APPENDIX
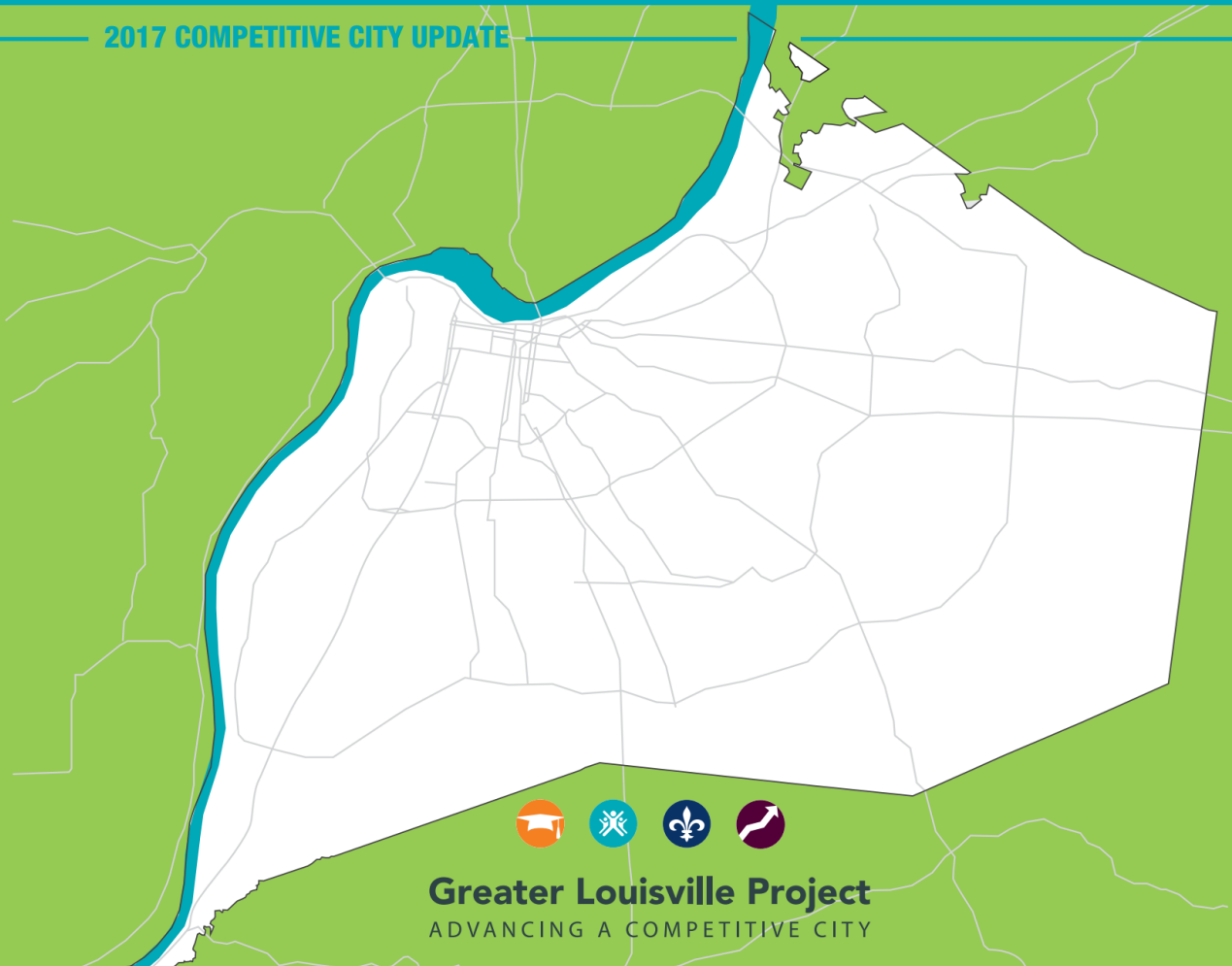
POVERTY BEYOND INCOME

Greater Louisville Project
ADVANCING A COMPETITIVE CITY

Appendix to Competitive City Update 2017: Poverty Beyond Income

This appendix documents the sources and methodology used to produce each statistic in the Greater Louisville Project's 2017 Competitive City Update, *Poverty Beyond Income,* as well as to provide additional data and context where possible.

The appendix is divided into multiple sections that mirror the sections in *Poverty Beyond Income*. The table of contents lists the tables and figures in each section. For each statistic, the appendix lists the source, the geographic scope of the statistic, and a brief explanation. The abbreviation ACS stands for the American Community Survey.

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Appendix A – Introduction

A1 – Median income of households in poverty with children ranking

Median income of households in poverty with children, 2015
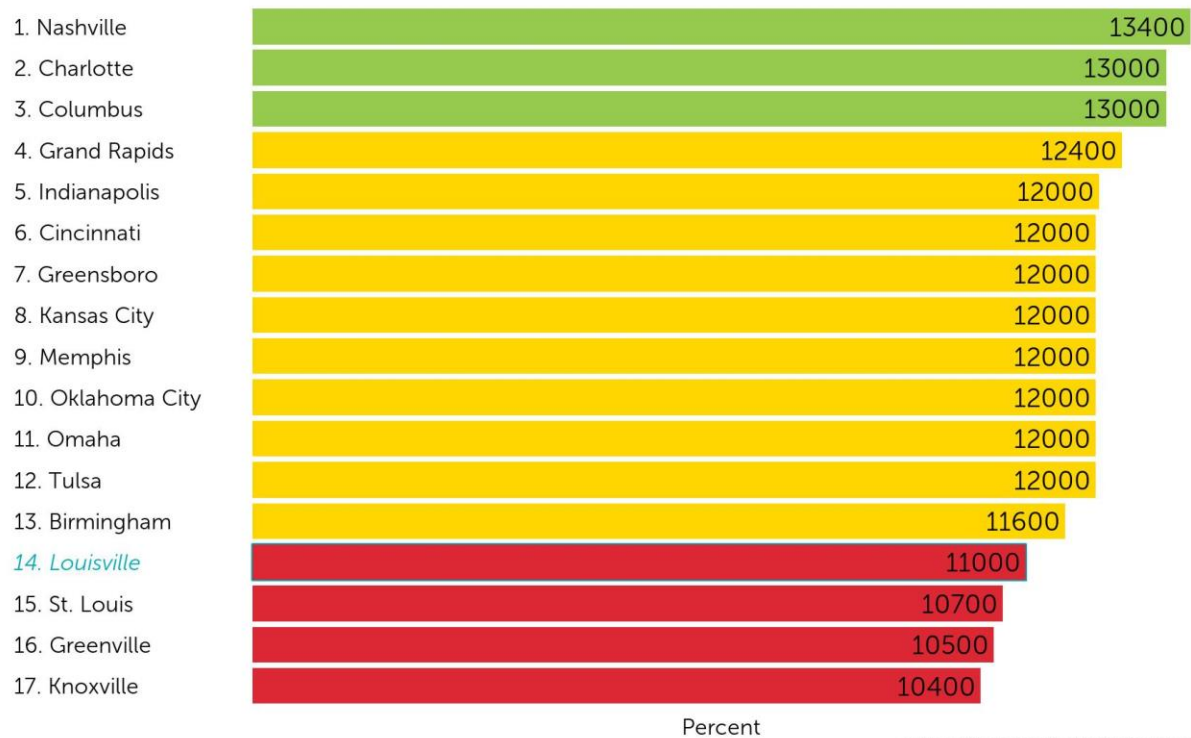
Rank	City	Value
1.	Nashville	13400
2.	Charlotte	13000
3.	Columbus	13000
4.	Grand Rapids	12400
5.	Indianapolis	12000
6.	Cincinnati	12000
7.	Greensboro	12000
8.	Kansas City	12000
9.	Memphis	12000
10.	Oklahoma City	12000
11.	Omaha	12000
12.	Tulsa	12000
13.	Birmingham	11600
14.	*Louisville*	11000
15.	St. Louis	10700
16.	Greenville	10500
17.	Knoxville	10400

Percent

Source: Greater Louisville Project Analysis of
American Community Survey Microdata Data via IPUMS

Source: ACS microdata

Geography: Louisville/Jefferson County MSA

The median income of a household is the pre-tax income earned by every member of that household from all sources in the last 12 months. It does not include unearned income, such as investment or retirement income.

A2 – Households in poverty with children where someone is employed ranking

Households in poverty with children where someone is employed, 2015

Rank	City	Percent
1.	Greenville	60.2
2.	Birmingham	61.6
3.	St. Louis	62.7
4.	Knoxville	64.8
5.	Greensboro	65.2
6.	Columbus	65.8
7.	Cincinnati	65.9
8.	Oklahoma City	66.6
9.	Louisville	67.1
10.	Tulsa	68.1
11.	Memphis	69.5
12.	Indianapolis	70.5
13.	Charlotte	72.1
14.	Nashville	74.0
15.	Kansas City	74.3
16.	Omaha	80.5
17.	Grand Rapids	83.4

Percent

Source: Greater Louisville Project Analysis of
American Community Survey Microdata Data via IPUMS

Source: ACS microdata

Geography: Louisville/Jefferson County MSA

A household is considered to be employed if anyone in the family is working. A household is also condiered to be employed if nobody in the family is working but someone in the family has retirement income of $21,000 or greater, someone in the family has investment income of $21,000 or greater, or if the family lives on a working farm.

