INSTITUTE FOR RESEARCH ON POVERTY DISCUSSION PAPERS

298-75

EDUCATION AND THE EARNINGS OF POVERTY-AREA RESIDENTS

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September 1975

This research was supported by a U.S. Department of Labor Manpower Dissertation Fellowship and by funds granted to the Institute for Research on Poverty at the University of Wisconsin-Madison by the Department of Health, Education, and Welfare pursuant to the Economic Opportunity Act of 1964. The opinions expressed are those of the author.

ABSTRACT

This paper employs data from the Census Employment Survey to analyze the effect of education on the earnings of poverty-area residents. It is shown that for the sample under consideration, education has a significant impact on the economic welfare of both whites and blacks despite the presence of truncation bias.

EDUCATION AND THE EARNINGS OF POVERTY-AREA RESIDENTS

Bennett Harrison (1972, p. 57) analyzed data from the Survey of Economic Opportunity (SEO) and concluded that "education is much more efficient for ghetto whites than for ghetto nonwhites. . . ." This paper employs data from the Census Employment Survey (CES) to retest Harrison's findings on the effect of education on the earnings of poverty-area residents.

In section I, the definitions of the poverty area used by the SEO and the CES are compared, and in section II their implications for "truncation bias" are examined. In section III, the CES data are described and the effect of education on the earnings of poverty-area residents is estimated. It is shown that for the sample under consideration, education has a significant impact on the economic welfare of both whites and blacks despite the presence of truncation bias.

I. The Survey of Economic Opportunity and the Census Employment Survey

Before a meaningful analysis of the economic welfare of "poverty-area" residents can be conducted, what constitutes a poverty area must be discussed, particularly since the SEO, the CES, and other microeconomic surveys define it differently. The importance of the spatial dimension is a familiar concern in urban economics, but this concern has been neglected in the literature based on recent surveys of poverty-area residents.

The poverty areas of the SEO are clusters of census tracts in Standard Metropolitan Statistical Areas with populations greater than

250,000 that approximate the lowest quartile of all tracts in these areas on the basis of a "poverty index." The index is constructed from the following 1960 Census data: the percentage of families with incomes under $3000, the percentage of children under eighteen years old not living with both parents, the percentage of males over twenty-five years old with less than eight years of completed schooling, the percentage of male laborers and service workers in the civilian labor force, and the percentage of housing units that are delapidated or lack complete plumbing facilities (see U.S. Bureau of the Census, 1966, for the complete SEO definitions).

The SEO poverty areas are clusters of census tracts, not necessarily neighborhoods. In some cities several noncontiguous clusters of tracts comprise the "poverty area." In the CES, however, poverty areas are defined as contiguous neighborhoods, and are not directly comparable to the more dispersed SEO areas:

> The designated areas used in the CES, therefore, differ from and are not to be confused with other low income or poverty areas that have been defined in the past. . . (U.S. Bureau of the Census, 1970, p. vi).

A subjective element was employed to define a neighborhood, rather than a collection of tracts:

> Changes were made to these previously delineated areas based on more recent information acquired by the Bureau's staff from a wide variety of sources (e.g., area boundaries, and data pertaining to welfare programs, juvenile delinquency, illegitimate births, and housing conditions). Using this information, the Bureau made preliminary designations of the current areas and sent them to local experts for review. Efforts were made to solicit comments from the local person responsible for census tracts, the city planning commission, and any other agency or person recommended as knowledgeable in this

> area. A letter was sent to each of these persons or agencies explaining the purpose of the project and requesting suggestions for additions or deletions to the area. The recommendations received were subjected to further scrutiny by the Bureau's staff under a set of guidelines designed to assure some uniformity across the country. Thus, the final designations of the areas selected for the Census Employment Survey represent a synthesis of previous area designations, 1960 Census and other more recent socioeconomic data, and the views of local knowledgeable agencies (U.S. Bureau of the Census, 1970, p. vii).

