Final Report

2013 Idaho Child Care Market Rate Analysis

Prepared for the

Idaho Department of Health and Welfare

by

The Ohio State University
Statistical Consulting Service

June 6, 2013

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Executive Summary

The Idaho Department of Health and Welfare (DHW) contracted with The Ohio State University Statistical Consulting Service (SCS) to perform the 2013 Idaho Child Care Market Rate Analysis. The DHW and SCS worked jointly to make decisions regarding the data and methods employed in the analysis and to review and approve the results presented in this report. The goal of the analysis is to characterize the unsubsidized (i.e., private pay) market rates for child care throughout the state of Idaho.

The market rate data were obtained from IdahoAEYC, the agency responsible for the state's IdahoSTARS project, which includes the state's Child Care Resource and Referral Services. Provider data are maintained by IdahoAEYC using NACCRRA*ware*, database software that generates child care referrals and reports and manages provider, client, and community data. Provider data were downloaded via text files and uploaded into Excel spreadsheets. The providers included in the analysis were required to be active and located in the state of Idaho, and the type of care provided was limited to child care centers, group care, and family care. In addition to basic information about the provider, the downloaded data included capacity and both full-time and part-time rates for five age groups: 0 – 12 months, 12 – 30 months, 30 – 60 months, 5 – 6 years, and 6 – 12 years. Providers were able to supply their rates in one or more of four modes: monthly, weekly, daily, and hourly rates. In order to perform the market rate analysis on consistent rate data, all rates (full- and part-time) were converted to monthly rate equivalents using standard conversion factors.

To evaluate the market structure, three geographic levels were examined -- zip code, county, and region – as the basic unit for the analysis, and county was selected as the unit that best allowed differentiation between units without a large number of units with missing information. Following methodology used by several other states in their market rate analyses, principal components analysis and cluster analysis were performed to divide counties into groups so that the counties within a group had similar rate structures while counties in different groups had differing rate structures. These analyses resulted in identifying three groups of counties. Multivariate analyses of variance were also performed to compare rates between licensed and exempt family care facilities and between provider types; these analyses showed no significant differences in rates between licensed and exempt family care facilities and no significant differences in rates between family and group care facilities. As a result, the provider types were divided into two groups for the market rate analysis: child care centers, and all group and family care facilities.

The market rate analysis consisted of calculating 5th, 10th, 15th , 20th, 25th, 30th, 35th, 40th, 45th, 50th, 55th, 60th, 65th, 70th, 75th, 80th , 85th, 90th, and 95th percentiles for the unsubsidized rate distributions for each provider type, each county group, each age, and each enrollment status (full, part). In each case the percentiles were calculated using gamma approximations to the distributions of the rates. Tables reporting these percentiles can be found in Section 4 of this report, starting on page 23.

1. Background and Objectives

The Idaho Department of Health and Welfare (DHW) offers programs that deal with complex social, economic and individual issues, often helping people in crisis situations. All of these programs are designed to strengthen families and promote self-reliance. Some of these programs address the needs of children and families. In particular, the Idaho Child Care Program (ICCP) provides child care assistance to low-income, working families by paying for a portion of child care and is funded through the federal Child Care Development Fund (CCDF). This program is for parents who work, attend school, or participate in approved activities to lead families to employment. The program pays for part of the child care costs for eligible households, and parents also pay for a portion based on the size of the family and the amount of their income. DHW also licenses child care providers and is working with community partners on a professional development and quality improvement system to improve the quality of child care services in Idaho.

Federal regulations (45 CFR 98.43) require that the child care assistance rate ceilings be based on the rates that child care providers charge parents who are not receiving assistance. The goal is to set assistance rates high enough to ensure access to child care for low-income families but low enough that prices are not inflated and the cost to taxpayers is not excessive. This Federal rule also requires that states conduct child care market rate analyses every two years as part of their program to ensure access to child care for low-income families.

This report presents the results of the 2013 Child Care Market Rate Analysis conducted for DHW. The primary goal of this analysis is to develop reasonable estimates of the distribution of rates that Idaho child care providers charge the general public who do not receive assistance. These rates are known to vary by the age of the child, the amount of time the child is being cared for, and the geographic location of the provider within the state. The 2013 market rate analysis was conducted between March and June of 2013.

The 2013 Idaho market rate analysis was conducted differently from the ones administered in previous years. DHW hired an external organization, the Statistical Consulting Service at The Ohio State University (SCS), to perform the market rate analysis using data processing and statistical analysis techniques that are being used in other states. These techniques include analyses to compare and combine different types of providers into a smaller number of categories and analyses to group providers with similar rate structures together to provide a better estimate of the child care market rate distribution. The SCS has provided child care market rate surveys analyses for the State of Ohio since 2004. DHW's role in the project was to provide the data, review the methods and results, and provide direction as needed.

This report is divided into four main sections. Section 2 describes the child care rate data that were used in the analysis. This section includes an overview of the data source, a summary of the total population of providers whose data were used in the analysis, a review of the methods that were used to select the appropriate data and transform them into their final form that was used in the market rate analysis, and a preliminary summary analysis of the data. Section 3 describes the statistical methods that were used to analyze the market structure and place providers into groups based on type of service and on geographic location. The methods employed include principal components analysis, cluster analysis, and multivariate analysis of variance. Finally, Section 4 reports the market rate distributions and associated

percentiles. This section includes a description of the statistical techniques that were employed to estimate the percentiles of the rate distributions within the child care service categories.

2. Data Summary

2.1 Data Source

In Idaho, there is a single agency responsible for the state's Child Care Resource and Referral System and IdahoSTARS project. This agency, which operates under contract with the DHW, consists of the Center on Disabilities and Human Development (CDHD) at the University of Idaho and the Idaho Association for the Education of Young Children (AEYC). One of their responsibilities under the contract with DHW is to maintain a database of child care provider information. This database uses the National Association of Child Care Resource and Referral Agencies' suite of data services, particularly NACCRRA*ware*, database software that generates child care referrals and reports and manages provider, client, and community data.

There are several categories of data included in NACCRRA*ware*:

- General information, such as identification number, owner name, business name, type of care, status, entry date, status date , and phone numbers;
- Location data, such as address, city, state, zip, county, latitude, and longitude;
- License information, such as regulation status, EIN/SSN, and expiration dates;
- General capacity information, such as total licensed capacity, total vacancies, accepted age ranges, and number of shifts;
- Other information, such as school district, school catchment, additional funding sources, memberships, transportation, languages, registration, and program focus;
- Shift information, such as days and time of operation and hours;
- Rate information for ten categories (five time periods, with full- and part-time rates for each);
- Additional fees information; and
- Population information, such as desired capacity, licensed capacity, enrollment, subsidized capacity, and current vacancies.

The shift and population information includes five age groups: 0 – 12 months, 13 – 30 months, 31 – 60 months, 5 – 6 years, and 6 – 12 years.

2.2 Data Selection and Transfer

In order to perform the market rate analysis, the following data were required for each provider:

- geographic location information (region, county, and zip code);
- type of care provided and licensing status;
- child care rates (full- and part-time) for each age group; and
- capacity and enrollment information for each age group.

Data can be downloaded from NACCRRA*ware* by requesting data reports that contain data fields of interest for sub-populations of interest. These reports are created as text files that can be downloaded to the user's computer.

The provider data required for the market rate analysis were downloaded into five text files. The first text file contained all the fields of interest. For ease in data processing, four additional files were downloaded: basic provider information, enrollment and capacity data, full-time rates, and part-time rates. Each file was downloaded as a text file, imported into Microsoft Word to perform some minor data formatting, and then imported into Excel spreadsheets. Each file included the provider ID and Unique Provider ID so that the data could be matched across all five files. The four Excel data files with subsets of the data were uploaded into SAS® and combined using the five-digit provider ID.

There were three criteria for inclusion of providers in the market rate analysis:

- the provider must be currently operating (*i.e.*, status = "Active");
- the providers must be located in the state of Idaho (seven providers that were included in the database from Washington, Oregon, and Utah were excluded); and
- the type of care provided must be in one of three categories: group, family, and center.

The original downloaded data included only Active providers; SAS® code was written to select providers based on the other two criteria. There were a total of 971 providers in the database that met all three criteria.

2.3 Data Processing

The NACCRRA*ware* database allows for child care pricing to be entered in up to five modes, depending upon how the child care provider sets its prices. The modes are hourly, daily, weekly, monthly, and other. Providers are encouraged to enter data for all of the modes they use. For example, one provider may have both a daily rate and a monthly rate that their customers can pay.

Table 1 shows the number of providers who listed full-time and part-time rates in each of four modes – hourly, daily, weekly, monthly. Of the 971 providers, 23 have no full-time rates, 760 use one full-time price mode, 161 use two full-time price modes, 23 use three full-time price modes, and four use all four price modes. Also, 386 providers list no part-time price modes, 497 use one part-time price mode, 84 use two price models, three use three price modes, and one uses all four price modes.

Table 1. Number (Percent) of Providers Who Use Each Pricing Mode

Period	Full-time	Part-time
Hourly	137 (14.11)	254 (26.16)
Daily	416 (42.84)	193 (19.88)
Weekly	176 (18.13)	62 (6.39)
Monthly	438 (45.11)	169 (17.40)
None	23 (2.37)	386 (39.75)

Because there are multiple modes, and the providers are encouraged to use the modes that best suit them, child care rates are not standard among all providers. In order to provide an estimate of the market rate across the entire industry, one must either perform separate rate analyses by pricing mode or

convert the pricing data to one consistent mode. In the interest of assessing the market rates for the entire population of providers at one time, the latter option was chosen.

Based on information from the database, the two most common modes for full-time rates are daily and monthly. In order to provide a single analysis for the entire industry, and to be consistent with DHW's current policy to pay providers on a monthly basis, monthly rate was chosen to be the basis for the market rate analysis. For converting the rates, the preference was to use monthly rates, followed in order by weekly rates, daily rates, and hourly rates. The multiplicative factors used to convert non-monthly rates to monthly rates were:

- 4.28 weeks per month;
- 21.4 days per month (5 days per week × 4.28 weeks per month); and
- 171.2 hours per month (40 hours per week × 4.28 weeks per month).