A3.i – Child poverty ranking
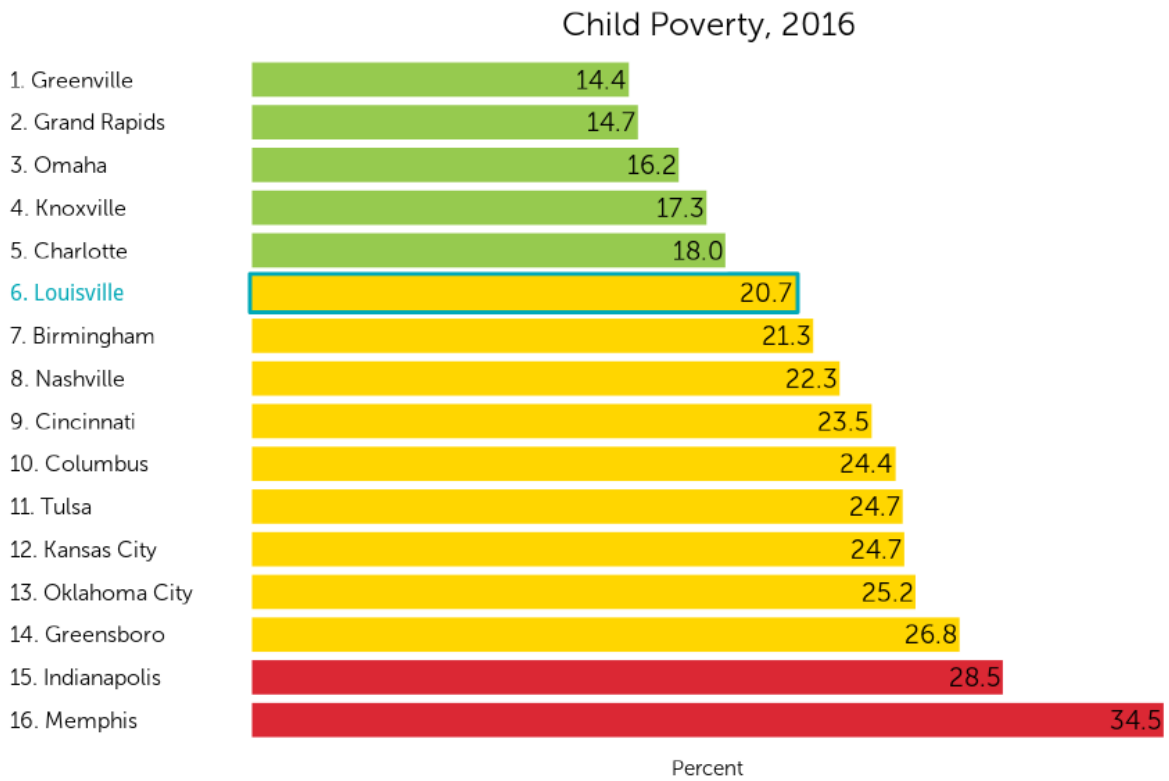
Child Poverty, 2016

Rank & City	Percent
1. Greenville	14.4
2. Grand Rapids	14.7
3. Omaha	16.2
4. Knoxville	17.3
5. Charlotte	18.0
6. Louisville	20.7
7. Birmingham	21.3
8. Nashville	22.3
9. Cincinnati	23.5
10. Columbus	24.4
11. Tulsa	24.7
12. Kansas City	24.7
13. Oklahoma City	25.2
14. Greensboro	26.8
15. Indianapolis	28.5
16. Memphis	34.5

Percent

Source: Greater Louisville Project
Data from American Community Survey Table B17001

A3.ii – Child poverty trendline
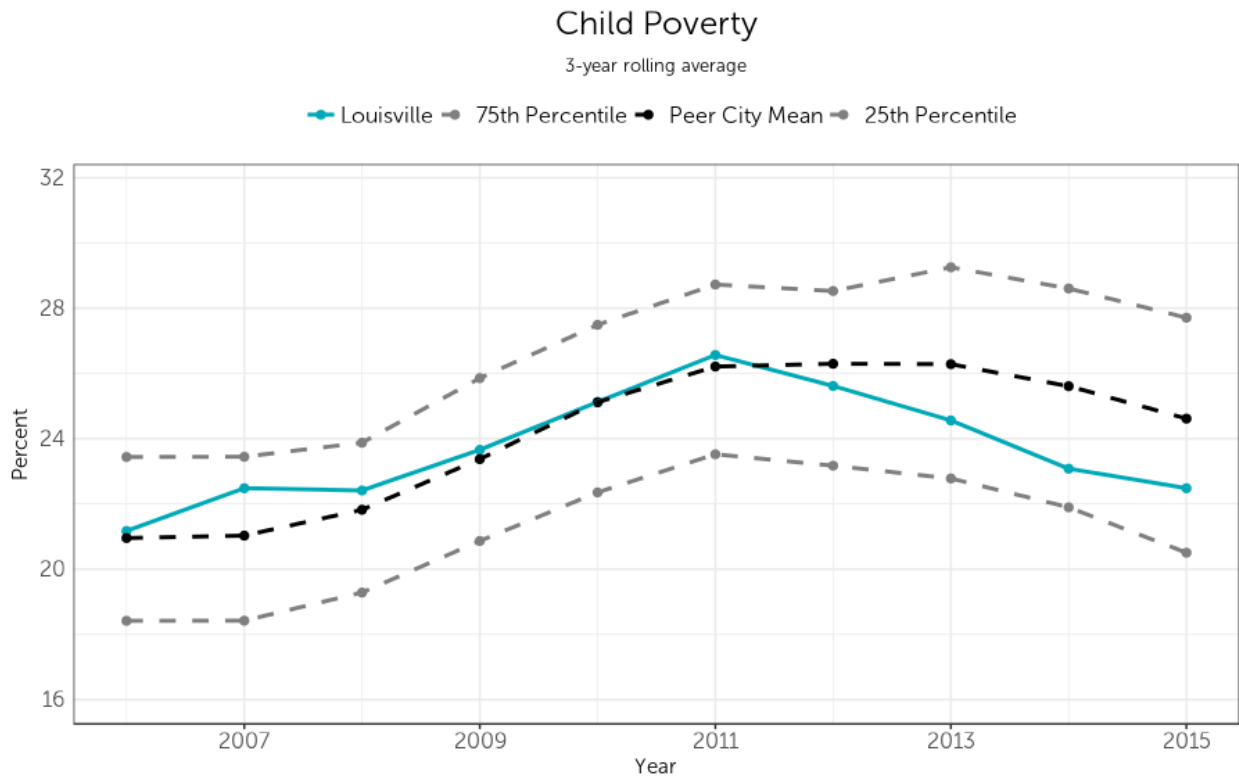
Child Poverty
3-year rolling average

Louisville — 75th Percentile — Peer City Mean — 25th Percentile

Source: Greater Louisville Project
Data from American Community Survey Table B17001

A3.iii – Child poverty map
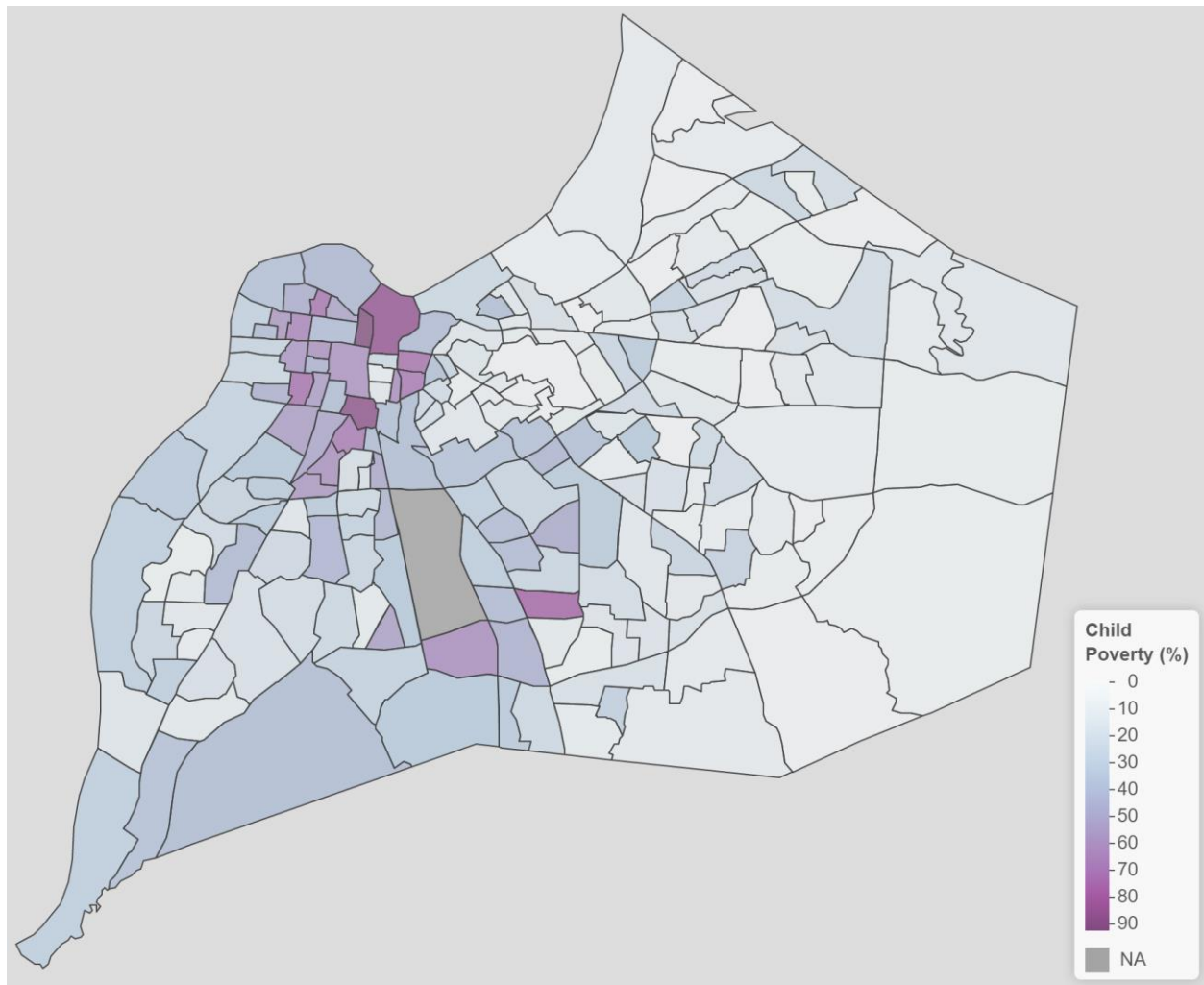
Source: ACS Table B17001

Geography: Louisville Metro

Children are considered to be in poverty if their household income is less than the federal poverty threshold, which is based on family size and composition. The poverty line for a family of four in 2016 was $24,300. Due to sampling variance from year to year, the child poverty trendline above displays three-year averages for the child poverty rate rather than yearly figures. An interactive version of the child poverty map can be viewed at http://greaterlouisvilleproject.org/factors/child-poverty/.

