experience) influence the number of violations a program receives?
- How can licensing agencies support increased consistency among licensing staff?
- Are the regulations that cost more to meet also the ones that are more frequently in violation?

State licensing agencies can only explore data that they can access. As noted earlier, none of the states that partnered with us for this study had CCEE program-level data about family income for enrolled children or race and ethnicity data for program staff or children. This is not unusual. In 2021, the TRLECE team interviewed CCEE licensing administrators from 48 states and territories. About half of respondents noted that they had some data in their licensing data system about staff characteristics (e.g., languages spoken, race/ethnicity) in licensed programs, but those data were limited in scope and may be incomplete. Only a few respondents indicated that their licensing data system included information on characteristics of children enrolled in licensed programs, but this information was also limited in scope and relatively incomplete. Without consistently collecting administrative data on the characteristics of staff or children in licensed programs, licensing agencies—and researchers—are limited in their ability to disaggregate data to examine issues of equity. Examining some characteristics, like subsidies, may also require licensing data to be merged or linked with information from separate data sets. Depending on the data systems and staff capacity, this may be challenging. This suggests that licensing administrative data have the potential to be useful for state leaders and researchers, but that there is work to be done to improve the quality of the data before that potential can be realized.

State-researcher partnerships

This study underscores the need to examine CCEE licensing data and to do so in close partnership with staff who understand licensing and the data system(s). State licensing and data staff who partnered with us for this study were eager to explore the study questions—and others—with their data. Working closely with state licensing staff helped ensure that we addressed questions that were meaningful to them and that we understood the licensing administrative data. Our experiences highlight the importance of researchers working together with licensing staff to identify and address research questions of mutual interest, select the appropriate data to examine the questions, review the findings, and interpret findings. Based on our experiences in this study, we do not think it is possible to understand licensing information that is available publicly (e.g., through web scraping) without working closely with licensing staff who know the licensing system and staff who know the data (and its limitations). There are too many nuances and possible differences between the data available publicly and the administrative data available to licensing staff. As mentioned earlier, we talked with every partner state—including the one state for which we publicly scraped data—to ensure we understood the data and its limitations.

In closing, this study is an important step in deepening the field's knowledge about CCEE licensing and demonstrating an approach to examining similar questions across multiple states. It provides ideas to help guide future research to better understand characteristics that might influence violations in different types of provider settings. We also hope it serves as an example for other researchers interested in examining CCEE licensing issues.

Glossary

Administrative data: "Information programs collect about individual children, families, and staff to deliver program services and meet program, funding, or legal requirements. Generally, programs collect administrative data to determine child/family eligibility for services, monitor staff workload, document services provided, or examine progress children are making" (King et al., 2016, p.2).

Child Care and Development Fund (CCDF): "A federal and state partnership program … authorized under the Child Care and Development Block Grant Act (CCDBG) and administered by states, territories, and tribes with funding and support from the Administration for Children and Families' Office of Child Care. States use CCDF to provide financial assistance to low-income families to access child care so they can work or attend a job training or educational program ... In addition, states use the CCDF to invest in quality to benefit millions more children by building the skills and qualifications of the teacher workforce, supporting child care programs to achieve higher standards, and providing consumer education to help parents select child care that meets their families' needs" (Administration for Children and Families, 2016).

Child Care and Development Fund (CCDF) Final Rule (2016): The 2016 final rule was published September 30, 2016 with an effective date of November 29, 2016 (Administration for Children and Families, 2023). It "updates CCDF regulations for the first time since 1998. The rule applies to states, territories and tribes administering CCDF and incorporates and clarifies changes made through the [Child Care and Development Block Grant Act of 2014]" (Administration for Children and Families, n.d., p.1).

Child care and early education: Caregiving and educational services for children from birth to age 13. CCEE includes center- and home-based settings for infants, toddlers, preschool- and school-aged children. CCEE refers to services for a larger age group than early care and education (ECE), which consists of services provided only for young children (birth to age 5 who are not yet in kindergarten). ECE programs are included within the definition of CCEE.

Child care and early education center: "Child care services for fewer than 24 hours per day per child in a nonresidential setting, unless care in excess of 24 hours is due to the nature of the parent(s)' work" (National Center on Early Childhood Quality Assurance, 2015, p. 3).

Child care and early education licensing: Establishes regulations that must be met to legally operate a child care program. Child care licensing also monitors and enforces those regulations.

Child care and early education licensing staff: Any staff who work in CCEE licensing (e.g., front-line staff, managers, administrative or clerical staff).

Equity: "The state that would be achieved if individuals fared the same way in society regardless of race, gender, class, language, disability, or any other social or cultural characteristic" (National Association for the Education of Young Children, 2019, p.17).

Family child care: "Child care provided for one or more unrelated children in a provider's home setting." (Child Care & Early Education Research Connections, n.d. -a). "Family child care" can be used to describe a provider (i.e., person) or a setting (i.e., home).

High-risk violations: Some licensing agencies designate a subset of their regulations as high-risk. These regulations are considered critical to children's health and safety, and, if violated, pose a greater risk of harm to children. Repeated violations may also be considered high-risk by some licensing agencies.

Implicit bias: "A negative attitude, of which one is not consciously aware, against a specific social group" (American Psychological Association, n.d.).

Inspection: A visit to assess if a CCEE provider is meeting licensing regulations.

Licensed capacity: "The maximum number of children allowed to be in a licensed or regulated child care program or setting at any one time. Capacity is based upon the number of children for which adequate facilities and teachers/caregivers are provided, in accordance with supervision and space requirements" (Child Care & Early Education Research Connections, n.d.).

Licensing agency: The agency responsible for regulating and licensing CCEE facilities. The term "licensing unit" may also be used.

Licensing regulations: "Requirements that providers must meet to legally operate child care services in a state or locality, including registration requirements established under state, local, or Tribal law" (Child Care & Early Education Research Connections, n.d.). (Child Care & Early Education Research Connections uses this definition for "licensing or regulatory requirements.")

Monitoring: "The process used to enforce child care providers' compliance with licensing rules and regulations" (Child Care & Early Education Research Connections, n.d.).

Subsidy: "Private or public assistance that reduces the cost of child care for families" (Child Care & Early Education Research Connections, n.d.).

Violation: Failure to comply with a licensing regulation.