For part-time rates, the pricing modes of hourly, daily, and monthly have similar numbers among providers. For consistency, part-time rates were also converted to a monthly basis. As with full-time rates, the preference in rates for calculating monthly equivalents is monthly rates, weekly rates, daily rates, and hourly rate. The conversion factors that were used were:

- 4.28 weeks per month;
- 12.84 days per month (3 days per week × 4.28 weeks per month); and
- 89.88 hours per month (21 hours per week × 4.28 weeks per month).

2.4 Data Summary

The final provider data were examined in terms of their geographic distribution across Idaho. In particular, the number of providers in each of the three type-of-care categories was tabulated by DHW region and county. Table 2 shows the number of providers by type and region, and Table 3 shows the number of providers by type and county. The counts of licensed/regulated and exempt providers were also calculated. Of the 971 providers, 792 are licensed/regulated and 179 are exempt. All of the child care centers and group providers are licensed; only family care providers can be exempt.

Table 4 provides a summary of the approximated monthly rates per provider (i.e., this is a summary across providers and not across available slots), combined across all geographic units and provider types. Figures 1 – 5 show histograms of the distribution of the adjusted monthly full-time rates for the five age groups. Table 5 provides a summary of the approximated monthly part-time rates for all child care providers in the target population. Figures 6 – 10 show histograms of the distribution of adjusted monthly part-time rates for the five age groups. Each histogram also includes two approximated probability distribution for the rates, one for a normal distribution and one for a lognormal distribution.

Table 2. Number of Providers by Region

Region	Type Of Care			
	Group	Center	Family	Total
1	33	65	34	132
2	16	25	17	58
3	73	57	84	214
4	68	98	62	228
5	36	48	64	148
6	53	31	9	93
7	41	39	18	98
Total	304	363	288	971

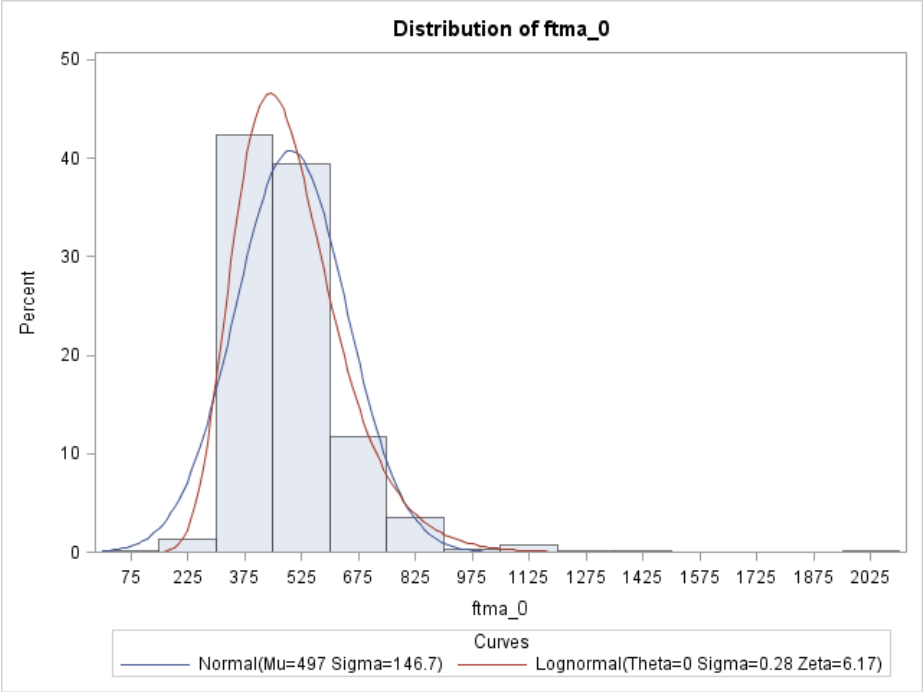

Figure 1. Histogram of Adjusted Full-time Monthly Rates for Ages 0 – 12 Months

Table 3. Number of Providers by Type and County

County	Type Of Care			
	Group	Center	Family	Total
Ada	65	86	57	208
Adams	0	1	0	1
Bannock	37	15	0	52
Bear Lake	0	2	0	2
Benewah	0	4	2	6
Bingham	10	11	6	27
Blaine	5	6	2	13
Boise	0	1	0	1
Bonner	6	7	4	17
Bonneville	28	27	15	70
Boundary	1	3	2	6
Butte	0	0	0	0
Camas	0	1	0	1
Canyon	53	43	71	167
Caribou	0	2	0	2
Cassia	3	4	11	18
Clark	0	0	0	0
Clearwater	1	3	2	6
Custer	0	0	0	0
Elmore	2	7	5	14
Franklin	3	0	2	5
Fremont	6	0	0	6
Gem	3	2	6	11
Gooding	1	3	4	8
Idaho	3	2	2	7
Jefferson	3	4	1	8
Jerome	6	2	4	12
Kootenai	23	49	24	96
Latah	4	10	2	16
Lemhi	1	0	0	1
Lewis	2	1	1	4
Lincoln	1	0	3	4
Madison	3	5	2	10
Minidoka	8	7	12	27
Nez Perce	6	9	10	25
Oneida	0	0	1	1
Owyhee	0	2	0	2
Payette	12	7	5	24
Power	3	1	0	4
Shoshone	3	2	2	7
Teton	0	3	0	3
Twin Falls	12	25	28	65
Valley	1	4	1	6
Washington	5	2	1	8
Total	320	363	288	971

Table 4. Summary of Approximate Monthly Full-Time Child Care Rates

Age Category	Number of Providers	Minimum Rate ($)	Maximum Rate ($)	Median Rate ($)	Mean Rate ($)
0 – 12 months	928	21.00	2,033.00	470.80	497.00
13 – 30 months	926	21.00	2,033.00	434.00	471.93
31 – 60 months	919	98.44	2,033.00	428.00	439.60
5 – 6 years	841	125.00	1,369.60	400.00	412.93
6 – 12 years	786	52.00	1,369.60	385.20	385.48

Table 5. Summary of Approximate Monthly Part-Time Child Care Rates

Age Category	Number of Providers	Minimum Rate ($)	Maximum Rate ($)	Median Rate ($)	Mean Rate ($)
0 – 12 months	476	64.20	1,219.80	292.11	310.38
13 – 30 months	492	64.20	3,000.00	269.64	302.46
31 – 60 months	489	64.20	1,142.76	269.64	282.65
5 – 6 years	484	64.20	963.00	256.80	265.97
6 – 12 years	485	51.36	1,438.08	247.00	248.35

