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Early Care & Education

Exploring Changes in the Supply of Listed Home-based Child Care and Early Education between 2012 and 2018

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Overview

Introduction

Prior to the COVID-19 pandemic, many states were observing significant declines in the availability of family child care providers, with the number of providers leaving the field outpacing the number of new entrants. This report uses a novel dataset that combines survey data from the 2012 National Survey of Early Care and Education (NSECE) and administrative lists of home-based child care providers from 2018. Using presence in administrative lists as a proxy for providing care, this report analyzes the factors that shape the attrition of listed home-based providers (i.e. home-based providers found on state child care licensing lists).

Purpose

Despite the need to better understand the drivers of provider attrition, quantitative evidence on predictors of provider attrition is sparse, partly because such research designs require datasets with a sufficiently large and representative sample, that include information on both provider attrition and characteristics that potentially predict attrition. This study addresses the data challenge by linking survey data from the 2012 NSECE with administrative lists collected from state child care licensing agencies in 2018. The analysis complements recent research on provider attrition based largely on qualitative data or state-specific samples.

Key Findings and Highlights

Change in the supply of listed home-based providers is a multifaceted phenomenon. Among listed home-based providers in 2012, older providers, those with more experience, and those with more program revenue in 2012 were more likely to be still providing care in 2018, when other covariates were taken into account. No other provider demographic, child care, or community characteristics were statistically significant predictors of provider attrition from state administrative lists.

Methods

This study combines survey data from the 2012 NSECE with administrative data to analyze stayers and leavers among listed home-based providers. It classifies listed home-based providers interviewed in the 2012 NSECE into stayer and leaver categories, and compares the characteristics of providers across these two categories. The analysis also employs logistic regression to identify predictors of provider attrition.

Executive Summary

Home-based child care providers that appear on state and national administrative lists, referred to as listed providers in this report, are an important source of child care in the United States, serving almost 800,000 children in 2019 (National Survey of Early Care and Education Project Team, 2021). Data from state licensing agencies indicate significant declines in the availability of listed home-based care, with the number of providers leaving the field outpacing the number of new entrants (National Center on Early Childhood Quality Assurance, 2020). In order to better understand potential drivers of provider attrition, research designs may require datasets that include information about both provider attrition and characteristics that potentially predict attrition, with multiple waves of data and a sufficiently large sample.

Because the 2012 National Survey of Early Care and Education (NSECE) contains detailed information about providers' demographic characteristics, the services they provide, and the communities they live in, it is a rich complementary resource to administrative datasets that allow researchers to explore the factors that can shape provider attrition. To analyze the correlates of provider attrition, listed home-based providers from the 2012 NSECE were linked to a comprehensive list of providers that NSECE staff compiled in 2018 for the 2019 NSECE. The linked analytic dataset was then analyzed to compare listed home-based providers from the 2012 NSECE still listed in 2018 to those that were no longer listed in the 2018 compiled list.

We estimate that about 55% of listed home-based providers serving children in 2012 were no longer listed in 2018, implying an annualized attrition rate of about 13% during this six-year period. When we analyze the correlates of provider attrition, we find that the change in the supply of listed home-based providers is a multifaceted phenomenon. Among listed home-based providers in 2012, older providers, those with more experience, and those with more program revenue in 2012 were more likely to be still providing care in 2018, when other covariates were taken into account. Specifically, a one year increase in age is associated with a 0.5 percentage point decrease in the probability of being a leaver, whereas a provider with more than 10 years of experience is about 12 percentage points less likely to be a leaver than one with 10 or less years of experience. A \$1,000 increase in yearly revenue is associated with a 0.2 percentage point decrease in the probability of being a leaver on average.

Background and Motivation

Home-based child care providers that appear on state and national administrative lists – listed providers – are an important source of child care in the United States, serving almost 800,000 children in 2019 (National Survey of Early Care and Education Project Team, 2021). High-quality home-based child care offers many benefits to children, such as personalized care and a warm, nurturing environment (National Center on Early Childhood Quality Assurance, 2017). Home-based care can be a particularly important child care option for families with children who have special needs, parents seeking infant and toddler care, those living in rural areas, and parents who require care for their children during non-standard hours like evenings and weekends.

