"Determinants of Youth Poverty: A Zip Code Analysis"

By

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Youth poverty has become an increasingly attractive topic as policy makers, government and non-government officials become interested because of its tremendous social and financial cost. US Census statistics revealed that about 31.1 millions people were poor in 2000, but the poverty trend declined from13.1 percent to 12.4 percent over the last decade and this occurred nationwide. Poverty is unevenly distributed across America as well as in Kentucky. Geographical variation in poverty is present, but it is higher in some areas in than other. Friedman and Litchter showed in their studies that child poverty is drawn due to spatial inequality in American children using county level data. Crandall and Weber introduced Census-tract level data to measure poverty changes during the past two decades in US. This study uses Zip Code data to determine the spatial difference in youth poverty in Kentucky.

Poverty can change not only over time but also over space. The reason for these disparities in the standard of living mainly come from communities in different locations and uneven infrastructure in the community such as industrial structure, density of economic activity, natural resources, public goods, and government policies and programs. Authors from various disciplines compare rural and urban poverty using different geographic levels of data. Most poverty researchers use demographic characteristics such as sex, age, race, and family structure and economic conditions such as employment types and duration as well as other social factors to measure poverty. Poverty research reached a new level when spatial externalities were included in the model. Renkow found that rural labor-market conditions are more sensitive than urban labor-market conditions, and he showed that returning to school is significantly lower in rural counties than in urban counties.

The county, Census-tract or other level of data has their own advantages and disadvantages. These are very useful and convenient geographic units, but county data suffers from spatial aggregation (Crandall & Weber). There are only a few studies where researchers used Zip Code data, as it is one of the smallest geographic units to measure poverty. Kirby, Coyle & Gould used the Zip Code data to study of the relation of young teenage birth rates and teen poverty in California. This is the first attempt Zip Code data was used to compare the youth poverty and to analyze the effect of spatial interference in the model. Series socioeconomic indicators are employing in this paper to determine youth poverty.

The objectives of this paper are

1. To estimate the extent of youth poverty in Kentucky,
2. To estimate the Gini coefficients for various age groups in Kentucky by Zip Code, and
3. To evaluate and compare the socioeconomic and demographic factors that influences the rural and urban youth poverty at Zip Code.

The motivation of this paper comes from the different ways economically-deprived youth are not only at higher risk for themselves and for the entire society. Young adulthood is a most important time for a person. In this transition period, youth build their future through access to educational opportunity, adequate health care, stable housing and positive relationships with others. Once youth enter in poverty, it is hard for them to get out from under this insufficiency of basic needs because youth that are growing in poor families are more likely to engage in high-risk behavior. These behaviors include pregnancy, dropping out of school, or entering the job market before they are ready. Again, youth who engage in high-risk behavior are most likely to be exposed to poverty in the future because they drop out. Young parents will have less income because

of low education with higher family responsibilities. Youth are not solely responsible for their poverty, but the surroundings they live in also play a major role in bringing them into poverty. The poor youth will enter a vicious circle, likely to continue and producing poor adults and poor child family members into the future. Ultimately, this process reduces social welfare as a whole. Youth poverty is a threat to societies for the future. From a social welfare perspective, goal should be search the causes of youth poverty and invent better policies to eradicate it. Public policy based upon the data sets Zip Code data should be effective and efficient, since the analysis can apply to very small communities. Different prevention programs and comprehensive intervention efforts with poor youth can break the vicious cycle of youth poverty and help them to make a path toward a productive, healthy future.

The Economic Theory of Youth Poverty

Defining youth is a difficult, as a person who is neither a child nor an adult, but in between. The United Nations defines the individual in between the age 13 and 30 are referred as a youth. Different countries and administrative regions use more narrow definitions within that age frame. In this paper the age-group of 18-24 years defined as youth which is consistent with 2004 Report on Illinois poverty studies. Increased responsibilities and partial freedom make them separate from all other age groups.
The Gini coefficient is a measure of inequality in a distribution but is also widely used to measure the income inequality of a population for a geographic area. The Gini coefficient is the ratio of area of the Lorenz curve of the distribution to the curve of the uniform distribution to the area under the uniform distribution (Xu). The coefficient is a number which is bounded by 0 to 1, where 0 corresponds to perfect (income) equality and 1 represents perfect (income) inequality.