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Appendix A: State Selection

Six states took part in this study. This study originally started as two separate projects with a common goal: to understand how program characteristics are related to licensing violations across states. For both projects, we intended to analyze administrative data collected and maintained by state CCEE licensing agencies. Originally, the two projects differed in that one would use publicly available data and the other would partner with state CCEE licensing agencies to access the needed data. Ultimately, we decided to merge the two projects because the research questions, available data, and data analysis strategies were very similar. Additionally, in the end, the project team that was planning to access public data had to work with the individual states to ensure that the team fully understood the data and to obtain data that were not publicly available. Below we describe how each of the two projects selected states.

For the first project, we intended to engage in web scraping – a process of extracting data from websites and organizing the information into a useable data set (Zhao, 2022)– to collect information from the websites where states and territories publish licensing reports. After identifying the consumer education website or other websites on which each state or territory published licensing and program information, we engaged in a two-phase scan to identify which states and territories to include in the project.

In the first phase of the scan, conducted in September 2021, we examined every state and territory website to identify whether the website published information about each individual licensed program beyond an overall licensing status. This first phase helped us determine which types of research questions we could explore for each state or territory, given the type and quality of data published on the website.

In our second phase, we examined website permissions[17] to determine which sites allowed users to use automated software to scrape the published data. We also assessed the feasibility of extracting data from each website.

In total, we determined 31 states and territories had websites that published at least some of the variables needed for our analyses and allowed users to scrape that information. To select among those 31, we identified which websites had most of the information needed to address our research questions. Because some of our research questions examined differences in violations by community demographics, we also considered whether the racial diversity within each state or territory was varied enough to provide meaningful results. Finally, we weighed the complexity of scraping data from each site with the amount and quality of data the website provided.

Based on the results of our scan and further considerations, we selected three states to include in our analysis. Upon meeting with administrators from each of the states, we learned two state websites did not publish detailed information about licensing visits that was essential for completing our analyses (e.g., identifying the type of licensing inspection), so we switched to analyzing administrative data provided to us directly by those two states. We completed web scraping for the remaining state.

For the second project, we aimed to establish research partnerships with a few states and use their administrative data to address questions related to CCEE licensing. To select states, we reviewed information collected from 45 states in interviews that the TRLECE team conducted in 2021 with state licensing administrators and data system staff. We prioritized the 15 states that had licensing data linked to

[17] We followed any rules listed in the websites' CAPTCHA (Completely Automated Public Turing test to tell Computers and Humans Apart) and robots.txt documentation. The former is a tool web administrators use to prevent automated programs from entering the website, while the latter provides protocols for which parts of a website allow for web scraping.

their other administrative data systems (i.e., Child Care Development Fund [CCDF] subsidy data and Quality Rating and Information System [QRIS]).

Next, we assessed the overall quality of state data systems, using responses to those same interviews, by jointly considering whether the respondent(s) indicated that (1) the system had quality control procedures in place to ensure data accuracy (e.g., data validation function in the system, regular data monitoring or checks) and (2) the data system had major issues that might affect our ability to analyze the data (e.g., data stored in .pdf format). We further considered whether states had documentation for their database and if they had ever had a data sharing agreement with other entities (e.g., universities or research organizations). Because we hoped to use licensing and other administrative data that might not be publicly available, we thought that states with previously established data sharing agreements might be better situated to share data with our project.

Based on these considerations, we invited four states to learn more about our project; three of which expressed interest. We met with licensing administrators and staff from each of the three states to identify research questions of shared interest between the state and our team. In addition, we prioritized questions that were of interest to at least two states, as one of our goals was to explore whether there would be similar or different findings across the partnering states.

Appendix B: Control Variables

We aimed to control for a standard set of variables in each model to account for other factors that might explain some of the relationship between the key variable of interest and violations. Table B1 summarizes which control variables were included in each state's analyses, and we provide the rationale and operationalization for each control variable below. Note that some of these variables (e.g., community poverty level) are also the key variables of interest for the research questions. We only considered these variables as controls when they were not the key variable of interest for that specific research question.

Table B1. Control Variables Included in Each State's Analyses

Control variable	State A	State B	State C	State D	State E	State F
Number of regulations inspected	✓			✓	✓	✓
Licensed capacity	✓	✓	✓	✓	✓	✓
Served infants[a]	✓	✓	✓	✓	✓	✓
Accepted subsidies	✓	✓	✓	✓	✓	✓
Community poverty level	✓	✓	✓	✓	✓	✓
Percentage of individuals in the community who identified as White	✓	✓	✓	✓	✓	✓

[a] In State A, the information about whether the program served infants was available for centers only; in States D and F, all FCC homes were licensed to serve infants and thus we did not control whether programs served infants in these states' FCC home models.

Number of regulations inspected

Because states set their own licensing regulations and monitoring standards, the number of regulations monitored during an inspection varies both within and across states. Further, although we focused on routine inspections where all regulations were monitored, programs were still subject to different numbers of regulations due to services provided (e.g., regulations regarding transportation are not monitored in programs that do not provide transportation). Programs that are subject to more regulations may have a higher chance of having a violation. Thus, we controlled for the number of regulations inspected during a visit when this information was available in our data. Four states (States A, D, E, and F) had information available on the number of regulations monitored.

Licensed capacity

Programs licensed to serve a larger number of children may have more financial or administrative resources to meet licensing requirements. On the other hand, there are more opportunities to identify violations when there are more classrooms, children, and staff in the program. Thus, we included the total number of children the program is licensed to serve as a control variable in the analyses in all six states.

Served infants

States typically have a set of regulations specifically for programs serving infants, and those regulations may be more difficult to meet than regulations for older children. For example, the standards for staff-child ratios are stricter for programs/classrooms serving infants compared to programs/classrooms serving preschoolers and school-aged children. Thus, we included this variable as a control in the models for centers

for all six states. For FCC homes, we included this variable in the models for three states (States B, C, and E)—one state did not have this information and in the other two states all FCC homes were licensed to serve infants so there was no variation.

Accepted subsidies

Programs that accept child care subsidies may have fewer financial resources to meet licensing regulations than programs that are supported entirely by parent payments. Additionally, accepting subsidies may be related to community poverty level, based on the assumption that families tend to use CCEE programs in the community where they reside or work (Smith et al., 2020). Further, because community poverty also tends to be related to the race and ethnicity of individuals in the community (see below for more details), accepting subsidies may also be related to the community's racial and ethnic composition. To help us better understand the relationship between licensing violations and the key variables of interest, in all models in all six states we controlled programs' subsidy status, except for the models in which programs' subsidy status or percentage of children receiving child care subsidies were the key variable of interest.

