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ABSTRACT

Washington County, Mississippi was selected as the site for this study because it manifested many of the rural social problems of the larger 11 county Yazoo Mississippi Delta region. During the spring of 1971 a sample of 418 males, 45 years of age and younger, were interviewed to investigate achieved level of living. The sample was about evenly distributed racially (white and black) and residentially (farm and urban areas). Among the basic study objectives were: (1) to specify those factors which influence achievement and examine the casual and intervening function of such factors; (2) to determine the degree to which childhood level of living determines achievement (along with other predictors); and (3) to specify how race influences achievement. A conclusion suggested by the findings was that the complex of circumstances, including race, which established one's social inheritance were among some of the most powerful factors which influenced ultimate achievement. When race was statistically controlled, education accounted for a sizable amount of the variation on achievement which would otherwise have been explained by ascribed status. The relationship between resident-origin-linkages and occupation suggested that an urban environment represented a more opportunistic social structure for blacks. Among both blacks and whites the higher the wife's educational attainment, the greater the respondent's achievement rank. Manipulations of the multiple regression model impressively increased black achievement, but parity with whites was not attainable. (BRDR)

Achieved Level of Living in a Mississippi Delta County: A Step-wise Multiple Regression Model with Emphasis on Race and Related Background Characteristics

by

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Introduction

Economic deprivation has continued to be a persistent problem of many southern rural people, particularly black residents of the Mississippi Delta. The problem of black poverty, and hence of black achievement, has been historically associated with a complex pattern of plantation organization and share-crop tenancy (Brandfon, 1967). Vestiges of this pattern, complicated by agricultural technology, have been shown to play an important part in the socioeconomic achievement process.

The serial impact of various structural forces not only influence the life chances of long term Delta residents, particularly blacks who remain on the large corporate farms, but such factors have also had an impact on the achievement of those who, having spent their formative years there, migrated elsewhere.

The present paper reports on the findings of a larger investigation of achieved level-of-living, hereafter referred to as achievement, among male household heads in a Delta county.[1] The study was designed to test a series of hypotheses relating to achievement, treated as the dependent variable, within the framework of a step-wise multiple regression model. The model was applied to a sample of male household heads 45 years of age and younger who were interviewed during the Spring of 1971.

Study Site and Sample Selection

Washington County, Mississippi, was selected as the study site because

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[1] For a detailed description of the study's background, methods and conclusions see the author's doctoral dissertation (McCoy, 1973).

it manifested many of the rural social problems of the larger eleven county region known as the Yazoo Mississippi Delta. Washington County represented a contrast between farm and industrial working conditions. It tended to have a balanced agricultural-industrial economic base and a more evenly distributed residential population than neighboring counties. The presence of an urban center, Greenville (1970 population, 39,648) also permitted a comparison between urban and rural occupations. Finally and of particular importance for comparative purposes, there was a more even racial distribution: blacks represented 53 percent of the population of Greenville and 57 percent of the population of the residual county. Washington County's location seemed especially appropriate in light of historical processes, particularly with respect to race, education, and social origin.

It is often mused by regional planners that industrial development is the ideal solution, if not the panacea, for local problems of individual economic well-being. While such development, through an increase in job opportunity, may be desirable, its contribution to upward mobility is problematic and complex. In the face of a modestly expanding industrial development, Washington County seemed ideally suited for a study of socio-economic achievement which would permit a test of some of the more classical concepts of mobility theory (Lipset and Bendix, 1959; Blau and Duncan, 1967).

Data were obtained by personal interviews with 418 randomly selected male household heads who were about evenly distributed among both racial groups and by farm and urban residence. Since a major constraint in the study design was to delimit effects due to old age and retirement, an age ceiling of 45 was maintained. The objective, therefore, was to

maximize linear effects of age, while minimizing its curvilinear impact on achievement, had older retired persons been interviewed. The survey design that was the most appropriate given the constraints of time and cost, was an area probability sample stratified by race and residence.

Study Objectives

The basic study objectives were as follows:

(1) To specify, from among a larger constellation, those factors which negatively or positively influence achievement;

(2) To further elaborate the causal and intervening function of such factors;

(3) To ascertain the degree to which "social inheritance;" i.e., childhood family level of living, determines achievement when considered along with other predictors of achievement.

