

A State Level Assessment of the Well-Being of Black Children in the United States

William P. O'Hare

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Abstract In the United States, reports on child well-being that only focus on the national level mask enormous variations across states. Child well-being reports that focus on state-level data typically assess only the well-being of all children which masks important differences among subgroups of children. This report addresses the two shortcomings of previous research identified above by examining variation in the well-being of Black children across the states. The well-being of Black children in each state is assessed using a ten item index of well-being. First, the well-being of Black children in each state is examined relative to Black children in other states. Second, the gap between the well-being of Black children and White children in the same state is measured and states are assessed based on this black/white gap. The relationship between state rankings based on the two perspectives is discussed. Finally, several potential explanatory variables are examined in relation to the well-being of Black children compared to Black children in other states, and the Gap between Black children and White children in the same state.

Keywords Well-being · Black · Index · State-Level

1 Introduction

The use of statistical indicators to measure and monitor the well-being of children is increasing rapidly (O'Hare 2014a; O'Hare and Guttierrez 2012; Ben-Arieh et al 2014; Fernandes et al. 2012; Lamb and Land 2013; Pollard and Lee 2003; Ben-Arieh and Frones 2007; Skocpol and Dickert 2001; O'Hare 2012a; Brown et al 2002; Brown and Botsko 1996; Brown. et al. 2008; Brown and Moore 2007; Stagner et al 2008). One stream of this research in the U.S focuses on racial differences in well-being but most of this has focused on the well-being of minority children nationwide (Hernandez and Macartney 2008; Massey and Denton 1993; National Research Council 1989; Farley and Allen 1987; Council of Economic Advisors 1998; Acevedo-Garcia et al. 2014;

W. P. O'Hare (✉)
The Annie E. Casey Foundation, Baltimore, MD, USA
e-mail: Billohare1@gmail.com

U.S. Federal Interagency Forum on Child and Family Statistics 2014; Lamb et al. 2005).

In the United States, reports on child well-being that only focus on the well-being of Black children at the national level mask enormous variations across states. On the other hand, child well-being reports that focus on state-level data typically assess only the well-being of all children which masks important differences among children in racial subgroups (The Annie E. Casey Foundation 2014c; Lamb and O'Hare 2013; Every Child Matters Education Fund 2008; Children's Rights Council 1999; O'Hare et al 2013).

This article addresses the two shortcomings of previous research identified above by examining variation in the well-being of Black children across the states. First, the well-being of Black children in each state is compared to the well-being of Black children in other states. Second, the gap between the well-being of Black children and White children in the same state is assessed and comparisons are made across states. The well-being of Black and White children is assessed based on a ten item composite index of well-being.

In addition to developing an index which shows the relative well-being of Black children across the states, I examine correlations between Black child well-being and several potential factors related to child well-being. In this context, the relative importance of state racial composition is juxtaposed to socioeconomic variables. The factors examined include state racial composition, poverty (poverty rate of Blacks and ratio of Black to White poverty), and education (education of Black adults and ratio of Black to White education).

This study is the first to systematically examine the relative well-being of Black children using a comprehensive index of well-being for Black and White children in all states. O'Hare (2012b) analyzed the well-being of Black children at the state level, but only for the 23 states with the largest Black populations. Other publications (The Annie E. Casey Foundation 1995 and 2003; Avecedo-Garcia et al. no date) have occasionally produced state-level data on Black child well-being but the data has seldom been analyzed.

Several analysts have found the racial composition of a state to be correlated with overall well-being of children in the state (Whitaker 2001; Ritualo and O'Hare 2000; McLeod et al. 2004). Studies show that states with a higher percentage of Black children tend to have lower levels of child well-being which implies that Black children have relatively low levels of child well-being, but none of these studies measured the well-being of Black children at the state level directly.

Focusing on states is important because there is enormous variation across the 50 U.S. states in child well-being. A recent study (Patterson and O'Hare 2014) found that nearly 80 % of 14 state-level indicators of child well-being were statistically significantly different than the corresponding national rate. O'Hare (2006) found that nearly 70 % of ten state child well-being indicators were statistically significantly different than the national average. Given these state-level differences, national measures tell us very little about child well-being in any particular state or region.

Moreover, during the past few decades there has been a devolution of responsibility for programs designed to support vulnerable children and families from the federal government to the state governments (Winston and Castañeda 2007). Devolution of federal power, through block grants, the passage of welfare reform in the mid-1990s

such as The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 and other mechanisms have made states more powerful actors in social policy decisions (Finegold et al. 2004a, b).

For many major social service programs that serve children, states have the power to decide eligibility criteria and set benefit levels (Winston and Castañeda 2007). A comprehensive review of state and federal program responsibilities for major safety net programs (Winston and Castañeda 2007, p. 27) concluded;

The recent shifts in federal-state arrangements across both standard setting and financing functions appears to have contributed to a widening of state variation in standards for, and financing of, three of these programs: TANF [Temporary Assistance for Needy Families], Food Stamps, and Medicaid (with state variation a hallmark of SCHIP [State Children's Health Insurance Program] since its inception).

Government support for children varies widely among the states. For example, per capita education expenditures range from a low of \$6212 in Utah, to a high of \$19,076 in New York (U.S. Census Bureau 2014d). Average state payments under the Temporary Assistance to Needy Families program range from a low of \$170 a month in Mississippi to a high of \$653 in Wisconsin (Floyd and Schott 2013). Where a child lives is important in determining the level of government support the child is likely to receive.

The enhanced decision-making powers of states has led to increased demand for state-level measures of child well-being (Brown and Moore 2007). This analysis responds to that need by provided detailed information on the well-being of Black children in each state.

2 Data and Methods

From a conceptual perspective, the measures used here provide a comprehensive portrait of how children were progressing on key milestones across states and demographic groups. The conceptual framework that guided the selection of indicators was a developmental framework that links earlier outcomes to later outcomes (Sawhill, and Karpilow 2014; Winship and Owen 2013). Measures included in this study reflect well-being from birth to early adulthood.

Data used in this study come from a report issued by The Annie E. Casey Foundation (2014a) that provides twelve state-level indicators of well-being for young people in each of several race/ethnic groups. According to the source (The Annie E. Casey Foundation 2014b, page 6);

“The selection of indicators in this study was heavily informed by the research of the Social Genome Project at the Brookings Institution, which connects key indicators to the likelihood of a young person becoming middle class by middle age, and by research that shows children do best in supportive families and communities”.

Some of these measures had been previously published by federal government statistical agencies but others are newly constructed indicators of well-being. Two of the twelve indicators focused on people in their 20s rather than children, so only ten of the twelve indicators are used here. The ten indicators of child well-being employed here are shown in Table 1.