Figure 3.1 illustrates income inequality across various age groups in Kentucky. The Lorenz curve suggests a greater inequality of income among the youth population than for other age groups in Kentucky. The Gini coefficients calculation supports the evidence.

Assume n is population, and y_i is population by age group where we indexed in increasing order ($y_i \leq y_{i+1}$) within a Zip code. Feiand, Ranis and Kuo defined the Gini index as $G = \frac{2}{n} u_y - \frac{n+1}{n}$, and where u_y is the mean, is given by

$$u_y = \frac{\sum_{i=i}^{n} i y_i}{\sum_{i=1}^{n} y_i}$$, and after simplifying through some algebra, find as below

$$G = \frac{2}{n} u_y - \frac{n+1}{n}$$

$$= \frac{2}{n} u_y - 2\frac{n+1}{n} + \frac{n+1}{n}$$

$$= \frac{n+1}{n} - 2\frac{n+1}{n} + \frac{2}{n} u_y$$

$$= \frac{1}{n}\left[n+1-2(n+1-u_y)\right]$$

$$= \frac{1}{n}\left[n+1-2(n+1-\frac{\sum_{i=i}^{n} i y_i}{\sum_{i=1}^{n} y_i}) \right]$$

$$= \frac{1}{n}\left[n+1-2\frac{\sum_{i=1}^{n}(n+1-i)y_i}{\sum_{i=1}^{n} y_i} \right]$$, which is also consistent with Sen's Gini coefficient.

Then the Gini coefficient is $G = \frac{1}{n}\left(n + 1 - 2\frac{\sum_{i=1}^{n}(n+1-i)\,y_i}{\sum_{i=1}^{n} y_i} \right)$ (Xu).

The Gini coefficient was calculated for all age groups and results represents in Table 3.1. The Gini coefficient is highest for youth population in Kentucky according to the analysis based on the 2000 Census data. The Gini coefficient is 73 percent among the Kentucky youths, which is greater than the total population itself in this state. This evidence of income inequality forwards this study about youth poverty.

In following section a theoretical model of youth poverty developed and how to measure youth poverty. The most popular measures of poverty are head-count ratio (*HCR*), the poverty gap ratio (*PGR*), and the income gap ratio (*IGR*) (Ray). The head count (*HC*) method is used to measure the number of poor youth in this state. Calculation employed here is number of youth between 18-24 years of age, who are below the poverty line according to the 2000 Census data.

Key variables included in the model of youth poverty are (1) type of employment, (2) education, (3) race and (4) geographic location. The economic model of youth poverty can be expressed as

$$Y_{Ti} = f(\mathbf{X_{ji}}\, Y_{Pi}) \qquad i \in N, \tag{3.1}$$

where $Y_{Ti,}$ is income of youth population. Youth partially depend upon their parents or guardians financially and at this age they join the workforce either in part-time or full-time. Assume X_{ji} is the different socioeconomic parameters, and P is parents or guardians of youth on whom they depend directly or indirectly for their day to day basic needs.

$$\text{Then} \quad Y_{Pi} = g(\mathbf{Z_i}) \qquad i \in N, \tag{3.2}$$

where $Y_{Pi,}$ is the income of the parents and depends $\boldsymbol{Z_i}$ a vector of socioeconomic variables. Thus, youth poverty depends upon their parents' or guardians' income, their income, and socioeconomic characteristics in the area they live.