Community poverty level

Prior research shows that community poverty level and racial composition tend to be related to one another due to structural racism and inequities—higher community poverty tends to be associated with greater populations of people of color, including Black residents, and Hispanic or Latino residents (Baker et al., 2022; Heard-Garris et al., 2021). To help us better understand the relationship between licensing violations and the key variables (e.g., community racial composition), we accounted for community poverty level (i.e., percentage of individuals in the community with incomes below 185% of FPL) in all analyses in all states, except for the models in which community poverty level was the key predictor.

The percentage of individuals who identify as White in the community

We accounted for the percentage of individuals who identify as White in all analyses in all six states, except for those in which the percentage of Asian, Black, Hispanic or Latino, or White individuals was the key variable of interest. By including this as a control variable we are also accounting for the percentage of individuals who are people of color in the community, which helps account for racial bias and historic and ongoing racial disparities between predominately White communities and those made up of mostly people of color. We did not control for each racial/ethnic group separately because that would reduce our statistical power, decreasing the likelihood that we would detect effects that exist. While this approach works well for the purposes of our analyses, we acknowledge that it does not account for the varying experiences of individuals across and within different racial and ethnic groups.

Appendix C: Descriptive Statistics

Tables C1 and C2 provide descriptive statistics for violations and program and community characteristics within each state and setting type. For continuous variables (e.g., number of violations, licensed capacity), we provide the mean and standard deviation (SD); for dichotomous variables (e.g., whether programs have high-risk violations), we provide the percentage. Across states, the mean number of violations ranged from 0 to 8 among centers (SD = 1-7) and ranged from 0 to 6 (SD = 2-5) among FCC homes.

Table C1. Descriptive Statistics for Violations and Licensed Child Care Center Characteristics

	State A	State B	State C	State D	State E	State F
Number of programs in data set[a]	1400	3600	300	1100	2700	1600
Violations						
Mean (SD) number of regulations inspected	170 (27)	--	--	810 (15)	343 (1)	209 (63)
Mean (SD) number of violations	4 (4)	3 (3)	--	0 (1)	4 (4)	8 (7)
Percentage of programs that had a high-risk violation	--	--	12%	4%	58%	--
Provider/program characteristics						
Percentage of programs that served infants	59%	56%	88%	56%	75%	40%
Mean (SD) licensed capacity	79 (51)	83 (61)	98 (63)	93 (77)	116 (81)	66 (48)
Percentage of programs that accepted subsidies[b]	61%	74%	95%	33%	68%	48%
Mean (SD) percentage of children in the program that received subsidies	--	--	--	8% (15%)	20% (1%)	17% (27%)
Community characteristics						
Percentage of programs in urban areas	68%	56%	85%	48%	72%	92%
Mean (SD) percentage of individuals in community who identified as…						
Asian	5% (7%)	3% (5%)	--	--	4% (7%)	8% (9%)
Black	8% (11%)	27% (23%)	--	20% (25%)	39% (29%)	6% (12%)
Hispanic/Latino	6% (7%)	10% (9%)	16% (13%)	8% (11%)	9% (11%)	10% (15%)
White	77% (18%)	56% (26%)	74% (16%)	66% (26%)	45% (28%)	72% (23%)
Mean (SD) percentage of individuals in community in poverty (income below 185% FPL)	22% (14%)	35% (16%)	26% (15%)	39% (16%)	34% (18%)	19% (15%)

Note: -- indicates that the information was not available. Only continuous variables (i.e., number of regulations inspected, number of violations, licensed capacity, percentage of children receiving subsidies, race, ethnicity, poverty) include the SD in parentheses.
[a] The total number of programs in each state's data set was rounded to the nearest hundred to protect state confidentiality.
[b] In States A, B, and C, the numbers represent the percentages of programs that accept child care subsidies, while in States D, E, and F, the numbers represent the percentages of programs that serve at least one child receiving a subsidy.

Table C2. Descriptive Statistics for Violations and Licensed Family Child Care Home Characteristics

	State A	State B	State C	State D	State E	State F
Number of programs in data set[a]	3000	1100	600	200	1300	3200
Violations						
Mean (SD) number of regulations inspected	338 (58)	--	--	700 (2)	194 (1)	58 (7)
Mean (SD) number of violations	0 (2)	2 (3)	--	1 (2)	2 (3)	6 (5)
Percentage of programs that had a high-risk violation	--	--	8%	5%	38%	--
Provider/program characteristics						
Percentage of programs that served infants	--	95%	91%	100%	86%	100%
Mean (SD) licensed capacity	12 (1)	8 (1)	14 (3)	12 (3)	6 (0)	8 (2)
Percentage of programs that accepted subsidies[b]	25%	74%	97%	24%	30%	51%
Mean (SD) percentage of children in the program that received subsidies	--	--	--	11% (24%)	16% (1%)	31% (36%)
Community characteristics						
Percentage of programs in urban areas	41%	64%	--	32%	71%	92%
Mean (SD) percentage of individuals in community who identified as…						
Asian	3% (5%)	3% (5%)	--	--	3% (5%)	6% (8%)
Black	4% (7%)	35% (24%)	--	19% (25%)	47% (30%)	9% (15%)
Hispanic/Latino	5% (5%)	12% (10%)	17% (11%)	9% (12%)	8% (10%)	20% (23%)
White	85% (14%)	47% (27%)	74% (14%)	67% (25%)	40% (28%)	61% (29%)
Mean (SD) percentage of individuals in community in poverty (income below 185% FPL)	19% (11%)	35% (16%)	24% (9%)	39% (15%)	33% (16%)	24% (16%)

Note: -- indicates that the information was not available. Only continuous variables (i.e., number of regulations inspected, number of violations, licensed capacity, percentage of children receiving subsidies, race, ethnicity, poverty) include the SD in parentheses.
[a] The total number of programs in each state's data set was rounded to the nearest hundred to protect state confidentiality.
[b] In States A, B, and C, the numbers represent the percentages of programs that accept child care subsidies, while in States D, E, and F, the numbers represent the percentages of programs that serve at least one child receiving a subsidy.