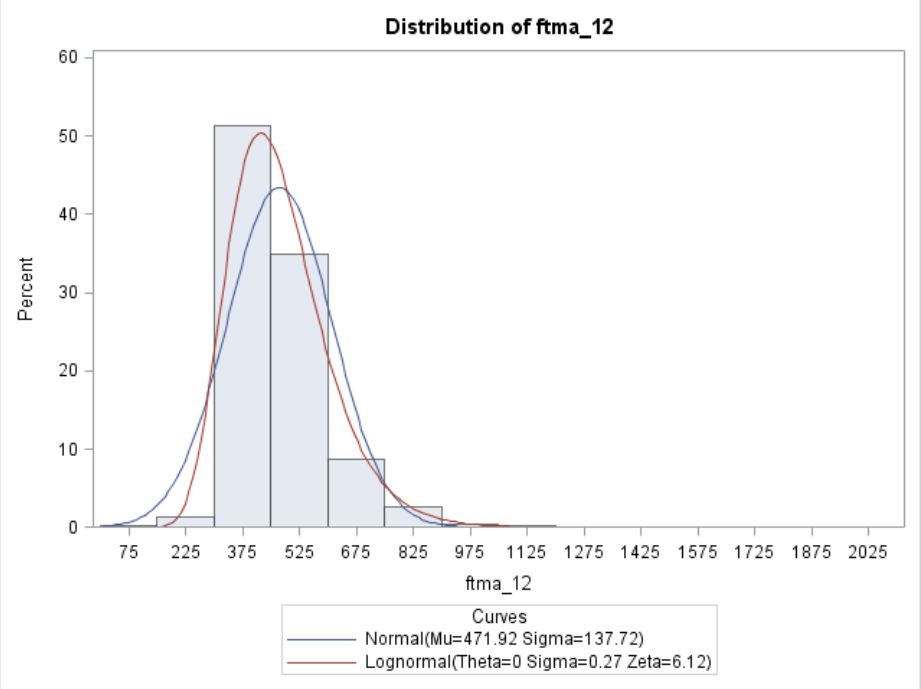

Figure 2. Histogram of Adjusted Full-time Monthly Rates for Ages 12 – 30 Months

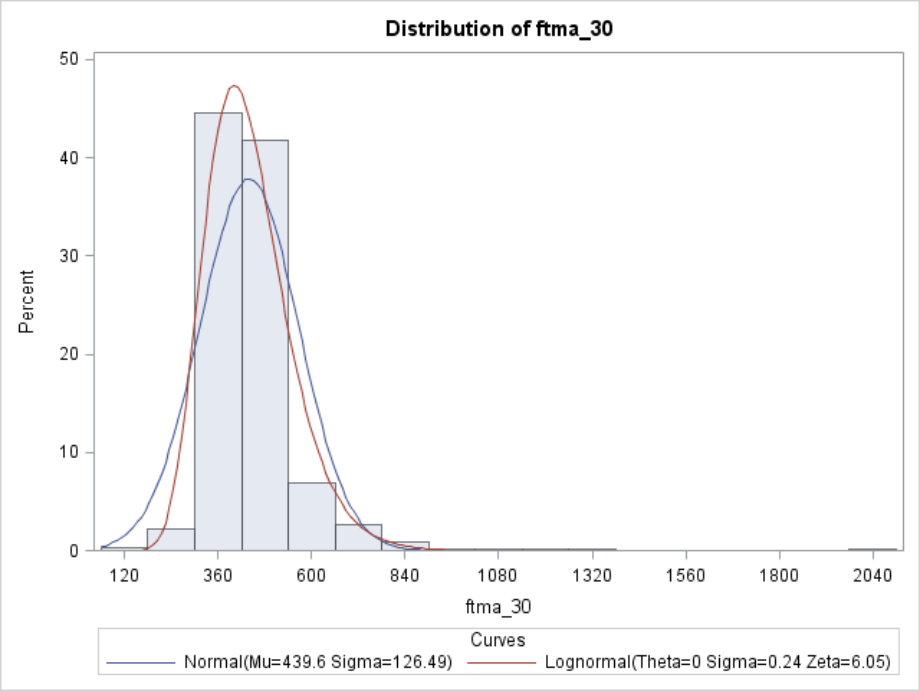

Figure 3. Histogram of Adjusted Full-time Monthly Rates for Ages 30 – 60 Months

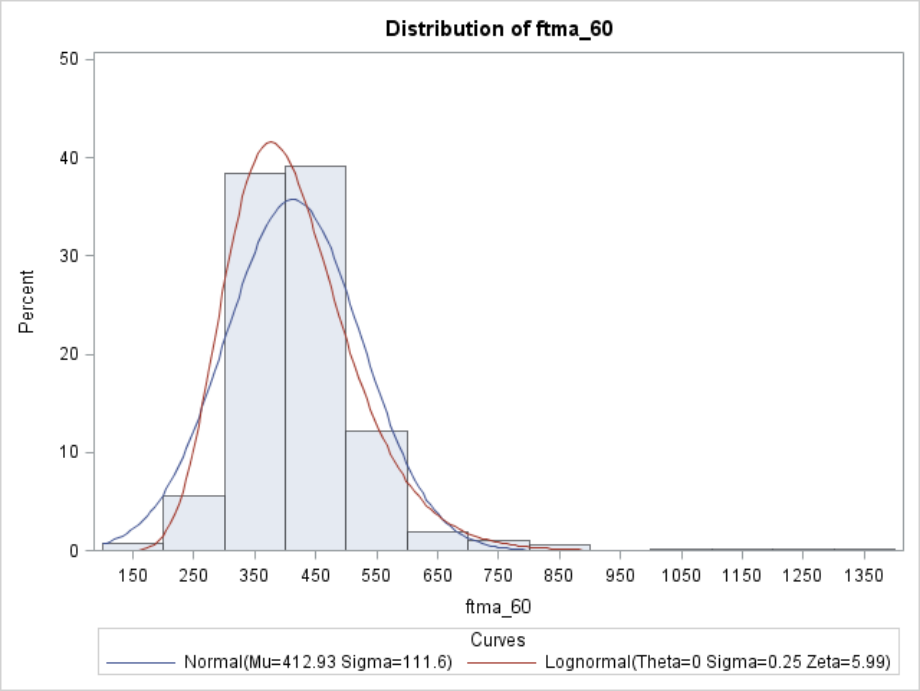

Figure 4. Histogram of Adjusted Full-time Monthly Rates for Ages 5 – 6 Years

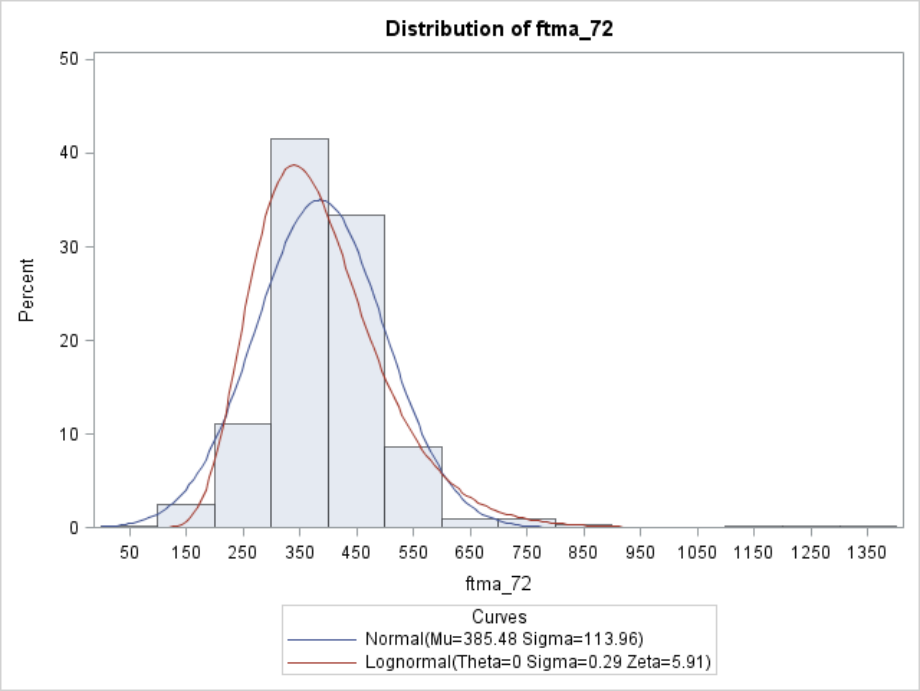

Figure 5. Histogram of Adjusted Full-time Monthly Rates for Ages 7 – 12 Years

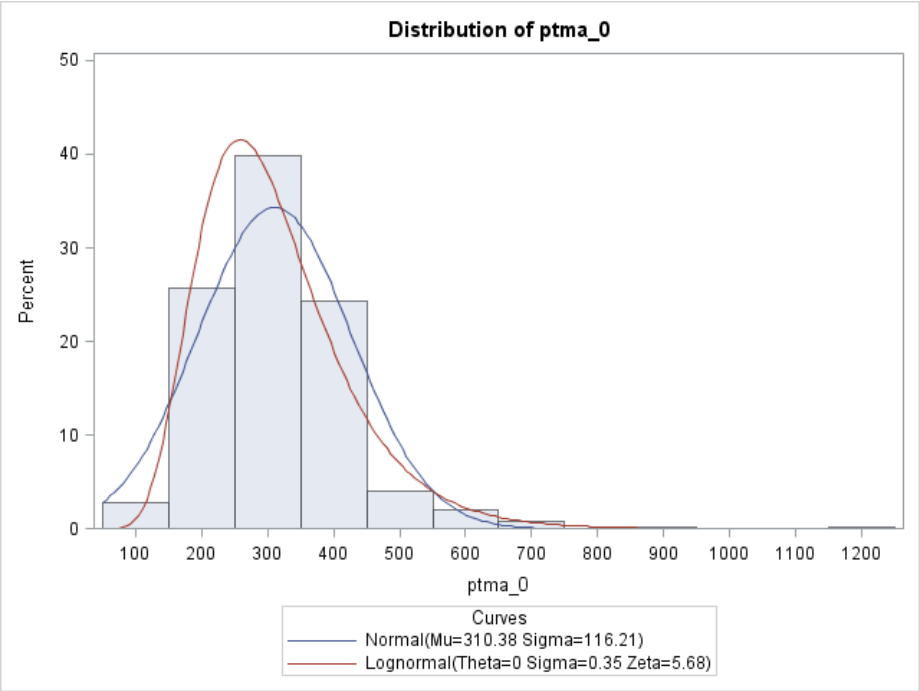

Figure 6. Histogram of Adjusted Part-time Monthly Rates for Ages 0 – 12 Months

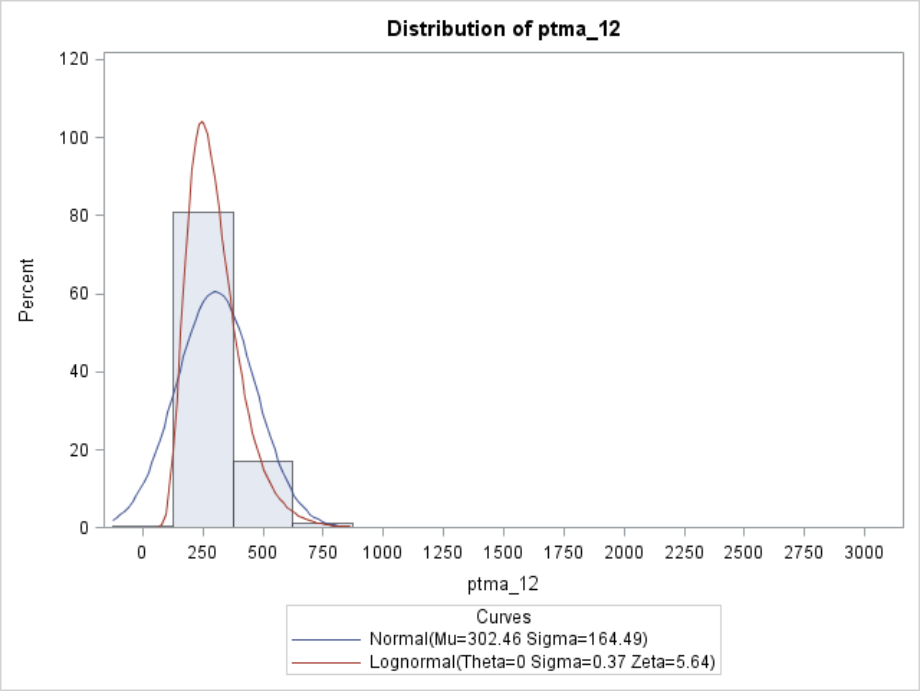

Figure 7. Histogram of Adjusted Part-time Monthly Rates for Ages 12 – 30 Months

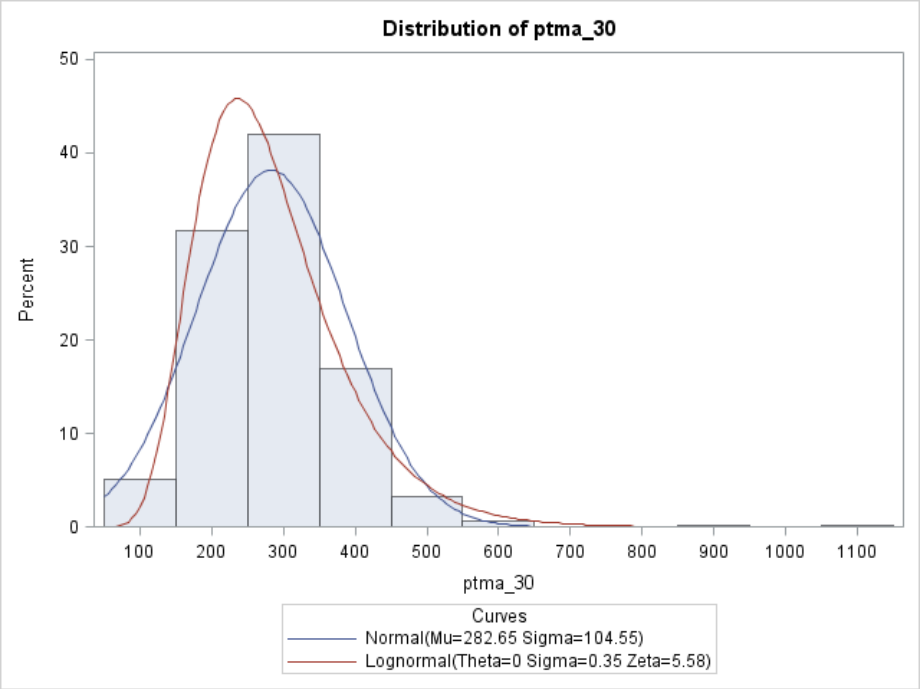

Figure 8. Histogram of Adjusted Part-time Monthly Rates for Ages 30 – 60 Months

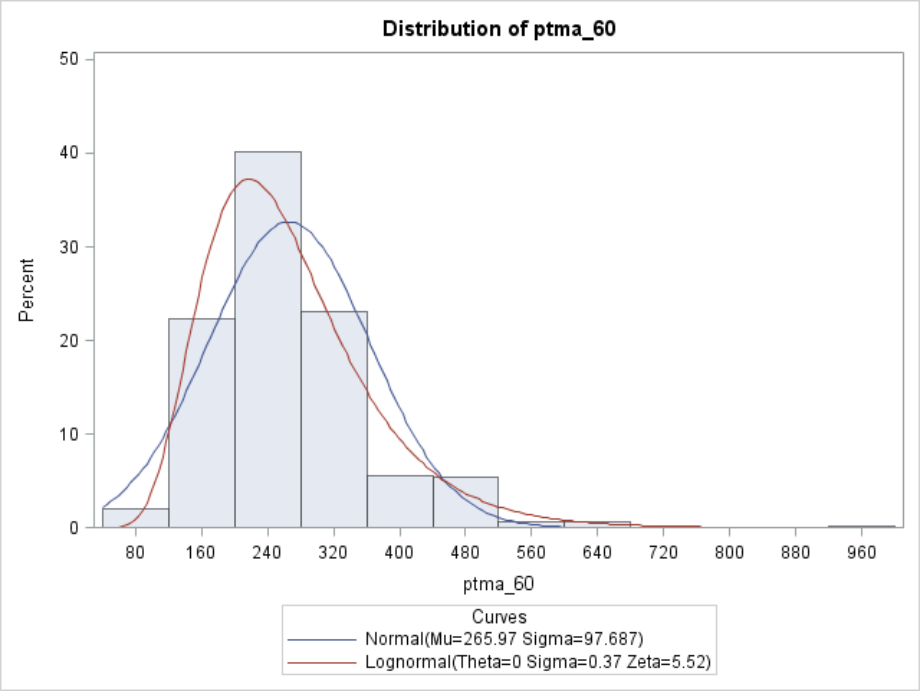

Figure 9. Histogram of Adjusted Part-time Monthly Rates for Ages 5 – 6 Years

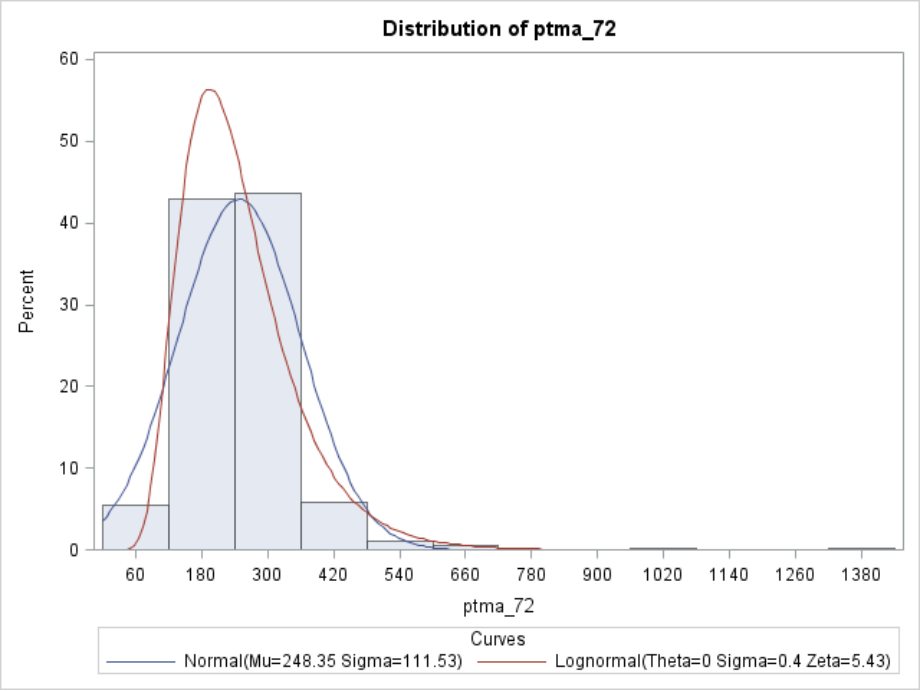

Figure 10. Histogram of Adjusted Part-time Monthly Rates for Ages 6 – 12 Years

3. Market Structure Analysis

The goal of the market rate analysis is to characterize the distribution of child care market rates across the state of Idaho. It is known that the market rates differ in important ways based on several factors. In particular, it is known that providers tend to charge different rates based on the number of hours of care per month, the age of the child, the type of care, and the geographic location of the provider. Some areas have higher overall rate structures than other areas due to differences in population density and differences in economic conditions. These four factors (provider type, age category, usage category, and geographic location) have been used to rationally divide the rates into meaningfully interpretable groups.

The three sections that follow present the approach that was taken to define the market rate structure using the four factors. These sections address age and usage categories, geographic regions, and provider type.

3.1 Age and Usage

With respect to age, children are divided into five categories in the IdahoSTARS database: 0 – 12 months, 13 through 30 months, 31 through 60 month, 5 through 6 years, and 6 through 12 years. These categories do not exactly align with the age groups used in provider licensing, and it is not possible to do any modifications to the age categories other than to combine the categories available in the Idaho STARS database. Within each of the age categories, rates are collected by IdahoSTARS for two "usage" categories: full-time and part-time. Some states collect rate data for school-age children for both school-year and summer/holiday periods, but the IdahoSTARS database does not collect separate data for the two periods (although a few providers have indicated summer rates using either multiple shifts or in a "Notes" field. As a result, the age and usage two-variable categorization scheme results in ten categories based. The market rate structure analysis will incorporate these ten categories, and the market rate analysis will provide percentiles for each of these ten categories.

3.2 Geographic Areas

Conceptually, the provider grouping strategy can range from making each provider its own group (requiring 971 groups) to simply combining all providers together into one large group and using a single set of state-wide rates. Using a single state-wide rate would not allow DHW to account for differences in rates due to geographic location, while using separate rates for each provider would be overly complex and would not account for similarities in rates within geographic regions. A reasonable compromise between these two approaches is to first combine providers into units based on geographic location, and then combine the geographic units into groups so that the rate structures are similar within each group but different across the groups.