The U.S. Census defines as poor those people whose income is below the poverty level. Again assume Y_{Pi} is the earning which is a product of wage (W) and labor participation (L). $Y_{Pi} = W_i.L_i,$ and the wage and labor participation depend on the various factors. Tokle and Huffman indicated that for any geographic area, the wage rate and participation in the labor force is a function of the existing stock of human capital, local labor market conditions, macroeconomic conditions, and age of the population. In this model the wage of labor (W_i) and quantity of labor (L_i) depend upon the education or training of the workers, type of employment (farming or non-farming), local labor market conditions including the number of full-time workers, race of the worker, and other demographical and socioeconomic factors. Therefore

$$Y_{Pi} = W_i\, L_i \tag{3.3}$$

$$Y_{Ti} = f\,(\boldsymbol{X_{ij}}, Y_{Pi}) \tag{3.4}$$

$$Y_{Ti} = h\,(Y_{Pi}) \qquad \forall i \in N\,, \ \boldsymbol{X_{ij}} = \text{Constant.} \tag{3.5}$$

Hence, several direct or indirect factors are accountable for youth poverty. Poor youth have limited resources and as a result may not able to support their current and future generations which produces intergenerational poverty in the society.

The Econometric Model and Data

The sample used in this analysis was divided into rural and urban subsets based upon the Zip Code. The Zip Code unit works well if it serves only in a rural community or urban

community but problem arise when rural and urban Zip Codes cross the rural-urban boundaries. In this study Zip Code is categories into rural and urban, depending upon the rural and urban population in Zip Code. If more people in rural area than urban then Zip Code categories as rural Zip Code and if more people in urban area than rural then Zip Code categories as urban Zip Code. For our sample in Kentucky 82 percent Zip Codes serving rural communities and 18 percent serve urban communities.

The Econometric Model

The methodology of this research is inspired by Friedman and Litcher, and Ghazouani and Goaled. One of the objectives in this paper is to identify the consistency of contributory factors to youth poverty by employing Zip Code data, and compare results with previous poverty studies. The intensity of vulnerability of youth poverty varies over Zip Codes, and intensities can provide a comparative basis of useful model estimation.

A logit model is employed. This model consists of two alternative and mutually exclusive situations. A sample of total youth population from 2000 Census data was collected and calculated the poor youth population in Kentucky by multiplying the poverty rate 15.8 percent[1] in the year 1999. The sample is divided into two categories. The first category indicate Zip Codes in which the number of poor youths is equals to ten percent or higher, called “high poverty Zip Code”, and “lower poverty Zip Code”, includes the remaining poor youth populations. Friedman and Lichter; Ghazouani and Goaled; and Bardhan used the same econometric approach.

The logit model is

$$Y_i = L\ (\beta_{0+} \beta_j X_{ik} + \beta R_{ij}) + \epsilon_i\ ,$$

Y_i = 1 if proportion of higher number of poor youth population in a Zip Code;

[1] Source: US Bureau of the Census 2000

= 0 if proportion of lower number of poor youth population in a Zip Code.

X_k= number of explanatory variables;

R_j= Rural or Urban, j=1 if rural

j= 0 if urban

ϵ = error term.

The error terms in logistic distribution follows Weibull distribution. In this model, L (.) is the cumulative distribution function, where $L(X) = e^x / (1+e^x)$.

The maximum likelihood function helps to get the estimators for this model. The data for youth poverty consist of n (n=765) numbers of Zip codes ($i=1,.....n$) in Kentucky according to year 1999 and are assumed to be statistically independent. For each Zip Code, the data consist of Y_i and $\boldsymbol{X_i}$, where Y_i is the dependent random variable with possible values 0 and 1 and the vector of explanatory variable is $\boldsymbol{X_i} = [\ 1\ X_{i1}\ \ldots\ldots X_{ij}]'$ including 1 as an intercept.

Assume P_i is the probability of Y_i =1, which is higher number of poor youth population in a Zip code and then solve the logit euqation for P_i and get

$$p_i = \frac{\exp(\alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + ... + \beta_k X_{ik})}{1 + \exp(\alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + ... + \beta_k X_{ik})} \qquad (4.1)$$

Exp is the exponential function and is equivalent to e^x , and get

$$p_i = \frac{1}{1 + e^{-\beta x_i}}. \qquad (4.2)$$

Which is equivalent to equation (4.1)(Allison).

Data

Data used for this study are from the 2000 United States Census Summary Tape File 3F. This analysis follows Kirby, Coyle and Gould who use Zip Code data to examine the linkages between poverty and birth rates among teen girls' in California.