The difference in the definitions of what constitutes the poverty area has implications both for truncation bias and for policy analysis. For example, the CES is very similar to the Urban Employment Survey (UES), a sample Harrison also used.[1] Comparing the poverty-area definitions of the SEO and the UES, Harrison concluded that

> Examination of various socioeconomic indices shows that the UES area is, relative to the more dispersed SEO "ghetto," the location of the truly "hard-core" poverty in the city (p. 22).

What is particularly relevant here is that Harrison himself found a major difference between the SEO and UES samples, which he chose not to emphasize. Harrison's well-known conclusion is based on his results from the SEO, but in a footnote he states that for the UES areas, the "hard-core" tracts,

> A Chow test showed that unlike the SEO areas the individual UES neighborhoods are not sufficiently heterogeneous. . . to warrant running separate regressions for "whites" and "nonwhites" (p. 84, footnote 17).

In the larger SEO poverty areas there were significant differences between the returns to education for white and nonwhite residents, yet in the smaller UES poverty areas these differences were not evident.

Economic theory does not provide a definition of the poverty area. An appropriate definition must involve a spatial dimension

and not merely define the poverty area as where poor people live. But theory does not tell us whether the SEO or the CES definition is the correct one. It is beyond the scope of this paper to propose an optimal definition of the poverty area. However, it is evident that empirical results are sensitive to the choice of definition. In the next section, the implications for truncation bias of these differences in definition are discussed.

II. Truncation Bias

Analysis of a "truncated" sample of the population produces biased estimates of the returns to education if the basis for truncation (in the SEO and the CES, residence in the poverty area) is not independent of the dependent variable. If poverty-area residence for both blacks and whites is negatively correlated with earnings, and education is positively correlated with earnings, then the error term will be negatively correlated with education, and ordinary least squares estimates will be biased. Unfortunately, the direction of the bias is indeterminate.[2] There would be no bias if all blacks lived in the poverty area or if the poverty area were defined to include all tracts in which blacks lived. Clearly this is not the case for blacks (or whites). Individuals who achieve higher-income levels often move out of the poverty area and thus are excluded from the poverty-area survey.

Truncation bias seems to be a more serious problem in the CES than in the SEO. First, CES data are drawn from a smaller area that is more likely than the more dispersed SEO area to contain the "poorest of the poor." Second, the CES data were gathered four years after the SEO data. If the mobility of blacks within the metropolitan area had increased

during this period (1966-1970) of growing incomes and government attempts to reduce discrimination in housing markets, then any given poverty-area sample would have become more truncated as higher-income blacks moved out of the poverty area (and, hence, out of the sample). Increased truncation bias in the CES decreases the probability that Harrison's finding of no significant returns to education will be rejected. A failure to reject this finding is rendered inconclusive by truncation bias, but a rejection still constitutes a powerful test.

There is also a serious problem in both samples concerning the relative degrees of bias in the white and black subsamples. Since the SEO and the CES poverty areas are predominantly black, there is reason to believe that the white sample is biased even more toward the less-educated, lower-income resident of the metropolitan area. Whites are more mobile than blacks, so that given equal incomes a white is more likely to find housing outside of the poverty area. Such a situation biases the results for whites to a greater degree than those for blacks.

Wiseman and Doolittle (1974) were able to estimate the degree of truncation bias in the SEO by comparing results from a sample of poverty-area residents with those from a sample of metropolitan-area residents. Measurement of the degree of bias is not possible with CES data, as comparable information for non-poverty-area residents is unavailable. In the next section the CES sample is described and used to estimate the effect of education on the earnings of poverty-area residents.

III. The CES Data

The CES surveyed sixty poverty areas in fifty-one cities. Microeconomic data are available for fewer than twenty-five of these

areas. This paper uses a sample that pools the microdata from three poverty areas--Cleveland, Detroit, and St. Louis. The sample provides a sufficiently large number of observations without introducing significant differences in region, racial composition, or structural characteristics of the cities included.[3]

The size and racial composition of the poverty areas are detailed in Table 1. The population of each poverty area is about one-fourth to one-third of the central-city population and about 10 percent of the total SMSA population. Blacks comprise about two-thirds of the poverty-area residents. The poverty areas contain about 35 to 40 percent of the black population of the SMSA.