The process of determining a set of geographic regions for the market rate analysis requires four steps. The first step is to select the initial geographic units to use in the market rate structure analysis; the second step is to reduce the provider-level data to unit-level data; the third step is to determine the best measurements to use to compare and combine the units; and the final step is to determine the best number of groups and to assign the geographic regions to the appropriate group. The four sections that

follow describe the methods and results for each of these four steps in defining the geographic regions for the market rate analysis.

3.2.1 Selection of Geographic Units

The goal of the selection of the initial geographic units is to minimize the number of units where there are too few data but to maximize the number of units available to allow for sufficient detail. Three geographic units were considered for the market rate structure analysis: zip code, county, and DHW Region.

DHW maintains a list of Idaho cities with zip code, county field and regional office location, and region. This list includes 304 unique zip codes. The final list of 971 providers includes 126 unique zip codes, many of which include only a single provider. Furthermore, of the 126 zip codes in the provider database, there are only 92 unique zip codes for which there are provider rates in all ten categories. Performing market rate analyses using only 92 of 304 zip codes leaves large tracts of land that either will not be assigned to market segments or will require special handling to assign to a final geographic cluster. While it might be very useful to be able to differentiate between different rate structures at the zip code level, there are not a sufficient number of providers per zip code to make this feasible.

There are 44 counties in Idaho. As shown in Table 3, the 971 providers in the final analysis database are located in 41 of the counties; there are no providers in Butte, Clark, and Custer Counties. There are twelve additional counties with fewer than five providers (Adams, Bear Lake, Boise, Camas, Caribou, Lemhi, Lewis, Lincoln, Oneida, Owyhee, Power, and Teton). Of these twelve, five do not have rates for all ten age/usage categories (Adams, Boise, Caribou, Lemhi, and Oneida). The use of counties as the analysis unit would allow for greater coverage of the state than the use of zip codes; however, there would still be parts of the state that are not covered.

DHW divides the State of Idaho into seven geographic Regions. Table 6 lists the counties in each region of the state. Table 2 shows that each region has at least 58 providers, and each region has data for each of the ten age/usage categories. As a result, the entire state can be assigned to geographic groups using region. On the other hand, using regions does not allow for discriminating between smaller areas within the regions that might have different market rate structures.

Based on the results of the evaluation of the three area units, a decision was made to proceed using county as the initial geographic analysis unit. While this does not provide as much local detail as the use of zip codes, it does allow greater coverage of the entire state. And while it does not provide as much coverage as the use of Region, it does allow more detailed discrimination between areas within the Region. Additionally, many other states define their market rate structures based on counties. In some cases, the counties are assigned to child care assistance clusters based simply on geographic region or based on urbanicity of the county. In other states (e.g., Colorado, Minnesota, Ohio), the counties are divided into assistance groups using analyses similar to those employed in this report.

With regard to the eight counties that cannot be included in the geographic grouping analysis due to lack of sufficient data, they can be assigned one of the groups derived using the 36 counties. For the five counties with incomplete data, the available rate data have been compared to the average rates of the county groups, and the counties have been assigned to the group that has the most similar rates. The

three counties with no providers have been assigned to groups based on county demographics and the group assignments of neighboring counties. The specific assignments for the eight counties are discussed in Section 3.2.4.