In this model, the dependent variable is the ratio of poor youth age (18 to 24 years) male and female with income below the poverty level in 1999 living in a Zip Code, relative to the total population in of poor youth. Friedmad and Lichter followed the similar approach but used the ratio of children aged 17 and younger living in the county with family incomes below the poverty line in 1989 relative to the total population in that age group, as a dependent variable.

The intensity of the poverty varies with respect to geographic location such as across the country or within a state or even within a county. Bluestone and Harrison argued that US labor markets vary because of uneven regional development. Due to uneven economic development rural and urban communities face varying poverty level. This paper includes rural-urban variable to quantify the difference between these two geographic locations in Kentucky.

Labor force is divided into three categories based on nature of employment, and they are employed, unemployed and not in labor force. Again employed category is divided into two broad subcategories based on type of jobs and duration of employments. There are two major types of jobs in the economy, and they are farm or agricultural related employment and non-farm employment such as transportations, finance, education or management related jobs. And last, labor force is divided into part-time

workers (who work 13 to 35 hours in a week for a year) and full-time workers (who work 35 and above hours in a week for a year).

Non-agricultural employment includes transporation-related jobs, finance-related jobs, education-related jobs or any other non-farming jobs. Generally, urban people depend on non-farm income, but rural people depend on income from agriculture and non-agricultural sources. Martin and Taylor identified a significant positive relationship between the poverty rates and California farm employment. In Kentucky, the unemployment rate has been decreasing in recent years, and within the last five years the rate had fallen to 4.2 percent. Working hours is also a key variable influencing the poverty level. The number of hours worked per week for youth or their parents present in the family is also extremely important variable.

The factors associated with youth poverty are more complicated than for other age groups. Youth income in part they depend upon their parent's income, they may be in school, or they may be employed part-time. As youth goes older they frequently leave home and take an better job. Youth who must depend upon entirely of their poor parent's income, will likely themselves become poor. A number of researchers have recognized that male and female, labor force participation has a significantly affects on poverty.

Poor people have less access to educational facilities than other living in the same geographic location. In a community poor people are hampered by high school early drop out rates, low educational achievement or irregular school attendance (Clawson). Social capital investigators argued that education, training and workshopping are the methods of invest in human capital. Poor people have less exposure than others and education completion rate are an important factor in determining youth poverty rate.

Kentucky has a great mix of different races with different ethnic backgrounds. Clawson explained that the living condition for urban poor is better than rural poor for African-American population as well as Caucasian. Lewit argued that increasing Hispanic poor families in between 1970 to 1990 was also a contributory factory for U.S. child poverty in 1992. There are some cases that researchers showed that poverty level vary by races in same geographic location. Racial prejudice, institutionalized racism can leads to lower income and higher poverty rate among the different races. Different races are growing at different rates in Kentucky during the last two decades. White, African-American and Hispanic are the three major races in the Kentucky population but Hispanic population growth are significant in Kentucky over the last decade among all races.

The Results for the Analysis of Kentucky Youth Poverty

The results represented in Table 5.1 display how different factors determine the intensity of youth poverty in Kentucky. Table 5.1 presents the results of the logit regression analysis of the proportion of youth living in poverty. A 10 percent two-tailed significance test is performed to analyze the results.

Analysis of these factors of youth poverty rates over Zip Codes in Kentucky gives an indication of where the poverty rate is highest and its causes, but at the same time it fails to provide information about the duration of poverty experienced by youth population. However, these factors help to provide insight into youth poverty in Kentucky.

Impact of employment on youth poverty

Labor force is one of the major components to determine youth poverty because employment is the only source of income we consider in this paper. So the type, nature

and duration of young workers and their family members play an important role in determining youth poverty. Each categories and subcategories have different levels of effects on youth poverty. Approximately 88% of households in Kentucky engage in some form of non-agricultural employment, and the rest engage in agricultural employments.

Participation in the labor force is the most explainable factor to determine youth poverty. A one percentage point increase in the percentage of males' unemployment or not in labor force will increase youth poverty by 10.38 percentage points or 2.86 percentage points assuming other factors remain at a constant level. Both variables are extremely significant. These results are consistent with Ghazouani and Goaied, Friedman and Lichter studies.