The ten indicators used here are commonly used measures of well-being and most have appeared in a number of other reports on child well-being (U.S. Federal

Table 1 Key statistics for ten state-level indicators of child well-being for non-Hispanic white children and non-Hispanic black children

	State mean for non-Hispanic white	State mean for non-Hispanic black	Share of states with white outcomes better than black outcomes ^a
Percent of Babies Born at Normal Birthweight 2011	92.9	87.3	44/44
Percent of Children Ages 3 to 5 Enrolled In Nursery School, Preschool or Kindergarten 2010–2012	60.1	59.2	23/50
Percent of 4th Graders Who Scored At or Above Proficient in Reading 2013	43.1	18	42/42
Percent of 8th Graders Who Scored At or Above Proficient in Math 2013	43	14.2	38/38
Averaged Freshman Graduation Rate (AFGR) 2009–2010	81.9	69	46/50
Percent of Females Ages 15 to 19 Who Delay Childbearing Until Adulthood 2010	95.2	88.9	49/49
Percent of Children Ages 0 to 17 Who Live With A Householder Who Has At Least A High School Degree 2010–2012	93.6	84.6	48/50
Percent of Children Ages 0 to 17 Who Live In Two-Parent Families 2010–2012	71.7	34.9	50/50
Percent of Children Ages 0 to 17 Living Above 200 % of Poverty 2010–2012	67.7	36.4	50/50
Percent of Children Ages 0 to 17 Who Live In Low Poverty Areas (poverty rate under 20 %) 2007–2011	86.7	57.4	50/50

^a There were 27 missing values

Interagency Forum on Child and Family Statistics 2014; Land et al 2001; UNICEF 2007; Organizations for Economic Development and Cooperation 2009). All of the indicator data come from U.S. government statistical agencies although some are constructed using public-use microdata files released by agencies.

The ten measures used here capture the most important forces shaping the lives of children such as income and poverty, family structure, education, parental employment, and neighborhood characteristics. O'Hare and Guttierrez (2012) found the most common domains used in constructing indices of child well-being were income, health and education. The index constructed here has indicators from those three domains.

While standardized scores for these ten measures are offered on the Casey Foundation website, I downloaded the variable values and calculated means, standard deviations and Z-scores myself. My results are exactly the same as those offered on the Casey Foundation website.

The District of Columbia is not included in this analysis because it differs from states in many important ways. The District of Columbia is more comparable to other large cities than to states both in terms of its policy-making powers and demographics.

Data used for the part of this study examining state level correlates of Black child well-being comes from the U.S. Census Bureau. The data on racial composition come from the 2010 Decennial Census and the data on socioeconomic status come from the U.S. Census Bureau's American Community Survey (ACS) files which accumulated data over five years (2008–2012). Both sets of data identified above were secured through the Census Bureau's American Factfinder software.

2.1 Racial Terminology

In 1997, the U.S. federal government adopted a change in the racial categories it uses for collecting data (U.S. Office of Management and Budget 1997). Prior to 1997 most federal data collection efforts allowed respondents to select only one racial category. Self-identification is used in most data collection activities of the Federal government and the change in 1997 allowed people to select as many racial categories as they felt applied.

The 1997 change in federal statistical policy led to two predominant ways in which people were grouped by race for reporting in statistical tables. One group were those who selected only one race category and they were labeled "race alone," for example, "White Alone" or "Black Alone." The group that marked more than one racial category were typically combined with those who marked only one category and labeled, "Race alone or in combination," for example, "Black Alone or in Combination."

Most of the indicators of well-being used in this study were only available for the "Black alone" category, therefore the "race alone" category was used for all indicators. In most government surveys the term Africa-American is used interchangeably with Black.

In addition, in the U.S. federal government statistical system Hispanic origin status is a separate item from racial categories. Consequently, for each race group, one can identify people of that race who are Hispanic and those who are Non-Hispanic.

For simplicity and consistency, in this study, when I refer to Black it refers to the group that are "Black alone" and "Non-Hispanic." Likewise White refers to the group that are "White Alone" and "Non-Hispanic." This later distinction is particularly important because a large number Hispanics identify as part of the White race. The category used here, "Non-Hispanic White Alone," is a more appropriate identification of the majority population than simply using White Alone.

2.2 Methodology

The methodology is presented in two sections. First the methodology used to construct the index of child well-being is discussed, then the methodology used in the correlational analysis is discussed.

Child well-being is a central concept among scholars trying to measure and monitor the status of children but there is little agreement on exactly how to define child well-being (Ben-Arieh et al 2014; Pollard and Lee 2003). Construction of an index of child well-being is a useful way to operationalize this concept and a comprehensive composite index is one of the most efficient ways to

communicate overall patterns and trends (Organisation for Economic Cooperation and Development 2008).

A child well-being index combines multiple indicators of well-being across many dimensions into a single comprehensive measure of overall well-being. For many audiences an index provides a more concise and understandable portrayal of child well-being than a collection of data tables for individual measures. An index helps one quickly determine which geographic areas are doing better and which are doing worse in terms of comprehensive child well-being.

In addition, combining individual indicators into an overall index can help reduce the impact of outliers, missing data, or other mis-measurement problems in individual indicators. These qualities may explain why the number of researchers using composite indices of child well-being is growing rapidly (O'Hare and Gutierrez, 2012; Fernandez et al. 2012; Lamb and Land 2013).

The methodology used to construct an index in this study, often referred to as the Standard Scores Method, is one that has been widely used by others (Bradshaw and Richardson 2009; The Annie E. Casey Foundation 2014c; O'Hare et al 2013). For the Black population, all indicator values are translated into standardized scores (sometimes called z-scores) then the standardized scores for all indicators are averaged for each state and the average z-scores are used to produce a state ranking of Black child well-being. The same method is used to assess the well-being of White children. A slight variation of this method is used to assess the gap between the well-being of Black children and White children in each state. The methodology is described in more detail below.

2.2.1 Standardization

One of the key aspects of building a comprehensive composite index of child well-being is standardizing the indicators used to construct the index so that they can be meaningfully combined (O'Hare 2014b; Organisation for Economic Cooperation and Development 2008). Standardization includes standardizing for directionality of indicators, standardizing units of measurement, and standardizing for different variances among the indicators.

In this study, directionality is not an issue because all indicators are constructed so that higher values reflect more positive outcomes. Since all indicators are measured as percentages there was no need to standardize for different units of measurement.

In the standard-scores method, observed values are standardized to control for different degrees of variability among indicators. If the measures are not standardized the measures with more variability would count more heavily in the index than those with less variability. For example, the state values for the percent of Black 3-to 5-year-olds in Nursery School, Preschool, or Kindergarten ranges from 37.7 to 76.9 % while the range for percent normal birthweight babies was only 84.1 to 90.8 %. If we simply combine these two percentages, data for the percent of 3-to 5-year-olds in Nursery School, Preschool, or Kindergarten would dominate the resulting sum. Standardizing variables by creating Z-scores allows us to combine indicators in meaningful ways.