Available data indicate significant declines in the availability of listed home-based care, with the number of providers that leave the field outpacing the number of new entrants. Data from the NSECE indicate that the number of listed providers across the nation fell from 121,000 in 2012 to 91,200 in 2019, a decline of almost 25% (National Survey of Early Care and Education Project Team, 2021). Several reasons have been suggested for the decrease in the number of listed home-based providers, such as limited earnings and the lack of benefits, and local challenges, such as licensing requirements, which may be perceived by providers to be burdensome (Bromer et al., 2021). Despite the need to better understand the drivers of provider attrition, quantitative evidence on predictors of provider attrition is sparse. Todd and Deery-Schmitt (1996) and Whitebook et al. (2004) studied provider attrition in a Midwestern and a Californian community, respectively, and estimated attrition rates, but both studies had relatively small sample sizes of around 100 or fewer listed home-based providers. To build upon these small studies, this analysis of the NSECE draws on data on about 3,300 listed home-based providers across 44 states and the District of Columbia, which include detailed information on both provider attrition and characteristics that potentially predict attrition.

This study combines data on listed home-based provider attrition with data about providers' demographic and child care characteristics to identify predictors of attrition. We began with data on about 3,300 listed home-based providers from the 2012 NSECE. The 2012 NSECE survey data include information on provider characteristics such as age of the providers, their education and experience, whether they receive public subsidies, and community characteristics such as poverty and urban density. We then determined if the home-based providers interviewed in the 2012 NSECE could be found in a comprehensive list of child care and early education (CCEE) providers that NSECE staff compiled in 2018. Providers found in the 2018 compiled list were labelled as “stayers”; the remaining providers were labelled as “leavers.” We then compared the characteristics of stayers and leavers. We also performed multivariate analyses to identify characteristics associated with provider attrition once other factors were taken into account.

Before turning to our analysis, we first highlight some of the limitations of this study. The findings documented in this report are correlational rather than causal in nature. The objective of this analysis is to better understand the characteristics associated with provider attrition and to inform both further research on the potential causes of the decline in the number of listed home-based providers, as well as research of potential policy relevance to help better ensure child care is available and accessible to households.

This report focuses on listed home-based providers, who are providers included in state- and national-level administrative lists of CCEE providers and that provide care in a home-based setting. In contrast, unlisted home-based providers, which are not included in this analysis, provide care in a home-based setting but do not appear on state or national administrative lists of CCEE providers (for example, some family, friend, and neighbor providers are unlisted). The 2019 NSECE estimated that there were around 91,200 listed home-based providers at the time of the survey, serving around 800,000 children under age 13, compared to around 1,050,000 unlisted home-based providers that were paid for providing child care services, serving around 3.5 million children. Because listed and unlisted home-based providers differ in important ways – e.g., listed home-based providers typically care for more children compared to unlisted providers, and many have to comply with licensing or regulatory requirements, whereas unlisted providers do not – findings from this study should not be generalized beyond listed home-based providers.

Our analysis addresses the attrition of those who, at one point, provided listed home-based CCEE. As such, it does not speak directly to factors that affect entry into the home-based CCEE field. To the extent that there is a high degree of churn – both entry and exit – in listed home-based care, this analysis does not paint a full picture of the factors associated with the net decline in the supply of listed home-based providers. Finally, the data used in this analysis were collected prior to the Covid-19 pandemic; to the extent that the pandemic has altered the dynamics of provider attrition, such changes are not captured in this analysis.

This report is divided into five sections. After this introductory section, we briefly describe the data used in these analyses. The next section describes methodological aspects related to linking the 2012 survey with the 2018 compiled list. That section also explains how we categorized providers into stayers and leavers. The fourth section describes the findings from our statistical analyses. The last section concludes and offers directions for further research.

Data

Survey data. The 2012 NSECE is a set of four integrated, nationally representative surveys conducted in 2012. These are surveys of 1) households with children under 13, 2) home-based providers of CCEE, 3) center-based providers of CCEE, and 4) the center-based provider workforce. This study draws on data from the survey of home-based providers. The 2012 NSECE defines a home-based provider as an individual who regularly cares for others' children under age 13 in a home-based setting for at least five hours a week. The category of home-based providers includes a wide variety of caregivers. In this analysis, we focus on *listed* home-based providers, defined as individuals reported on state or national lists of child care and early education services, such as licensed, regulated, license-exempt, or registered home-based providers. States use these terms with varying definitions and attach varying levels of program and professional standards, oversight, and monitoring.