The ACS estimates that 37,858 children ages between the ages of 0 to 17 were living in poverty within Louisville Metro in 2015.

A4 – Calculation of earning potential for children growing up in poverty

The additional income that could be unlocked by mitigating the impacts of poverty on children is based on the 2008 paper "The economic costs of childhood poverty in the United States" by Harry Holzer et al. In this paper, Holzer et al. use the Panel Study of Income Dynamics to estimate the impact that growing up in poverty has on a child's future earnings, health, and propensity to commit crime. Holzer finds a reduction in GDP of 1.3% can be attributed to the lost earnings of children who grew up in poverty. Holzer also finds that the cost of crime associated with child poverty is 1.3% of GDP, and the cost of health expenditures and worse health outcomes outcomes associated with child poverty is 1.2% of GDP, although these costs are not factored into the report.

At the time of Holzer's research in 2005, the GDP of the United States was $13.4 trillion (not adjusted for inflation). A 1.3% reduction in the 2005 GDP translates to $170 billion in lost earnings.

In 2005, 136 million people were employed, and Holzer estimates that 17% of them grew up in poverty, or 23.2 million. Dividing the $170 billion in lost earnings by 23.2 million workers yields average lost earnings of $7,300 per worker. Adjusting for inflation yields an average of $9,300 in lost earnings per worker in today's dollars.

The total annual estimated lost earnings among the 38,000 children currently growing up in Louisville is 38,000 * $9,3000 = $353 million. The average net present value of an annual cash flow of $353 million over a 40 year working lifetime is $200 million, assuming a discount rate of 3%.

Refer to Appendix A3 for information on how the number of children in poverty in Louisville was calculated.

Source: Holzer et al. – "The economic costs of childhood poverty in the United States"

Geography: Louisville Metro

B1 – Poor children in families paying over half their income in housing costs ranking
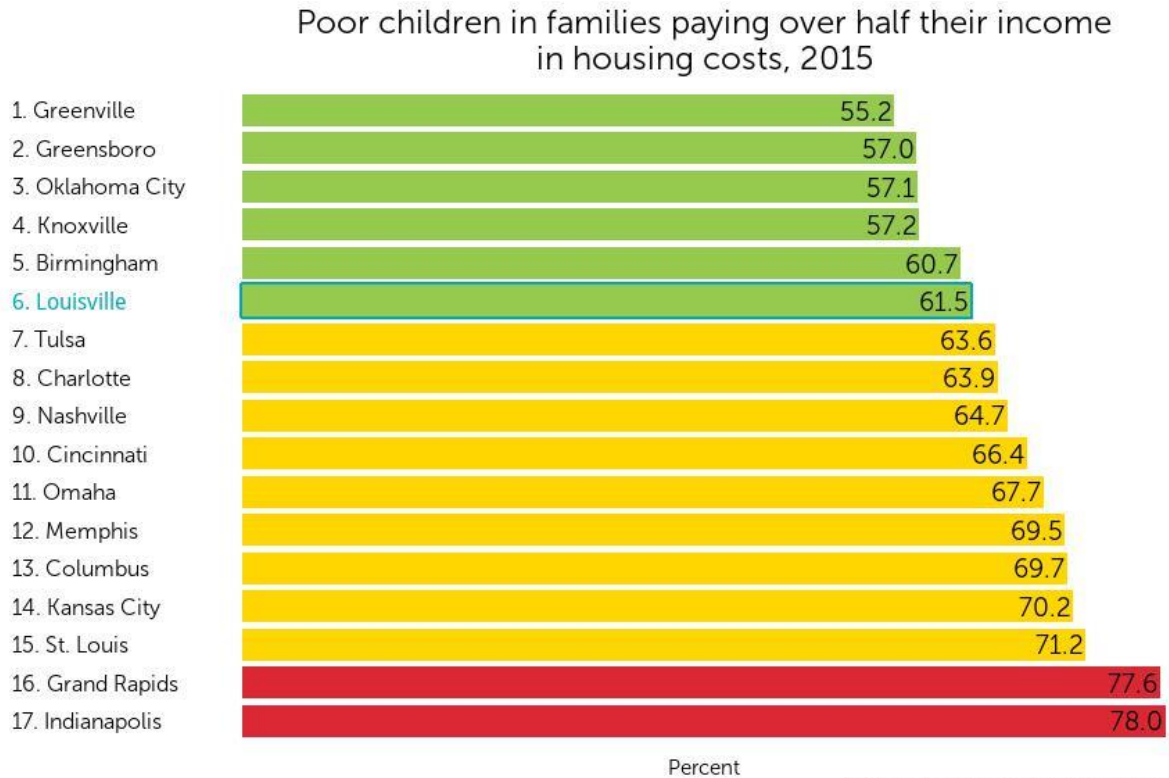
Poor children in families paying over half their income in housing costs, 2015

Rank	City	Percent
1.	Greenville	55.2
2.	Greensboro	57.0
3.	Oklahoma City	57.1
4.	Knoxville	57.2
5.	Birmingham	60.7
6.	Louisville	61.5
7.	Tulsa	63.6
8.	Charlotte	63.9
9.	Nashville	64.7
10.	Cincinnati	66.4
11.	Omaha	67.7
12.	Memphis	69.5
13.	Columbus	69.7
14.	Kansas City	70.2
15.	St. Louis	71.2
16.	Grand Rapids	77.6
17.	Indianapolis	78.0

Percent

Source: Greater Louisville Project Analysis of
American Community Survey Microdata Data via IPUMS

Source: ACS microdata

Geography: Louisville/Jefferson County MSA

Households are considered cost burdened if they spend 30% or more of their total income on housing costs and severely cost burdened if they spend 50% or more of their total income on housing costs. Housing costs include rent and morgatge payments; real estate taxes; fire, hazard, and flood insurance on the property; utilities (electricity, gas, and water and sewer); and fuels (oil, coal, kerosene, wood, etc.). Housing costs also monthly condominium fees and mobile home costs.

B2 – Poor children who have moved in the past twelve months ranking

Poor children who moved homes in the last twelve months, 2015
Three-year average

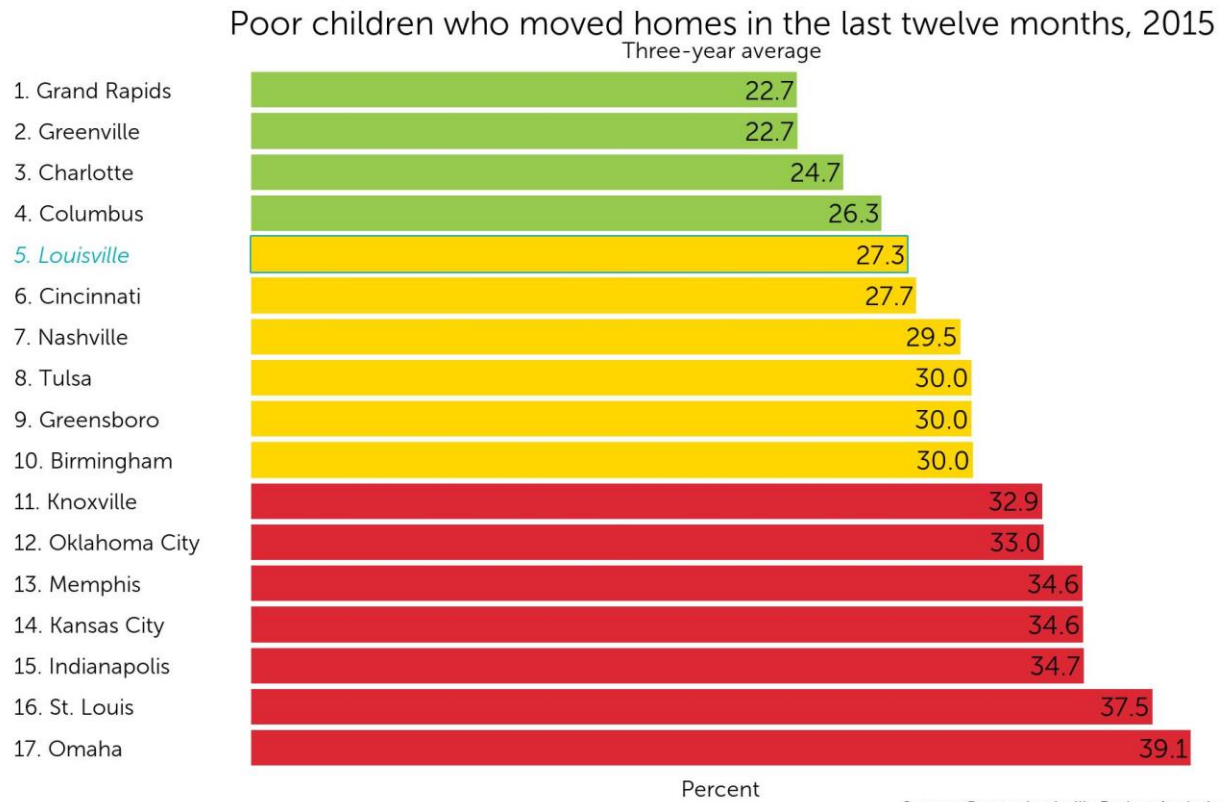| Rank	City	Percent
1.	Grand Rapids	22.7
2.	Greenville	22.7
3.	Charlotte	24.7
4.	Columbus	26.3
5.	Louisville	27.3
6.	Cincinnati	27.7
7.	Nashville	29.5
8.	Tulsa	30.0
9.	Greensboro	30.0
10.	Birmingham	30.0
11.	Knoxville	32.9
12.	Oklahoma City	33.0
13.	Memphis	34.6
14.	Kansas City	34.6
15.	Indianapolis	34.7
16.	St. Louis	37.5
17.	Omaha	39.1

Percent

Source: Greater Louisville Project Analysis of
American Community Survey Microdata Data via IPUMS

Source: ACS microdata

Geography: Louisville/Jefferson County MSA

Due to sampling variance from year to year, the percent of children who moved homes in the past year is calculated as a three year average. Children who do not live in the same house as they did one year ago are considered to have moved. Some children might have moved out of their house and moved back in within the past year. To account for this scenario, if the person who owns or rents the house moved out and back in during the last year, the children are presumed to have also moved in the last year.