For each indicator, standard scores were derived by subtracting the mean state value (across 50 states) from the observed estimate for a given state/racial group and dividing

the result by the standard deviation for that distribution of estimates, as shown in formula (1).

$$z_{sr} = \frac{x_{sr} - \mu}{\sigma} \quad (1)$$

Where;

- Z_{sr} the z-score for a given state and race
- X_{sr} value of an indicator of child well-being for a given state and race
- μ the mean across the 50 state values, and
- σ the standard deviation.

One drawback of using an index based on standard scores is that the resulting index values are not always intuitive or easy to interpret. To more clearly show the differences across racial groups and states the average z-scores are used to rank states on the basis of Black child well-being, White child well-being and the gap between Black and White child well-being.

2.2.2 Measuring the Black-White Gap

The gap between Black and White child well-being across all the states and over many different dimensions of well-being can be measured several different ways. Recall that all indicators are percentages. For example;

- a) One could look at the percentage point difference between Blacks and Whites,
- b) One could convert the percentage point difference into a percentage of the base, or
- c) One could look at the ratio of percentages.

Analysis not shown here indicates that the results would be very similar with any of the three statistical approaches noted above to measure Black-White gaps. Therefore in this study the gap between Blacks and Whites is calculated by subtracting the value for Black children from that of White children for each indicator in each state. Almost all such values of this subtraction are positive (White values larger than Black values) and the larger the value the larger the gap favoring Whites over Blacks.

The z-scores for each state for the percentage point difference between Blacks and Whites were averaged to produce an index value for Black-White gap in each state. The Z-score average is used to rank states on the gap between Black and White child well-being. The state with the largest gap is ranked worse (50) and the state with the smallest gap is ranked (1).

2.2.3 Missing Data

Typically, when indicator values are missing, researchers simply average the values that are available (Organisation for Economic Cooperation and Development 2009; Lau and Bradshaw 2010). That is the approach taken here.

Some indicator values were not used here because they were deemed unreliable. Reliability was assessed using the Coefficient of Variation (the standard deviation

divided by the mean). The U.S. Centers for Disease Control and Prevention reviewed the criteria for data suppression used by 22 of the 23 major data systems (Klein et al 2002) and found that .3 is a common Coefficient of Variation level used to suppress estimates. Indicator values where the Coefficient of Variation was .3 or higher were not used in this study. The application of this criterion resulted in suppression of 27 indicator values.

Data for all states and all indicators were available for the White population. Most states (34) had data for all ten indicators for Black children. It is worth noting that 99 % of the total national Black population live in these 34 states. One state (North Dakota) had only six measures available for Blacks, one state (Idaho) had only seven measures and all the rest had eight or more.

To examine the impact of missing data, a state index of child well-being was constructed using only the six indicators for which there were data for all states. The results in terms of state rankings show the six-item index was very similar to the results using all ten indicators. Based on this result, all states and all indicators were included in the analysis.

2.2.4 Weighting Indicators and Use of Domains

An equal-weighting strategy is the simplest, most widely used, and most transparent method for combining indicators (Haggerty and Land 2007). The use of equal weighting is widely used for composite indices in other areas of research as well (Booyesen 2002). An equal-weighting approach is used in this study.

Since there are only ten indicators used in this study there was no attempt to assemble them into domains. Furthermore, O'Hare (2014a) shows that in terms of ranking geographic units on overall child well-being, indices that use domains produce nearly the same results as indices that do not use domains. Mather et al (2007) came to a similar conclusion.

2.2.5 Correlational Analysis

The study also uses correlational analysis. Most of the results are presented as Pearson Product-Moment Correlation Coefficients but rank order correlations are also examined using Spearman Rank-order Correlation Coefficients (Vogt 1993, page 49).

3 Results

Table 1 shows the mean state values for all ten indicators for White children and Black children and the proportion of states where the indicator values for White children are better than those for Black children. There are several important points in Table 1. First, the mean state value for White children is higher than that for Black children on every indicator examined here. The fact that the well-being of Black children is lower than that of White children is not surprising but Table 1 shows that it is pervasive both geographically and for every dimension of child well-being examined here.

There were 22 states where White children had better outcomes than Black children on all ten indicators and there were 26 states where White children had better outcomes

than Black children on nine out of the ten indicators. In two states (Vermont and Montana) Black children had better outcomes than White children on two indicators.

Looking at 473 possible comparisons for the ten measures across fifty states (there were 27 missing values) White children had higher (better) values than Black children on 440 comparisons which amounts to 93 %. Of the 33 cells where the results for Black children were better than those for White children, 27 occurred in the Percent of 3-to-5 Year-Olds in Nursery School, Preschool, or Kindergarten. This may reflect a higher level of working single-parent families in the Black community rather than higher levels of well-being for Black children.

Second, it is worth noting that the size of White advantage varies widely across indicators. For example, the mean value of White children on percent of children age 3 to 5 enrolled in Nursery School, Preschool, or Kindergarten is only about one percentage point above that of Black children. On the other hand the mean value on Percent of 8th Graders Who Scored At or Above Proficient in Math is nearly 30 percentage points higher for Whites than for Blacks.

Table 2 provides data on the extent of variation for each of the ten indicators for Black and White children across states. There is a lot of variability across states in the measures of child well-being for both Black and White children, but the range and standard deviations for Black children are higher than that of White children on eight of the ten variable. In both the range and the standard deviation, it was the same two variables where Black values were less varied than White values (The percent of children age 3 to 5 attending enrolled in Nursery School, Preschool or Kindergarten and Percent of 4th Graders Who Scored At or Above Proficient in Math).

For Black children the standard deviations for the ten measures range from a low of 1.7 percentage points for Percent of Babies Born at Normal Birthweight, to a high of 16.4 percentage points for Percent of Children Age 0 to 17 Who Live in Low Poverty Areas. In several cases, the maximum state value is several times the minimum state value. For White children the standard deviations for the ten measures range from a low of 0.9 percentage points for Percent of Babies Born at Normal Birthweight, to a high of 8.0 percentage points for Percent of Children Age 0 to 17 Who Live in Low Poverty Areas. In several cases, the maximum state value is more than twice the minimum state value.

Data in Tables 1 and 2 show that the differences between the Black maximum and minimum state values are larger than the differences between White and Black state averages in all but one of the indicators. In some cases, the differences between Black maximum and minimum values are more than twice as large as the difference between White and Black state average values. In other words, the differences between Black child well-being across the states is larger than the differences between Black and Whites nationally for most indicators. This underscores the importance of looking at states rather than relying solely on national figures to understand Black child well-being.