The 2012 NSECE data collection took place between November 2011 and June 2012 and resulted in interviews with 3,934 listed home-based providers, representing the U.S. population of 121,000 caregivers serving children under 13 years of age in a home-based setting and reported in state or national administrative records. This dataset – henceforth the “survey data” – includes basic demographic characteristics for these caregivers, characteristics of the care services provided, and characteristics of the communities in which the providers were located.

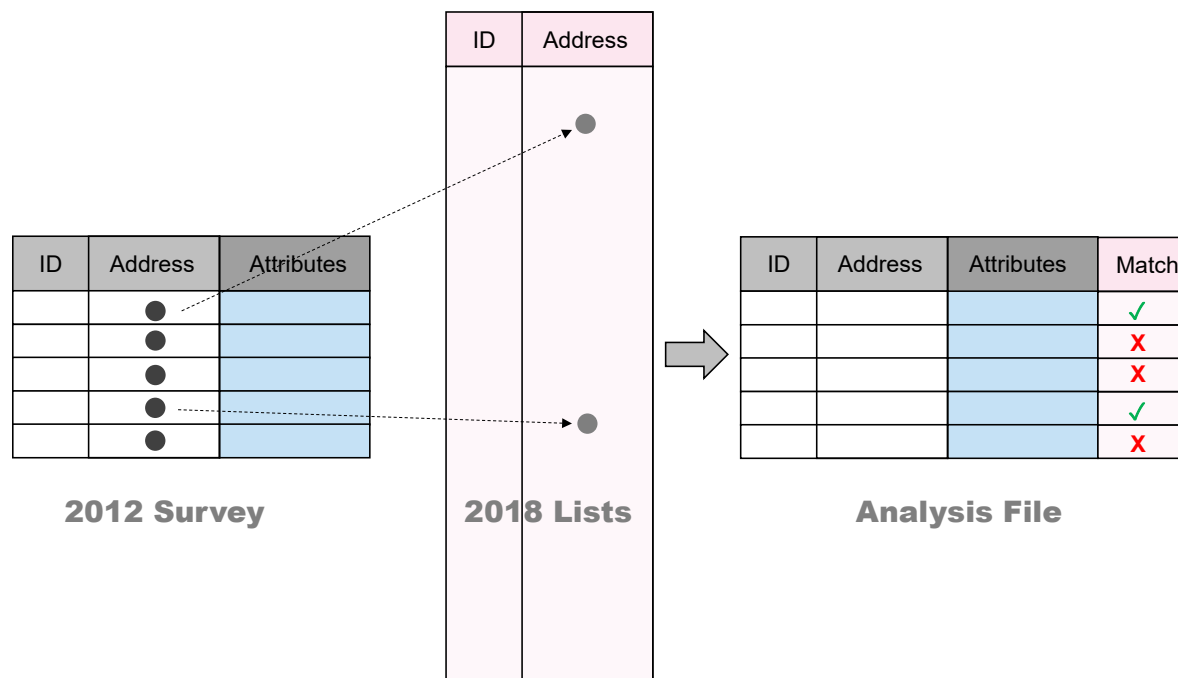
Compiled list. This analysis also uses a comprehensive list of CCEE providers compiled for the 2019 NSECE. This list was compiled and collated in 2018. To create this list, NSECE staff collected administrative datasets from federal, state, and local agencies across the 50 states and the District of Columbia, as well as proprietary data on schools and CCEE providers from a commercial vendor. These datasets were collected in the spring and summer of 2018. NSECE staff then processed the data to consolidate duplicate records. The compiled list comprises about 350,000 entries for center-based and home-based CCEE providers that were listed in state- and national-level administrative datasets in the spring and summer of 2018. Of these providers, approximately 150,000 were classified on our compiled list as home-based providers. To create the analytic dataset, the 2012 NSECE survey data were augmented with information on whether or not the provider could be found in the 2018 compiled list. The following section describes how this analytic dataset was prepared.