(4) To specify how race, treated as a complex environmental variable, influences achievement through its antecedent and intervening characteristics.

Analysis

Essentially three major techniques were used in the analysis: (1) Principal component analysis (Hotelling, 1933; Harman, 1968) (2) Step-wise multiple regression analysis (Anderson, 1958; Williams, 1959), and (3) Cross-tabulation with a selected introduction of test-factors (Rosenberg, 1968). Since a more complete discussion of the rationale and application of these techniques can be found elsewhere only a brief mention of their application will be discussed at this time (McCoy, 1973).

Principal component analysis was used to derive two multivariate indexes: (a) an index of ascribed level of living designed to represent childhood living conditions as reported by respondents; (b) an index of achievement which focused on the quality of life as it existed for

respondents at the time they were interviewed. Rank on the Achievement Index was treated as the dependent variable in a multiple regression model. Rank on the Ascribed Index was considered along with the following other independent or predictor variables: Age, educational attainment of respondent, educational attainment of his wife, residence (farm, town or urban), origin (farm, town or urban), birth order, military service experience, age of respondent at birth of his first child (designed to measure postponement of family development), and race.

Step-wise multiple regression using dummy deletion procedures for dichotomous independent variables was the major analytic method. Since an explanation of interaction effects is often a challenge in problems of this type, a parallel analysis using cross-tabulation was also utilized.[2] The procedure in the cross-tabulation analysis paralleled that suggested by Rosenberg (1968) who advocates the introduction of test-factors to further specify the relationship between independent and dependent variables. In the present investigation this was used to clarify relationships among predictor variables and between predictor variables and achievement.

Construction of Achievement Index

The index of achievement included a total of 25 household possession items and conveniences, net household per capita income, and a measure of household crowding as determined by the ratio of rooms to persons. Component analysis (Harman, 1968) was used twice in the index construction

[2] An additional analysis not reported here included a typological classification based on ascribed and achieved status which was also used in a cross-tabulation format. Results of this analysis generally supported findings in the multiple regression model.

procedure. It was first used to obtain a weighted score value for the combination of possessions and conveniences. Using this weighted possessions score along with net household per capita income and crowding, component analysis was then applied in the construction of the achievement index. Rank on this index constituted the dependent variable in the step-wise multiple regression analysis.

Possessions and conveniences included in the index were as follows: kitchen sink, fluch toilet, availability of both hot and cold water, cold water only, bathtub, shower, septic tank or cesspool, electricity, range, refrigerator, radio, window screens, automobile, truck, washing machine, television (black and white), television (color), telephone, air conditioner, vacuum cleaner, sewing machine, toaster, furnace, home freezer, and automatic dishwasher.[3]

Construction of Ascribed Level of Living Index

The level of living of the respondent's childhood family, hereafter referred to as ascribed status or ascribed level of living, was assessed by the extraction of the first principal component of a combination of 9 items. The index was designed to encompass the "life chances" concept first articulated by Max Weber (Gerth and Mills, 1946), which emphasizes ".... the amount and kind of power, or lack of such, to dispose of goods or skills for the sake of income in a given economic order." The objective of the index was to assess as accurately as possible, with retrospective recall information, social inheritance (Lipset and Bendix, 1959; Blau and

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[3] For a more complete discussion concerning level of living concept and measurement see Harpod and Ducoff (1944), Danley and Ramsey (1959), Belcher and Sharp (1952), and Cleland (1965).

Duncan, 1967), or the level of living that existed for the respondent during his formative years. The 9 items used to operationalize this concept were as follows: Father's presence during childhood, father's major occupation during the respondent's childhood, father's highest level of formal education, size of the childhood family, absence or presence of a radio and a vehicle in the childhood family, self or sibling presence in school or absence from school because of work, self or sibling presence in school or absence from school because of insufficient clothing, and self or sibling receipt of clothing from sources other than family relatives. Rank on this index was treated as one of the independent variables in the regression model.