B3 - Additional cost of household goods for families in poverty

Households in poverty face budget constraints that affect how they shop. The article "Why the poor pay more for toilet paper — and just about everything else" by Emily Badger describes a study by Orhun and Palazzolo that analyzes panel data on toilet paper purchases by more than 100,000 American households.

Although households in poverty tend to purchase cheaper brands, they are less likely to purchase larger quantities of goods to receive bulk discounts. Because households in poverty are less likely to stock up on household goods, they are less able to adjust the timing of their purchases to wait for sales. The authors find that as a result of purchasing in smaller quantities and not waiting for sales, households that earn less than $20,000 per year pay an average of 5.9% more per sheet of the same toilet paper than households earning more than $20,000 per year.

Orhun and Palazzolo show that poor households take advantage of these cost saving strategies earlier in the month when they have more cash on hand. As the month goes on and they have less available money, they buy in bulk less and take advantage of sales less. This implies that poor households pay more for household good due to their budgetary constraints and not because they do not know how to take advantage of these cost saving strategies.

Sources:

Emily Badger – "Why the poor pay more for toilet paper — and just about everything else"

Orhun and Palazzolo – "Frugality Is Hard To Afford"

Appendix C – Education

C1.i – Kindergarten readiness table

Group	Total kindergarteners	Kindergarteners who are k-ready	Percent
All students	7479	3859	51.6
Students eligible for free/reduced-price meals	5043	2128	42.2
Students not eligible for free/reduced-price meals	2436	1731	71.1

C1.ii – Kindergarten readiness trendline

Kindergarten Readiness
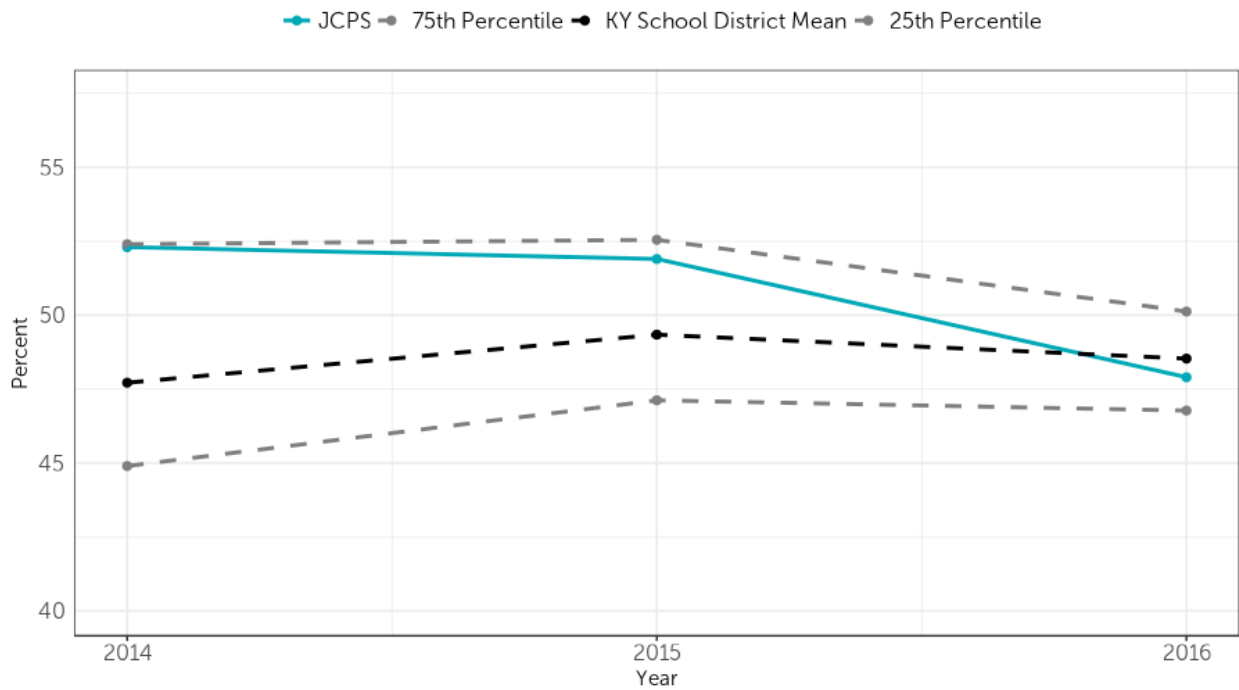
Source: Greater Louisville Project
Data from Kentucky Department of Education School Report Card

C1.iii – Kindergarten readiness trendline by ethnicity

Kindergarten Readiness by Ethnicity, JCPS

Source: Greater Louisville Project
Data from Kentucky Department of Education School Report Card

Source: Kentucky Department of Education

Geography: Louisville Metro

Kindergarten readiness is determined based on the BRIGANCE K Screen III. Kindergarten readiness incorporates a child's academic/cognitive development, language development, and physical development into a single measure. The numbers above reflect kindergarten readiness among Jefferson County Public School students and do not reflect kindergarten readiness among students enrolled in private schools or who are homeschooled.

Data on kindergarten readiness is available at the Kentucky Department of Education's Open Data portal here: http://openhouse.education.ky.gov/Data.

C2.i – College and career readiness table

Group	Total graduates	Graduates who are college and career ready	Percent
All students	6106	3872	63.4
Students eligible for free/reduced-price meals	3310	1732	52.3
Students not eligible for free/reduced-price meals	2796	2140	76.5

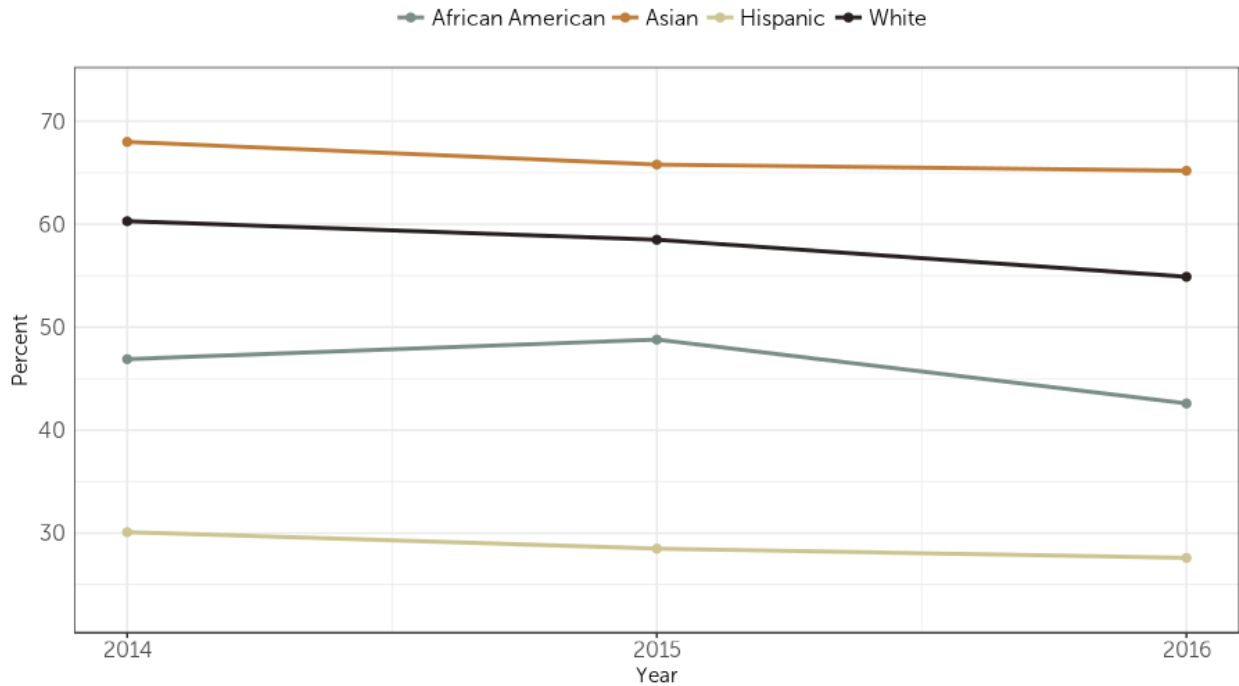C2.ii – College and career readiness trendline