Table 3 shows the average Z-scores and state ranks for Black children relative to Black children in other states, White children compared to White children in other states, and for the gap in the well-being between Black and White children relative to the gap in other states. States are ranked from 1 (best) to 50th (worst).

In terms of Black child well-being relative to Black children in other states, Hawaii is at the top of the list followed by Vermont and Idaho. Mississippi is last followed by Wisconsin at 49th and Louisiana at 48th.

Table 2 State variation for ten state-level indicators of child well-being for non-hispanic white children and non-Hispanic black children

	Non-Hispanic black				Non-Hispanic white			
	Minimum	Maximum	Range (maximum - minimum)	Standard deviation	Minimum	Maximum	Range (maximum - minimum)	Standard deviation
Percent of Babies Born at Normal Birthweight 2011	84.1	90.8	6.7	1.7	90.4	95.0	4.6	0.9
Percent of Children Ages 3 to 5 Enrolled In Nursery School, Preschool or Kindergarten 2010–2012	37.7	76.9	39.2	9.2	46.9	76.1	29.2	6.4
Percent of 4th Graders Who Scored At or Above Proficient in Reading 2013	10.7	37.1	26.4	5.2	27.6	60.2	32.5	6.1
Percent of 8th Graders Who Scored At or Above Proficient in Math 2013	5.5	27.7	22.2	5.1	24.0	62.9	39.0	7.5
Averaged Freshman Graduation Rate (AFGR) 2009–2010	46.7	100	53.3	9.7	65.5	95.630.1	6.6	
Percent of Females Ages 15 to 19 Who Delay Childbearing Until Adulthood 2010	83.3	95.8	12.5	2.7	91.4	98.6	7.2	1.9
Percent of Children Ages 0 to 17 Who Live With A Householder Who Has At Least A High School Degree 2010–2012	61.2	96.7	35.5	7	87.9	98.5	10.5	2.6
Percent of Children Ages 0 to 17 Who Live In Two-Parent Families 2010–2012	20.3	66.3	46	9.8	63.6	81.7	18.1	4.1
Percent of Children Ages 0 to 17 Living Above 200 % of Poverty 2010–2012	12.7	67.8	55.111.7	52.6	32.2	7.5		
Percent of Children Ages 0 to 17 Who Live In Low Poverty Areas (poverty rate under 20 %) 2007–2011	29.7	93.2	63.5	16.4	64.4	98.0	33.6	8.0

Table 3 Child well-being index values and state ranks for black children, white children and the gap between black and white children

State	Black children		White children		Gap Z-score	
	Average Z-score	State rank (1=best)	Average Z-score	State rank (1=best)	Average z-score	State rank (1=smallest gap)
Alabama	-0.70	45	-1.00	46	-0.04	23
Alaska	0.92	5	0.35	19	-0.82	7
Arizona	0.32	17	-0.17	29	-0.43	11
Arkansas	-0.70	46	-1.23	47	-0.11	21
California	0.13	21	0.64	10	0.24	35
Colorado	0.19	20	0.66	8	0.33	38
Connecticut	0.26	18	1.34	3	0.63	43
Delaware	0.33	16	0.36	17	-0.04	22
Florida	-0.11	29	-0.21	30	0.03	25
Georgia	0.01	24	-0.26	33	-0.14	19
Hawaii	1.51	1	0.12	26	-1.56	1
Idaho	1.01	3	-0.09	28	-1.28	3
Illinois	-0.40	34	0.74	6	0.95	49
Indiana	-0.55	39	-0.54	39	0.28	36
Iowa	-0.55	40	0.31	21	0.70	46
Kansas	-0.15	32	0.21	24	0.34	39
Kentucky	-0.40	35	-1.49	48	-0.58	10
Louisiana	-0.87	48	-0.96	44	0.20	33
Maine	0.07	23	-0.31	36	-0.30	14
Maryland	0.76	8	1.17	4	0.12	28
Massachusetts	0.87	6	1.38	2	0.23	34
Michigan	-0.87	47	-0.22	31	0.69	45
Minnesota	-0.04	26	1.07	5	0.79	47
Mississippi	-0.98	50	-1.62	49	-0.12	20
Missouri	-0.46	38	-0.44	38	0.18	31
Montana	0.72	9	-0.28	35	-0.94	5
Nebraska	-0.56	42	0.52	13	0.95	48
Nevada	-0.46	37	-0.64	41	-0.01	24
New Hampshire	0.98	4	0.53	12	-0.63	9
New Jersey	0.79	7	1.51	1	0.32	37
New Mexico	0.38	15	-0.63	40	-0.87	6
New York	0.12	22	0.66	9	0.34	40
North Carolina	-0.12	31	-0.08	27	0.18	32
North Dakota	0.38	14	0.48	14	-0.18	17
Ohio	-0.67	44	-0.26	34	0.60	42
Oklahoma	-0.55	41	-0.98	45	-0.18	16
Oregon	-0.07	27	-0.35	37	-0.14	18
Pennsylvania	-0.25	33	0.42	16	0.65	44

Table 3 (continued)

State	Black children		White children		Gap Z-score	
	Average Z-score	State rank (1=best)	Average Z-score	State rank (1=best)	Average z-score	State rank (1=smallest gap)
Rhode Island	-0.12	30	0.36	18	0.43	41
South Carolina	-0.57	43	-0.64	42	0.17	30
South Dakota	-0.03	25	0.23	23	0.13	29
Tennessee	-0.43	36	-0.91	43	-0.23	15
Texas	0.20	19	0.20	25	0.04	27
Utah	0.55	11	0.42	15	-0.32	13
Vermont	1.21	2	0.24	22	-1.27	4
Virginia	0.45	13	0.68	7	0.04	26
Washington	0.55	12	0.32	20	-0.33	12
West Virginia	-0.08	28	-1.96	50	-1.42	2
Wisconsin	-0.94	49	0.59	11	1.38	50
Wyoming	0.65	10	-0.237	32	-0.82	8

Table 3 also shows states ranked on the basis of the gap between Black and White child well-being. The three states with the largest gaps in the well-being of Black and White children and Wisconsin, Illinois, and Nebraska. The three states with the smallest gap between the well-being of Black children and White children are Hawaii, West Virginia, and Idaho. It is important to recognize that a small gap in the well-being of Black and White children may be driven by relatively good outcomes for Black children or poor outcomes for White children or some combination of these two factors.

Table 4 shows the correlation coefficients involving Black child well-being, White child well-being and the gap between Black children and White children. Correlation for average Z-scores and ranks are both examined and the results are pretty similar. I focus on the correlations among average Z-score here because they reflect more precise differences among states.

The correlation between the average Z-score for Black children and White children is +0.48. This suggests that states where Black children are doing better than Black children in other states are also states where White children are also likely to be doing better than White children in other states. However, it is worth noting that this correlation is only moderate in size indicating there are many states where the well-being of Blacks and Whites differ relative to their counterparts in other states.