Table 2 compares black and white residents of the poverty area to each other and to the SMSA population at large. In each of the three cities, poverty-area blacks are better educated (slightly) than poverty-area whites and of equal educational attainment with all blacks within the SMSA. For poverty-area blacks, male unemployment rates are higher, the percentage of families with incomes below the poverty line is greater, and median earnings of males are lower than for the other three groups. Poverty-area whites have economic characteristics that are very similar to those for all blacks within the SMSA. Blacks and poverty-area whites have lower levels of educational attainment and male earnings and higher unemployment rates and incidence of poverty than the average for all SMSA residents. Table 2 reveals that neither the poverty-area blacks nor the poverty-area whites are random samples of SMSA residents, and that truncation bias is likely to be a problem in the CES.

Table 1

Size and Racial Composition of the Poverty Area

	Cleveland	Detroit	St. Louis
Number of poverty-area residents	209,645	348,413	194,882
Poverty-area residents as a % of central-city population	27.9	23.1	31.3
Poverty-area residents as a % of SMSA population	10.2	8.3	8.2
Blacks as a % of poverty-area residents	64.1	73.3	68.0
Poverty-area blacks as a % of SMSA blacks	40.4	33.7	35.0

Table 2

Comparison of Poverty-Area Residents and Residents of the Entire Standard Metropolitan Statistical Area

	Poverty-Area Blacks	Poverty-Area Whites	SMSA Blacks	All SMSA Residents*
Median years of school completed, males, ages 25+				
Cleveland	10.5	9.8	10.5	12.1
Detroit	10.3	10.0	10.3	12.0
St. Louis	9.6	8.8	9.5	11.9
Unemployment rate, males, ages 16+				
Cleveland	8.3	7.6	7.2	3.2
Detroit	13.0	9.8	10.0	5.3
St. Louis	11.0	5.9	9.8	4.5
% of families with incomes below poverty line				
Cleveland	28.2	16.5	21.5	6.9
Detroit	24.8	21.8	18.5	6.5
St. Louis	32.4	19.3	26.1	8.1
Median yearly earnings, males, ages 16+				
Cleveland	6583	6817	7060	8930
Detroit	7215	6956	7540	9528
St. Louis	5276	6062	5896	8322

*Data are not published separately for whites.

While Harrison's results are based on a pooled sample of males and females (from twelve SMSAs), the results reported here are based on a sample of males, ages twenty-one to sixty-four.[4] Table 3 displays the characteristics of the microeconomic sample; Table 4 defines the variables. Poverty-area blacks and whites have similar distributions of employment by industry. However, whites are employed to a greater extent in nondurable manufacturing and in the transport, communications, and public utilities industry, and blacks to a greater extent in public administration. The household status and training attainments are also similar, but 37 percent of poverty-area blacks have completed high school compared to only 31 percent poverty-area whites, while 10 percent of the whites and only 6 percent of the blacks report that health interferes with their job performance. The occupational distribution, average age, yearly earnings, job tenure, and hours worked per week are also very similar for the two racial groups.

Table 5 presents a cross-tabulation of the sample by educational attainment and weekly wage. For whites and blacks, the average weekly wages are practically equal, however, the range of wages by educational status is wider for blacks. For blacks the difference between the average wage of those with some college ($155.48) and those with less than eight years of education ($128.90) is about 21 percent, while for whites this difference is only 9 percent ($145.66-133.86/133.86). For both blacks and whites, earnings rise with educational status (except at the college level, for whites). Obviously, such a cross-tabulation does not control for the variation in personal characteristics. The regression results reported below move beyond this tabulation.