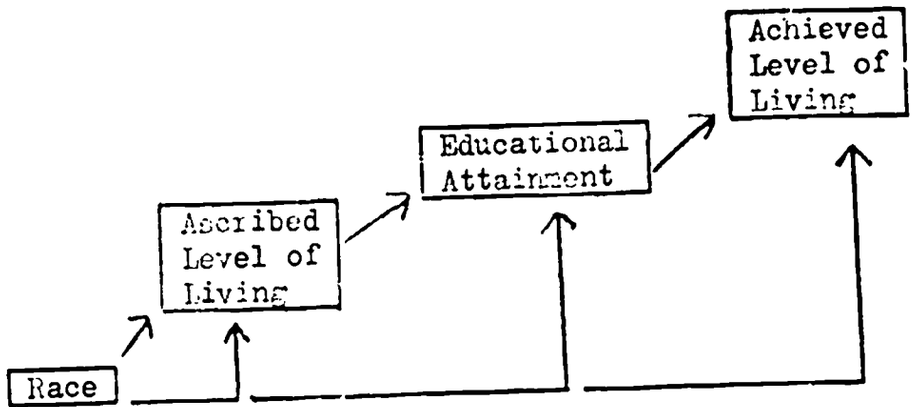
Predictions and Results

The predicted impact of key independent variables included in the model is presented in Figure A It was hypothesized that Race (i.e., being black) would have both a direct, as well as a powerful intervening, influence on achievement. It was further hypothesized that this impact would, with few exceptions, be negative or suppressive. Considered within this context, race is analytically conceived as an environmental variable, acting directly as a predictor and indirectly through other demographic and construct variables.[4] Race, therefore, treated as an integral part of one's social inheritance as well as an environmental variable should have a powerful and suppressive influence both on ascribed status and on achievement. These two complex predictors, should

[4]The term "racism" as conceived by van den Berghe (1967) would be equally appropriate as a conceptual focus of analysis.

in turn have a correspondingly significant impact on achievement through the intervening influence of formal education. Hence, race is predicted to have a three-fold impact: (a) as an antecedent variable, (b) serially through the influence of other variables, and (c) directly on the outcome variable: achievement.

Figure A



(Race acts both as an antecedent and as an intervening variable.)

Results of the step-wise multiple regression analysis (Table 1 about here) show the impact of these key factors considered along with other hypothesized predictors of achievement in Washington County. Race, as expected, had a very powerful and generally suppressive impact on achievement. When race is considered along with other factors, the average black man ranks 103 units lower than the average white man on the achievement index.

Socialization theories, particularly the cycle of poverty hypotheses (Lewis, 1965) and vicious circle theories (Lipset and Bendix, 1959) postulate that economic deprivation in the family of origin (i.e., a poor social inheritance) should significantly influence later achievement. However, ascribed status, operationalized to assess this concept, had only a negligible influence on achievement. Without further thought this is a puzzling result, which runs counter to a sizable body of evidence.

It appears that this negative result was primarily due to the very powerful interaction effects of race and education with ascribed status. Even when race is statistically controlled (Table 1: Regressions within racial groups), the effect of ascribed status on achievement remains negligible because of the powerful intervening effects of education. In other words, considered within the context of Delta life, race acts as a powerful determinant of social origin, which subsequently influences education and achievement. When race is statistically controlled, education, which enters the step-wise multiple regression equation first, accounts for a sizable amount of the variation on achievement which would have otherwise been explainable by ascribed status.[5]

An interesting exception to the generally suppressive influence of race occurred with educational attainment. The regression coefficient for blacks (beta=9.22) compared with that for whites (beta=8.23) suggests that blacks have greater achievement for each year of educational attainment. However, such relative progress is ineffectual when considered in light of their low level of educational attainment (black $\bar{x}$=9.2; white $\bar{x}$=12.3). Hence, it can be argued that while an increase in formal schooling helped to move them up relative to their origin, it had comparatively little influence judged within the context of white social structure and white achievement.

A conclusion suggested by these findings is that the complex of circumstances, including race, which go into establishing one's social

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[5] For a further demonstration of this influence using a series of deletion regressions see McCoy (1973), Table 6.4.

inheritance are among some of the most powerful factors which influence ultimate achievement. If race were no longer a determinant of ascribed status, and the environmental effects of race ceased to suppress the positive impact of other key factors on achievement, a more opportunistic variant of vertical mobility would be a predicted result. That is to say, in the absence of discrimination, such a social system would manifest determinants of achievement that would be unrelated to race when examined conceptually as an environmental factor.

