COLLEGE STUDENTS ARE NOT POOR: REASSESSING POVERTY RATES IN KANSAS COLLEGE TOWNS

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Abstract - The poverty rate is the standard metric for quantifying how much of a state, county, or nation lives in a state of material deprivation. The poverty rate is used by businesses trying to locate facilities, researchers trying to understand the economy, and the social safety net trying to target aid to those most in need. While mismeasurement is common in all data, we quantify the large magnitude of mismeasurement in some jurisdictions, those were the population consists of a large proportion of college students. We show that the presence of college students sometimes doubles the poverty rate above what it would be without the presence of those students. We also show inconsistencies in how college students effect the poverty rate calculation. We do not recommend a fix. Rather we call for better poverty metrics which look beyond money-income in defining poverty, considering in addition other forms of income and need.

I. INTRODUCTION

The poverty rate is a common metric for describing what proportion of the county, state, or nation lives in a condition whereby income is below an amount necessary to support basic necessities. Long-term poverty not only brings discomfort, but is also associated with shortened life spans, declining health, and has long-term negative effects on society such as crime.

Consider the typical college student. This person has income below the poverty level, but may have money coming in from loans, may receive some financial support from parents in cash or in kind, probably does not support a family, usually has health care on campus, can economize on large expenses like rent by living with peers. Additionally, the worst effects of poverty, the long term effects, do not apply since this student is investing in a future above the poverty level.

College towns, with an abundance of college students, tend to have high poverty rates. But this reflects the college students, not a community with short life-spans, poor health, or high incidence of poverty-related crime. Quite the opposite, college towns tend to be healthier and safer than the average and their inhabitants will live longer.

In order to better align poverty statistics with the true costs of poverty, in this research we re-calculate the poverty rates for Kansas counties, excluding college students. Using the traditional poverty rate measure, four of the six highest poverty counties in Kansas contain Regents institutions. Using our adjusted poverty rate definition none are still in the worst six, or even in the worst ten percent. Two of these counties, those with the largest student populations, drop from the worst to the middle. Two containing smaller schools, drop out of the worst 10%. And one drops from the 75th percentile to the 25th percentile.

In the next section, we explain the results of our research. The third section details how we calculate each poverty rate and section four is our conclusion. The Appendix listed at the end lists all of the counties in Kansas with their poverty rates and rankings.

II. RESULTS

Poverty rates in Kansas can be deceiving because Kansas is home to some major colleges and/or universities in relatively small counties. There are 105 counties in Kansas and our research focuses on Ellis County (Ft. Hays State University), Douglas County (University of Kansas), Lyon County (Emporia State University), Crawford County (Pittsburg State University), and Riley County (Kansas State University)[1].

Using data covering 2012-2016, before the adjustment, Crawford, Lyon, and Riley Counties were similarly situated with poverty rates just above 20%. Douglas County was below 20%, and Ellis County was just above 14%, being the best of the five. After applying the adjustment, Crawford and Lyon Counties were about even at 16% and Douglas and Riley Counties were nearly cut in half (10%-12%). Ellis County still had the lowest poverty rate and dropped by almost half. The poverty estimates for all of the five improved by at least 4.5 percentage points and the most improved county was Riley County which decreased its poverty rate by over eleven percentage points (by half). Figure 1 shows

[1]We exclude Sedgwick county and WSU from our focus because the student population is a small fraction of the large metropolitan area. Indeed, when we adjust the poverty rate Sedgwick county drops from a poverty rate of 14.63% to 14.31% and a rank of 78 to 77.

the poverty rate estimates including college students and not including college students.

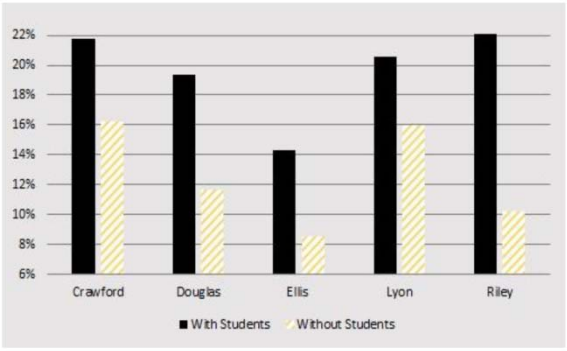


Figure 11: Poverty Rates, Traditional and Adjusted (select Kansas counties)

Before the adjustment, four out of the five college counties represented four of the six highest poverty counties in the state of Kansas. After applying the poverty rate adjustment excluding college students, we see lower poverty rates for all five counties. Two out of the four counties which started above 100, the two with large universities, switch from the worst six to the middle quintile. Lyon and Crawford County remain high but have dropped out of the bottom 10 and Ellis County drops from approximately the 75th percentile to below the 25th percentile. The rankings of each of the five counties improves by at least nine places. Riley County improves the most going from a 104 ranking to a 45 ranking. Figure 2 shows rankings with and without the adjustment.