Table 3

Mean Value of Various Personal Characteristics by Race

Characteristic	Black Males N = 1223	White Males N = 542
Residential distribution		
Cleveland residents	.266	.393
Detroit residents	.496	.360
St. Louis residents	.238	.247
Industrial distribution		
Agff	.001	.004
Mining	.000	.000
Const	.043	.042
Durable	.512	.424
Nondurable	.069	.103
Tpu	.053	.103
Wholesale or retail	.115	.155
Fire	.011	.009
Buspers	.043	.066
Enter	.038	.052
Edserv	.011	.000
Pubadm	.105	.041
Health status		
Bad health	.064	.103
Good health	.936	.897
Head of household	.863	.838
Educational attainment		
Fewer than 8 years	.185	.229
8-11 years	.441	.461
12 years	.290	.221
More than 12 years	.084	.089
Training program completed	.253	.251
Occupational distribution		
Clerk	.094	.100
Machinist	.052	.092
Craft	.116	.149
Operative	.370	.321
Transport worker	.114	.107
Labor	.119	.098
Service	.135	.133

Table 3 (cont.)

	Black Males N = 1223	White Males N = 542
Age (years)	40.9	41.2
Yearly earnings (dollars)	6654	6587
Job tenure (years)	9.5	8.3
Hours worked (per week)	41.9	41.9

Note: Totals may not add to 1.000 because of rounding error.

Table 4

Variable Definitions

W_k = (nominal weekly earnings/price index) for k = Cleveland, or Detroit, or St. Louis; index used is the BLS Low-Income Workers' Budget.

Age = age of the individual, in years (sample contains only males, 21-64).

Tenure = length of tenure on current job, in years.

Training = 1 if individual has completed a training program in the armed forces, high school, trade school, federal or state program, or an apprenticeship; 0 if not.

Cleveland = 1 if the individual lives in the Cleveland poverty area; 0 if not.

St. Louis = 1 if the individual lives in the St. Louis poverty area; 0 if not.

E1 = 1 if the individual has completed fewer than 8 years of education; 0 if otherwise.

E2 = 1 if the individual has completed 8-11 years of education; 0 if otherwise.

E3 = 1 if the individual has completed high school; 0 if otherwise.

E4 = 1 if the individual has completed one or more years of college; 0 if otherwise.

Badhealth = 1 if the individual has a health problem that interferes with his ability to hold a job; 0 if not.

Clerk = 1 if occupation is clerical or sales; 0 if otherwise.

Craft = 1 if occupation is carpenter or craftsman; 0 if otherwise.

Table 4 (cont.)

Machinist = 1 if occupation is mechanic, machinist, or metal craftsman; 0 if otherwise.

Operatives = 1 if occupation is operative; 0 if otherwise.

Labor = 1 if occupation is laborer; 0 if otherwise.

Service = 1 if occupation is service worker; 0 if otherwise.

Agff = 1 if industry is agriculture, forestry, or fisheries; 0 if otherwise.

Const = 1 if industry is construction; 0 if otherwise.

Durable = 1 if industry is durable goods manufacturing; 0 if otherwise.

Nondurable = 1 if industry is nondurable goods manufacturing; 0 if otherwise.

Tpu = 1 if industry is transportation, communications, or public utilities; 0 if otherwise.

Buspers = 1 if industry is business, repair, or personal services; 0 if otherwise.

Fire = 1 if industry is finance, insurance, or real estate; 0 if otherwise.

Enter = 1 if industry is professional services or entertainment; 0 if otherwise.

Edserv = 1 if industry is educational services; 0 if otherwise.

Pubadm = 1 if industry is government (other than educational) services; 0 if otherwise.

Head = 1 if individual is the head of a household; 0 if not.