Provider Classification

Classifying Providers As Stayers or Leavers

The 2012 NSECE home-based provider survey collected completed questionnaires from 3,934 listed home-based providers. Of these providers, we excluded from our analysis all providers located in states for which the 2018 compiled list did not have sufficient information to produce accurate address matches with providers from the 2012 survey. Specifically, we excluded providers located in states where we had address information for less than 80% of listed home-based providers in the 2018 compiled list. One additional state reported provider addresses in the form of nearest cross-streets instead of exact street addresses. We excluded this state as well because the data did not allow for precise address matching. In the end, we excluded a total of six states (Hawaii, Montana, New Jersey, New Mexico, Oregon, and Washington) from the analysis, comprising about 6% of all listed home-based providers from the 2012 survey. In addition, we excluded from our analysis providers from the 2012 survey for which we did not have address information. Our analysis thus included about 3,300 of the 3,934 listed home-based providers interviewed in the 2012 NSECE.

Exhibit 1: Data Sources and Address Matching



Note: Data from the 2012 NSECE survey include both listed home-based provider addresses and attributes based on survey responses. The 2018 administrative lists were then searched for addresses from the 2012 survey. Providers from the 2012 survey were classified based on whether a match was found (“stayers”) or not (“leavers”).

We then matched providers from the survey data to those in the compiled list based on their addresses, as illustrated in Exhibit 1. (The technical appendix to this report describes our matching method in more detail.) We first classified “Stayers” as the providers whose 2012 addresses matched addresses in the 2018 compiled list. The remaining unmatched 2012 providers were classified as “Leavers”. Exhibit 2 presents weighted and unweighted counts of providers included in our analysis in each category. We estimate that about 55% of listed home-based providers serving children in 2012 were no longer listed in 2018, implying an annualized attrition rate of about 13% during this six-year period.¹ Our estimates are comparable to those from Todd and Deery-Schmitt (1996) and Whitebook et al. (2004), who report annualized attrition rates of 14% and 9%, respectively, both based on a two-year study period.

Exhibit 2: Unweighted and weighted counts by provider category

Unweighted		Weighted	
Category	Count	Count	Percent
Stayers	1,480	46,700	44.6
Leavers	1,860	57,900	55.4
Total	3,340	105,000	100.0

Note: Unweighted counts rounded to nearest 20. Weighted counts rounded to three significant figures. Numbers do not sum to total because of rounding

Methodological Considerations

We highlight several methodological considerations associated with the approach depicted in Exhibit 1.

Some providers on the compiled list might not have been providing care in 2018.

Our research design uses the presence or absence of providers in the compiled list to identify stayers and leavers. Based on fieldwork conducted for the 2019 NSECE, we estimate that between 10% to 20% of the home-based providers found on the compiled list collected in spring/summer 2018 were closed or not serving children at the time of the 2019 fieldwork. *Presence* in the compiled list does not imply active home-based care *provision*. It is likely that some of the providers identified as stayers were, in fact, closed. The attrition rate, when taking into account closed providers, is hence likely to be higher than our estimate, although it is not possible to adjust the estimated attrition rate without either more information or making strong assumptions—that may not be warranted given the data—about the listed-but-closed providers. For example, if we were to assume that 20% of the stayers were, in fact, closed, then the weighted count of

¹ The annualized attrition rate is the x that solves $(1 - x)^6 = 0.446$.

stayers falls to about 37,400 (36% of total providers), implying an annualized attrition rate of about 16%.

Addresses that are in the 2018 compiled list do not necessarily imply staying. We use the presence of the provider's address in the 2018 compiled list to identify stayers (and absence to identify leavers). However, a listed home-based provider interviewed in 2012 might have stopped providing care and moved away but was replaced by a different provider at the same address. In this case, the provider would be incorrectly identified as a stayer. Conversely, a provider may be still providing home-based care but at a different location and thus be incorrectly identified as being a leaver.

Ideally, every provider would have a unique identifier (such as a state licensing number) that could be used to link records between the survey data and the compiled list. The NSECE data do not include such an identifier. Provider names can also be used to link providers from the survey to the compiled list. However, there is much greater variation in how provider names are reported in administrative lists compared to addresses. For example, there may be changes over time in whether a provider uses a business name or her actual name or both (e.g., "Jane Smith D/B/A Tiny Tots Inc.") in administrative lists. Names may also change over time due to changes in the individual's name (e.g., name change related to marital status). Consequently, matching by provider name is likely to lead to more erroneous linkage results than matching by addresses. In particular, matching by provider names may lead to an over-count of provider attrition (i.e., it might lead to more false non-matches) compared to matching by addresses. Given the relative challenges and costs of linking providers using addresses compared to using names, the research team determined that provider linkage using addresses represented a better methodological approach.