Relative Impact of Other Variables

It is clear from Table 1 that following race and education, other variables also play an important part in the determination of achievement. One of these is the educational attainment of the respondent's wife. Among both blacks and whites, the higher the wife's educational attainment, the greater the respondent's achievement rank. However, whites obtained greater benefits as indicated by their respective beta coefficients (whites, beta=9.20; blacks, beta=6.97). This was true contrary to the supporting evidence that black wives had equal or better employment patterns than white wives (blacks - 68 percent; whites - 62 percent). Additional trend data relating to occupations also demonstrate that there is a greater abundance of black related domestic and service occupation, and that these types of occupations are among the lowest ranked in average annual wages (McCoy, 1973). Blacks, compared with whites, were disproportionately represented in personal services which have consistently lagged behind other major Delta industry groups in average annual wages.

It is considered almost axiomatic that the quality of life for black

residents of urban areas is higher than that of their cohorts on farms. Results support the general hypothesis that local urban residence had a positive influence on the achievement of black respondents, but tended to have a reverse impact on white achievement levels. The interpretation to be placed on this finding is simply that residence must be judged from the comparative viewpoint; i.e., black urbanites are better off because rural blacks are worse off. Among whites, however, farm residents (here meaning plantation owners, operators, and managers) are generally better off than their white urban cohorts: a finding certainly supported by historical evidence (Clement, 1952; Brandfon, 1967).

An interesting research problem presented by these findings concerns how, in the collective sense, residential origin, education and occupation are associated with achievement. The general theory of stratification, and particularly Delta history, suggests that there would be a hierarchy of achievement based on linkage effects between childhood residential origin and current residence. These linkage effects should be strongly associated with occupational and educational patterns. To test these effects, respondents were reclassified into the following three groups: (a) Farm residents with farm backgrounds, (b) urban residents with urban backgrounds and (c) urban residents with farm backgrounds. A fourth logical classification was not possible because there were hardly any farm residents with urban backgrounds.

These findings suggest that urban residence across generations may have a cumulative effect in its positive contribution to social inheritance, which in turn, reinforces effects of education and occupation. Data presented in Table 2, for example, suggest that among blacks, urban residents with urban

backgrounds tend to have far more formal education than residents who remained on farms, or more education than their cohorts who migrated from the farm to the city (Table 2 about here). Having a farm background has a suppressive impact on achievement, primarily through its association with formal education and ascribed status. Judging from the findings, educational attainment functions as a selection factor in such a way that persons with the least amount of schooling tend to remain on farms, while those with more formal education tend to either originate in cities, or move there.

The relationship between residence-origin linkages and occupation (Table 3 about here) suggests that an urban environment represents a more opportunistic social structure for black residents of Washington County. Black farm residents who had spent their childhood years on farms were more likely to be operatives and farm laborers; those who moved to the city were more represented among non-farm laborers and operatives; while black urbanites who spent their formative years in the city had the largest representation among professionals and craftsmen and the smallest representation among laborers.

Another significant but somewhat puzzling predictor of black achievement was age. Age represents not only physical maturation over time, but also generational values and changing opportunities. An initial hypothesis was that age would have a greater positive influence on black achievement than on white achievement. The reasoning was that since black people had a much lower ascribed status than whites it would take them longer, over time, to accumulate some of the benefits of income and possessions. Another consideration is that age is also associated with formal educational attainment; i.e., younger blacks had

higher educational attainment than older blacks whereas among whites these differences were not as evident. In the step-wise multiple regression analysis, education acts partly as a proxy for age. Hence, the evidence suggests that education and age both act to slow the downward mobility of blacks but with different outcomes. Without the benefit of formal education, it takes longer to accumulate a few of the benefits which might serve to buffer the effects of a downward mobility spiral.

In the present investigation older age represents not only the handicap of lower educational attainment, but also the additional handicap of plantation existence, and generational differences in social inheritance.

Lack of Influence of other Hypothesized Predictors

Selected factors shown to be significantly related to achievement and vertical mobility in other investigations proved to have no discernible impact in the present analysis. These included the following: birth order, age at birth of 1st child, rural-urban origin, and military experience. The fact that they had no statistically significant impact, when considered among the constellation of variables in the model, raises some fundamental questions concerning the meaning of influence and causation. It also underscores a very complex web of interrelationships that are woven into the social tapestry of Delta existence.