Table 5

Weekly Wage by Race and Educational Attainment

Educational Attainment	Black Males		White Males	
	Size of Group	Average Wage*	Size of Group	Average Wage*
Fewer than 8 years	226	$128.90 (52.69)	124	$133.86 (53.27)
8-11 years	539	136.34 (50.64)	250	140.34 (58.90)
12 years	355	149.49 (57.36)	120	148.82 (63.84)
More than 12 years	103	155.48 (60.63)	48	145.66 (69.27)
Total sample	1223	140.40 (54.54)	542	141.21 (59.85)

*Standard deviations appear in parentheses below average wage.

Table 6 presents the results of a linear regression in which weekly earnings in the sample week is the dependent variable. The results for blacks and whites are quite similar. Earnings rise with age and reach a maximum at about age forty for both groups. Job tenure and the completion of a training program both contribute significantly to earnings. Education contributes positively to earnings, although only two of the three coefficients are significant for blacks and only one for whites. Industry of employment is an important determinant of earnings. Public administration, educational service, and construction are particularly advantageous to blacks, while construction and transportation, communication, and public utilities are advantageous to whites. Employment in these industries adds at least $30 per week to earnings, an impact greater than that associated with having completed some college. Being a machinist or a craftsman has a positive impact for both racial groups.

Table 7 presents data for the returns to education by broad occupational category. The results are derived by pooling the data for both races from Table 6 and then running separate regressions for white-collar and blue-collar workers. For both white- and blue-collar workers, earnings increase with the level of education. White-collar workers earn more per year of education than blue-collar workers. Both groups earn about the same amount by completing a training program.

If occupational and industrial status are dependent on educational attainment, then the returns to education presented in Tables 6 and 7 will be biased. Table 8 presents the returns to education when occupation and industry are omitted as explanatory variables. For blacks, omitting occupation (row 1) raises the returns to education by about 20 percent,

Table 6

Regression Results for Poverty-Area Residents

Independent Variables	Dependent Variables A. Blacks' Weekly Earnings	B. Whites' Weekly Earnings
Constant	54.90	28.06
Age	2.48 (0.91)*	3.64 (1.46)*
Age^2	-0.03 (0.01)*	-0.05 (0.02)*
Tenure	0.63 (0.21)*	0.70 (0.32)*
Training	9.43 (3.42)*	15.69 (5.83)*
Cleveland	-18.35 (3.59)*	-2.26 (5.66)*
St. Louis	-21.99 (3.84)*	-17.42 (6.55)*
E2	4.28 (4.27)	4.14 (6.47)
E3	13.99 (4.90)*	10.85 (7.72)
E4	19.28 (6.50)*	20.76 (10.39)*
Badhealth	-22.36 (6.05)*	-12.73 (8.21)
Head	10.45 (4.47)*	15.16 (6.95)*
Agff	-20.83 (50.80)	-9.47 (40.68)
Const	45.92 (8.40)*	30.86 (13.73)*
Durable	18.11 (5.13)*	21.29 (7.86)*
Nondurable	14.87 (7.13)*	26.63 (9.94)*

Table 6 (cont.)

Independent Variables	Dependent Variables A. Blacks' Weekly Earnings	B. Whites' Weekly Earnings
Tpu	29.50 (7.79)*	48.38 (10.60)*
Buspers	5.99 (8.32)	-15.74 (11.43)
Fire	21.29 (14.43)	7.98 (26.98)
Enter	3.91 (9.08)	22.64 (12.88)
Edserv	31.29 (14.96)*	
Pubadm	34.45 (6.31)*	8.23 (13.79)
Transit	11.12 (6.39)	-1.14 (11.55)
Machinist	24.21 (7.86)*	20.65 (11.26)
Craft	17.85 (6.42)*	22.21 (10.22)*
Operative	9.01 (5.46)	7.68 (9.21)
Labor	0.60 (6.30)	-0.22 (11.20)
Clerk	2.77 (6.55)	0.28 (10.68)
Standard error (of the regression)	50.27	56.06
Mean of dependent variable	140.40	141.21
R^2	.169	.165
Sample size	1223	542

Note: The constant in each regression refers to an individual who has not completed a training program, who lives in Detroit, who has completed fewer than eight years of education, who is not the head of a household, whose industry is wholesale on retail trade, whose occupation is service worker, and for whom health has not been a problem.