College and Career Readiness
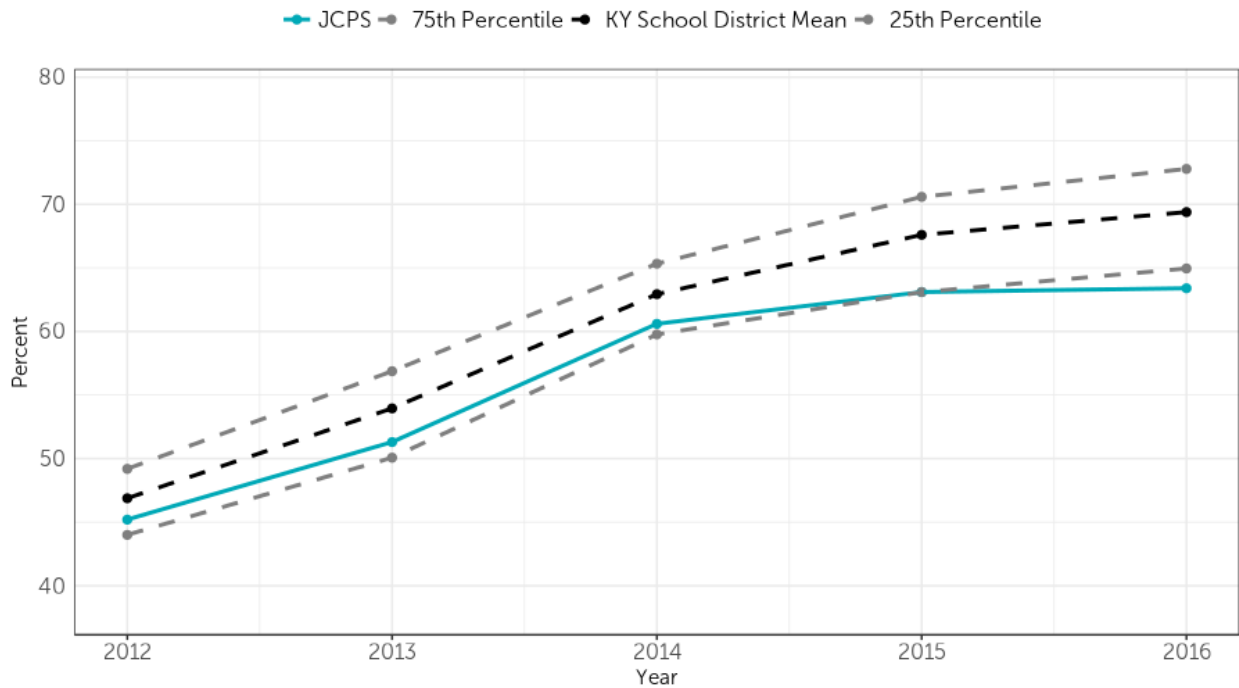
Source: Greater Louisville Project
Data from Kentucky Department of Education School Report Card

C2.iii – College and career readiness trendline by ethnicity

College and Career Readiness by Ethnicity, JCPS
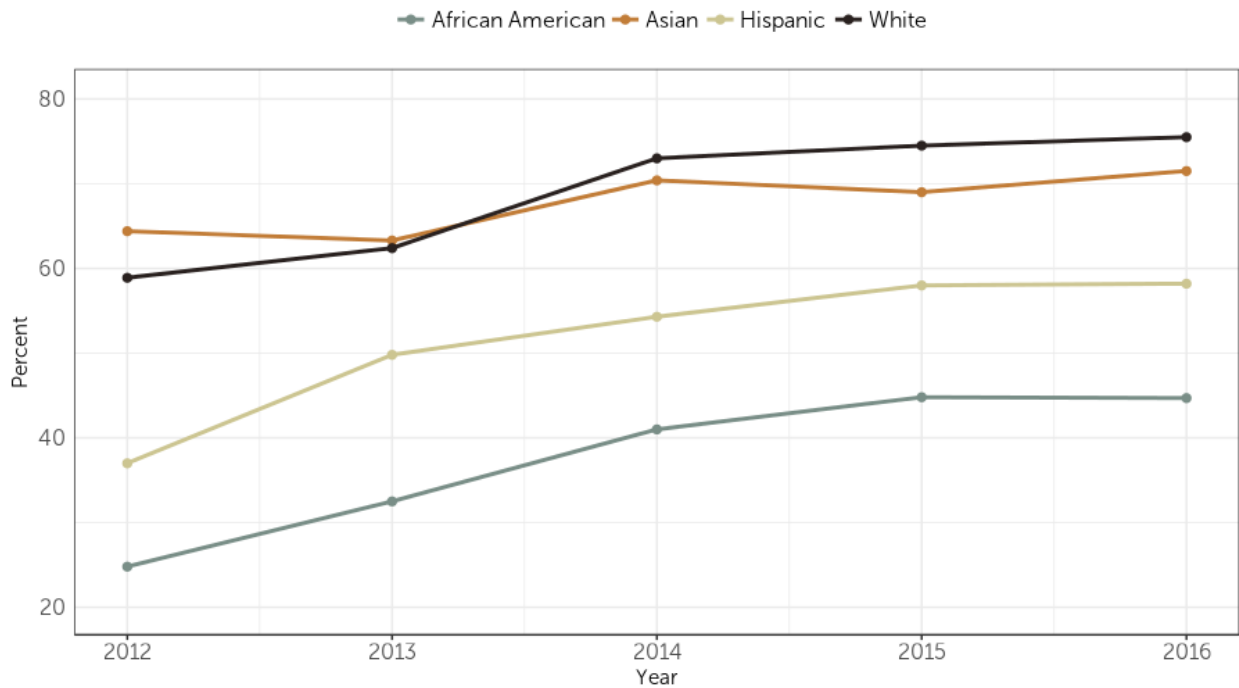
Source: Greater Louisville Project
Data from Kentucky Department of Education School Report Card

Source: Kentucky Department of Education

Geography: Louisville/Jefferson County MSA

College and career readiness measures the number of high school graduates who are determined to be ready for college and/or ready for a career based on their scores on several tests. The numbers above capture college and career readiness among Jefferson County Public School students and do not reflect college and career readiness among students enrolled in private schools or who are homeschooled.

The measure used in this report does not distinguish between graduates who are *either* college or career ready and graduates who are *both* college and career ready. An alternate method of calculating college and career readiness is sometimes used that awards a "bonus" for graduates who are both college and career ready. Under this alternate method, graduates who are both college and career ready count as 1.5 graduates who are either college or career ready (see the formula below). Using this formula, the college and career readiness of JCPS graduates in 2016 was 72.2%. The Greater Louisville Project does not use this weighting system.

$$CCR\ rate = \frac{graduates\ who\ are\ only\ college\ ready + graduates\ who\ are\ only\ career\ ready + 1.5\ x\ graduates\ who\ are\ both\ college\ and\ career\ ready}{total\ graduates}$$

College and career readiness data by school and school district can be found here: http://applications.education.ky.gov/SRC/DataSets.aspx.

The qualification tests for college and career readiness are listed here: https://education.ky.gov/CTE/Documents/CCRChart.pdf

C3.i – Children in households where no one has a high school degree or equivalent table

	Percent of children in poverty living in a household without someone who holds a high school degree or equivalent	Percent of children not in poverty living in a household without someone who holds a high school degree or equivalent
Birmingham	17.2	2.4
Charlotte	19.3	2.9
Cincinnati	11.2	1.0
Columbus	21.5	2.1
Grand Rapids	12.6	1.5
Greensboro	23.1	4.1
Greenville	23.8	3.7
Indianapolis	25.2	2.8
Kansas City	16.7	3.5
Knoxville	16.0	2.4
Louisville	18.2	1.2
Memphis	14.9	4.8
Nashville	23.5	2.4
Oklahoma City	24.0	4.3
Omaha	24.2	2.8
St. Louis	10.6	1.4
Tulsa	16.2	2.6

C3.ii – Children in poverty in households where no one has a high school degree or equivalent ranking

Children in poverty in households where no one has a high school degree or equivalent, 2015

Rank	City	Percent
1.	Indianapolis	25.2
2.	Omaha	24.2
3.	Oklahoma City	24.0
4.	Greenville	23.8
5.	Nashville	23.5
6.	Greensboro	23.1
7.	Columbus	21.5
8.	Charlotte	19.3
9.	Louisville	18.2
10.	Birmingham	17.2
11.	Kansas City	16.7
12.	Tulsa	16.2
13.	Knoxville	16.0
14.	Memphis	14.9
15.	Grand Rapids	12.6
16.	Cincinnati	11.2
17.	St. Louis	10.6

Percent

Source: Greater Louisville Project Analysis of
American Community Survey Microdata Data via IPUMS

Source: ACS microdata.

Geography: Louisville/Jefferson County MSA

A child is considered to live in a household where someone has a high school degree or equivalent if anyone living in the household has a high school degree, a GED certificate, or an equivalent certification. The credential is most often held by a parent, but it could belong to a sibling, relative, or unrelated adult.
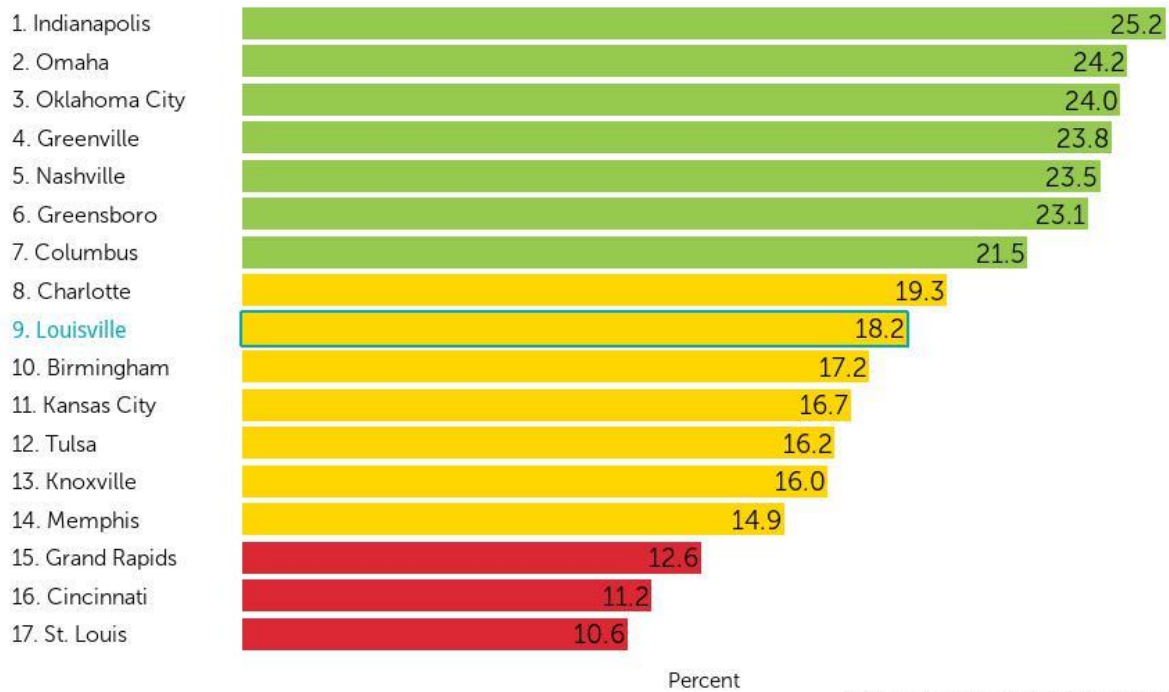
C4.i – Children in households where no one has an associate degree or higher table