Table 4 shows the correlation between the average Z-score of Black children and the gap between Black children and White children is -0.60, signifying that states where the well-being of Black children is high tend to have smaller gaps between the well-being of Black children and White children.

Table 4 shows the correlation between White child well-being and the gap between Black and White children is +0.40, signifying the higher the level of White child well-being the bigger the gap between the well-being of Black and White children.

Table 4 State correlations among index values and ranks

Correlation of Z-scores ^a		
	White index value	Black-white gap
Black Index Value	0.48	-0.60
White Index Value		0.40
Correlation of ranks ^b		
	White ranks	Black-white gap
Black Ranks	0.49	-0.51
White Ranks		0.44

All correlation coefficients in this table are statistically significantly different from zero at .05 level

^a Pearson product-moment correlation coefficient

^b Spearment rank-order correlation coefficient

Table 5 shows the ten best states in terms of Black child well-being, White child well-being and that gap between Black and Whites as well as the ten worst states in is of these categories. Looking at the top tier of Table 5, there were no states that were in the top ten in all three categories. There are only three states, all in the Northeast region of the country (New Jersey, Massachusetts, and Maryland), where the well-being of both Black and White children are among the ten best in the nation. There are seven states that appear in both column 1 and 3 (best states relative to Blacks in other states and states with the smallest gaps between Blacks and Whites). These are mostly small states.

Looking at the bottom tier in Table 5, there were no states in all three categories but several states were in two of the three categories. Six states where the well-being of both Black and White children are among the ten worst states in the nation. Five of the six states are in the Deep South and the one other state (Oklahoma) is in the Census-defined South region. The state of Mississippi is noteworthy because the well-being of Black children is the worst in the nation and the well-being of White children is the second worst in the nation. There are four states that appear in both column 1 and column 3 (worst states relative to Blacks in other states and states with the largest gaps between Blacks and Whites). These are mostly in the Upper Midwest or Great Lakes region.

4 Potential Explanatory Variables

Previous research on state-level differences in child well-being provides some guidance on what measures are likely to be correlated with state differences in the well-being of Black children. That stream of research is used here to guide selection of potential explanatory variables.

Previous research on state differences in child well-being (O'Hare et al 2013; O'Hare and Lee 2007; McLeod et al 2004; Whitiker 2001; Ritualo and O'Hare 2000) found demographics and social economic status indicators were typically related to state differences in child well-being. Those types of measures are examined here as

Table 5 Top ten and bottom ten states for black and white child well-being

	1	2	3
	Top Ten States for Black Children	Top Ten States for White Children	Top Ten States in Terms of Gap
Rank			
1	Hawaii ^a	New Jersey ^a	Hawaii ^a
2	Vermont ^a	Massachusetts ^a	West Virginia
3	Idaho ^a	Connecticut	Idaho ^a
4	New Hampshire ^a	Maryland ^a	Vermont ^a
5	Alaska ^a	Minnesota	Montana ^a
6	Massachusetts ^a	Illinois	New Mexico
7	New Jersey ^a	Virginia	Alaska ^a
8	Maryland ^a	Colorado	Wyoming ^a
9	Montana ^a	New York	New Hampshire ^a
10	Wyoming ^a	California	Kentucky
	Bottom Ten States for Black Children	Bottom Ten States for White Children	Bottom Ten States in Terms of Gap
41	Oklahoma ^b	Nevada	Rhode Island
42	Nebraska ^b	South Carolina ^b	Ohio ^b
43	South Carolina ^b	Tennessee	Connecticut
44	Ohio ^b	Louisiana ^b	Pennsylvania
45	Alabama ^b	Oklahoma ^b	Michigan ^b
46	Arkansas ^b	Alabama ^b	Iowa
47	Michigan ^b	Arkansas ^b	Minnesota
48	Louisiana ^b	Kentucky	Nebraska ^b
49	Wisconsin ^b	Mississippi ^b	Illinois
50	Mississippi ^b	West Virginia	Wisconsin ^b

^a States in more than one column of ten best

^b States in more than one column of ten worst

potential explanatory variables for the differences in the relative well-being of Black children compared to Black children in other states, and the gap between the well-being of Black and White children across the states.

There are three categories of potential explanatory measures examined here; 1) racial composition of the state, 2) the poverty rate, and 3) and the percent of adults who did not complete high school.

For the three demographic measures used here, the total population was used rather than the child population because adults are typically the ones making decisions which are likely to have an impact on the well-being of children. Data used here are from the 2010 Decennial Census (U.S. Census Bureau 2014a). Post-Census population estimates were available but the Decennial Census counts are likely to produce more reliable numbers for states with small numbers of Blacks.

The three racial composition measures used here are:

- 1) The absolute size of the Black population in a state
- 2) The percent of the state population that is Black
- 3) The percent of the state population that is minority (anyone other than Non-Hispanic White Alone)

The measure of poverty used here is based on the official poverty rate as reported by the U.S. Census Bureau (2014b). The five-year data (2008 to 2012) from the American Community Survey are used here to provide more reliable measures at the state level.

The two poverty measures used here are;

- 4) The percent of the Black population that is in poverty (i.e., the Black poverty rate)
- 5) The ratio of the Black Poverty Rate to the White Poverty Rate in the state. This might be thought of as a relative poverty measure.

The two measures of education used here are based on data reported by the U.S. Census Bureau (2014c). The five-year data (2008 to 2012) from the American Community Survey are used here to provide more reliable measures at the state level.

The two education measures used here are;

- 6) The percent of Black adults (age 25+) who did not complete high school
- 7) The ratio of the percent of Black adults who did not complete high school to the percent of White adults who did not complete high school.

Given the nature of the independent variables, it is important to examine their inter-correlations in the context of multicollinearity. If independent variables are too highly correlated with each other their inclusion in a multiple regression model produces coefficients that are unstable. A couple of the inter-correlations among independent variables are above .80 and many are above .60. This suggests that the potential explanatory variables are too highly correlated with each other to use collectively in a multivariate analysis because of potential problems of multicollinearity (Kumar 1975; Blalock 1972). Accordingly, multi-variate analysis is not pursued here because of potential problems with multicollinearity.

Table 6 shows zero-order correlations among the state-level measures of potential explanatory variables and child well-being outcomes in the states. The correlations are tested to see if they statistically significantly different from zero using a two-tailed test and the levels of statistical significance are shown in Table 6.

In terms of explaining the well-being of Black children relative to Black children in other states (the average Z-scores of Blacks), four correlations coefficients are statistically significant. The Black poverty rate has the highest correlation with the Black child well-being index score at -0.65 . States with high Black poverty rates have relatively low levels of Black child well-being.