Over the past few decades, the female labor force participation has been increasing. A one percentage point increase in the percentage of females' unemployment or not in labor force will increase youth poverty rate by 0.7 percentage points or 2.28 percentage points assuming all other factors remain constant. The variable of females not in labor force is weakly significant. So female participation in the labor force directly influence the youth poverty rate.

Agricultural service holders in a Zip code are likely to increase the youth poverty than non-agricultural service holders. The variable of agricultural employments carries a positive sign, which suggests that populations in a Zip Code who engage in agricultural occupations are likely to increase youth poverty assuming all other factors remain constant. This variable is also weakly significant. But for non-agricultural employments such as transportation, finance, education or management related jobs in Kentucky, where the negative sign is consistent with previous studies, populations in a Zip Code who engage in non-farm occupations are likely to decrease youth poverty rate. A one percent

point increase in the percentage of management related jobs will decrease youth poverty by 2.33 percentage points. Management related jobs offer higher salaries on the average than any other jobs. So people with management related job are less likely to be poor. Only this variable among all non-agricultural employments variables is significant.

Males or females who are working part-time are more vulnerable to poverty than males or females who work full-time. The directions and magnitudes of full-time male or female workers or part-time male or female workers help to explain the relationship with youth poverty. A one percentage point increase in the percentage of males' full-time workers or part-time workers will increase youth poverty by 2.18 and 5.48 percentage points. Both of these variables are extremely significant. However, a one percentage point increase in the percentage of females' full-time workers or part-time workers will increase the youth poverty rate by 2.49 or 1.7 percentage points. The full-time female worker variable is significant but the part-time female worker variable was insignificant in this model.

The relative magnitudes of both coefficients affect the conclusions. Part-time male or female workers are more vulnerable to the poverty than full-time male or female workers, as part-time male workers are having greater magnitude than other group of workers in this model. Most youth are part-time workers, and their income might not be sufficient to cover all their expenses. If they are not dependent on their parents, they will likely be exposed to poverty. People who are working as full-time workers are also vulnerable to poverty because they might face bigger responsibilities such as maintaining a larger family size, a higher number of kids in the family, or earlier financial burdens imposed on them, which was not control in this model.

Impact of education on youth poverty

Comparative educational levels among males and females influence poverty in different ways. Our study suggests that earnings are higher for the educated than for the uneducated youth. Further, poverty research literature reveals that increasing schooling has a negative effect on poverty. The gender gap is prominent when we measure the poverty in terms of education.

The male and female educations are significant contributory factors on youth poverty. The high school graduates male and female variables carry a negative sign and large magnitudes, which indicates that assuming all other factors in this model at a constant level, a one percentage point increase in the percentage of high school graduated males or females will decrease the youth poverty rate by 1.92 percentage points or 4.47 percentage points. Both of these variables are significant.

Impact of race on youth poverty

The impact of race on youth poverty is greatly diversified. According to the 2000 Census Bureau report, Kentucky became more integrated over the last century. The African-American population in this state grew from 7.13 percent in 1990 to 7.27 percent in 2000. Census figures indicate the Hispanic population more than doubled, growing from 0.60 percent in 1990 to 1.40 percent in 2000. This study includes three different races such as white, African-American and Hispanic to determine the youth poverty in Kentucky.

The African-American youth population is more vulnerable to poverty than other races in Kentucky. A one percent increase in percentage of white, African-American or Hispanic population will increase youth poverty rate by 9.71 percentage points for whites, 11.09 percentage points for African-Americans and 17.71 percentage points for

Hispanics, while keeping all other determinants in this model at a constant level respectively. White and African-American variables are significant at 5 percent level, but the Hispanic population is not significant. Magnitude for the African-American population is higher, which indicates that the African-American youth population is more vulnerable to poverty than white and Hispanic populations in Kentucky.

Impact of geographic locations on youth poverty

Research has shown that geographic targeting can be very effective, since poor households tend to be concentrated in specific areas. However, the effectiveness of the program depends greatly on the level of geographic detail at which targeting decisions are made. Several literatures previously explained the importance of existence of a causal link between geography and the well-being level. Spatial poverty traps are areas where poor resource endowments lead to limited access to educational, social and economic opportunities, thereby further increasing the differences between poor and non-poor areas. A Zip Code that belongs to urban areas is more vulnerable to youth poverty than a rural Zip Code. This variable is insignificant and not consistent with previous studies.