The criteria for inclusion in administrative lists changed in some states between 2012 and 2018. Changes in the categories of providers that were included in state administrative lists may give the appearance of provider attrition, even if providers did not in fact leave the child care field. In other words, providers may no longer be included on state administrative lists between 2012 and 2018 simply because state agencies no longer require some categories of providers to be listed. To gauge the role of state changes in reported provider types on listed home-based provider attrition, we compared the inclusion criteria for state administrative lists of home-based providers from 2012 and 2018.

Our analysis identified 12 states that changed the categories of home-based providers for whom they maintain lists between 2012 and 2018. Of the 12 states, only two had a provider type in the 2012 administrative lists that was absent from the 2018 lists: Kansas and New Jersey. In 2012, the Kansas list included "Family Day Care Home

(mandatory registered),” and the New Jersey list included “Family child care homes (voluntarily regulated).” Neither was included in the respective state’s 2018 list. We then reviewed the detailed definitions of home-based provider categories for these 12 states. Louisiana was the only state we found to have a definition change.² We conclude that although inclusion criteria for administrative lists and provider type definitions changed for some states between 2012 and 2018, we do not expect these changes to have a significant impact on our analysis, given that only three states had changes to the criteria that might affect the analysis.

We define attrition as exit from listed home-based care, not home-based care generally. Some providers may have reduced the number of children they serve so, in turn, they were not required to be licensed. While these providers are leavers in the strict sense of this analysis – they are no longer listed – they are still stayers in some sense. Our analysis is unable to distinguish between providers that have left home-based care entirely and those that are still providing home-based care but are no longer listed because they no longer meet the criteria to be included on administrative lists.

Our analysis excluded some states and providers due to data limitations, which may affect the generalizability of our findings. As mentioned previously, we excluded from our analysis all providers located in states for which the 2018 compiled list did not have sufficient information to produce accurate address matches with providers from the 2012 survey. In addition, we excluded from our analysis providers from the 2012 survey for which we did not have address information. Our analysis thus included about 3,340 of the 3,934 listed home-based providers interviewed in the 2012 NSECE across 44 states and the District of Columbia. To the extent that states and providers excluded from our analysis are systematically different from those included in our analysis, with respect to patterns of attrition, the findings in our analysis may not be generalizable to all listed home-based providers in the nation.

Findings

Comparison of Stayers and Leavers

In this section, we compare stayers and leavers with respect to a set of attributes that previous literature has found to be relevant for provider attrition (see the discussion in

² Louisiana’s definition of family home provider changed from “any place, facility, or home operated by any institution, society, agency, corporation, person or persons, or any other group for the primary purpose of providing care, supervision, and/or guidance of six or fewer children” in its 2012 list to “a provider who cares for children in a private residence for no more than 6 children including the provider’s own children and any other children living at the residence who are under age 13, or age 13 through 17, if special needs” in the 2018 list. In the other nine states, new provider types were added to the respective lists, meaning that the change in the list inclusion criteria should not affect an analysis of provider attrition.

Bromer et al. 2021b) and for which data are available from the 2012 NSECE. These attributes include the demographic characteristics of the providers, the characteristics of their child care programs, as well as characteristics of the community in which they live.³

Exhibit 3 presents descriptive statistics for each provider category. We report means (for continuous variables) and proportions (for categorical variables), weighted using 2012 survey weights. We also report results from statistical tests of differences between stayers and leavers. All statistics reported below were based on data from the 2012 NSECE.

Demographic characteristics. Stayers were about 2.5 years older than leavers on average (48.7 years vs. 46.1 years). Stayers also derived a larger proportion of their income from child care compared to leavers. Among stayers, 61% derived half or more of their income from child care, compared to 46% of leavers. In a similar vein, stayers were less likely to report that they worked at other jobs for pay in addition to child care (11% vs. 16% for leavers). Stayers also reported more experience caring for children who were not their own, on average. Among stayers, 71% reported more than 10 years of experience, compared to 56% of leavers. Stayers and leavers were not statistically distinguishable in other characteristics examined, such as whether the provider lived with a partner, health insurance coverage, and educational attainment.