Appendix D: Regression Tables

Below we present the unstandardized regression coefficients (and standard errors) for all variables in all regression models predicting total violations. Table 1 lists the state data we used to answer each research question. Each research question could be answered using data from up to 6 states, however many research questions were answered using data from fewer states because the data were not available. In a few states, the percentage of specific racial/ethnic groups were too small for inclusion. These specific groups were excluded from analyses and are labeled in the tables below.

The unstandardized coefficients in the tables below tell us the increase (or decrease) in the number of violations associated with a one-unit change on the independent variable. For instance, the only significant association between community poverty level and violations was among FCC homes in State F. Looking at Table D1b, in State F, on average, each percentage point increase in community members with incomes below 185% FPL was associated with 0.02 fewer violations after accounting for program and community characteristics. Therefore, FCC homes in a community where 50 percent of individuals have incomes below 185 percent FPL would have 0.9 fewer violations, on average, than FCC homes in a community where 5 percent of individuals had incomes below 185 percent FPL (i.e., 50% minus 5% = 45; 45 *-0.02 = -0.9). For context, the average number of violations for FCC homes in State F was 6 (see Table C2 above).

For the logistic regressions predicting whether programs have high-risk violations, we present odds ratios. Looking at Table D2c, State E findings, the odds ratio is 1.957, meaning that in State E the odds of having one or more high-risk violations is 95.7 percent greater for centers that accept subsidies compared to centers that do not accept subsidies.

Table D1a. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by Community Poverty Level in Centers

	Centers				
	State A	State B	State D	State E	State F
Key variable of interest					
Percentage of individuals in the community in poverty (income below 185% FPL)	0.006	0.003	0.001	0.004	-0.004
	(0.010)	(0.005)	(0.002)	(0.006)	(0.020)
Program & community characteristics (controls)					
Number of regulations monitored	0.008*	--	0.007***	-0.303**	0.005*
	(0.004)	--	(0.002)	(0.104)	(0.002)
Licensed capacity	0.001	0.004***	-0.000	0.001	0.016**
	(0.003)	(0.001)	(0.000)	(0.001)	(0.005)
Served infants	0.594*	1.190***	0.289***	1.392***	1.617***
	(0.293)	(0.131)	(0.063)	(0.164)	(0.361)
Accepted subsidies	0.421	0.194	0.137	1.616***	1.784***
	(0.276)	(0.134)	(0.077)	(0.170)	(0.374)
Percentage of individuals identified as White in the community where the program was located	-0.008	0.005	-0.004*	-0.012**	-0.017
	(0.008)	(0.003)	(0.002)	(0.004)	(0.013)

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

Table D1b. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by Community Poverty Level in FCC Homes

	FCC Homes				
	State A	State B	State E	State F	State D†
Key variable of interest					
Percentage of individuals in the community in poverty (income below 185% FPL)	0.002	0.002	0.009	-0.020*	0.007
	(0.003)	(0.006)	(0.005)	(0.009)	(0.007)
Program & community characteristics (controls)					
Number of regulations monitored	-0.002**	--	-0.643***	-0.036**	--
	(0.001)	--	(0.131)	(0.013)	--
Licensed capacity	-0.03	0.046	-0.198	-0.138**	--
	(0.019)	(0.082)	(0.355)	(0.052)	--
Served infants	--	0.341	-0.360	--	--
	--	(0.278)	(0.211)	--	--
Accepted subsidies	0.02	0.384*	0.681***	0.236	--
	(0.072)	(0.187)	(0.165)	(0.190)	--
Percentage of individuals identified as White in the community where the program was located	0.001	0.002	-0.002	-0.038***	--
	(0.002)	(0.004)	(0.003)	(0.005)	--

†The incidence of violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*$p < .05$. **$p < .01$. ***$p < .001$.

Table D1c. Odds Ratios and Standard Errors for Logistic Regression Models Predicting the Presence of High-risk Violations by Community Poverty Level in Centers

	Centers		
	State D	State E	State C†
Key variable of interest			
Percentage of individuals in the community in poverty (income below 185% FPL)	0.984	1.000	1.004
	(0.011)	(0.003)	(0.011)
Program & community characteristics (controls)			
Number of regulations monitored	1.038	0.768	--
	(0.053)	(0.207)	--
Licensed capacity	0.995	1.000	--
	(0.003)	(0.001)	--
Served infants	5.085***	2.047***	--
	(2.423)	(0.213)	--
Accepted subsidies	1.582	1.957***	--
	(0.482)	(0.183)	--
Percentage of individuals identified as White in the community where the program was located	0.978**	0.995**	--
	(0.007)	(0.002)	--

†The incidence of high-risk violations in centers in state C was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D1d. Odds Ratios and Standard Errors for Logistic Regression Models Predicting the Presence of High-risk Violations by Community Poverty Level in FCC Homes

	FCC Homes		
	State C	State E	State D†
Key variable of interest			
Percentage of individuals in the community in poverty (income below 185% FPL)	0.96	1.006	0.992
	(0.024)	(0.004)	(0.023)
Program & community characteristics (controls)			
Number of regulations monitored	--	2.812***	--
	--	(0.540)	--
Licensed capacity	1.120*	0.865	--
	(0.065)	(0.260)	--
Served infants	2.044	0.961	--
	(1.451)	(0.159)	--
Accepted subsidies	1.142	1.572***	--
	(1.374)	(0.210)	--
Percentage of individuals identified as White in the community where the program was located	0.958***	0.998	--
	(0.010)	(0.002)	--

†The incidence of high-risk violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D2a. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by Whether the Program Accepted Subsidies in Centers

	Centers				
	State A	State B	State D	State E	State F
Key variable of interest					
Accepted subsidies	0.421	0.194	0.137	1.616***	1.784***
	(0.276)	(0.134)	(0.077)	(0.170)	(0.374)
Program & community characteristics (controls)					
Number of regulations monitored	0.008*	--	0.007***	-0.303**	0.005*
	(0.004)	--	(0.002)	(0.104)	(0.002)
Licensed capacity	0.001	0.004***	0.000	0.001	0.016**
	(0.003)	(0.001)	(0.000)	(0.001)	(0.005)
Served infants	0.594*	1.190***	0.289***	1.392***	1.617***
	(0.293)	(0.131)	(0.063)	(0.164)	(0.361)
Percentage of individuals identified as White in the community where the program was located	-0.008	0.005	-0.004*	-0.012**	-0.017
	(0.008)	(0.003)	(0.002)	(0.004)	(0.013)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.006	0.003	0.001	0.004	-0.004
	(0.010)	(0.005)	(0.002)	(0.006)	(0.020)

*p < .05. **p < .01. ***p < .001.