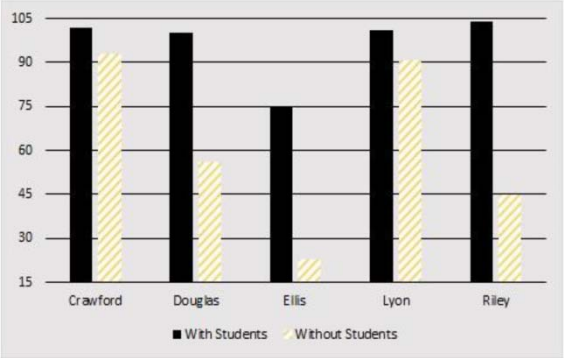


Figure 22: Rankings, Traditional and Adjusted (select Kansas counties)

III. METHODOLOGY

Our methodology is consistent with that developed by Rorem and Juday (2016). In order to source the data for our calculations, we use U.S. Census Bureau's table B14006, "Poverty Status in the Past 12 Months by School Enrollment by Level of School for the Population 3 Years and Over" which reports data from the 2012-2016 American Community Survey 5-year Estimates. The table reports the number of individuals living in households with annual income above the poverty level and the number below that level. The table also provides, for each of these two groups, a breakdown of the number of people in each of the following education categories: nursery school/preschool, kindergarten, grade 1 to grade 4, grade 5 to grade 8, grade 9 to grade 12, college undergraduate years, graduate or professional school, and not enrolled in school.

In order to calculate the "traditional" poverty rate we use the following calculation:

$$PovertyRate_{traditional} = \frac{TotPoor}{TotPoor + TotNot}$$

Where:
TotPoor is the number of people living in the county who are members of a household with income below the poverty level, and
TotNot is the number of people living in the county who are members of a household with income above the poverty level.

In order to calculate the "adjusted" poverty rate we simply recalculate the poverty rate for all people excluding college students:

$$PovertyRate_{adjusted} = \frac{TotPoor - CollegePoor}{(TotPoor - CollegePoor) + (TotNot - CollegeNot)}$$

Where:
CollegePoor is the number of people categorized as living in poverty and either "college undergraduate", or "college graduate or professional school", and
CollegeNot is the number of people categorized as not living in poverty and either "college undergraduate", or "college graduate or professional school"

The astute reader may have noticed that even our "traditional" calculation is different from the "official" poverty rates published by the Census Bureau. While our two rates described above represent the percentage of people in the population who live in households earning income below the poverty rate, the official poverty rate is the percentage of households earning income below the poverty rate. These two numbers are different in two respects. First, if households in poverty have more people than households not in poverty then our "traditional" calculation will be higher than the "official" poverty rate. The county rankings derived from these numbers are different only in the sense that this difference in household sizes is different across counties.

The second respect in which our "traditional" poverty rate will differ from the "official" rate is in the way students living on-campus are treated. In the "official" poverty rate calculation, these students are attributed to their parents' households. However when a student lives in off-campus housing she becomes an independent household. Thus students living on-campus do not effect the "official" poverty

rate of a college county or any other county. For the "traditional" poverty rate, they would be attributed to the college county, and their poverty status would derive from their parents' poverty status. Thus the poverty rate for this group would reflect the poverty rate for the average household statewide with college-age children. This will tend to pull the poverty rate in a college town toward the average/median. As we noticed, despite the on-campus students pulling the college counties closer to the average, the off-campus students are quite clearly pulling them back up in the extreme (four of the worst six statewide).

For the sake of the interested reader we have provided Table A2 in the appendix which lists the counties and shows their rates according to all three poverty metrics: the official rate (households in poverty), our traditional rate (people in poverty), and our adjusted metric (people in poverty adjusting for college students). Scrutiny of this table demonstrates that there is very little difference between the first two columns, but that as noted above, the third column is indeed quite different from either of the first two, for the five college-counties mentioned above.

CONCLUSION

Poverty rates are a vital piece of information that economists and decision makers use regularly. However, the official poverty rate is a misleading metric as pertains to college students living off campus. Thus the poverty rate for small localities that house large universities is especially distorted. Looking at Kansas as a whole, the poverty estimate including students is 12.94%. After recalculating the poverty rate to exclude college students, the poverty rate is 11.90%. We believe this to be a better poverty measure.

REFERENCES

Rorem, Annie and Luke Juday, "How to Modify Poverty Calculations for College Towns", StatCh@t, Weldon Cooper Center for Public Service: Charlottesville VA, 2016 March 7.

APPENDIX

Table A1: Poverty Rates and Ranks, Traditional and Adjusted (Select Kansas Counties)

County	Poverty Rate (Traditional)	Rank (Traditional)	Poverty Rate (Adjusted)	Rank (Adjusted)
Trego	4.48%	1	3.89%	1
Hodgeman	4.72%	2	4.67%	2
Scott	5.36%	3	5.17%	3
Johnson	5.94%	4	5.52%	4
Sheridan	6.10%	5	6.01%	5
McPherson	6.78%	8	6.27%	6
Ellis	14.27%	75	8.55%	23
Riley	22.13%	104	10.25%	45
Douglas	19.33%	100	11.63%	56
Lyon	20.56%	101	16.00%	91
Crawford	21.76%	102	16.26%	93
Seward	18.14%	97	18.11%	102
Neosho	19.13%	99	18.81%	103
Wyandotte	22.19%	103	21.90%	104
Woodson	22.97%	105	22.95%	105

Table A2: Poverty Rates, Official, Traditional and Adjusted (Select Kansas Counties)

County	Official	Traditional	Adjusted
Crawford	21.80%	21.76%	16.26%
Douglas	19.20%	19.33%	11.63%
Ellis	14.40%	14.27%	8.55%
Lyon	20.90%	20.56%	16.00%
Riley	21.70%	22.13%	10.25%

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