Concluding comments

The theory and research that have been examined in this paper make a compelling case for the argument that employment, race, education and geographic location are underlying agents in the production of youth poverty in Kentucky. Although these structural conditions do not often have a direct effect on producing poor youth, they are important because the impact they have on other social attributes influences youth poverty. Education does not influence poverty directly but generates significant positive externalities in a society, which helps individual earn increased wages (Rupasinga, Goetz and Freshwater).

The results suggest that almost all variables in this model are important to predict youth poverty in Kentucky. Clearly, impacts of education and employment status on youth poverty are more important than any other factors in this model. The significance of the variables is also consistent with previous studies on poverty, although this paper used a new methodology. The key factors also remain indifferent while evaluating youth poverty at the Zip Code level in Kentucky. The results suggest that increased employment opportunities and female education will reduce youth poverty in Kentucky, which is consistent with Thornburg, Hoffman and Remeika findings.

Conclusion

This paper is the first attempt to use Zip Code level data across Kentucky using only year 2000 Census data to model the determinants of youth poverty. Conclusion regarding the methodology of using Zip Code data is that the study successfully demonstrates the analysis and opens a way to further research with this smaller geographic unit. The key factors of poverty suggest that they are still very good indicators while this study has been done in the smallest geographic unit. This paper has successfully quantified the impact of key geographic and socioeconomic variables in youth poverty in a Zip Code level analysis.

Economic development can help to eradicate youth poverty. Development of economic conditions for youth or their parents is crucial, as youth indirectly depend upon their parents or guardians. The economic development only occurs when more people employed in the non-farming employment and it is already proved that the non-farming employment helps to eradicate poverty.

The anti poverty researchers showed the fact that promoting work among single mothers is important to eradicate poverty. Friedman & Litcher stressed the importance of

community development as well as that individual economic development help to minimize the poverty rate. Hence, the necessity of engaging programs such as promote jobs to the females and to African-American people, and to organize training programs, workshops, and conferences that will help them to get jobs in the market.

A key finding is the strong relationship between female education and intensity of youth poverty. Education influences human capital accumulation in a community, which ultimately influences community economic development. So youth who are not high school graduate are more likely to stay in poor condition or will face poor conditions in future. Hence, the illiteracy program influence and motivate them to engage themselves in the education related programs and help to alleviate the poverty from their community in Kentucky.

The results supported the earlier research and do indicate the vulnerability of youth poverty is varied among the rural and urban Zip Codes in Kentucky, due to types of job opportunities, educational and social infrastructural differences. Once social welfare reform aims to create more jobs in vulnerable areas, increase educational facilities and provide a better infrastructure, youth poverty or poverty itself will be eradicated shortly. As Zip Code is a smaller geographic unit, identification of the problem should be much easier, and employing policies like welfare and economic development programs, funds for antipoverty might be used in very specific needs for poor youths in Kentucky.

For further research and model improvement, including the data set of youth mother with this model and evaluate the results would be great extension of this paper, but recent unavailability of this data set in a Zip Code in Kentucky gives us a scope for further research. In addition to that, analysis for one state is somewhat limiting. A useful extension would be to include other states for further analysis.

References:

Allison, Paul. D., Logistic Regression Using the SAS System Theory and Application, Cary,NC: SAS Institute Inc.,1999.

Bluestone,Barry., and Harrison, Bennett.,"The Growth of Low-Wage Employment: 1963-86," The American Economic Review, Vol.78,No.2,(May,1988), pp. 124-128.

Clawson, Marion. "Rural Poverty in the United States". Journal of Farm Economics, Vol.49, No. 5, (Dec., 1967), pp. 1227-1234.

Crandall,Mindy.S., and Weber, Bruce. A., "LOCAL SOCIAL AND ECONOMIC CONDITIONS, SPATIAL CONCENTRATIONS OF POVERTY, AND POVERTY DYNAMICS."American Journal of Agricultural Economics,Vol. 86, No.5, (Aug., 2004), pp.1276-1281.