Table D2b. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by Whether the Program Accepted Subsidies in FCC Homes

	FCC Homes				
	State A	State B	State E	State F	State D†
Key variable of interest					
Accepted subsidies	0.02	0.384*	0.681***	0.236	0.238
	(0.072)	(0.187)	(0.165)	(0.190)	(0.300)
Program & community characteristics (controls)					
Number of regulations monitored	-0.002**	--	-0.643***	-0.036**	--
	(0.001)	--	(0.131)	(0.013)	--
Licensed capacity	-0.03	0.046	-0.198	-0.138**	--
	(0.019)	(0.082)	(0.355)	(0.052)	--
Served infants	--	0.341	-0.360	--	--
	--	(0.278)	(0.211)	--	--
Percentage of individuals identified as White in the community where the program was located	0.001	0.002	-0.002	-0.038***	--
	(0.002)	(0.004)	(0.003)	(0.005)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.002	0.002	0.009	-0.020*	--
	(0.003)	(0.006)	(0.005)	(0.009)	--

†The incidence of violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D2c. Odds Ratios and Standard Errors for Logistic Regression Models Predicting the Presence of High-risk Violations by Whether the Program Accepted Subsidies in Centers

	Centers		
	State D	**State E**	**State C†**
Key variable of interest			
Accepted subsidies	1.582	1.957***	1.938
	(0.482)	(0.183)	(2.055)
Program & community characteristics (controls)			
Number of regulations monitored	1.038	0.768	--
	(0.053)	(0.207)	--
Licensed capacity	0.995	1.000	--
	(0.003)	(0.001)	--
Served infants	5.085***	2.047***	--
	(2.423)	(0.213)	--
Percentage of individuals identified as White in the community where the program was located	0.978**	0.995**	--
	(0.007)	(0.002)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.984	1.000	--
	(0.011)	(0.003)	--

†The incidence of high-risk violations in centers in state C was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D2d. Odds Ratios and Standard Errors for Logistic Regression Models Predicting the Presence of High-risk Violations by Whether the Program Accepted Subsidies in FCC Homes

	FCC Homes		
	State C	State E	State D†
Key variable of interest			
Accepted subsidies	1.142	1.572***	1.615
	(1.374)	(0.210)	(1.180)
Program & community characteristics (controls)			
Number of regulations monitored	--	2.812***	--
	--	(0.540)	--
Licensed capacity	1.120*	0.865	--
	(0.065)	(0.260)	--
Served infants	2.044	0.961	--
	(1.451)	(0.159)	--
Percentage of individuals identified as White in the community where the program was located	0.958***	0.998	--
	(0.010)	(0.002)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.96	1.006	--
	(0.024)	(0.004)	--

†The incidence of high-risk violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D3a. Regression Coefficients (and Standard Errors) for Linear Models Predicting the Number of Violations by the Percentage of Children That Received Subsidies in Centers

	Centers		
	State D	State E	State F
Key variable of interest			
Percentage of children that received subsidies	0.003	0.024***	0.030***
	(0.003)	(0.005)	(0.008)
Program & community characteristics (controls)			
Number of regulations monitored	0.008***	-0.334**	0.004*
	(0.002)	(0.104)	(0.002)
Licensed capacity	-0.000	0.003*	0.016***
	(0.000)	(0.001)	(0.005)
Served infants	0.307***	1.692***	1.901***
	(0.068)	(0.158)	(0.359)
Percentage of individuals identified as White in the community where the program was located	-0.004*	-0.009*	-0.014
	(0.002)	(0.004)	(0.013)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.001	0.002	-0.009
	(0.002)	(0.006)	(0.020)

*p < .05. **p < .01. ***p < .001.

Table D3b. Regression Coefficients (and Standard Errors) for Linear Models Predicting the Number of Violations by the Percentage of Children That Received Subsidies in FCC Homes

	FCC Homes		
	State E	State F	State D†
Key variable of interest			
Percentage of children that received subsidies	0.011***	0.002	0.002
	(0.003)	(0.003)	(0.004)
Program & community characteristics (controls)			
Number of regulations monitored	-0.642***	-0.036**	--
	(0.130)	(0.013)	--
Licensed capacity	-0.173	-0.135**	--
	(0.357)	(0.052)	--
Served infants	-0.361	--	--
	(0.210)	--	--
Percentage of individuals identified as White in the community where the program was located	-0.003	-0.039***	--
	(0.003)	(0.005)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.009	-0.019*	--
	(0.005)	(0.009)	--

†The incidence of violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D3c. Odds Ratios and Standard Errors for Logistic Regressions Predicting the Presence of High-risk Violations by the Percentage of Children That Received Subsidies in Centers

	Centers	
	State D	State E
Key variable of interest		
Percentage of children that received subsidies in the program	1.018**	1.010***
	(0.007)	(0.002)
Program & community characteristics (controls)		
Number of regulations monitored	1.035	0.771
	(0.050)	(0.207)
Licensed capacity	0.996	1.000
	(0.003)	(0.001)
Served infants	4.778***	2.320***
	(2.264)	(0.232)
Percentage of individuals identified as White in the community where the program was located	0.981**	0.996*
	(0.007)	(0.002)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.981	0.999
	(0.011)	(0.003)

*p < .05. **p < .01. ***p < .001.

Table D3d. Odds Ratios and Standard Errors for Logistic Regressions Predicting the Presence of High-risk Violations by the Percentage of Children That Received Subsidies in FCC Homes

	FCC Homes	
	State E	State D†
Key variable of interest		
Percentage of children that received subsidies in the program	1.006**	1.012
	(0.002)	(0.012)
Program & community characteristics (controls)		
Number of regulations monitored	2.814***	--
	(0.540)	--
Licensed capacity	0.872	--
	(0.267)	--
Served infants	0.966	--
	(0.159)	--
Percentage of individuals identified as White in the community where the program was located	0.997	--
	(0.002)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	1.005	--
	(0.004)	--

†The incidence of high-risk violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D4a. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by the Percentage of Individuals Identified as Asian in the Community Where Centers Were Located

	Centers			
	State A	State B	State E	State F
Key variable of interest				
Percentage of individuals identified as Asian in the community where the program was located	0.022	-0.035**	0.011	-0.002
	(0.018)	(0.012)	(0.012)	(0.020)
Program & community characteristics (controls)				
Number of regulations monitored	0.008*	--	-0.321**	0.005*
	(0.004)	--	(0.105)	(0.002)
Licensed capacity	0.001	0.004***	0.001	0.016***
	(0.003)	(0.001)	(0.001)	(0.005)
Served infants	0.600*	1.172***	1.368***	1.630***
	(0.291)	(0.130)	(0.166)	(0.361)
Accepted subsidies	0.429	0.188	1.756***	1.795***
	(0.276)	(0.136)	(0.170)	(0.383)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.01	-0.004	0.014**	0.014
	(0.008)	(0.004)	(0.005)	(0.015)

*p < .05. **p < .01. ***p < .001.
Note: State D was not included in this analysis because the percentage of Asian individuals in the state was very low.

