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The Impact of Juvenile Delinquency on Poverty Status: A Study of the NLSY

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Introduction

There is a significant literature on the intersection of criminal behavior and labor market outcomes, but little attention has been paid to in examining the effects of juvenile delinquency on adult labor market outcomes. There are many studies that document poverty's effect on criminal status as well as studies on various labor market conditions' effects on criminal status. (Bellair and Roscigno; Freeman). These studies establish a causal relationship between poverty status and other labor market conditions and the likelihood of committing a crime. However, there has been less written about the causal effect of criminality on future labor market outcomes, including poverty status. The studies that have been conducted have focused on the effects of juvenile delinquency on education, earnings, and employment status (Freeman; Tanner, Davies, O'Grady, Waldenfogel).

To complement this literature, we are interested in analyzing the effects of juvenile delinquency on adult poverty status. Does juvenile delinquency exert an independent effect on the likelihood of being poor in adulthood? Do different types of delinquency have different effects on poverty status? For instance, it is rational to think that a one-time juvenile drug offense would not affect adult labor market outcomes as adversely as a murder conviction. Thus the hope with this project is to examine the effects of moderate delinquency and serious delinquency on poverty rates. The literature

on poverty status discusses several different factors that influence the likelihood of being poor. Studies have shown that gender and race are key determinants of poverty status (Haynie and Gorman; Starrels, Bould, and Nicholas). Labor market conditions, macroeconomic conditions, rural residence, marital status, education, and family structure are also key determinants used in past analyses of poverty status (McDowell; Weinberg).

The Model

Based on the various conceptual approaches in the criminology literature and the poverty status literature, the conceptual model was formulated as follows:

$$P_i = f(D_i, S_i, E_i, R_i)$$

where *i* indexes the individuals and,

P = poverty status
D = delinquency status
S = socioeconomic characteristics (education, race, gender, employement status, presence of children in the household, marital status, parental education)
E = labor market and macroeconomic conditions
R = geographic region

Empirically, this conceptual model was estimated with the following variables. The dependent variable is poverty status in 1991, a dichotomous variable taking the values of 1 when the respondent was poor and 0 when the respondent was not poor. The independent variables used as the delinquency status measures were:

1. being convicted of a crime by the year 1979 (when all respondents were between the ages of 14-20);
2. being stopped, booked or charged for a crime but not convicted of a crime by the year 1979;

3. and being stopped, book, charged, or convicted of a crime by the year 1979 (a combination of the first two variables).

These variable labels are x_a, x_b, and x_c.

The education variable used was the highest grade completed by 1991 (x_1). Employment status is measured as a dummy variable taking the value of 1 if the respondent is employed and 0 if the respondent is not employed or out of the labor force (x_2). Race is a dummy taking the value 1 if the respondent is non-white (x_3). Sex is a dichotomous variable that is 1 when respondents are female (x_4). The presence of children in the house is a dummy that takes the value of 1 when a biological, step, or adopted child under the age of 18 lives in the household (x_5). Marital status is a dummy that equals 1 if the respondent is married with their spouse present and equals 0 otherwise (x_6).

Mother's education and father's education are both measured by the highest grade completed by the respondent's mother or father in 1979 (x_7 and x_8). Geographic location is measured with a dummy variable that takes the value 1 when the respondent lives in an urban area and 0 when the respondent lives in a rural area (x_9). Finally, labor market and macroeconomic conditions are measured with a variable that takes the value of 1 when unemployment in the respondent's local labor market is greater than seven percent (x_{10}).

The three main empirical models estimated differ only by the variable describing the nature of juvenile deliquency:

$$P_{1991} = \beta_a x_a + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \beta_{10} x_{10} + E$$

$$P_{1991} = \beta_b x_b + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \beta_{10} x_{10} + E$$

$$P_{1991} = \beta_c x_c + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \beta_{10} x_{10} + E$$

These models are estimated using Logit regression. The above models measure the direct effects of the delinquency variables on poverty status. We are also interested in calculating the effects of delinquency on poverty status through indirect mechanisms, namely the recursive effects that delinquency has on poverty status via its effects on employment status and education. These indirect effects will be calculated using previously run models of the direct effects of delinquency on education and employment status. The tables of these models are in the appendix.

The Sample Data

The data used for this study comes from the National Longitudinal Survey of Youth (NLSY). The NLSY is an ongoing study of 12,686 young men & women who were aged 14 to 21 as of January 1, 1979. Over 90%of these respondents have participated in an annual personal interview approximately one hour in length, since 1979. The interviewees have responded to questions about their work an/or military experience, training, schooling, family background, marital status, income and assets, fertility, child care, and drug and alcohol use.