	Percent of children in poverty living in a household without someone who holds an associate degree	Percent of children not in poverty living in a household without someone who holds an associate degree
Birmingham	84.8	34.3
Charlotte	76.6	34.5
Cincinnati	76.8	33.0
Columbus	86.7	34.6
Grand Rapids	75.4	35.2
Greensboro	78.2	45.5
Greenville	85.7	37.5
Indianapolis	85.0	33.4
Kansas City	83.8	33.5
Knoxville	85.9	39.8
Louisville	78.9	37.2
Memphis	94.0	41.8
Nashville	82.6	38.3
Oklahoma City	82.8	46.2
Omaha	72.7	33.6
St. Louis	80.1	33.2
Tulsa	79.9	37.4

C4.ii – Children in poverty in households where no one has an associate degree or higher ranking

Children in poverty in households where no one has an associate degree or higher, 2015

Rank	City	Percent
1.	Omaha	72.7
2.	Grand Rapids	75.4
3.	Charlotte	76.6
4.	Cincinnati	76.8
5.	Greensboro	78.2
6.	Louisville	78.9
7.	Tulsa	79.9
8.	St. Louis	80.1
9.	Nashville	82.6
10.	Oklahoma City	82.8
11.	Kansas City	83.8
12.	Birmingham	84.8
13.	Indianapolis	85.0
14.	Greenville	85.7
15.	Knoxville	85.9
16.	Columbus	86.7
17.	Memphis	94.0

Percent

Source: Greater Louisville Project Analysis of American Community Survey Microdata Data via IPUMS

Source: ACS microdata.

Geography: Louisville/Jefferson County MSA
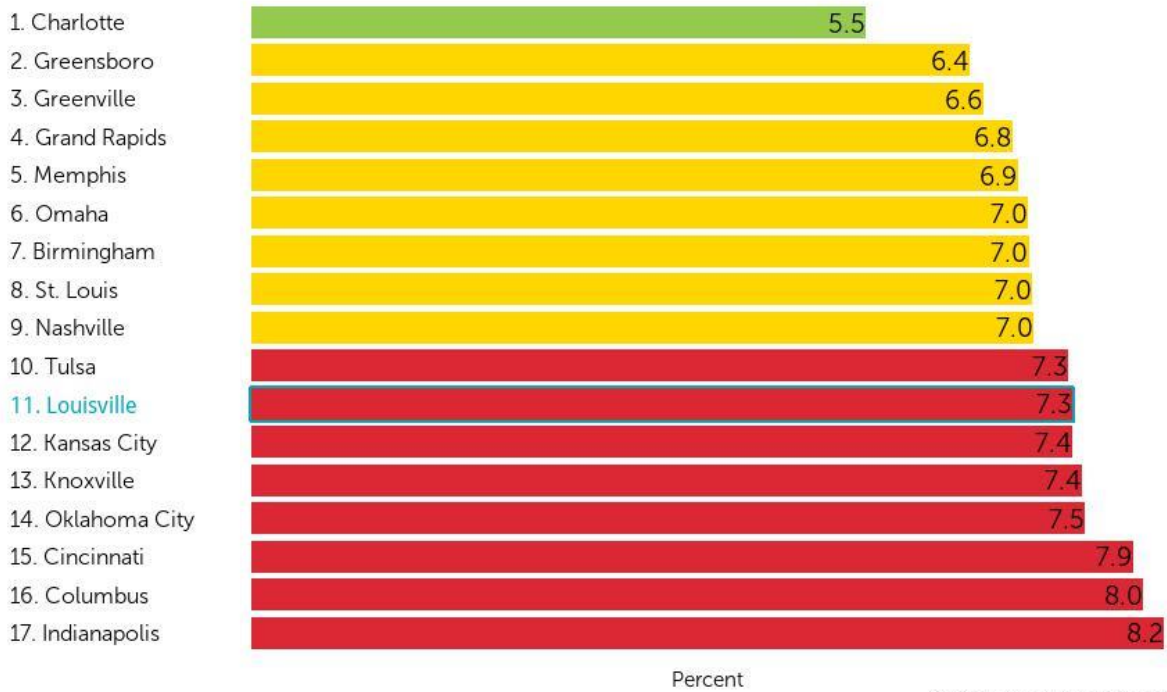
A child is considered to live in a household where someone has an associate degree or higher if anyone living in the household has an associate degree, a bachelor's degree, a master's degree, a professional degree beyond a bachelor's degree (such as an MD), or a doctoral degree. The credential is most often held by a parent, but it could belong to a sibling, relative, or unrelated adult.

Appendix D – Health

D1.i – Life expectancy gap between females in the top and bottom income quartiles ranking

Life Expectancy Gap Between Females in the Top and Bottom Income Quartiles

Rank	City	Percent
1.	Charlotte	5.5
2.	Greensboro	6.4
3.	Greenville	6.6
4.	Grand Rapids	6.8
5.	Memphis	6.9
6.	Omaha	7.0
7.	Birmingham	7.0
8.	St. Louis	7.0
9.	Nashville	7.0
10.	Tulsa	7.3
11.	Louisville	7.3
12.	Kansas City	7.4
13.	Knoxville	7.4
14.	Oklahoma City	7.5
15.	Cincinnati	7.9
16.	Columbus	8.0
17.	Indianapolis	8.2

Percent

Source: Greater Louisville Project
Data from the Health Inequality Project

D1.ii – Life expectancy gap between males in the top and bottom income quartiles ranking

Life Expectancy Gap Between Males in the Top and Bottom Income Quartiles

Rank	City	Percent
1.	Charlotte	9.3
2.	Tulsa	9.4
3.	Greensboro	9.5
4.	Grand Rapids	9.6
5.	Kansas City	9.6
6.	St. Louis	9.9
7.	Oklahoma City	10.0
8.	Omaha	10.2
9.	Birmingham	10.6
10.	Columbus	10.7
11.	Louisville	10.7
12.	Greenville	10.7
13.	Nashville	10.7
14.	Memphis	10.8
15.	Indianapolis	10.9
16.	Cincinnati	11.1
17.	Knoxville	11.4

Percent
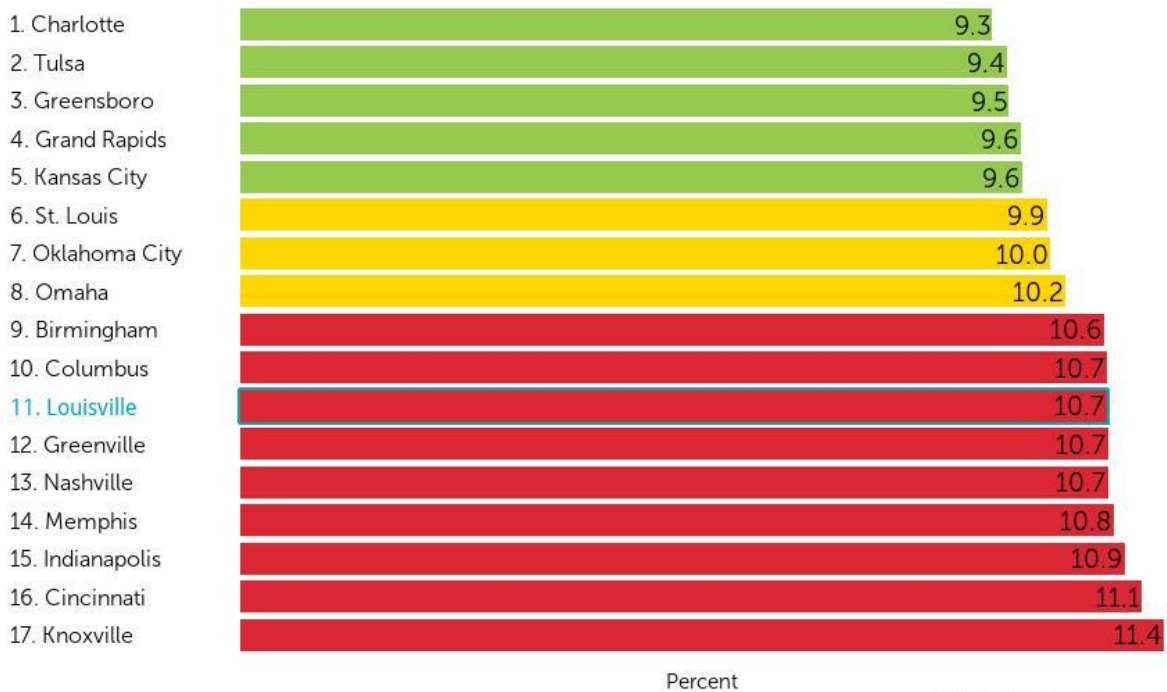
Source: Greater Louisville Project
Data from the Health Inequality Project

Source: The Health Inequality Project

Geography: Louisville Metro

Life expectancy estimates are the difference between point estimates of life expectancy for females and males at age 40 in the top and bottom income quartiles. This measure is based on data from 2001-2014. More information about the Health Inequality Project can be found here: https://healthinequality.org/.