Table D4b. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by the Percentage of Individuals Identified as Asian in the Community Where FCC Homes Were Located

	FCC Homes			
	State A	State B	State E	State F
Key variable of interest				
Percentage of individuals identified as Asian in the community where the program was located	-0.011**	-0.026*	-0.014	0.006
	(0.004)	(0.013)	(0.016)	(0.015)
Program & community characteristics (controls)				
Number of regulations monitored	-0.002**	--	-0.647***	-0.053***
	(0.001)	--	(0.131)	(0.013)
Licensed capacity	-0.031	0.041	-0.223	-0.128*
	(0.019)	(0.082)	(0.355)	(0.053)
Served infants	--	0.331	-0.364	--
	--	(0.277)	(0.212)	--
Accepted subsidies	0.016	0.351	0.708***	0.644***
	(0.071)	(0.190)	(0.164)	(0.187)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.002	-0.002	0.010	0.025***
	(0.003)	(0.005)	(0.005)	(0.007)

*p < .05. **p < .01. ***p < .001.
Note: State D was not included in this analysis because the percentage of Asian individuals in the state was very low.

Table D4c. Odds Ratios and Standard Errors for Logistic Regressions Predicting High-risk Violations by the Percentage of Individuals Identified as Asian in the Community Where Centers and FCC Homes Were Located

	Centers	FCC Homes
	State E	State E
Key variable of interest		
Percentage of individuals identified as Asian in the community where the program was located	1.004	0.992
	(0.006)	(0.014)
Program & community characteristics (controls)		
Number of regulations monitored	0.779	2.837***
	(0.208)	(0.543)
Licensed capacity	1.000	0.852
	(0.001)	(0.257)
Served infants	2.023***	0.957
	(0.210)	(0.159)
Accepted subsidies	2.066***	1.618***
	(0.188)	(0.212)
Percentage of individuals in the community in poverty (income below 185% FPL)	1.004	1.006
	(0.003)	(0.004)

*p < .05. **p < .01. ***p < .001.
Note: State C and D were not included in this analysis because the percentage of Asian individuals in these states was very low.

Table D5a. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by the Percentage of Individuals Identified as Black in Community Where Centers Were Located

	Centers				
	State A	State B	State D	State E	State F
Key variable of interest					
Percentage of individuals identified as Black in the community where the program was located	0.011	-0.002	0.005*	0.012***	0.058*
	(0.012)	(0.004)	(0.002)	(0.004)	(0.024)
Program & community characteristics (controls)					
Number of regulations monitored	0.008*	--	0.007**	-0.295**	0.005*
	(0.004)	--	(0.002)	(0.104)	(0.002)
Licensed capacity	0.001	0.004***	-0.000	0.001	0.016***
	(0.003)	(0.001)	(0.000)	(0.001)	(0.005)
Served infants	0.592*	1.162***	0.280***	1.401***	1.648***
	(0.293)	(0.131)	(0.063)	(0.163)	(0.359)
Accepted subsidies	0.425	0.201	0.147	1.599***	1.655***
	(0.276)	(0.134)	(0.077)	(0.171)	(0.373)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.007	0.000	0.001	0.003	-0.003
	(0.010)	(0.005)	(0.002)	(0.006)	(0.017)

*p < .05. **p < .01. ***p < .001.

Table D5b. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by the Percentage of Individuals Identified as Black in the Community Where FCC Homes Were Located

	FCC Homes				
	State A	State B	State E	State F	State D†
Key variable of interest					
Percentage of individuals identified as Black in the community where the program was located	0.003	0.001	0.004	0.036***	0.016*
	(0.005)	(0.004)	(0.003)	(0.008)	(0.008)
Program & community characteristics (controls)					
Number of regulations monitored	-0.002**	--	-0.635***	-0.042**	--
	(0.001)	--	(0.131)	(0.013)	--
Licensed capacity	-0.028	0.053	-0.224	-0.137**	--
	(0.019)	(0.083)	(0.354)	(0.052)	--
Served infants	--	0.328	-0.353	--	--
	--	(0.277)	(0.211)	--	--
Accepted subsidies	0.028	0.378*	0.646***	0.517**	--
	(0.071)	(0.187)	(0.165)	(0.191)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.001	-0.001	0.008	0.016*	--
	(0.003)	(0.006)	(0.005)	(0.008)	--

†The incidence of violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D5c. Odds Ratios and Standard Errors for Logistic Regressions Predicting High-risk Violations by the Percentage of Individuals Identified as Black in the Community Where Centers Were Located

	Centers	
	State D	State E
Key variable of interest		
Percentage of individuals identified as Black in the community where the program was located	1.022***	1.005**
	(0.005)	(0.002)
Program & community characteristics (controls)		
Number of regulations monitored	1.035	0.781
	(0.052)	(0.214)
Licensed capacity	0.995	1.000
	(0.003)	(0.001)
Served infants	4.804**	2.058***
	(2.338)	(0.215)
Accepted subsidies	1.574	1.937***
	(0.492)	(0.180)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.984	0.999
	(0.010)	(0.003)

*p < .05. **p < .01. ***p < .001.
Note: State C was not included in this analysis because the percentage of Black individuals in the state was very low

Table D5d. Odds Ratios and Standard Errors for Logistic Regressions Predicting High-risk Violations by the Percentage of Individuals Identified as Black in the Community Where FCC Homes Were Located

	FCC Homes	
	State E	State D†
Key variable of interest		
Percentage of individuals identified as Black in the community where the program was located	1.004	1.012
	(0.002)	(0.011)
Program & community characteristics (controls)		
Number of regulations monitored	2.788***	--
	(0.533)	--
Licensed capacity	0.842	--
	(0.252)	--
Served infants	0.968	--
	(0.160)	--
Accepted subsidies	1.526**	--
	(0.205)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	1.004	--
	(0.004)	--

†The incidence of high-risk violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.
Note: State C was not included in this analysis because the percentage of Black individuals in the state was very low.