Table 6 (cont.)

*Denotes significance at the 5 percent level; standard errors appear in parentheses below the regression coefficients.

Table 7

Returns to Education and Training by Occupational Group

	White Collar N = 406	Blue Collar N = 1359
E2	7.71 (8.57)	3.41 (3.88)
E3	16.89 (9.63)	12.72 (4.53)*
E4	30.45 (11.44)*	14.48 (6.43)*
Training	12.76 (6.49)*	10.10 (3.35)*

Note: Regression coefficients; standard errors in parentheses.

*Denotes significance at the 5 percent level.

Table 8

Returns to Education When Industry and Occupation are Omitted as Explanatory Variables

	Educational Attainment		
	E2	E3	E4
1. Blacks: occupation omitted	7.11 (4.11)	16.63 (4.57)	22.42 (6.27)*
2. Whites: occupation omitted	5.09 (6.40)	12.14 (7.65)	19.78 (10.07)*
3. Blacks: industry and occupation omitted	6.14 (4.31)	17.35 (4.87)*	23.92 (6.47)*
4. Whites: industry and occupation omitted	2.46 (6.52)	12.40 (7.80)	14.40 (10.20)
5. White-collar workers: industry omitted	9.87 (8.47)	20.66 (9.45)*	37.22 (10.92)*
6. Blue-collar workers: industry omitted	4.14 (3.95)	15.93 (4.59)*	18.38 (6.56)*

Note: Regression coefficients; standard errors in parentheses.

* Denotes significance at the 5 percent level.

and omitting industry as well as occupation (row 3) raises the returns by about 25 percent. For whites, these omissions have a smaller impact, and when both industry and occupation are omitted (row 4), none of the coefficients are significant. Returns to both white-collar and blue-collar workers are increased by about 25 percent when industry is omitted from the regressions.

Table 9 presents a breakdown of the returns to education by age and racial group as estimated by Pucher and Harrison (1975). They pooled data from twenty of the CES poverty areas and ran ordinary least squares regressions in which hourly wage was the dependent variable. Again, the average wage for whites and blacks in each of the three age groups is similar.

Prime-age males, twenty-six to forty-nine years, earn the highest wages and the highest returns to education. For blacks, twenty-six to forty-nine years, the coefficient is six cents per hour. Thus, a high school degree translates into $28.80 for a forty-hour week, while six years of schooling means one-half this amount (education is entered linearly in these regressions.) The difference between a high school degree and six years of schooling is thus about $14.40, which compares to the regression coefficient of $13.99 in Table 6. The results from the pooled sample of twenty poverty areas are quite similar to those from the sample used in this paper (males aged twenty-one to sixty-four, from three poverty areas). The completion of a training program also has a positive and significant impact for prime-age males.

Education and training do not have significant impacts on the younger and older age groups. The results are striking for the youngest group, which has achieved higher levels of education but has not

Table 9

Returns to Education and Training by Age and Racial Group

White Males	Hourly Wage[1]	Years of School[1]	Returns to Education[2]	Returns to Training[2]
Ages 16-25	2.46	11.26	.030	.180
N = 416	(1.55)	(2.37)	(.045)	(.200)
Ages 26-49	2.94	10.11	.051	.268
N = 1221	(1.46)	(3.02)	(.019)*	(.106)*
Ages 50-65	2.59	9.28	.042	-.038
N = 536	(1.46)	(3.16)	(.029)	(.165)
Black Males				
Ages 16-25	2.48	12.20	-.084	.174
N = 431	(1.83)	(1.56)	(.078)	(.207)
Ages 26-49	2.92	11.15	.061	.216
N = 1484	(1.62)	(2.37)	(.025)*	(.104)*
Ages 50-65	2.63	9.15	.004	.080
N = 585	(1.65)	(3.16)	(.030)	(.179)

Source: Pucher and Harrison (1975).