D2.i – Poor children who are food insecure table

	Percent of children in poverty living in homes that are food insecure	Percent of children above poverty living in homes that are food insecure
Birmingham	41.5	17.2
Charlotte	46.9	23.9
Cincinnati	46.9	18.3
Columbus	54.0	18.2
Grand Rapids	60.4	16.5
Greensboro	65.0	14.9
Greenville	42.4	12.4
Indianapolis	47.2	12.8
Kansas City	58.6	15.1
Knoxville	49.9	15.1
Louisville	44.3	17.0
Memphis	26.7	21.1
Nashville	51.8	11.8
Oklahoma City	42.8	15.3
Omaha	46.2	15.4
St. Louis	43.2	15.7
Tulsa	36.2	22.9

D2.ii – Poor children who are food insecure ranking

Poor children living in housheolds that are food insecure

Rank	City	Percent
1.	Memphis	26.7
2.	Tulsa	36.2
3.	Jacksonville	37.3
4.	Raleigh	38.4
5.	Birmingham	41.5
6.	Greenville	42.4
7.	Oklahoma City	42.8
8.	St. Louis	43.2
9.	Louisville	44.3
10.	Omaha	46.2
11.	Cincinnati	46.9
12.	Charlotte	46.9
13.	Indianapolis	47.2
14.	Knoxville	49.9
15.	Nashville	51.8
16.	Richmond	52.2
17.	Columbus	54.0
18.	Dayton	56.4
19.	Kansas City	58.6
20.	Grand Rapids	60.4
21.	Greensboro	65.0

Percent

Source: Greater Louisville Project Analysis of
Current Population Survey Microdata Data via IPUMS
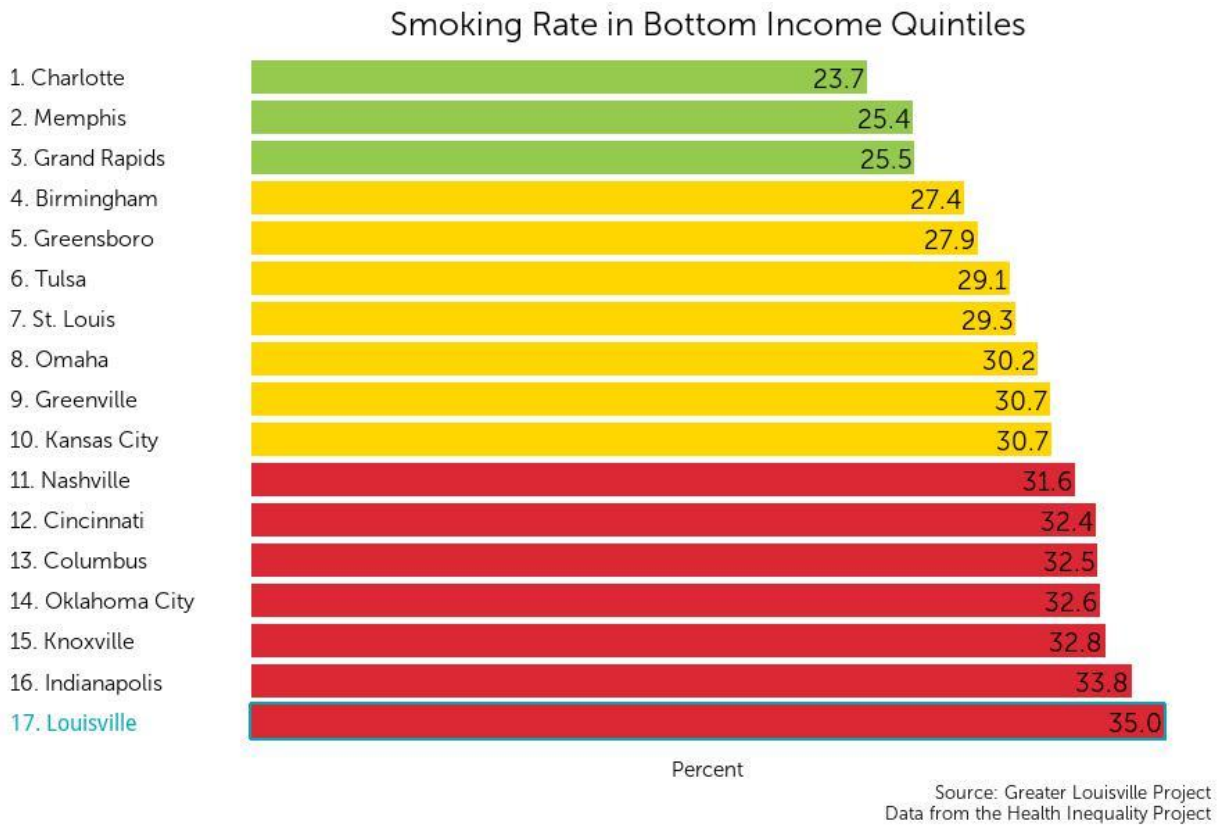
Source: Current Population Survey

Geography: Louisville/Jefferson County MSA

The Current Population Survey (CPS) is a monthly survey of US households. The December survey includes a supplement which asks households with children 18 questions about their access to food. Households with children are classified as "low food insecure" if they report 3-7 food insecure conditions, and "very low food insecure" if they report 8 or more food insecure conditions. This report classifies both conditions as "food insecure."

The December CSP does not provide exact household income or poverty status. Instead, households are classified into income brackets. Households were considered to be in poverty if their reported income bracket extended below the poverty line, although they might actually been above the poverty line. As a result, some households that are not poor were classified as poor. The percentage of poor children who are food insecure is likely underestimated, and the percentage of non-poor children who are food insecure is likely overestimated.

The statistic is calculated using data collected from 2005-2015 due to the small monthly sample size of the CPS.

D3.i – Smoking rate in bottom income quartile ranking

Smoking Rate in Bottom Income Quintiles

Rank	City	Percent
1	Charlotte	23.7
2	Memphis	25.4
3	Grand Rapids	25.5
4	Birmingham	27.4
5	Greensboro	27.9
6	Tulsa	29.1
7	St. Louis	29.3
8	Omaha	30.2
9	Greenville	30.7
10	Kansas City	30.7
11	Nashville	31.6
12	Cincinnati	32.4
13	Columbus	32.5
14	Oklahoma City	32.6
15	Knoxville	32.8
16	Indianapolis	33.8
17	Louisville	35.0

Percent

Source: Greater Louisville Project
Data from the Health Inequality Project

D3.ii – Gap in smoking rate between top and bottom income quartiles ranking

Gap in Smoking Rates between Top and Bottom Income Quintiles

Rank	City	Percent
1	Memphis	11.5
2	Charlotte	13.3
3	Grand Rapids	13.5
4	Kansas City	14.1
5	Birmingham	14.1
6	Greensboro	14.6
7	St. Louis	15.6
8	Omaha	16.5
9	Tulsa	16.7
10	Greenville	19.1
11	Indianapolis	19.5
12	Nashville	20.2
13	Columbus	20.3
14	Oklahoma City	20.5
15	Knoxville	21.1
16	Louisville	21.8
17	Cincinnati	22.2

Percent

Source: Greater Louisville Project
Data from the Health Inequality Project
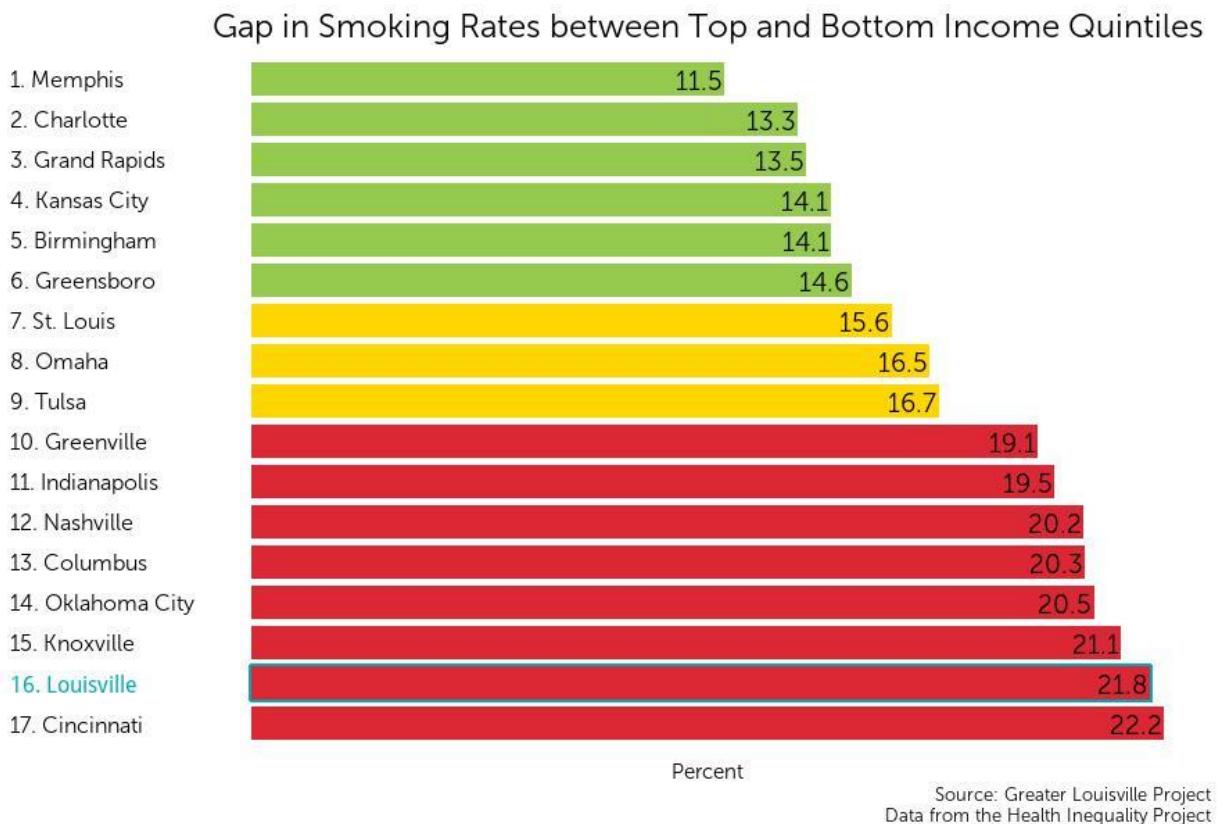
Source: The Health Inequality Project
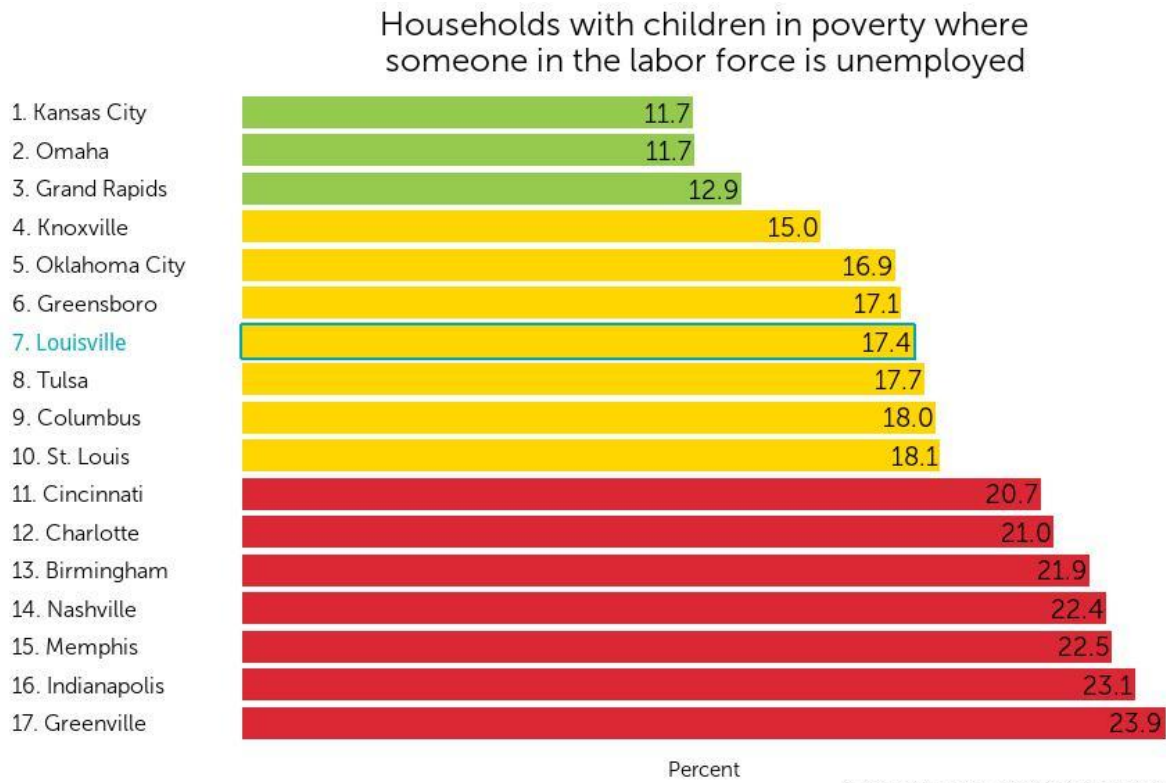
Geography: Louisville Metro