The correlation between the Black child well-being index value and the percent of Blacks over age 25 who have not graduated from high schools is -0.63 , indicating states where a high percentage of Black adults did not finish high school tend to have lower levels of Black child well-being.

Table 6 Correlations among child well-being index scores and potential explanatory variables

		Average Z-score of blacks	Average Z-score for gap between blacks and whites
Racial Composition	Number Non- Hispanic Black	-0.24	0.33 ^a
	Percent Non-Hispanic Black Alone	-0.44 ^b	0.28 ^a
	Percent Minority (100 % - Percent Non-Hispanic White)	0.12	0.05
Poverty	Black Poverty Rate ACS 2009–2013	-0.65 ^b	0.29 ^a
	Ratio of Black to White Poverty Rates	-0.30 ^a	0.56 ^b
Education	Percent Black Less than High School Completion (age 25+)	-0.63 ^b	0.50 ^b
	Ratio of Black to White Percent High School Completion (age 25+)	-0.10	0.46 ^b

Statistical Significance Levels of Correlations (2-tailed tests)

^a 0.10 or higher

^b 0.05 or higher

^c 0.001 or higher

The percent of the state population that is Black is correlated with the Black child well-being index value at -0.44 . States where a larger share of their population is Black tend to have lower levels of Black child well-being. The absolute number of Blacks and the percent of the state population that is minority are not statistically significantly correlated with Black child well-being.

The ratio of Black poverty rates to White poverty rates is correlated at -0.30 with Black child well-being but it is barely statistically significant at the .10 level.

In summary, poverty and education are more closely tied to state differences in Black child well-being than racial demographics are.

In terms of explaining the gap between Black and White child well-being, many of the same variables are statistically significant. In terms of poverty, the correlation between the gap in Black to White child well-being and the ratio of Black to White Poverty is relatively high ($+0.56$) indicating that as the relative poverty levels of Black compared to Whites increase, the gap between Black and White child well-being increases.

In terms of the education measures used here (Percent of adults who did not complete high school) the Black rate is correlated with the gap between Black and White child well-being is $+0.50$. The correlation between ratio of Black to White education and the gap between the well-being of Black children and White children is $+0.46$. When the percent of Blacks adults without a high school degree increases, both in an absolute and relative sense, the gap between Black child well-being and White child well-being increases.

In terms of demographics, the correlation between the gap in the Well-Being of Black and White children and size of the Black population is $+0.33$. For the percent of the state population that is Black, the correlation is $+0.28$. States with larger number of Blacks tend to have worse Black child well-being. Both of these correlation coefficients

are barely statistically significant but they suggest that the larger the Black population is in a state, the larger the gap in well-being of Black children relative to White children.

5 Discussion

The disadvantaged position of Blacks in America has been well documented (National Research Council 1989; National Advisory Commission on Civil Disorders 1968) and the situation has stimulated political activities from affirmative action and civil rights laws in the 1960s to “My Brother’s Keeper” initiative launched by the Obama administration in 2014. This study shows the disadvantaged position of Black children is pervasive both geographically and in terms of multiple dimensions of child well-being. But the size of the gap between well-being of White children and Black children varies widely across indicators and across states.

The results of this study challenge our countries aspirations for an “equal opportunity society.” Primarily this is an issue of Black disadvantage compared to Whites but data presented here also raise issues about the equality of opportunities for Black children in some states relative to Black children in other states. The gap between the state-level measures of well-being for Black children are larger than the gap between the well-being of Black children and White children at the national level.

This perspective on the diversity of child well-being in the U.S. has seldom been noted in the past. The large differences in the well-being of Black children in different states provides a new perspective on equality of opportunities based on location. Although Black children trail White children in every state in terms of child well-being, evidence presented here shows Black children in some states are substantially better off than Black children in other states.

The ranking of states in terms of the well-being of Black children differs in some important ways from the pattern of rankings typically seen for overall child well-being. Numerous studies have examined well-being of children across the states (The Annie E. Casey Foundation 2014c; Lamb and O’Hare 2013; Every Child Matters Education Fund 2008; Children’s Rights Council 1999; The Foundation for Child Development 2012). The common pattern of child well-being across the states is summarized by O’Hare et al (2013 page, 408) thusly;

States in the South and Southwest do poorly while states in the upper Midwest and Northeast do well. The bottom-10 states in terms of child well-being are almost all in the South and Southwest. The top-10 states are mostly in the Northeast and Upper Midwest.

However, in terms of Black child well-being several states from the upper Midwest or Great Lakes region (for example, Wisconsin-49th, Michigan-47th, and Ohio-44th) rank among the worst in the nation in terms of Black child well-being. This point is amplified by noting that several mid-western states (Wisconsin, Illinois, and Michigan) are among the states with the largest gaps in the well-being of Black and White children.

It is noteworthy that several states that were once thought of as places of opportunity of Black workers moving up from the South (Michigan, Ohio, Wisconsin) now have

levels of Black child well-being that are among the worst in the country (Hahn 2003; Farley and Allen 1987). According to the National Research Council (1989, page 18), “The major developments accounting Black gains in earnings and occupation status from 1939 to 1969 were South-to-North migration....”

The fact that the size of the overall minority population in states (everyone other than Non-Hispanic White Alone) is not significantly correlated with Black child well-being or the gap between Black child well-being and White child well-being suggests that the presence of minorities other than Blacks in a state has little bearing of the well-being of Black children.

The analysis shown here indicates that socioeconomic measures (poverty and education) are more highly correlated with Black child well-being than racial composition measures. This is consistent with O'Hare et al (2013) findings that socio-economic measures were powerful predictors of child well-being of all children in a state. In other words, in terms of explaining differences in Black child well-being across states, the characteristics of the Black adult population are more important than the size of the Black population, in absolute or relative terms.

The evidence cited above makes it clear that one should not use the state ranking for White children to infer the relative well-being of Black children. There are many states where there are large differences between the well-being of these two populations of children relative to their counterparts in other states.

The results shown here highlight the extent to which the measures of child well-being for all children masks important differences for sub-groups of children. This is reflected in the extent to which the well-being of children in individual states different from national averages and it is also reflected in the fact that many states show big differences between the state rankings in the relative well-being Black children and the rankings for White children. By implication, findings here suggest that the ranking of states based on the well-being of all children should not be used to infer the well-being of Black children. In addition, it suggests the well-being of all children should not be used to infer the well-being of children in other racial/ethnic minority groups as well.

There are a couple of limitations that should be mentioned. For small groups and especially small groups in small states, there may be significant measurement error in the data used here because the relatively small sample size for some measures reported in the American Community Survey is an issue (National Research Council 2007) estimates are based on small samples. Eliminating the least reliable estimates based on Coefficient of Variation may help address this issue, but does not completely eliminate it. There are issues of completeness and quality in the Decennial Census data (Hogan et al 2013). The focus on the index scores and rankings, which mitigate the impact of mis-measurement in any particular variable, also help address potential measurement problems.