Child care characteristics. Stayers served more children on average in 2012 than did leavers (9.0 children vs. 7.2 children). A larger proportion of stayers reported receiving public funding (30% of stayers vs. 21% of leavers) in 2012, and stayers, on average, reported more revenue (about \$35,400 vs. \$21,100 annually) that year. A larger proportion of stayers reported serving infants and toddlers, as well as preschoolers, compared to leavers. Stayers also tended to spend more hours providing CCEE than leavers, with almost all stayers (99%) reporting working more than 20 hours a week providing child care in 2012, compared to 95% of leavers. Stayers and leavers were statistically indistinguishable on other service characteristics such as whether they used a standard curriculum, their reported intent to continue working with children, prior experience working with children in centers, and whether they employed paid assistants.

³ Readers can find more information about these characteristics from “Characteristics of Home-based Early Care and Education Providers: Initial Findings from the National Survey of Early Care and Education” (National Survey of Early Care and Education Project Team, 2016).

Community characteristics. Providers were located in communities that vary in terms of their poverty rates and urbanicity.⁴ We cannot distinguish statistically between stayers and leavers in terms of the proportion of providers in each category operating in communities at various levels of poverty and urbanicity.

Exhibit 3: Comparison of Characteristics Between Listed Home-based Provider Stayers and Leavers 2012 to 2018

Variable	Proportions/Mean		Significance Test
	Stayer	Leaver	Stayer vs Leaver
Demographic Characteristics			
Age	48.7	46.1	***
Living with a partner	0.73	0.75	
Household income	51,900	49,200	
Proportion of income derived from child care			***
All	0.24	0.20	
Almost All	0.12	0.08	
> Half	0.10	0.05	
Half	0.14	0.12	
< Half	0.24	0.29	
Little	0.14	0.23	
None	0.01	0.03	
Works at other job for pay	0.11	0.16	**
Covered by health insurance	0.78	0.83	
Health insurance coverage is related to employment	0.58	0.56	
Educational attainment			
< High School	0.05	0.04	
High School	0.32	0.28	
Some College	0.33	0.35	
Associate	0.15	0.17	
Bachelor's	0.11	0.13	
> Bachelor's	0.04	0.04	
Years of experience caring for children not their own			***
≤ 5 years	0.12	0.20	
> 5 to ≤ 10 years	0.16	0.25	
>10 to ≤15 years	0.22	0.21	
>15 to ≤20 years	0.15	0.13	
>20 to ≤25 years	0.11	0.09	
>25 years	0.22	0.13	

⁴ Poverty density of a community is defined by the adjusted share of the population with incomes below the poverty level. In low poverty density communities, less than 13 percent of the population has incomes below the poverty level, whereas in moderate-poverty density communities more than 13 percent but less than 20 percent does so, and in high-poverty density more than 20 percent are living in poverty. Urbanicity is defined by the share of population in a community living in urban areas. In high-density urban communities, 85 percent or more of the population live in urban areas, whereas in medium-density urban communities 30 to 84 percent of the population live in urban areas, and in rural communities, 29 percent or less of the population live in urban areas.

Variable	Proportions/Mean		Significance Test Stayer vs Leaver
	Stayer	Leaver	
Prior experience working with children in a center or school	0.39	0.41	
Main reason for looking after children is calling or career-related	0.54	0.49	
Child Care Characteristics			
Number of children served	9.04	7.23	***
Serves children 0-3 years	0.97	0.92	***
Serves children 3-5 years	0.93	0.82	***
Serves children with special needs: physical	0.09	0.11	
Serves children with special needs: emotional	0.22	0.22	
Hours worked per week			***
≤20 hours	0.01	0.05	
>20 to ≤50 hours	0.32	0.31	
>50 hours	0.66	0.65	
Reported receiving public funding	0.30	0.21	***
Reported receiving professional development funding	0.30	0.25	
Uses standard curriculum	0.58	0.52	
Intent to continue working with children	0.85	0.81	
Annual revenue from child care	35,400	21,100	**
Employs paid assistant(s)			
Yes	0.30	0.25	
No	0.38	0.42	
Unknown	0.32	0.33	
Community Characteristics			
Poverty density			
Low	0.65	0.59	
Medium	0.20	0.21	
High	0.16	0.19	
Urbanicity			
High-density urban	0.51	0.50	
Medium-density urban	0.31	0.34	
Rural	0.18	0.16	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Statistical tests for the null hypothesis of no difference are independent T-tests for continuous variables (age, income, revenue) and Chi-squared tests for categorical variables, using design-corrected standard errors. Statistics are weighted using 2012 survey weights and rounded to at most three significant figures.