Table D6a. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by the Percentage of Individuals Identified as Hispanic or Latino in the Community Where Centers Were Located

	Centers				
	State A	State B	State D	State E	State F
Key variable of interest					
Percentage of individuals identified as Hispanic or Latino in the community where the program was located	0.003	-0.008	-0.001	-0.011	-0.019
	(0.020)	(0.007)	(0.003)	(0.008)	(0.018)
Program & community characteristics (controls)					
Number of regulations monitored	0.008*	--	0.007***	-0.313**	0.005*
	(0.004)	--	(0.002)	(0.105)	(0.002)
Licensed capacity	0.001	0.004***	-0.000	0.001	0.016***
	(0.003)	(0.001)	(0.000)	(0.001)	(0.005)
Served infants	0.609*	1.157***	0.298***	1.376***	1.600***
	(0.292)	(0.130)	(0.066)	(0.165)	(0.361)
Accepted subsidies	0.434	0.204	0.155*	1.742***	1.816***
	(0.276)	(0.134)	(0.078)	(0.169)	(0.375)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.011	0.000	0.005*	0.013**	0.027
	(0.008)	(0.004)	(0.002)	(0.005)	(0.018)

*p < .05. **p < .01. ***p < .001.

Table D6b. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by the Percentage of Individuals Identified as Hispanic or Latino in the Community Where FCC Homes Were Located

	FCC Homes				
	State A	State B	State E	State F	State D†
Key variable of interest					
Percentage of individuals identified as Hispanic or Latino in the community where the program was located	0.002	-0.006	-0.011	0.020*	-0.016
	(0.005)	(0.008)	(0.007)	(0.008)	(0.008)
Program & community characteristics (controls)					
Number of regulations monitored	-0.002**	--	-0.656***	-0.053***	--
	(0.001)	--	(0.130)	(0.013)	--
Licensed capacity	-0.03	0.053	-0.266	-0.127*	--
	(0.019)	(0.083)	(0.359)	(0.053)	--
Served infants	--	0.335	-0.355	n/a	--
	--	(0.275)	(0.212)		--
Accepted subsidies	0.026	0.384*	0.692***	0.513**	--
	(0.073)	(0.187)	(0.164)	(0.188)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.001	0.001	0.011*	0.006	--
	(0.003)	(0.005)	(0.005)	(0.009)	--

†The incidence of violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D6c. Odds Ratios and Standard Errors for Logistic Regressions Predicting High-risk Violations by the Percentage of Individuals Identified as Hispanic or Latino in the Community Where Centers Were Located

	Centers		
	State D	State E	State C†
Key variable of interest			
Percentage of individuals identified as Hispanic or Latino in the community where the program was located	0.993	0.995	1.017
	(0.014)	(0.004)	(0.013)
Program & community characteristics (controls)			
Number of regulations monitored	1.044	0.793	--
	(0.055)	(0.215)	--
Licensed capacity	0.994	1.000	--
	(0.004)	(0.001)	--
Served infants	5.441***	2.031***	--
	(2.623)	(0.211)	--
Accepted subsidies	1.835*	2.055***	--
	(0.553)	(0.187)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	1.007	1.004	--
	(0.010)	(0.003)	--

†The incidence of high-risk violations in centers in state C was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D6d. Odds Ratios and Standard Errors for Logistic Regressions Predicting High-risk Violations by the Percentage of Individuals Identified as Hispanic or Latino in the Community Where FCC Homes Were Located

	FCC Homes		
	State C	State E	State D†
Key variable of interest			
Percentage of individuals identified as Hispanic or Latino in the community where the program was located	1.055***	0.990	0.985
	(0.012)	(0.006)	(0.043)
Program & community characteristics (controls)			
Number of regulations monitored	--	2.865***	--
	--	(0.539)	--
Licensed capacity	1.128*	0.811	--
	(0.065)	(0.247)	--
Served infants	1.956	0.965	--
	(1.393)	(0.159)	--
Accepted subsidies	1.14	1.596***	--
	(1.377)	(0.210)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.966	1.007	--
	(0.021)	(0.004)	--

†The incidence of high-risk violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D7a. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by the Percentage of Individuals Identified as White in the Community Where Centers Were Located

	Centers				
	State A	State B	State D	State E	State F
Key variable of interest					
Percentage of individuals identified as White in the community where the program was located	-0.008	0.005	-0.004*	-0.012**	-0.017
	(0.008)	(0.003)	(0.002)	(0.004)	(0.013)
Program & community characteristics (controls)					
Number of regulations monitored	0.008*	--	0.007***	-0.303**	0.005*
	(0.004)	--	(0.002)	(0.104)	(0.002)
Licensed capacity	0.001	0.004***	-0.000	0.001	0.016**
	(0.003)	(0.001)	(0.000)	(0.001)	(0.005)
Served infants	0.594*	1.190***	0.289***	1.392***	1.617***
	(0.293)	(0.131)	(0.063)	(0.164)	(0.361)
Accepted subsidies	0.421	0.194	0.137	1.616***	1.784***
	(0.276)	(0.134)	(0.077)	(0.170)	(0.374)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.006	0.003	0.001	0.004	-0.004
	(0.010)	(0.005)	(0.002)	(0.006)	(0.020)

*p < .05. **p < .01. ***p < .001.