[1]Mean; standard deviation in parentheses.

[2]Regression coefficient; standard error in parentheses.

*Denotes significance at the 5 percent level.

reaped the benefits. Many of the manpower programs of the late 1960s were directed to this group, so the absence of a positive impact for either education or training is particularly troublesome. There is the possibility that mobility in the younger group was increased by the programs of the 1960s. If more of the younger group move out of the poverty area, then truncation bias will be more serious for this group. Without other data, however, this remains a conjecture.

IV. Summary

The regression analysis has shown that the returns to education for poverty-area residents are positive and significant on average. Whites and blacks in the CES poverty area do not differ to a great extent either in personal characteristics (based on standard t-tests for the variables presented in Table 3) or in the way their earnings are determined in the labor market (based on tests of the equality of coefficients for the regressions of Table 6). Prime-age males and white-collar workers receive higher returns to education than the other age or occupational groups.

Comparisons between whites and blacks are difficult to interpret because of the differences in truncation bias over time. However, they do seem to differ from Harrison's SEO results and to approximate his UES results, emphasizing the importance of the spatial definition of the poverty area. The results for nonwhites do contradict Harrison's SEO results, and, as argued earlier, the differential truncation bias in the CES serves to reinforce this conclusion. Education does seem to pay off, although it is a risky investment. More than

one-fourth of the poverty-area residents with some college earn less than the average weekly wage of those with fewer than eight years of schooling.[5]

To say that education and training are profitable investments is not to say that they are the optimal investment. In fact, the large impact of industry of employment in the regressions of Table 6 suggests that policies that alter labor demands may yield higher returns to poverty-area residents than policies that emphasize education and training.

NOTES

[1]Two Urban Employment Surveys were conducted. Harrison reports on the 1966 UES, which contains data on ten poverty areas. The 1968 UES gathered data from six cities for both poverty-area and non-poverty-area samples. The CES is similar to the 1968 UES:

> The questionnaire and tabulation requirements of the CES in general followed the pattern established by the Urban Employment Survey (U.S. Bureau of the Census, 1970, p. vi.).

[2]This discussion draws from Cain and Watts (1973) and Crawford (1975).

[3]Chow tests failed to reject the null hypothesis that the labor market in these three metropolitan areas can be explained by the same structure.

[4]The data used in this paper were extracted from the CES to examine the effect of employment location on the wage rates of poverty-area residents (Danziger and Weinstein, forthcoming). Thus, only those males employed during the survey week are included in the sample, and weekly wage in the survey week is the dependent variable. Harrison also examines the effect of education on unemployment, but this is not possible with the sample at hand.

[5]The distribution of wages by educational class is available on request.

REFERENCES

Cain, G., and Watts, H. Income Maintenance and Labor Supply. Chicago: Rand McNally, 1973.

Crawford, D. "Estimating Earning Functions from Truncated Samples." Discussion Paper No. 287-75. Madison: University of Wisconsin, Institute for Research on Poverty, July 1975.

Danziger, S., and Weinstein, M. "Employment Location and Wage Rates of Poverty-Area Residents." Journal of Urban Economics (forthcoming).

Harrison, B. Education, Training, and the Urban Ghetto. Baltimore: Johns Hopkins University Press, 1972.

Pucher, J., and Harrison, B. "Reservation Wages, Unemployment, and Earnings Expectations in Urban Labor Markets." Mimeo. Cambridge: M.I.T., Department of Urban Studies, April 1975.

U.S. Bureau of the Census. Current Population Reports. "Characteristics of Families Residing in Poverty Areas." Series P-23, No. 19. Washington: U.S. Government Printing Office, 1966.

U.S. Bureau of the Census. Employment Profiles of Selected Low-Income Areas. Washington: U.S. Government Printing Office, 1970.

Wiseman, M., and Doolittle, F. "Education, Earnings and the Ghetto: Problems of Inference from Geographically Restricted Data." Mimeo. 1974.