Characteristics of Providers That Predict Attrition

Univariate analysis shows how stayers differ from leavers, but it gives an incomplete account of the factors associated with provider attrition. Because provider characteristics are correlated (e.g., more experienced providers may tend to earn more revenue), an association between a given provider characteristic and provider attrition may simply reflect the association between some other correlated

characteristic and provider attrition. For instance, the relationship between revenue and provider attrition could plausibly reflect differences in the number of children served by stayers and leavers, the higher premium paid to providers with more experience, or differences in child care costs in areas with a higher concentration of stayers or leavers. Multivariate analysis allows us to understand whether a provider characteristic is still associated with provider attrition when other characteristics are held constant (i.e., whether revenue predicts attrition when comparing two providers who are alike with respect to other variables).

We estimate a logistic model predicting whether a provider is a leaver. Variable selection for the model was based primarily on statistically significant differences between stayers and leavers in the univariate analysis, although we also included other variables that were of analytic interest, such as community characteristics. The variables selected for the model include provider characteristics (age, education, experience), service characteristics (annual revenue from child care, number of children served, hours worked, receipt of public funding, receipt of professional development funding), the provider's economic situation (proportion of household income from child care, working at another job for pay), and community characteristics (community poverty density and urbanicity).

Exhibit 4 reports estimates of model parameters and the p-value of each estimate. Annual revenue from child care, age, and having more than 10 years of experience are statistically significant predictors of attrition at a 0.05 significance level (i.e., $p < 0.05$). For ease of interpretation, we report average marginal effects in the right-most column of Exhibit 4. These average marginal effects represent the average change in the probability of being a leaver given a small change in the independent variable. Specifically, a \$1,000 increase in yearly revenue is associated with a 0.2 percentage point decrease in the probability of being a leaver on average. Likewise, a one year increase in age is associated with a 0.5 percentage point decrease in the probability of being a leaver, whereas a provider with more than 10 years of experience is about 12 percentage points less likely to be a leaver than one with 10 or less years of experience.

Exhibit 4: Estimates from Logistic Model Predicting Provider Attrition

	Coefficient	Std. Error	p-value	AME
Intercept	2.01	0.89	0.024	
Yearly revenue, \$ thousands	-0.01	0.00	0.047	-0.002
>50% of income from childcare	-0.03	0.23	0.908	-0.006
Age	-0.02	0.01	0.021	-0.005
Has at least some college education	0.41	0.24	0.087	0.092
>10 years of experience	-0.52	0.20	0.011	-0.116
Prior childcare experience	0.01	0.18	0.977	0.001

	Coefficient	Std. Error	p-value	AME
Number of children served	-0.03	0.02	0.116	-0.008
Hours worked 21-50 (vs <20)	-0.39	0.75	0.604	-0.088
Hours worked 50+ (vs <20)	-0.03	0.70	0.971	-0.006
Works at other job for pay	0.25	0.30	0.420	0.055
Reported receiving public funding	-0.26	0.22	0.246	-0.058
Reported receiving professional development funding	-0.50	0.31	0.108	-0.113
Community poverty density medium (vs low)	0.23	0.23	0.308	0.053
Community poverty density high (vs low)	0.49	0.27	0.069	0.110
Community urbanicity rural (vs high urban density)	-0.37	0.29	0.206	-0.084
Community urbanicity medium (vs high urban density)	0.30	0.27	0.275	0.067
Observations	1,900			
Pseudo R ²	0.101			

Note: A positive coefficient indicates that the variable is positively correlated with provider attrition. The “Std. Error” column reports design-corrected standard errors. The “AME” column reports the average marginal effect, which represents the average change in the probability of being a leaver given a small change in the independent variable. For example, a \$1,000 increase in yearly revenue is associated with a 0.2 percentage point decrease in the probability of being a leaver. Observations are weighted using 2012 survey weights. The unweighted number of observations reported in the table is rounded to the nearest 20, to comply with disclosure limitation guidelines.

It is important to note that the main objective of this set of analyses is to identify factors that are associated with provider attrition, rather than to generate definitive predictions of which providers are likely to stay, and which are likely to leave. As such, the model has a fairly weak goodness of fit reported in Exhibit 4 (pseudo R-square of around 0.1), which could suggest, as one might expect, that provider attrition may be driven by a set of factors that is much more expansive and that may interact in more complex ways than those included in this study.