Table 6. Counties in Each Idaho Department of Health and Welfare Region

Region	Counties
1	Benewah, Bonner, Boundary, Kootenai, Shoshone
2	Clearwater, Idaho, Latah, Lewis, Nez Perce
3	Adams, Canyon, Gem, Owyhee, Payette, Washington
4	Ada, Boise, Elmore, Valley
5	Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, Twin Falls
6	Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida, Power
7	Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, Teton

3.2.2 Calculating Representative County Rates

The second step in the clustering process is calculating the representative rates within counties for each of the ten age/usage categories. In Section 2, the rates were all standardized to monthly rate equivalents. For each of the ten age/usage categories, arithmetic average rates were calculated over all providers in the county. These averages were based on the raw rates for each provider, unadjusted by the number of available slots. There are some providers who do not accept children in all five age categories or who do not accept either full- or part-time enrollees, and as a result, do not have values for all ten age/usage categories. In calculating the county-wide averages, all available provider rates for each category, regardless of the number of categories for which a provider had rates, were used.

3.2.3 Selecting Measurements for County Grouping

The division of counties into groups (i.e., clustering) must be based on a set of measurements that characterize each unit. For the market structure analysis, the set of measurements are the ten age/usage average rates per county. These ten measurements are highly correlated; that is, counties that have higher full-time rates for 0 – 12 month olds are likely to have higher rates in the other nine categories as well. Rather than basing the clustering on the ten individual measurements that are highly correlated, it is reasonable to evaluate whether the number of measurements for clustering can be reduced.

Principal components analysis (PCA) is one method that can be used to reduce a large number of correlated measurements to a smaller number of statistically independent measurements that account for the majority of the variation observed in the original data while still having a direct interpretation within the context of the application. The specific objective of PCA is to determine linear combinations of the ten measurements that explain a large proportion of the variability among all the values. PCA determines appropriate “factor loadings” (multipliers for each measurement) and the associated proportion of variability explained by the factor. Ideally, a large proportion of variability between the units’ measurements will be explained by a small number of principal components, and these principal components will have factor loadings that have meaningful interpretations.

For the Idaho child care market structure analysis, the PCA was conducted using the county-wide averages for the ten age/usage categories in each of 36 counties. Tables 7 and 8 show the results of the PCA. Table 7 contains the principal component value (eigenvalue) and information about the proportion of variability explained by each PC. Table 7 shows that the first PC explains 65% of the variability in the ten rates, and the first two PCs explain 90% of the variability. The proportions of explained variability for the remaining PCs are small compared to the first two PCs, which indicates that it is reasonable to reduce the ten rate measurements to two PCs for the grouping analysis that follows. Table 8 contains the factor loadings for each of the nine PCs. Table 8 shows that the factor loadings for the first PC are approximately equal and highest for the eight rates that exclude the two part-time rates for school-age children. This indicates that the first PC is approximately equal to the average of those eight rates. The factor loadings for second PC are greatest for the part-time rates for the two groups of school-age children. Thus, the second PC is approximately equal to a combination of those two rates.

Table 7. Eigenvalues and Proportions of Variability Explained for PCA by County

PC	Eigenvalue	Difference	Proportion	Cumulative
1	6.47919384	3.98165952	**0.6479**	0.6479
2	2.49753432	1.79662410	**0.2498**	**0.8977**
3	0.70091022	0.55634941	0.0701	0.9678
4	0.14456081	0.07663087	0.0145	0.9822
5	0.06792995	0.01365854	0.0068	0.9890
6	0.05427140	0.01842297	0.0054	0.9944
7	0.03584844	0.02412921	0.0036	0.9980
8	0.01171923	0.00596251	0.0012	0.9992
9	0.00575672	0.00348166	0.0006	0.9998

Table 8. Factor Loadings for Each PC by County

Measurement	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9
Full-time 0 – 12 mo	**0.3478**	-.2732	-.1196	-.1416	0.1053	0.2689	0.4257	0.6903	-.1703
Full-time 12 – 30 mo	**0.3576**	-.2510	-.0696	-.0240	0.1023	0.2126	0.2996	-.4300	0.5896
Full-time 30 – 60 mo	**0.3593**	-.2519	0.0180	-.0450	0.0242	-.0339	0.1260	-.4242	-.2451
Full-time 5 – 6 yr	**0.3524**	-.2516	0.2003	0.0986	0.1607	-.0859	-.2786	-.1815	-.5924
Full-time 6 – 12 yr	**0.3302**	-.2791	0.3306	0.2200	-.1235	-.2310	-.4942	0.3457	0.4400
Part-time 0 – 12 mo	**0.3147**	0.3147	-.3104	-.3420	-.0736	0.5331	-.5438	-.0174	0.0089
Part-time 12 – 30 mo	**0.2835**	0.2824	-.5377	0.7276	0.0062	-.1282	0.0496	0.0348	-.0344
Part-time 30 – 60 mo	**0.3403**	0.2529	-.1916	-.4965	-.2099	-.6809	0.1136	0.0300	0.0320
Part-time 5 – 6 yr	0.1862	0.5069	**0.3707**	-.0127	0.7376	-.0401	0.0676	0.0518	0.0935
Part-time 6 – 12 yr	0.2429	0.3976	**0.5211**	0.1618	-.5858	0.2342	0.2750	-.0343	-.0882

3.2.4 County Grouping Results

The statistical analysis method that is most useful for partitioning a set of units into groups is cluster analysis. In cluster analysis, the partitioning is based on a set of measurements taken for each unit and is done in such a way that differences in the measurements within each group are small compared to the differences in the measurements between the groups. The optimal number of groups is determined by

finding a number of clusters where the proportion of the variability between all units that can be attributed to differences between the groups is large but drops considerably when there are a larger number of clusters.

There are several alternative methods that can be used with cluster analysis. These methods differ primarily in two respects: (1) whether the number of clusters is fixed or whether a step-wise, "hierarchical" approach is taken that evaluates all numbers of clusters, and (2) the statistical measure of distance between units and clusters. For the first aspect, the number of clusters can be specified, and the routine will find the best way to assign units to the number of specified clusters. The fixed-number cluster analysis must then be run using several different cluster counts and the results for the different cluster counts evaluated to determine the best number of clusters. In hierarchical clustering, a step-wise approach is taken, beginning with all units in either a single cluster or separate clusters. When starting with all units in separate clusters, the routine sequentially joins the two separates clusters that are the closest in distance until all the clusters have been joined into one. Similarly, if the units start in a single cluster, the routine splits the cluster into two individual clusters whose distance apart is greatest, until all clusters individual units. At each step in hierarchical cluster analysis several measures of within- and between-cluster variability are calculated, and these measures are used to determine the optimum number of clusters. There are many different options for distances between clusters that have been developed and used in the past; none of them have proven to be more effective than all others, so a simple distance measure should be sufficiently effective for the market structure analysis.

Cluster analysis partitions the counties into groups such that the measurements are similar within a cluster and different between clusters. The optimal number of clusters is the smallest number that produces a high between-cluster difference and small within-cluster difference. There is no generally-accepted numerical rule for determining when this criterion has been met; thus, the optimal number of clusters is chosen based on the experience of someone trained in cluster analysis methods and application.

For the Idaho market structure analysis, a hierarchical clustering approach was taken, beginning with all units in separate clusters. The distance between clusters was selected to be the linear distance between the averages of the members of two clusters. Cluster analysis of the counties was performed using the first two PCs. The optimal number of clusters was determined by examining the ratio of between-cluster variability to total variability and choosing the number of clusters where the ratio is sufficiently large and where there is only a small increase in the ratio when the most clusters are used. Auxiliary information such as distances between clusters was used to assist in the decision. The ratio of between-cluster to total variability is the equivalent to the value of R^2 from a one-factor analysis of variance to test for differences in cluster means.

Table 9 and Figure 11 show the results of the cluster analysis. Table 9 shows step-by-step results for the hierarchical cluster analysis, including information about which clusters were joined at each step and the ratio of between-cluster to within-cluster variance (R-square). In Table 9, the cluster formed at each step is denoted by "CL#" where "#" is the number of clusters. For example, the cluster formed in the first step, which combines Bear Lake and Jerome Counties, is denoted as "CL35" because the number of clusters has been reduced from 35 to 36. Similarly, the cluster formed in the second step, consisting of Fremont and Payette Counties, is denoted "CL34." The hierarchical cluster analysis continued to the final step, which was to combine cluster CL3 with cluster CL2 into a single cluster that includes all 36 counties. Figure 11 is a dendogram that shows the results of the hierarchical clustering analysis. The

horizontal lines show the clusters that are combined, and their height indicates the distance between the clusters that were joined. The highest horizontal line corresponds to the last clusters combined (i.e., CL2 and CL3). Figure 11 and Table 9 show that there were three counties – Teton, Blaine, and Owyhee – that did not get added to a cluster until most of the other counties had been combined into one or two clusters.

Table 9. Hierarchical Cluster Analysis Results

Number of Clusters	Clusters Joined		Semipartial R-Square	R-Square	Distance
35	Bear Lake	Jerome	0.0000	1.00	0.0240
34	Fremont	Payette	0.0000	1.00	0.0513
33	Idaho	Lincoln	0.0000	1.00	0.0552
32	CL34	Gooding	0.0000	1.00	0.0584
31	Twin Falls	Washington	0.0001	1.00	0.0662
30	Minidoka	CL31	0.0004	.999	0.0973
29	Bannock	Shoshone	0.0001	.999	0.0990
28	Boundary	Canyon	0.0001	.999	0.1035
27	Elmore	CL33	0.0001	.999	0.1036
26	CL32	Jefferson	0.0002	.999	0.1122
25	Camas	Clearwater	0.0000	.999	0.1309
24	Cassia	Madison	0.0003	.999	0.1391
23	Bingham	CL27	0.0008	.998	0.1821
22	Bonneville	Nez Perce	0.0015	.996	0.1950
21	Kootenai	Power	0.0003	.996	0.1959
20	CL29	CL30	0.0027	993	0.1968
19	CL35	CL26	0.0008	.992	0.1995
18	Ada	Lewis	0.0005	.992	0.2395
17	Bonner	CL22	0.0016	.990	0.2495
16	Benewah	CL28	0.0009	.989	0.2777
15	CL19	Gem	0.0014	.988	0.2814
14	CL25	Franklin	0.0005	.988	0.2825
13	CL20	CL24	0.0033	.984	0.2837
12	CL16	CL23	0.0063	.978	0.2951
11	Latah	Valley	0.0008	.977	0.2994
10	CL13	CL12	0.0196	.958	0.3557
9	CL17	CL21	0.0218	.936	0.4621
8	CL18	CL11	0.0096	.926	0.5010
7	CL15	CL14	0.0049	.921	0.5144
6	CL10	CL7	0.0397	.882	0.6015
5	CL8	CL9	0.0662	**.815**	0.6055
4	CL5	CL6	0.4908	.325	1.0919
3	Blaine	Teton	0.0062	.318	1.1093
2	CL4	Owyhee	0.0164	.302	2.0746
1	CL2	CL3	0.3020	.000	3.1290

Based on the results from Table 9, it appears that optimal number of county clusters is five for three reasons. First, at that point, a relatively large percentage of the total variability between counties (81.5%) has been explained by differences between clusters. Second, all increases in R^2 (semipartial R-square) for larger numbers of clusters are relatively small (less than 7%). Finally, the distance between

the clusters joined into CL5 ("Distance") is significantly larger than the distance between the clusters joined into CL6.