Smoking rate data was originally compiled by the Behavioral Risk Factor Surveillance System and was processed by the Health Inequality Project using data collected from data from 2001-2014. More information about the Health Inequality Project can be found here: https://healthinequality.org/.

Appendix E – Jobs

E1.i – Households in poverty with children where someone is unemployed table

	Percent of households in poverty with children where someone is looking for work	Percent of households above the poverty line with children where someone is looking for work
Birmingham	21.9	4.8
Charlotte	21.0	8.7
Cincinnati	20.7	6.4
Columbus	18.0	7.0
Grand Rapids	12.9	8.7
Greensboro	17.1	5.9
Greenville	23.9	7.6
Indianapolis	23.1	6.4
Kansas City	11.7	6.0
Knoxville	15.0	10.4
Louisville	17.4	6.6
Memphis	22.5	9.5
Nashville	22.4	6.2
Oklahoma City	16.9	6.8
Omaha	11.7	4.8
St. Louis	18.1	8.7

E1.ii – Households in poverty with children where someone is unemployed ranking

Households with children in poverty where someone in the labor force is unemployed

Rank	City	Percent
1.	Kansas City	11.7
2.	Omaha	11.7
3.	Grand Rapids	12.9
4.	Knoxville	15.0
5.	Oklahoma City	16.9
6.	Greensboro	17.1
7.	Louisville	17.4
8.	Tulsa	17.7
9.	Columbus	18.0
10.	St. Louis	18.1
11.	Cincinnati	20.7
12.	Charlotte	21.0
13.	Birmingham	21.9
14.	Nashville	22.4
15.	Memphis	22.5
16.	Indianapolis	23.1
17.	Greenville	23.9

Percent

Source: Greater Louisville Project Analysis of
American Community Survey Microdata Data via IPUMS

Source: American Community Survey

Geography: Louisville/Jefferson County MSA

A person is considered to be unemployed if they do not have a job and are actively looking for work.
Someone is not considered to be unemployed if they are not looking for a job.

E2 – Ratio of the poor to not-poor who rely on public transit table

	Percent of workers in poverty who rely on public transportation to get to work	Percent of workers not in poverty who rely on public transportation to get to work	Ratio of poor to non-poor workers who rely on public transportation to get to work
Kansas City	4.6	2.0	2.3
Greensboro	2.7	0.9	3.0
Nashville	7.1	2.3	3.1
Charlotte	10.2	3.1	3.2
Columbus	7.6	2.3	3.3
Cincinnati	11.1	3.2	3.5
Indianapolis	5.7	1.4	4.2
Louisville	9.7	2.3	4.2
St. Louis	14.6	3.4	4.2
Knoxville	1.9	0.4	4.6
Greenville	1.5	0.3	5.1
Grand Rapids	9.4	1.5	6.1
Memphis	6.5	0.9	7.0
Omaha	6.8	1.0	7.0
Birmingham	4.8	0.7	7.3
Oklahoma City	2.5	0.3	9.0

Source: ACS Table S0802

Geography: Louisville Metro

In Louisville, 9.7% of workers in poverty and 2.3% of workers not in poverty rely on public transportation to get to work. While the ratio between the two is meaningful in Louisville, it is not very comparable to other cities where the utilization of public transportation is dramatically different. As such, it is not presented as a ranking graph.

Appendix F – Methodology

F1 – Code used to generate statistics

All of the statistics in the report come from publicly available data sources. The source data used in this report is available in the online repository below. To reduce the file size so the ACS and CPS microdata could be included in the GitHub repository, those files were filtered to include only peer city observations. To speed up the amount of time it takes to read the microdata into R, the ACS and CPS data sets were also converted from .csv to .feather files. Those transformations are listed below. The code that generates the statistics in this report is written in R.

All of the data and code used to generate the report is available at
https://github.com/greaterlouisvilleproject/ccu15_focus_on_poverty.

Data source	Transformation
ACS Tables	No change
ACS microdata	Converted from .csv to .feather and trimmed to peer cities
CPS microdata	Converted from .csv to .feather and trimmed to peer cities
Kentucky education data	Converted from .xlsx to .csv
Health data	No change

F2 – Geography: Louisville Metro vs. the Louisville/Jefferson County MSA

All of the statistics in this report describe either Louisville Metro or the Louisville/Jefferson County MSA. The geographic area that each statistic describes is available directly beneath that statistic's section in the appendix.

Louisville Metro

Statistics that describe Louisville Metro were calculated based on survey response from all households within Jefferson County (including those who live in independent municipalities within Jefferson County.)

Louisville/Jefferson County MSA

Statistics that describe Louisville Metro were calculated based on survey response from households within Jefferson County, KY; Bullitt County, KY; Henry County, KY; Meade County, KY; Oldham County, KY; Shelby County, KY; Spencer County, KY; Trimble County, KY; Clark County, IN; Floyd County, IN; Harrison County, IN; Scott County, IN; and Washington County, IN.

According to the Census Bureau, a Metropolitan Statistical Area (MSA) is "a core area containing a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that core." Statistics at the MSA level describe the broader Louisville community that extends past the boundaries of Jefferson County alone. The statistics in this report which were calculated from microdata are available at the MSA level and not the county level.

F3 – Notes on statistics produced using microdata

The American Community Survey (ACS) and Current Population Survey (CPS) are conducted by the United States Census Bureau. The ACS is the largest household survey in the United States, collecting data from approximately 3.5 million households each year. The CPS collects data from 60,000 households per year. In addition to publishing statistics online, the Census Bureau publishes individual responses to the ACS and CPS known as microdata. This data can be downloaded from the Census Bureau website. It is also available through the Integrated Public Use Microdata Series (IPUMS), sponsored by the Minnesota Population Center at the University of Minnesota. IPUMS collects microdata and makes it easy to download and process. The data in this report was downloaded from IPUMS.

Statistics were generated using microdata by subsetting the observations to the appropriate group (e.g. households in poverty with children or children living in poverty), then calculating the percentage of the sample with the characteristic. Both the ACS and the CPS include survey weights. For statistics where the unit of observation is the household, the statistic was weighted using household weights. For statistics where the unit of observation is children, the statistic was weighted using the individual weights. More information about using ACS microdata is available here: https://usa.ipums.org/usa/intro.shtml, and more information about using CPS microdata is available here: https://cps.ipums.org/cps/intro.shtml.

Statistics using ACS and CPS microdata are calculated at the MSA level, though the MSA for each observation is not found within the original data. For privacy purposes, the Census Bureau does not publish microdata at the county or MSA level. Since some counties have only a few hundred residents, it would be possible to link individual observations to people. Instead, observations are identified by Public Use Microdata Area (PUMA), a collection of tracts or counties that comprise more than 100,000 people. IPUMS calculates the MSA for each observation using the PUMA associated with it; however, PUMAs and MSAs are not necessarily coterminous—some PUMAs cross MSA boundaries. IPUMS estimates that approximately 2% of the population living in the Louisville MSA was excluded from the samples used in this report, although this error is different for Louisville's peer cities. More information about the process used to generate MSAs from PUMAs is available here: https://usa.ipums.org/usa-action/variables/MET2013#description_section.

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