Discussion

This report examined data from about 3,340 listed home-based providers from the 2012 NSECE representing 105,000 home-based providers in 44 states and the District of Columbia. Drawing on a comprehensive list of CCEE providers compiled for the 2019 NSECE, we classified providers from the 2012 NSECE as stayers and leavers. We then compared the characteristics of stayers and leavers, and identified potential predictors of provider attrition. We found that among listed home-based providers in 2012, older providers, those with more experience, and those with more revenue from child care in 2012 were more likely to still be providing care in 2018, when other covariates were taken into account.

These findings suggest that the change in the supply of listed home-based providers may be influenced by many factors. More importantly, the findings point to the need for more research to untangle causality from correlation and to identify potential causal mechanisms. For instance, the analysis finds that provider age, experience, and revenue are positively associated with being a stayer. One possible interpretation of these findings is that providers that manage to establish a successful business over time are also more likely to remain in business. Another possible interpretation is that providers that go into home-based care with more experience in providing care are better able to meet families' specific needs (e.g., by caring for children during non-standard hours) and develop a more stable customer base. These interpretations are neither exhaustive nor mutually exclusive. Rather, they represent a set of hypotheses that may serve as a starting point for future research.

In addition to the significant findings reported in the main body of this report, other predictors may be associated with attrition that may warrant further research. Our analysis shows that having at least some college education and being in a high poverty density community are marginally significant predictors of attrition.⁵ As shown in Exhibit 4, a provider that has at least some college education is about 9 percentage points more likely to be a leaver than one who has no college education and being in a community with high poverty density is associated with a 11 percentage point increase in the probability of being a leaver compared to being in a community with low poverty density, though these findings are not significant at traditional levels. Future research may wish to examine the relationship between education and provider attrition in more detail, for example in contexts where providers with higher educational attainment have access to other employment opportunities with better remuneration or benefits (e.g., health insurance, paid time off). Our findings also point to the need for more research that focuses on the role of local community contexts, such as poverty density, on attrition.

Future research may consider predictors of attrition among unlisted home-based providers, as well as trends in entry rates into home-based care provision. Particular attention should also be given to home-based providers serving families with children who have special needs, parents seeking infant and toddler care, and those living in rural areas. Rural communities, in particular, may exhibit different provider attrition dynamics compared to urban areas. The relatively small number of listed home-based providers located in rural areas limited our ability to perform a statistically informative analysis of this subgroup. More data are needed to understand patterns of attrition among this critical group of home-based care providers.

⁵ In discussing predictors that meet different significance thresholds, we follow recommendations from recent literature to treat *p*-values as a measure of the strength of the evidence for or against a hypothesis, rather than use them as litmus tests (Wasserstein 2016). *P*-values for all the variables in our model are reported in Exhibit 4.

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Technical Appendix: Linking Addresses

Address linkage poses some unique challenges because of inconsistent representations of addresses across datasets, particularly when addresses are not validated at the point of data entry. For instance, “Martin Luther King Jr. Boulevard” may be represented as “Martin Luther King Boulevard”, “Dr. Martin Luther King Blvd”, “M. L. K. Jr. Blvd”, and so on. To link addresses, we adopted a probabilistic record linkage algorithm. We first parsed addresses into their components, such as street number, street name, and city name. Next, we standardized each component (e.g. converting “Blvd” to “Boulevard” or “St” into “Street”). We then created pairs of addresses, where each pair comprised an address from the 2012 survey and an address from the 2018 lists. Because comparing all possible pairs of addresses (more than a billion pairs) would be computationally expensive, we only compared pairs of addresses within a state that shared the same street number. Finally, we generated a metric that measured similarity between pairs of addresses. For example, although “Martin Luther King Jr. Boulevard” is not identical to “Martin Luther King Boulevard,” they are similar. We set a numerical threshold for this similarity metric, above and below which address pairs were determined to be matches and non-matches respectively. A sample of providers was clerically reviewed to assess the accuracy of the matches and non-matches. Although we assessed the algorithm to be highly accurate, the probabilistic nature of the algorithm means that some classification errors (false matches and false non-matches) might exist in our analytic dataset.