Of the five clusters formed in this analysis, three consist of a single county. Two of these three have the highest value of PC1 (i.e., highest average of eight rates) and similar values for PC2 – Teton and Blaine. Because they are the two counties with the highest rates and there was little change in the overall R^2 when they were joined, they could be placed in a single cluster. The third county with its own cluster, Owyhee, was joined to the combination of the two lower clusters rather than to the cluster containing Blaine and Teton Counties. Thus, it may make sense to consider assigning Owyhee County to one of the two lower clusters. Figure 12 is a scatterplot of the values of the first two principal components by county, color-coded to indicate the final cluster assignment. In Figure 12, the two red circles correspond to Blaine and Teton Counties. These two counties are in a similar location on the plot, so it is reasonable to combine them into a single cluster. The rightmost green circle corresponds to Owyhee County. The value of the first PC for Owyhee County shows that it is in line with Cluster 2, so it is value of the second PC that sets it apart from the rest of the state. Based on Figure 12, it seems reasonable to assign Owyhee County to Cluster 2.

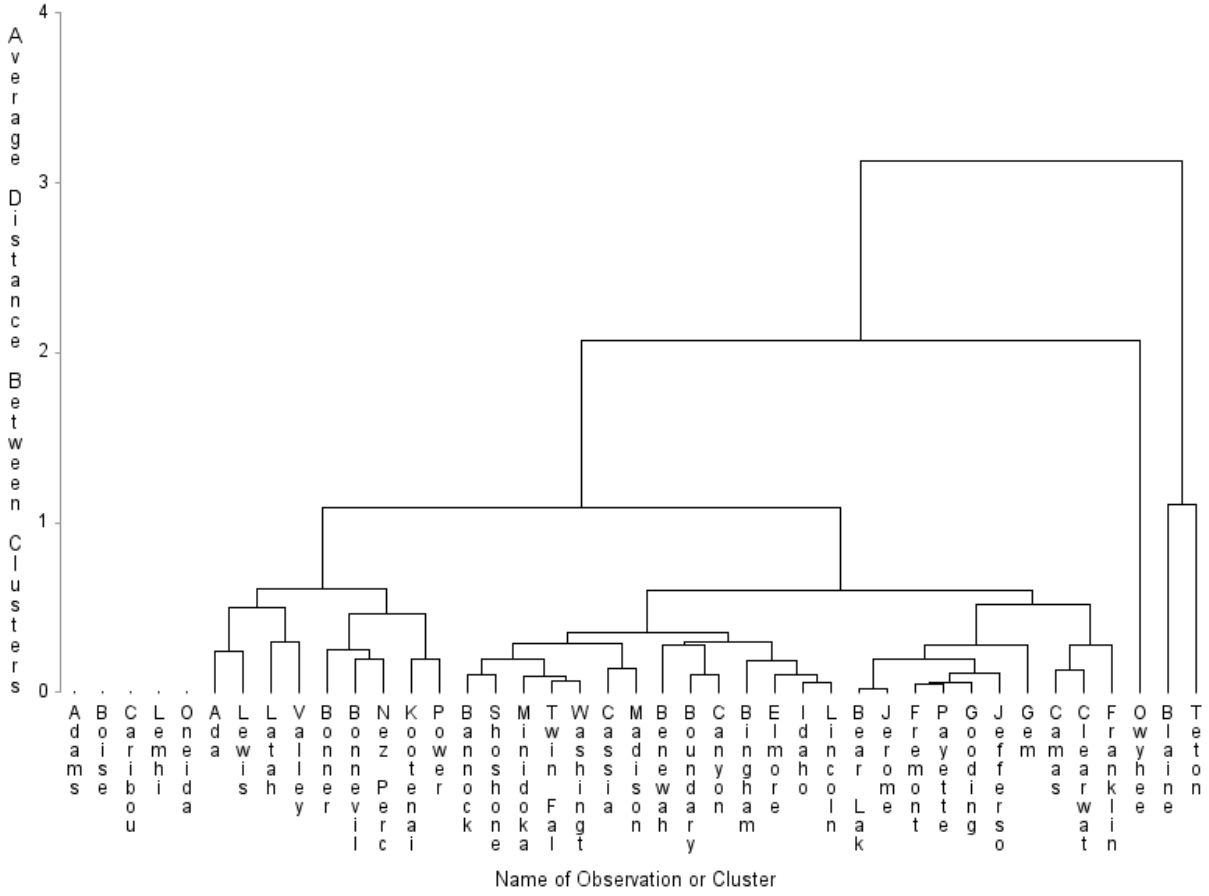

Figure 11. Dendogram of Clustering by County

The cluster analysis routine included only 36 of the 44 counties due to missing rate values in five counties and the absence of providers in three counties. For the five counties with missing rate values, the non-missing age/usage rate values were compared to the mean rates for the same age/usage category for each of the three clusters. In all five cases, the county's partial rates were closest to Cluster 1. The three counties with no providers were also all assigned to Cluster 1 because they had similar demographic characteristics as Cluster 1 and most of their neighbors were also in that cluster.

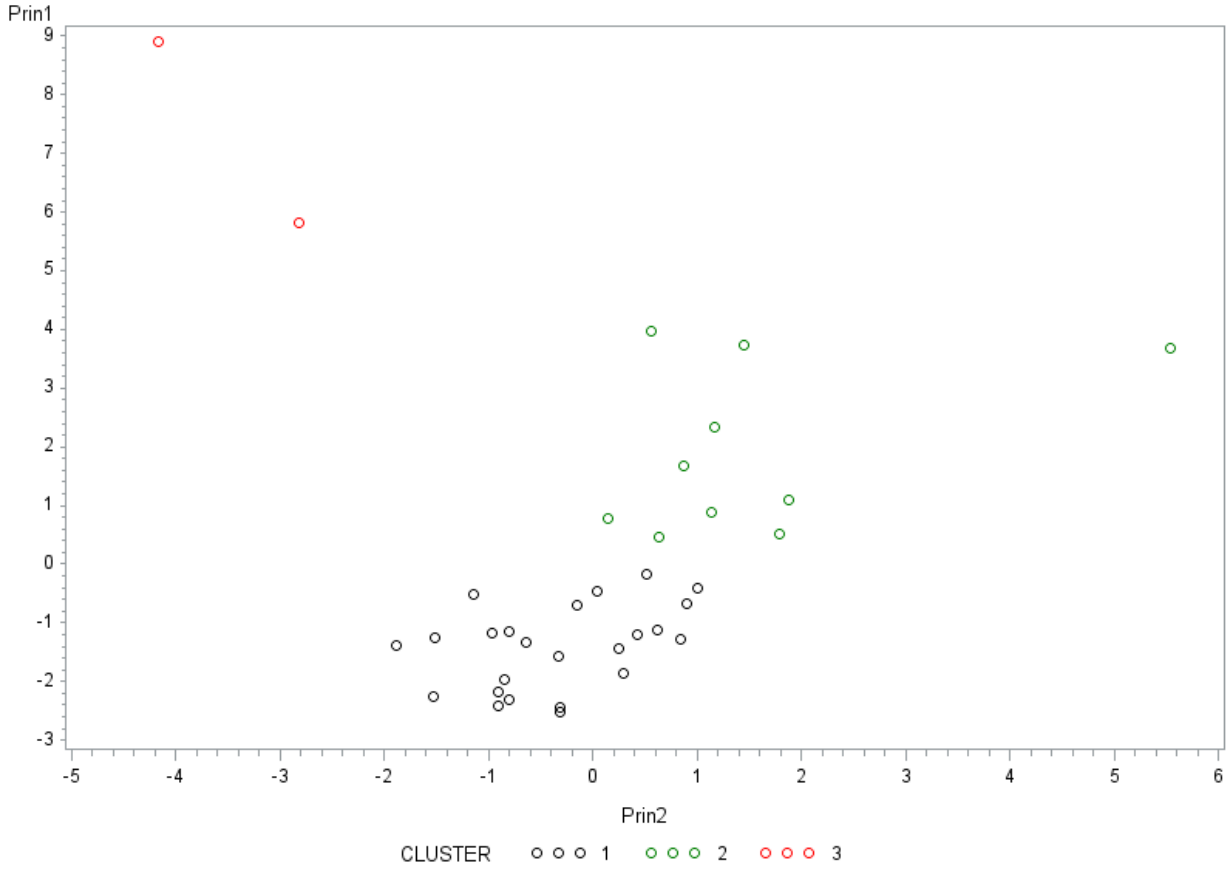

Figure 11. Scatterplot of First Two Principal Components by County

Table 10 shows the clusters to which each county is assigned. Cluster 1, which generally has the lowest child care rates, includes 32 counties; Cluster 2, which generally has intermediate rates, includes ten counties; and Cluster 3, which generally has the highest rates, includes two counties. Figure 12 maps the cluster membership of each county.

Table 10: Cluster Assignments for Counties

County	Cluster	County	Cluster	County	Cluster	County	Cluster
Ada	2	Butte [b]	1	Gem	1	Minidoka	1
Adams [a]	1	Camas	1	Gooding	1	Nez Perce	2
Bannock	1	Canyon	1	Idaho	1	Oneida [a]	1
Bear Lake	1	Caribou [a]	1	Jefferson	1	Owyhee	3
Benewah	1	Cassia	1	Jerome	1	Payette	1
Bingham	1	Clark [b]	1	Kootenai	2	Power	2
Blaine	3	Clearwater	1	Latah	2	Shoshone	1
Boise [a]	1	Custer [b]	1	Lemhi [a]	1	Teton	3
Bonner	2	Elmore	1	Lewis	2	Twin Falls	1
Bonneville	2	Franklin	1	Lincoln	1	Valley	2
Boundary	1	Fremont	1	Madison	1	Washington	1

a. County assignment based on comparing non-missing rates to cluster averages.
b. County assignment based on assignment of neighboring counties.