This study used the racial categories as provided by the U.S. Census Bureau under guidance from the U.S. Office of Management and Budget (1997). While the categories used here are a widely-used standard it is worth noting that racial categorization is constantly changing (U.S. Census Bureau 2013). Other ways of classifying Whites and Blacks might alter some of the findings of this study.

6 Conclusion

The analysis presented here provides new information on the geographic dimensions of variations in the well-being of Black children and a deeper understanding of the gap in child well-being between Black and White children in the U.S.

There is extensive variation in Black child well-being across the states, both in individual measures of child well-being and in a composite index of well-being, but the advantages of White children over Black children in terms of child well-being is geographically pervasive. On every measure examined here, the well-being of White children was better than that of Black children in nearly every state.

In terms of explaining both the well-being of Black children compared to Black children in other states, and the gap between Black and White child well-being in the same state, the socio-economic measures of adults have higher correlations than the racial composition of the states.

The results of this study indicate that the relative well-being of Black children in a state should not be inferred from that of all children or White children. The typical state pattern of child well-being seen for all children is not the pattern seen for Black children. To the extent possible, sub-national data should be provided for racial minorities and the well-being of minority children should be examined separately from all children.

References

- Avecedo-Garcia, D., McArdle, N., Ospyuk, T. L., Lefkowitz, B., and Krimgold, B. (no date). Children left behind: how metropolitan areas are failing America's children, first in a series of reports from diversitydata.org. Harvard School of Public Health, and Center for the Advancement of Health.
- Avecedo-Garcia, D., McArdle, N., Ospyuk, T. L., Hardy, E., Crisan, U. I., Romano, B., Norris, D., Baek, M., & Reece, J. (2014). The child opportunity index: improving collaboration between community development and public health. *Health Affairs*, 33(11), 1948–1957.
- Ben-Arieh, A., & Frones, I. (2007). Editorial: indicators of children's well-being; concepts, indices and usage. *Social Indicators Research*, 80, 1–4.
- Ben-Arieh, A., Casas, F., Frones, I., & Korbin, J. (Eds.). (2014). *Handbook of child well-being*. Dordrecht: Springer.
- Blalock, H. M. (1972). *Social statistics*. New York: McGraw-Hill Book Company.
- Booyesen, F. (2002). An overview and evaluation of composite indices of development. *Social Indicators Research*, 59, 115–151. Kluwer Publishers. Netherlands.
- Bradshaw, J., & Richardson, D. (2009). An index of child well-being in Europe. *Child Indicators Research*, 2(3), 319–351.
- Brown, B. V., & Botsko, C. (1996). A guide to state and local-level indicators of child well-being available through the federal statistical system. (prepared for the Annie E. Casey Foundation). Washington, D.C., Child Trends, Inc.
- Brown, B. V., & Moore, K. A. (2007). *On overview of state-level data on child well-being available through the federal statistical system*. Washington DC: Child Trends.
- Brown, B. V., Smith, B., & Harper, M. (2002). *International surveys of child and family well-being: An overview*. Washington, DC: Child Trends.
- Brown, B. V., Hashim, K., & Martin, P. (2008). A guide to resources for creating, locating, and using child and youth indicators data. Child Trends and KIDS COUNT.
- Council, C.'s. R. (1999). *Children's rights council: Top ten states to raise a child*. Washington, DC: Children's Rights Council.
- Council of Economic Advisors (1998). *Changing America: Indicators of Social and Economic Well-Being by race and Hispanic Origin*, Council of Economic Advisors for the Presidents initiative on Race, Washington, DC.

- Every Child Matters Education Fund. (2008). *Geography matters: Child well-being in the states*. Washington, DC: Every Child Matters Fund.
- Farley, R., & Allen, W. R. (1987). *The color line and the quality of life in America*. NY: Russell Sage.
- Fernandez, L., Mendes, A., & Teixeira, A. A. C. (2012). A review essay on the measurement of child well-being. *Social Indicators Research, 106*, 239–257.
- Finegold, K., Wherry, L., & Schardin S. (2004a). Block Grants: Historical Overview and Lessons Learned. No. A-63 in Series, "New Federalism: Issues and Options for States." The Urban Institute, Washington, DC.
- Finegold, K., Wherry, L., & Schardin S. (2004b). Block Grants; Details of the Bush Proposals. No. A-64 in Series, "New Federalism: Issues and Options for states."The Urban Institute, Washington, DC.
- Floyd, I., & Schott, L. (2013). *TANF cash benefits continued to lose value in 2013*. Washington, DC: The Center on Budget and Policy Priorities.
- Haggerty, M. R., & Land, K. C. (2007). Constructing summary indices of quality of life: a model for the effect of heterogeneous importance weights. *Sociological Methods and Research, 35*, 455–496.
- Hahn, S. (2003). *A nation under our feet: Black political struggles in the rural South, from slavery to the great migration*. Cambridge: Belknap.
- Hernandez, D., & Macartney S.E. (2008). Racial-Ethnic Inequality in Child well-Being 1985–2004: Gaps Narrowing, but Persist, FCD Policy Brief, Child Well-Being Index (CWI), No. 9., Foundation for Child Development, New York, NY.
- Hogan, H., Cantwell, P., Devine, J., Mule, V. T., & Velkoff, V. (2013). Quality and the 2010 census. *Population Research and Public Policy, 32*, 637–662.
- Klein, R. J., Proctor, S. E., Boudreault, M.A., & Turczyn, K.M. (2002) Healthy People 2010 Criteria for Data Suppression, Health People 2010 Statistical Notes, Number 24, Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, Washington, DC.
- Kumar, T. K. (1975). Multicollinearity in regression analysis. *Review of Economics and Statistics, 57*(3), 365–366.
- La, M., & Bradshaw, J. (2010). Child well-being on the Pacific Rim. *Child Indicators Research, 3*(3), 374.
- Lamb, V. L., & Land, K. C. (2013). Methodologies used in the construction of composite child well-being indices. In A. Ben-Arieh, F. Casas, I. Frones, & J. Korbin (Eds.), *Handbook of child well-being*. Dordrecht: Springer.
- Lamb, V., & O'Hare, W. P. (2013). "Scalability of the CWI: State-Level Indicators and Composite Indices" Chapter 7 in *The Well-Being of America's Children: Developing and Improving the Child and Youth Well-Being Index*, Editor Kenneth C. Land.
- Lamb, V. L., Land, K. C., Meadows, S. O., & Traylor, F. (2005). Trends in African American child well-being: 1985–2001. In K. Dodge, V. McLoyd, & N. Hill (Eds.), *Emerging issues in black family life: Context, adaptation, and policy*. New York: Guilford Press.
- Land, K. C., Lamb, V. L., & Mustillo, S. K. (2001). Child and youth well-being in the United States, 1975–1998: some findings from a new index. *Social Indicators Research, 56*, 241–320.
- Massey, D., & Denton, N. (1993). *American apartheid*. Cambridge: Harvard University Press.
- Mather, M., O'Hare, W. P., & Adams D. (2007) Testing the Validity of the KIDS COUNT State-Level Index of Child Well-Being, KIDS COUNT Working Paper, The Annie E. Casey Foundation, Baltimore, MD.
- McLeod, J. D., Nonnemaker, J. M., & Call, K. H. (2004). Income inequality, race, and child well-being: an aggregate analysis in the 50 United States. *Journal of Health and Social Behavior, 45*, 249–264.
- National Advisory Commission on Civil Disorders. (1968). *Report of the national advisory commission on civil disorders*. New York: Bantam books.
- National Research Council. (1989). *A common destiny: Blacks and American society*. Washington, DC: The National Academy Press.
- National Research Council. (2007). *Using the American community survey: Benefits and challenges*. Washington, DC: The National Academy Press.
- O'Hare, W. P. (2006). *Developing state indices of child well-being*. Washington, DC: The Brookings Institution.
- O'Hare, W. P. (2012a) Use of Domains in Indices of Child Well-Being, presentation at International Society for Child Indicators Board Meeting, Heidelberg, Germany.
- O'Hare, W. P. (2012b). Assessing the well-Being of African-American Children State-by-States, Poster presentation at the Annual Conference of the Southern Demographic Association, Williamsburg, VA, October 11–12.
- O'Hare, W. P., (2014a). *Data-Based Child Advocacy: Using Statistical Indicators to Improve the Lives of Children*, Springer Publishers.
- O'Hare, W. P. (2014b). A Research Note on Statistical Methods Used to Create Indices of Child Well-Being, *Child Indicators Research*, Accepted: 26 March 2014, DOI 10.1007/s12187-014-9244-8.