Fei,John C.H., Gustav Ranis, and Shirley. W.Y. Kuo.,"Growth and the Family Distribution of Income by Factor Components," Quarterly Journal of Economics, Vol 92, No.1,(Feb 1978), pp.17-53.

Friedman, Samantha, and Lichter, Daniel.T. " Spatial inequality and poverty among American children". Population Research and Policy Review, Vol.17, 1998, pp.91-109.

GHAZOUANI, SAMIR. and GOAIED, MOHAMED. "THE DETERMINANTS OF URBAN AND RURAL POVERTY IN TUNISIA". June 2001.

Kirby, Douglas.,Coyle, Karin., and Gould, Jeffrey. B. "Manifestation of Poverty and Birthrates Among Young Teenagers in California Zip Code Areas." Family Planning Perspectives, Vol.33, No.2 (March., 2001), pp.63-69.

Lewit, Eugene.M., "Children in Poverty" , The Future of Children, Vol.3, No.1, Adoption.(Spring,1993), pp. 176-182.

Martin, Philip. L. and Taylor, J. Edwards. "Poverty Amid Prosperity: Farm Employment, Immigration and Poverty in California". American Journal of Agricultural Economics, Vol. 80, No.5, (Dec., 1998), pp.1008-1014.

Ray, Debraj., Development Economics. New Jersey: Princeton University Press, 1998.

Renkow, Mitch. "Income Non-Convergence and Rural – Urban Earning Differentials: Evidence from North Carolina". Southern Economic Journal, Vol. 62, No.4. (Apr., 1996), pp. 1017-1028.

Rupasingha,A., Goetz, S.J., and Freshwater.D., " Social Capital and Economic Growth: A County Level Analysis." American Journal of Agricultural Economics,Vol. 32, No.5, (Aug., 2000), pp.565-572.

Tokle, J.G., and Huffman, Wallace. E. " Local Economic Conditions and Wage Labor Decisions of Farm and Rural Nonfarm Couples." AJAE, Vol.73, No.3 (Aug., 1991),pp.652-670.

Xu, Kuan. "How Has the Literature on Gini's Index Evolved in the Past 80 Years?". Internet site: http://econpapers.repec.org/paper/dalwparch/howgini.htm (Accessed Aug.20,2006).

Table 3.1. Calculation of Gini Coefficient for different age groups in Kentucky.

Different age groups population	Gini Coefficient
1-11 yrs age population	0.6904
12-17 yrs age population	0.6821
18-24yrs(youth) age population	0.7307
25-54 yrs age population	0.6957
55+ yrs age population	0.6923
Total population	0.6904

Source: US Bureau of the Census 2000 and calculations by the author.

Table 4.1. Descriptive Statistics for Youth Poverty in Kentucky.

Variable	N	Mean	Std.Dev.
Depended Variable			
Proportion of youth below in poverty	765	0.48	0.50
Explanatory Variable			
Rural or urban population	765	0.82	0.39
Proportion of agricultural related employments	765	0.15	0.16
Proportion of transportations related employments	765	0.12	0.11
Proportion of finance related employments	765	0.07	0.07
Proportion of education related employments	765	0.43	0.20
Proportion of white population	765	0.95	0.09
Proportion of black population	765	0.03	0.08
Proportion of hispanic population	765	0.01	0.02
Proportion of male high school graduates	765	0.23	0.09
Proportion of female high school graduates	765	0.24	0.08
Proportion of unemployed male	765	0.04	0.04
Proportion of unemployed female	765	0.02	0.03
Proportion of male not in labor force	765	0.30	0.13
Proportion of female not in labor force	765	0.42	0.13
Proportion of male worker work 35+ hours per week for 52 wks	765	0.56	0.15
Proportion of male worker work 13+ hours per week for 52 wks	765	0.06	0.04
Proportion of female worker work 35+ hours per week for 52wks	765	0.37	0.12
Proportion of female worker work 13+ hours per week for 52 wks	765	0.12	0.06

Source: US Bureau of the Census 2000 and calculations by the author.