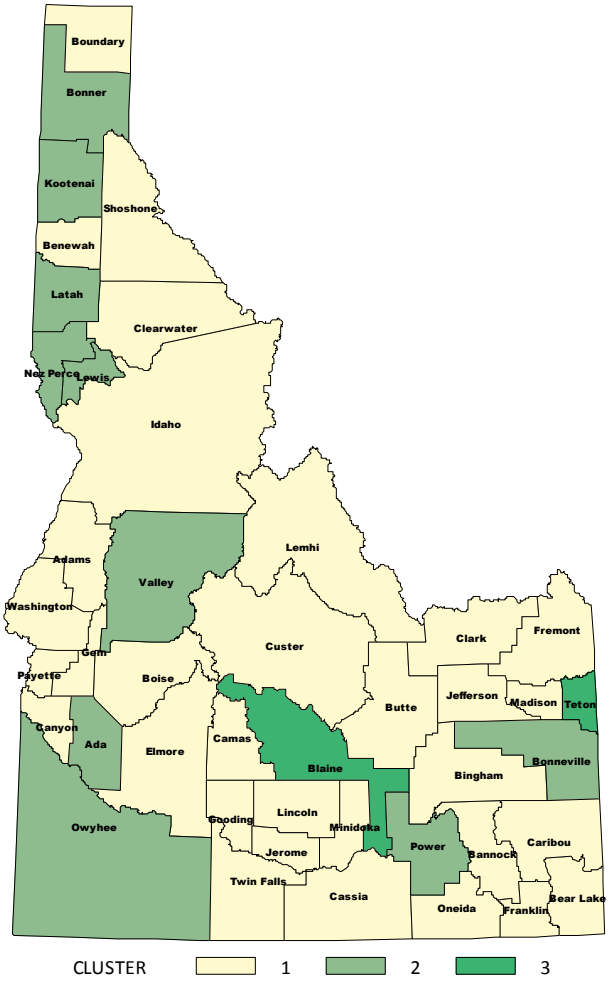

Figure 13. Plot of County Clusters

3.3 Type of Care

As noted in Section 2, the market rate analysis has been restricted to three types of care: child care centers, group care, and family care. Family care can be further subdivided into licensed/regulated and exempt facilities (centers and group care are necessarily regulated/licensed). In order to determine the market rate structure, an analysis was conducted to determine whether any of the types of providers had rates that were similar enough to warrant combining. This analysis consisted of two parts: comparison of licensed/regulated family care with exempt family care, and comparison of centers, group care, and family care. To perform the comparisons, multivariate analyses of variance (MANOVA) were performed. This analysis method compares the mean rates of several correlated measurements between the groups of interest. The measurements that were compared were the rates from the ten age/usage categories. In order to adjust the analysis for potential geographic differences, the county was included as a second factor in the analyses (in addition to type of provider).

The results of the analysis comparing licensed/regulated and exempt family care providers showed that the county-adjusted average full-time rates for all age categories were slightly higher for exempt than licensed providers and that county-adjusted average part-time rates were slightly higher for licensed than exempt providers. The results of the MANOVA, however, showed that the differences were not statistically significant for any of the ten categories. Based on this analysis, the differences between rates for licensed/regulated and exempt family care providers are not great enough to warrant providing separate market rate analyses.

The results of the MANOVA comparing the three types of care indicated that there were statistically significant differences in average child care prices after adjusting for geographic differences. Tukey multiple comparisons were performed within each age/usage category to compare each type of care to the others, and they showed that when there were differences between the types of providers, it was always the case that centers were significantly different than the other two types; however, group and family care rates were not statistically significantly different. This analysis shows that it is reasonable to combine family and group care together for the market rate analysis, but that child care centers should have a separate market rate analysis.

4. Estimated Rate Distributions and Percentiles

Once the counties were grouped into three clusters, percentiles of the distributions of market rates were calculated. From earlier analyses, it was determined that licensed and exempt family care could be grouped together because they had similar rates. A similar analysis showed that group and family care could be combined because they had similar rates. As a result, the percentiles are calculated for two types of care (centers and group/family) and three clusters of counties. Percentiles were calculated separately for each of the ten age/usage categories.

For each combination of provider type, cluster, age group, and usage, all appropriate rates were identified from all appropriate providers. Based on earlier examination of the data (Figures 1 through 10), the child care rates appear to have probability distribution that is skewed to the right. The gamma family of probability distributions fit the general profile of the rates, so it was selected to describe the distribution of market rates for percentile estimation. DHW is interested in the distribution of rates for all child care slots, so the rates for each provider were weighted by the number of available slots for each age group (the database does not differentiate between full-time and part-time capacity). In particular, the desired capacity for the age group that was entered into the database for the provider was used to approximate the number of available slots. For each age/usage category, the two parameters for a gamma distribution were estimated using the weighted rates, and the market rate percentiles were calculated as the percentiles from a gamma probability distribution with parameters equal to those calculated from the data. The 5th, 10th, 15th, 20th, 25th, 30th, 35th, 40th, 45th, 50th, 55th, 60th, 65th, 70th, 75th, 80th, 85th, 90th and 95th percentiles for the distribution of the rates are presented in Tables 11 through 29. Where the percentile value is missing, there were too few observations to obtain reasonable estimates of the gamma parameters and, as a result, the percentiles.

Table 11. 5th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	259.86	428.43	645.15	293.78	352.11	672.00
	Part-time	173.15	198.27	173.40	153.96	181.86	
12 – 30 mo	Full-time	274.31	399.93	606.17	284.65	330.82	633.45
	Part-time	155.14	137.96	197.55	142.41	159.97	
30 – 60 mo	Full-time	292.52	359.14	453.13	281.86	304.69	542.63
	Part-time	138.00	182.88	164.56	138.17	164.85	
5 – 6 yr	Full-time	189.32	270.40	601.19	269.45	290.36	492.74
	Part-time	90.53	164.65	60.69	128.61	149.43	
6 – 12 yr	Full-time	177.70	159.04		255.32	272.27	482.25
	Part-time	83.68	67.67		112.67	140.69	

Table 12. 10th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	290.49	471.19	711.05	320.55	379.98	727.06
	Part-time	194.31	232.71	210.28	175.95	207.49	
12 – 30 mo	Full-time	303.19	439.84	680.19	308.38	358.82	684.93
	Part-time	176.15	177.78	235.70	162.36	186.97	
30 – 60 mo	Full-time	313.39	392.98	539.12	301.59	333.36	603.55
	Part-time	156.90	209.97	210.58	157.49	190.57	
5 – 6 yr	Full-time	215.75	305.46	629.85	290.39	318.23	558.97
	Part-time	110.27	192.86	78.04	147.81	174.71	
6 – 12 yr	Full-time	203.39	186.45		277.70	302.26	548.46
	Part-time	102.47	89.50		131.76	165.00	

Table 13. 15th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	312.50	501.65	758.04	339.52	399.62	765.91
	Part-time	209.55	258.18	238.10	191.97	226.13	
12 – 30 mo	Full-time	323.81	468.26	733.52	325.14	378.61	721.24
	Part-time	191.39	208.93	264.18	176.87	206.89	
30 – 60 mo	Full-time	328.03	417.01	603.22	315.41	353.72	647.22
	Part-time	170.62	229.75	246.42	171.54	209.42	
5 – 6 yr	Full-time	234.96	330.81	649.70	305.13	338.03	606.98
	Part-time	125.20	213.70	91.58	161.84	193.37	
6 – 12 yr	Full-time	222.11	206.71		293.53	323.74	596.52
	Part-time	116.71	106.85		145.86	182.97	

Table 14. 20th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	330.79	526.79	796.87	355.14	415.70	797.77
	Part-time	222.23	279.75	261.96	205.40	241.74	
12 – 30 mo	Full-time	340.87	491.72	777.89	338.89	394.85	751.01
	Part-time	204.13	236.30	288.46	189.01	223.73	
30 – 60 mo	Full-time	339.99	436.80	657.81	326.70	370.49	683.43
	Part-time	182.09	246.36	277.82	183.30	225.29	
5 – 6 yr	Full-time	251.05	351.96	665.78	317.19	354.36	647.10
	Part-time	138.03	231.34	103.47	173.62	209.15	
6 – 12 yr	Full-time	237.81	223.86		306.54	341.53	636.73
	Part-time	128.98	122.25		157.78	198.19	

Table 15. 25th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		1	2	3	1	2	3
0 – 12 mo	Full-time	347.05	549.03	831.23	368.92	429.85	825.80
	Part-time	233.52	299.22	283.71	217.42	255.71	
12 – 30 mo	Full-time	355.98	512.47	817.39	351.00	409.15	777.21
	Part-time	215.51	261.70	310.48	199.88	238.92	
30 – 60 mo	Full-time	350.49	454.28	707.28	336.60	385.30	715.58
	Part-time	192.35	261.24	306.91	193.82	239.55	
5 – 6 yr	Full-time	265.43	370.83	679.78	327.80	368.79	682.93
	Part-time	149.73	247.24	114.50	184.18	223.37	
6 – 12 yr	Full-time	251.88	239.33		318.01	357.32	672.67
	Part-time	140.20	136.66		168.52	211.92	

Table 16. 30th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	362.10	569.53	862.94	381.59	442.83	851.54
	Part-time	243.98	317.47	304.27	228.61	268.72	
12 – 30 mo	Full-time	369.93	531.60	854.01	362.11	422.30	801.25
	Part-time	226.10	286.07	331.22	209.99	253.14	
30 – 60 mo	Full-time	360.09	470.38	753.82	345.66	398.93	745.30
	Part-time	201.89	275.12	334.77	203.61	252.87	
5 – 6 yr	Full-time	278.82	388.35	692.52	337.53	382.08	716.24
	Part-time	160.82	262.15	125.08	194.04	236.70	
6 – 12 yr	Full-time	264.98	253.84		328.56	371.91	706.10
	Part-time	150.82	150.57		178.59	224.79	