- O'Hare, W. P., & Gutierrez, F. (2012). The use of domains in constructing a comprehensive composite index of child well-being. *Child Indicators Research*, 5(4), 609–629.
- O'Hare, W. P. and Lee, M., (2007). Factors Affecting State Differences in Child Well-Being, KIDS COUNT Working Paper, The Annie E. Casey Foundation, Baltimore, MD.
- O'Hare, W. P., Mather, M., Dupuis, G., Land, K. C., Fu, Q., & Lamb, V. L. (2013). Analyzing differences in child well-being among U.S. States. *Child Indicators Research*, 6(2), 401–431.
- Organisation for Economic Cooperation and Development (2008) Handbook on Constructing Composite Indicators: Methodology and User Guide, OECD, Paris, France.
- Organisation for Economic Cooperation and Development (2009). Doing Better for Children, Chapter 2, Comparative Child Well-Being Across Member States, Organization for Economic Cooperation and Development, Paris, France.
- Patterson, K., & O'Hare, W. P. (2014). A New Assessment of Changes Over Time and Differences Across States in the Well-Being of Children in the U.S., Paper delivered at the Southern Demographic Association Conference, October, 30–31, Memphis, TN.
- Pollard, E. I., & Lee, P. D. (2003). Child well-being: a systematic review of the literature. *Social Indicators Research*, 61, 59–78.
- Ritualo, A. and O'Hare, W.P., (2000). "Factors Related to State Differences in Child Well-Being," Paper presented at the Southern Demographic Association Conference, October.
- Sawhill, I. V., & Karpilow, Q. (2014). *How much could we improve children's life chances by intervening early and often*. Washington, DC: Center on Children and Families at Brookings.
- Stagner, M., Goerge, R. M., & Ballard, P. (2008). *Improved indicators of child well-being*. Chicago: Chapin Hall at the University of Chicago.
- The Annie E. Casey Foundation. (1995). *KIDS COUNT data on Asian, Native American, and Hispanic children: Findings from the 1990 census*. Baltimore: Annie E. Casey Foundation.
- The Annie E. Casey Foundation. (2003). *Black children: State-level measures of child well-being from the 2000 census, pocket guide*. Baltimore: The Annie E. Casey Foundation.
- The Annie E. Casey Foundation. (2014a). *Race for results: Building a path to opportunity for all children*. Baltimore: The Annie E. Casey Foundation.
- The Annie E. Casey Foundation. (2014b). *Race for results methodology: Comparing children's success across and within states*. Baltimore: The Annie E. Casey Foundation.
- The Annie E. Casey Foundation. (2014c). *KIDS COUNT data book*. Baltimore: The Annie E. Casey.
- The Foundation for Child Development. (2012). Analyzing State Differences in Child Well-Being. New York, NY: O'Hare, W. P., Mather, M., and DePuis, G.
- U.S. Census Bureau (2013) 2010 Census Race and Hispanic Origin Alternative Questionnaire Experiment, 2010 Census Planning Memorandum Series, No. 211 (2nd reissue), U.S. Census Bureau, Washington, DC.
- U.S. Census Bureau (2014a). 2010 Decennial Census, Summary File 1, Table QT-P6, Accessed from American Factfinder on July 10, 2014.
- U.S. Census Bureau (2014b). 2012 American Community Survey, 5-year data, Table B17001, Accessed from American Factfinder on July 10, 2014.
- U.S. Census Bureau (2014c). 2012 American Community Survey, 5-year data, Table B17001A, Accessed from American Factfinder on July 10, 2014.
- U.S. Census Bureau. (2014d). *Public education finances: 2012, G12—CG-ASPEF*. Washington, DC: GPO.
- U.S. Federal Interagency Forum on Child and Family Statistics. (2014). *America's children: Key national indicators of well-being*. Washington, DC: U.S. Government Printing Office.
- U.S. Office of Management and Budget. (1997). Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity, Statistical Policy Directive 15, Federal Register Notice October 30, 1997
- UNICEF (2007). Child poverty in perspective: An overview of child well-being in rich countries, Innocenti Report Card No. 7, UNICEF Innocenti Research Centre, Florence, Italy.
- Vogt, W. P. (1993). *Dictionary of statistics and methodology: A nontechnical Guide for Social Sciences*. Newbury Park: Sage Publications.
- Whitaker, I. P. (2001). Unequal opportunities among unequal states: the importance of examining state characteristics in making social welfare policies regarding children. *Journal of Children and Poverty*, 7, 145–162.
- Winship, S. and Owen, S. (2013) Guide to the Brookings Social Genome Project, the Brookings Institute, Washington, DC.
- Winston, P., and Castañeda, R. M. (2007). Assessing federalism: ANF and the recent evolution of American social policy federalism. Urban Institute, Discussion Papers 07-01.