Of the 12,686 observations in the survey, 5,698 are used in the models. The other 6,985 observations are excluded due to missing values, with the greatest number of missing values present in the poverty status variable. The most recent data available for

all of the variables is 1991, when the respondents were between the ages of 26 and 32. Of the 5,701 observations, 790 of them had a 1 value for poverty status, while 4911 of them had a 0 value. Thus, 13.85 % of the sample was poor.

Of the sample, 6.2 percent have been convicted and 17.6 percent were delinquent with no conviction. The share of respondents with any sort of criminal activity is 23.8 percent. The missing values do not differ significantly from the values used in the regression, as can be seen in Table 1 in the appendix.

Empirical Results

In model one, using the ever convicted measure of delinquency, suggests that being convicted of a crime before the age of 20 does affect poverty status in adulthood. The parameter estimate on the ever convicted variable is .3397 with $p < .0873$, a positive and significant impact. The odds ratio for this estimate is 1.405, implying that the odds of being poor in 1991 are 40% higher for convicted members of the sample than non-convicted members of the sample. The other independent variables exert effects consistent with previous studies and commonsense.

Model two, using the stopped, booked, or charged but not convicted measure, did not show delinquency to exert independent influence on poverty status. The fundamental difference with model one being that, the delinquency did not result in conviction. The parameter estimate on this measure of delinquency was -.1054 with an odds ratio of .900 ($p < .4154$).

In model three with the inclusive delinquency variable, the parameter estimate was .0280, with an odds ratio of 1.028 ($p < .8140$). Thus, it is fair to assert that there

seems to be no evidence from this sample that supports the hypothesis that being stopped, booked, or charged with a crime has any independent effects on adult poverty status.

Since we are interested in assessing the indirect effects of criminal behavior on poverty status, we must analyze the effects of criminal behavior on employment status and on education. We look only at the models using convicted status as the delinquency variable because only this measure of delinquency was significant in the models on poverty status. It is interesting to note that when employment status is modeled using logistic regression, being convicted had no significant, independent effect on employment status. Thus, there appears to be no indirect effects of criminal behavior on poverty status via employment status for this sample.

However, being convicted does exert an independent effect on the highest grade of schooling completed. According to a previously run model on highest grade completed in 1991, being convicted of a crime lowers the educational attainment by .759 years. The parameter estimate of the impact of education was (-.3096). Translating that into an odds ratio gives (.734), or a lowered likelihood of being poor of 26.6% for every extra year of education. Multiplying 26.6% by .759 yields the indirect effect we are looking for. Thus the indirect effect of being convicted on poverty status via the education mechanism is 20.19%.

It is important to note that this is a conservative estimate of the indirect effects of conviction on poverty status, since education also affects employment status which affects poverty status, as well. Thus, there most likely is an added indirect effect of conviction on poverty status via education's effect on employment status and employment status' effect on poverty status.

Adding the direct effects and the indirect effects of juvenile conviction on adult poverty status, we can see that the members of this sample who were convicted of a crime in their youth were 60.69% more likely to be poor than their non-convicted counterparts. This is an extremely large effect, especially when considering that this effect is independent of employment status and the other variables in the model.

Conclusion

This paper has sought to analyze the effects of juvenile delinquency on adult poverty status. In this sample, the likelihood of being poor in 1991 is 60.69% greater for convicted respondents than non-convicted respondents when indirect and direct effects are taken into account.

This study could be improved if data on recidivism were available. Because the NLSY does not include recidivism measures, we do not know if the respondents were convicted of a crime after 1979. Not having this information could be having detrimental effects on our model. Furthermore, a more recent analysis would help improve this study by seeing the longitudinal effects of juvenile delinquency on poverty status. It would be interesting to examine whether or not the effects of delinquency on poverty status stay constant, increase, or decrease over time. Another improvement that would make this analysis better would be to use a data set that documents the family structure of the respondents, for several studies have shown that living in a female-headed household greatly influences the likelihood of being poor (Haynie and Gorman, Thompson and McDowell).

Despite its limitations, we believe that this study provides evidence that the likelihood of being poor is independently influenced by criminal activity and that this link is a fruitful area for future research on poverty status.

Table 1—Selected Descriptives, Observations in the Model vs. Those with Missing Values

	Mean, observations with missing values	Std. Deviation, observations with missing values	Mean, observations in the model	Std. Deviation, observations in the model
Race	.32	.47	.31	.46
Everconv	.077	.268	.062	.241
Sex	.48	.50	.5	.5
Edu91	12.36	2.372	12.87	2.422
Urb91	.836	.370	.816	.388
Delinquency no convict	.1842	.3877	.1757	.3806
Kid91	.5322	.4990	.5643	.4959
EmpStat91	.7157	.4512	.7676	.4224
MaritalStat	.4431	.4968	.5262	.4993
General Delinquency	.262	.440	.238	.426

Valid n listwise: 5698

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