Table 5.1. Parameter Estimates for Youth Poverty in Kentucky.

Parameters	Estimates	Standard Error
Intercept	-12.96**	5.89
Rural or urban population	-0.30	0.25
Proportion of agriculture related employments	0.96***	0.60
Proportion of transportation related employments	-0.40	0.81
Proportion of finance related employments	-0.45	1.36
Proportion of education related employments	-0.07	0.43
Proportion of management related employments	-2.33**	1.13
Proportion of male worker work 35+ hours per week for 52 wks	2.18***	1.22
Proportion of female worker work 35+ hours per week for 52 wks	2.49***	1.41
Proportion of male worker work 13+ hours per week for 52 wks	5.48*	2.24
Proportion of female worker work 13+ hours per week for 52 wks	1.70	1.61
Proportion of unemployed male	10.38*	2.63
Proportion of unemployed female	0.70	3.36
Proportion of male not in labor force	2.86**	1.29
Proportion of female not in labor force	2.28***	1.40
Proportion of white population	9.71***	5.73
Proportion of black population	11.09**	5.80
Proportion of Hispanic population	17.71*	6.59
Proportion of male high school graduates	-1.92***	1.13
Proportion of female high school graduates	-4.47*	1.21

Source: US Bureau of the Census 2000 and calculations by the author.
Notes: Single, double and triple asterisks (*) denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively

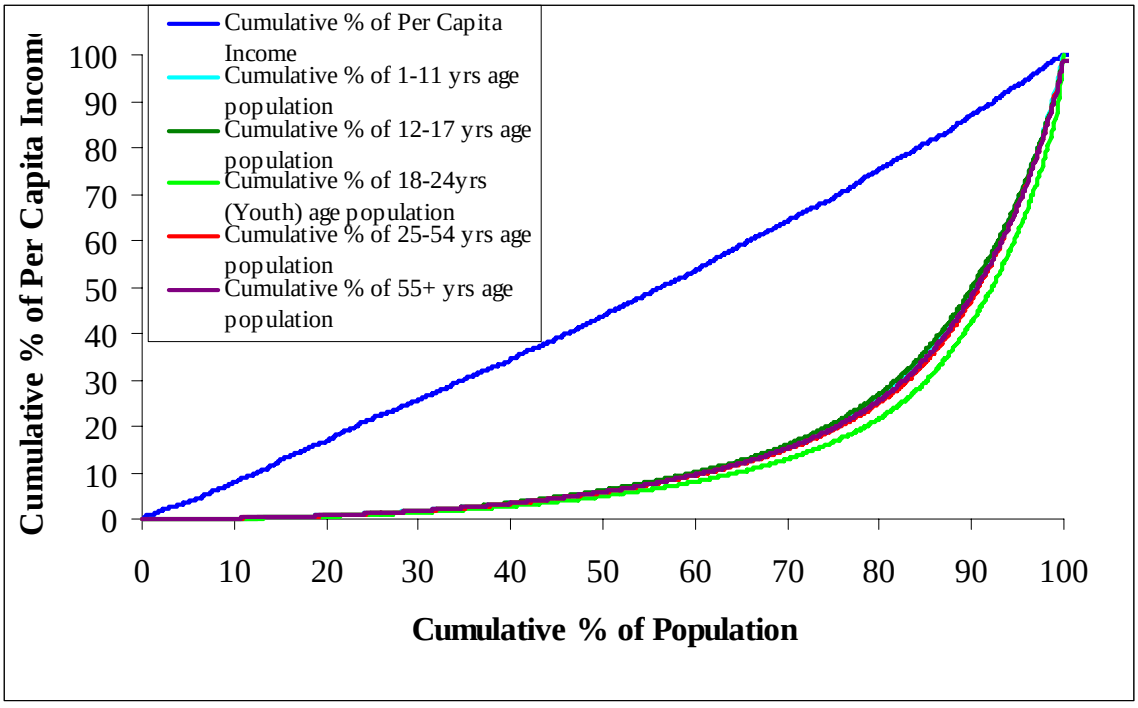

Figure 3.1 The Lorenz Curve
Source: US Bureau of the Census 2000 and calculations by the author.