Table D7b. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by the Percentage of Individuals Identified as White in the Community Where FCC Homes Were Located

	FCC Homes				
	State A	State B	State E	State F	State D†
Key variable of interest					
Percentage of individuals identified as White in the community where the program was located	0.001	0.002	-0.002	-0.038***	-0.013*
	(0.002)	(0.004)	(0.003)	(0.005)	(0.006)
Program & community characteristics (controls)					
Number of regulations monitored	-0.002**	--	-0.643***	-0.036**	--
	(0.001)	--	(0.131)	(0.013)	--
Licensed capacity	-0.030	0.046	-0.198	-0.138**	--
	(0.019)	(0.082)	(0.355)	(0.052)	--
Served infants	--	0.341	-0.360	--	--
	--	(0.278)	(0.211)	--	--
Accepted subsidies	0.020	0.384*	0.681***	0.236	--
	(0.072)	(0.187)	(0.165)	(0.190)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.002	0.002	0.009	-0.020*	--
	(0.003)	(0.006)	(0.005)	(0.009)	--

†The incidence of violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D7c. Odds Ratios and Standard Errors for Logistic Regressions Predicting High-risk Violations by the Percentage of Individuals Identified as White in the Community Where Centers Were Located

	Centers		
	State D	State E	State C†
Key variable of interest			
Percentage of individuals identified as White in the community where the program was located	0.978**	0.995**	0.990
	(0.007)	(0.002)	(0.010)
Program & community characteristics (controls)			
Number of regulations monitored	1.038	0.768	--
	(0.053)	(0.207)	--
Licensed capacity	0.995	1.000	--
	(0.003)	(0.001)	--
Served infants	5.085***	2.047***	--
	(2.423)	(0.213)	--
Accepted subsidies	1.582	1.957***	--
	(0.482)	(0.183)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.984	1.000	--
	(0.011)	(0.003)	--

†The incidence of high-risk violations in centers in state C was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D7d. Odds Ratios and Standard Errors for Logistic Regressions Predicting High-risk Violations by the Percentage of Individuals Identified as White in the Community Where FCC Homes Were Located

	FCC Homes		
	State C	State E	State D†
Key variable of interest			
Percentage of individuals identified as White in the community where the program was located	0.958***	0.998	0.989
	(0.010)	(0.002)	(0.013)
Program & community characteristics (controls)			
Number of regulations monitored	--	2.812***	--
	--	(0.540)	--
Licensed capacity	1.120*	0.865	--
	(0.065)	(0.260)	--
Served infants	2.044	0.961	--
	(1.451)	(0.159)	--
Accepted subsidies	1.142	1.572***	--
	(1.374)	(0.210)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.96	1.006	--
	(0.024)	(0.004)	--

†The incidence of high-risk violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D8a. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by Whether Centers Were Located in an Urban Area

	Centers				
	State A	State B	State D	State E	State F
Key variable of interest					
Located in an urban area	-0.337	0.018	-0.039	-0.081	0.892
	(0.291)	(0.132)	(0.078)	(0.233)	(0.570)
Program & community characteristics (controls)					
Number of regulations monitored	0.009**	--	0.007***	-0.306**	0.004*
	(0.004)	--	(0.002)	(0.105)	(0.002)
Licensed capacity	0.001	0.004***	-0.000	0.001	0.015**
	(0.003)	(0.001)	(0.000)	(0.001)	(0.005)
Served infants	0.57	1.189***	0.290***	1.393***	1.594***
	(0.293)	(0.131)	(0.063)	(0.164)	(0.361)
Accepted subsidies	0.429	0.193	0.138	1.615***	1.818***
	(0.276)	(0.134)	(0.076)	(0.170)	(0.375)
Percentage of individuals identified as White in the community where the program was located	-0.013	0.005	-0.005*	-0.013**	-0.014
	(0.009)	(0.003)	(0.002)	(0.004)	(0.013)
Percentage of individuals in the community in poverty (income below 185% FPL)	0.002	0.003	0.001	0.003	-0.001
	(0.010)	(0.005)	(0.002)	(0.006)	(0.020)

*p < .05. **p < .01. ***p < .001.

Table D8b. Regression Coefficients (and Standard Errors) for Linear Models Predicting Number of Violations by Whether FCC Homes Were Located in an Urban Area

	FCC Homes				
	State A	State B	State E	State F	State D†
Key variable of interest					
Located in an urban area	-0.027	-0.364	0.067	-0.352	-0.283
	(0.076)	(0.205)	(0.192)	(0.307)	(0.277)
Program & community characteristics (controls)					
Number of regulations monitored	-0.002**	-	-0.642***	-0.036**	--
	(0.001)	-	(0.131)	(0.013)	--
Licensed capacity	-0.031	0.031	-0.194	-0.141**	--
	(0.019)	(0.083)	(0.354)	(0.052)	--
Served infants	-	0.308	-0.360	--	--
	-	(0.274)	(0.212)	--	--
Accepted subsidies	0.018	0.353	0.682***	0.237	--
	(0.072)	(0.189)	(0.165)	(0.190)	--
Percentage of individuals identified as White in the community where the program was located	0.001	-0.002	-0.001	-0.040***	--
	(0.002)	(0.004)	(0.003)	(0.006)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.002	-0.002	0.010	-0.021*	--
	(0.004)	(0.006)	(0.006)	(0.009)	--

†The incidence of violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D8c. Odds Ratios and Standard Errors for Logistic Regressions Predicting High-risk Violations by Whether Centers Were Located in an Urban Area

	Centers		
	State D	State E	State C†
Key variable of interest			
Located in an urban area	1.533	0.882	1.191
	(0.564)	(0.096)	(0.541)
Program & community characteristics (controls)			
Number of regulations monitored	1.033	0.775	--
	(0.053)	(0.209)	--
Licensed capacity	0.995	1.000	--
	(0.004)	(0.001)	--
Served infants	5.032***	2.051***	--
	(2.391)	(0.214)	--
Accepted subsidies	1.546	1.954***	--
	(0.476)	(0.182)	--
Percentage of individuals identified as White in the community where the program was located	0.982**	0.994**	--
	(0.007)	(0.002)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	0.988	0.999	--
	(0.010)	(0.003)	--

†The incidence of high-risk violations in centers in state C was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.

Table D8d. Odds Ratios and Standard Errors for Logistic Regressions Predicting High-risk Violations by Whether FCC Homes Were Located in an Urban Area

	FCCs	
	State E	State D†
Key variable of interest		
Whether the program is located in an urban area	0.955	1.087
	(0.163)	(0.800)
Program & community characteristics (controls)		
Number of regulations monitored	2.815***	--
	(0.541)	--
Licensed capacity	0.863	--
	(0.260)	--
Served infants	0.961	--
	(0.159)	--
Accepted subsidies	1.570***	--
	(0.210)	--
Percentage of individuals identified as White in the community where the program was located	0.997	--
	(0.003)	--
Percentage of individuals in the community in poverty (income below 185% FPL)	1.005	--
	(0.005)	--

†The incidence of high-risk violations in FCC homes in state D was very low, therefore we did not have enough statistical power to control for program and community characteristics. The value displayed is the correlation coefficient (SD).
*p < .05. **p < .01. ***p < .001.