Table 17. 35th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	376.44	588.99	893.03	393.60	455.09	875.87
	Part-time	253.96	335.05	324.21	239.33	281.16	
12 – 30 mo	Full-time	383.19	549.76	888.91	372.63	434.72	823.97
	Part-time	236.22	310.01	351.26	219.67	266.82	
30 – 60 mo	Full-time	369.15	485.64	798.78	354.20	411.85	773.59
	Part-time	211.01	288.43	362.10	212.98	265.65	
5 – 6 yr	Full-time	291.63	405.07	704.47	346.71	394.68	748.08
	Part-time	171.57	276.50	135.47	203.48	249.52	
6 – 12 yr	Full-time	277.53	267.81		338.54	385.79	738.07
	Part-time	161.15	164.30		188.28	237.19	

Table 18. 40th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	390.40	607.86	922.24	405.23	466.93	899.38
	Part-time	263.67	352.33	343.94	249.80	293.33	
12 – 30 mo	Full-time	396.06	567.37	922.91	382.79	446.74	845.93
	Part-time	246.09	333.97	371.03	229.12	280.26	
30 – 60 mo	Full-time	377.89	500.42	843.09	362.43	424.37	801.08
	Part-time	219.92	301.44	389.41	222.13	278.17	
5 – 6 yr	Full-time	304.14	421.39	715.93	355.58	406.89	779.15
	Part-time	182.23	290.61	145.86	212.73	262.11	
6 – 12 yr	Full-time	289.80	281.53		348.19	399.27	769.29
	Part-time	171.39	178.11		197.79	249.37	

Table 19. 45th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	404.23	626.50	951.10	416.69	478.58	922.53
	Part-time	273.31	369.62	363.78	260.23	305.43	
12 – 30 mo	Full-time	408.78	584.76	956.62	392.80	458.58	867.54
	Part-time	255.91	358.32	390.85	238.53	293.69	
30 – 60 mo	Full-time	386.47	515.01	887.51	370.52	436.73	828.30
	Part-time	228.78	314.41	417.13	231.24	290.67	
5 – 6 yr	Full-time	316.59	437.59	727.14	364.31	418.94	810.04
	Part-time	192.95	304.70	156.41	221.94	274.70	
6 – 12 yr	Full-time	302.01	295.25		357.71	412.62	800.34
	Part-time	181.71	192.20		207.30	261.55	

Table 20. 50th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	418.16	645.22	980.09	428.19	490.24	945.69
	Part-time	283.02	387.17	384.05	270.77	317.66	
12 – 30 mo	Full-time	421.57	602.23	990.60	402.81	470.43	889.17
	Part-time	265.83	383.42	411.04	248.03	307.32	
30 – 60 mo	Full-time	395.05	529.64	932.74	378.60	449.12	855.69
	Part-time	237.73	327.53	445.69	240.44	303.32	
5 – 6 yr	Full-time	329.17	453.93	738.29	373.03	431.03	841.22
	Part-time	203.91	319.02	167.29	231.26	287.47	
6 – 12 yr	Full-time	314.37	309.19		367.24	426.04	831.70
	Part-time	192.26	206.79		216.96	273.92	

Table 21. 55th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	432.41	664.31	1009.66	439.89	502.08	969.25
	Part-time	292.96	405.28	405.07	281.60	330.21	
12 – 30 mo	Full-time	434.62	620.04	1025.37	413.00	482.49	911.16
	Part-time	276.00	409.68	431.93	257.79	321.37	
30 – 60 mo	Full-time	403.75	544.54	979.49	386.79	461.74	883.68
	Part-time	246.91	341.01	475.53	249.88	316.34	
5 – 6 yr	Full-time	342.08	470.68	749.55	381.89	443.36	873.20
	Part-time	215.28	333.78	178.67	240.84	300.64	
6 – 12 yr	Full-time	327.05	323.56		376.95	439.75	863.87
	Part-time	203.22	222.11		226.91	286.68	

Table 22. 60th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	447.21	684.08	1040.31	452.00	514.31	993.57
	Part-time	303.29	424.25	427.19	292.89	343.31	
12 – 30 mo	Full-time	448.16	638.49	1061.53	423.53	494.95	933.86
	Part-time	286.59	437.58	453.86	267.96	336.08	
30 – 60 mo	Full-time	412.72	559.97	1028.57	395.24	474.81	912.73
	Part-time	256.47	355.09	507.20	259.73	329.95	
5 – 6 yr	Full-time	355.54	488.12	761.11	391.04	456.12	906.51
	Part-time	227.26	349.23	190.75	250.84	314.43	
6 – 12 yr	Full-time	340.29	338.61		386.98	453.98	897.40
	Part-time	214.77	238.43		237.33	300.04	

Table 23. 65th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	462.86	704.92	1072.63	464.74	527.15	1019.14
	Part-time	314.23	444.46	450.89	304.87	357.19	
12 – 30 mo	Full-time	462.44	657.94	1099.78	434.59	508.05	957.73
	Part-time	297.82	467.70	477.29	278.75	351.75	
30 – 60 mo	Full-time	422.13	576.22	1080.98	404.09	488.57	943.42
	Part-time	266.61	370.03	541.36	270.17	344.41	
5 – 6 yr	Full-time	369.82	506.58	773.18	400.65	469.56	941.82
	Part-time	240.10	365.70	203.79	261.47	329.11	
6 – 12 yr	Full-time	354.34	354.65		397.53	469.00	932.95
	Part-time	227.16	256.12		248.42	314.28	

Table 24. 70th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	479.74	727.34	1107.41	478.43	540.91	1046.55
	Part-time	326.03	466.44	476.78	317.84	372.23	
12 – 30 mo	Full-time	477.81	678.86	1141.07	446.46	522.10	983.31
	Part-time	309.97	500.90	502.83	290.43	368.77	
30 – 60 mo	Full-time	432.20	593.68	1138.10	413.57	503.35	976.50
	Part-time	277.59	386.23	578.98	281.48	360.11	
5 – 6 yr	Full-time	385.26	526.54	786.04	410.94	484.01	980.00
	Part-time	254.14	383.60	218.15	272.98	345.07	
6 – 12 yr	Full-time	369.56	372.09		408.86	485.19	971.41
	Part-time	240.72	275.68		260.49	329.77	

Table 25. 75th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		1	2	3	1	2	3
0 – 12 mo	Full-time	498.41	752.06	1145.77	493.49	556.03	1076.68
	Part-time	339.09	490.95	505.81	332.24	388.91	
12 – 30 mo	Full-time	494.77	701.92	1186.76	459.50	537.55	1011.42
	Part-time	323.44	538.42	531.39	303.39	387.74	
30 – 60 mo	Full-time	443.24	612.91	1201.92	423.96	519.64	1013.04
	Part-time	289.76	404.22	621.46	294.02	377.56	
5 – 6 yr	Full-time	402.41	548.64	800.07	422.25	499.93	1022.34
	Part-time	269.88	403.55	234.39	285.78	362.85	
6 – 12 yr	Full-time	386.46	391.53		421.32	503.07	1014.08
	Part-time	255.93	297.86		273.93	347.03	

Table 26. 80th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	519.75	780.23	1189.50	510.64	573.19	1110.89
	Part-time	354.03	519.23	539.46	348.78	408.06	
12 – 30 mo	Full-time	514.13	728.20	1239.03	474.32	555.11	1043.34
	Part-time	338.89	582.31	564.42	318.26	409.60	
30 – 60 mo	Full-time	455.76	634.80	1275.71	435.73	538.17	1054.78
	Part-time	303.72	424.90	671.10	308.41	397.64	
5 – 6 yr	Full-time	422.08	573.97	815.89	435.07	518.06	1070.87
	Part-time	288.15	426.56	253.37	300.48	383.35	
6 – 12 yr	Full-time	405.86	413.95		435.48	523.48	1063.02
	Part-time	273.61	323.89		289.42	366.94	

Table 27. 85th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	545.38	813.92	1241.84	531.10	593.63	1151.67
	Part-time	371.98	553.50	580.48	368.72	431.15	
12 – 30 mo	Full-time	537.30	759.64	1301.84	491.99	576.05	1081.37
	Part-time	357.50	636.32	604.57	336.18	436.09	
30 – 60 mo	Full-time	470.64	660.95	1365.37	449.72	560.32	1104.83
	Part-time	320.53	449.85	732.13	325.76	421.92	
5 – 6 yr	Full-time	445.79	604.45	834.59	450.34	539.73	1129.32
	Part-time	310.44	454.44	276.73	318.24	408.18	
6 – 12 yr	Full-time	429.28	441.13		452.39	547.95	1121.99
	Part-time	295.18	356.04		308.19	391.07	

Table 28. 90th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	578.77	857.66	1309.81	557.61	620.02	1204.35
	Part-time	395.40	598.66	634.90	394.84	461.39	
12 – 30 mo	Full-time	567.42	800.45	1383.78	514.82	603.12	1130.51
	Part-time	381.84	708.72	657.66	359.66	470.96	
30 – 60 mo	Full-time	489.81	694.86	1483.86	467.73	589.03	1169.99
	Part-time	342.54	482.59	813.84	348.48	453.80	
5 – 6 yr	Full-time	476.84	644.27	858.52	470.05	567.83	1205.77
	Part-time	340.03	491.17	308.02	341.53	440.88	
6 – 12 yr	Full-time	459.96	476.93		474.26	579.79	1199.15
	Part-time	323.86	399.31		332.91	422.86	

Table 29. 95th Percentile of Market Rates ($/Month)

Age	Usage	Child Care Centers			Group or Family Care		
		Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
0 – 12 mo	Full-time	630.67	925.25	1414.94	598.47	660.53	1285.29
	Part-time	431.85	669.86	721.41	435.73	508.68	
12 – 30 mo	Full-time	614.05	863.52	1511.27	549.93	644.75	1205.98
	Part-time	419.85	825.35	741.72	396.36	525.87	
30 – 60 mo	Full-time	519.15	747.16	1671.32	495.30	633.32	1271.08
	Part-time	376.92	533.87	945.28	383.99	503.85	
5 – 6 yr	Full-time	525.38	706.35	894.81	500.29	611.20	1325.12
	Part-time	387.12	549.04	358.41	378.03	492.37	
6 – 12 yr	Full-time	507.99	533.35		507.93	629.15	1319.72
	Part-time	369.54	469.37		371.83	472.98	