Education, like race, acts as a proxy for several of these variables. Postponement of family development has no discernible influence because of its partial correlation with education. Likewise, birth order, is partially associated with education. Those who were only, oldest or

youngest children, compared with middle born children, were more likely to have attained at least 12 years of education, although, this relationship is stronger among whites. Blau and Duncan found a similar relationship in their study. This leads to the speculation that selective outmigration among blacks may have impeded the full impact of this factor on achievement. If more talented blacks are leaving the area, this would also explain, in part, the lack of positive influence that military service experience might have on achievement. The military organizations, particularly prior to the present decade, were among the few channels of upward mobility for young black men. However, only a small proportion of them reported military experience which may also reflect ineligibility because of educational inadequacy.

Rural-urban origin has no significant impact on achievement because of the serial role it plays in the determination of occupation and education attainment which are closely associated with social inheritance. Being black and originating on a Delta plantation are tantamount to having a father of share-cropper or laborer occupation who has less than eight years of education. It also means being part of a social system which historically has offered few rewards for educational attainment and which carries with it the penalties of lower income.

Some Implications for Enhancing Black Achievement

In order to examine some of the possible effects of differing assumptions relating to black achievement, a series of adjustments were made in the original multiple regression equation. This technique, which Duncan (1969) refers to as "tinkering with the model," demonstrates what black achievement would be like if certain predictors had different coefficients

or means. The ideal objective was to increase average achievement parity between blacks and whites. A more practical consideration was to develop a better understanding of the relative impact of predictor variables and hence enlarge our conceptual knowledge of race as an environmental complex of factors.

There are to be sure a number of methodological and statistical limitations assumed when applying a model of this type. Such a model, for example, is concerned with a type of individual who is representative only in a statistical sense; that is, a "summary man" representative of average attributes of the group as a whole. Results of adjustments in the step-wise regression analysis as applied in the present study would appear to have greater conceptual application than statistical generalization.

In the original regression analysis, black coefficients most often represented a lower rate of progress up the achievement index. In those few instances where those coefficients were larger than corresponding white coefficients, either a lower ascribed index rank, or a lower mean value for the attribute, tended to detract from the maximum impact that particular variable might have had in a more opportunistic social-economic system.

The problem was to determine what changes in values or sets of values representative of demographic factors would diminish the average level of living gap between blacks and whites. The standard procedure was to assign white values to corresponding black values and vice versa. Three kinds of adjustments were made. (1) A coefficient and mean were changed together; (2) the corresponding white coefficient was multiplied times

the black mean value or (3) a black coefficient was multiplied times a white mean, while other conditions remained unchanged.

As indicated in Figure B, a complete local urban immigration of blacks (situation b) is less effective than several other assumptions such as increase in formal education, postponement of family development, and raising ascribed index rank. Raising the average black educational level to 12 years (situation c), without other changes, would not increase their achievement much more than a change from farm to urban residence. Increasing the educational level of the wife, however, increases achievement rank from 122 to 162, still significantly lower than an average white achievement level of 286. Clearly very few, if any, of these changes occur as isolated events. Formal education, for example, was shown by regression and cross-tabulation to be associated with a number of other factors.

In situations h and i are represented some of the major differences between black and white socioeconomic structure in the Delta. In situation h, black social structure (as suggested by black regression coefficients) is retained, but black respondents are assumed to have the same demographic characteristics as whites; that is, white means are substituted for black means. This manipulation results in a rank increase from 122 to 164, which is still considerably below the rank of 285 for whites.

Situation i presents the reverse conditions. Here black demographic characteristics are retained, but with the ensuing benefits of white society, that is white regression coefficients are substituted. This manipulation results in an achievement rank of 221. Differences in the

results of these two opposite situational changes clearly suggest that it is the condition representative of white social structure that remains a crucial substratum of achievement and vertical mobility.

The final data manipulation (situation j) represents the hypothesis that changes which influence the present generation also have an impact on the achievement potential of succeeding generations, both through the environment and by creating a more desirable social inheritance. This condition was simulated by assigning black respondents the equivalent of a twelfth grade education (with the accompanying white coefficient), an urban origin and residence, and the same social inheritance rank and family postponement characteristics as whites, while holding other conditions in the model constant. By increasing education, postponing family development, creating urban opportunities, and assuming that blacks had an improved childhood family background, the following generation would have an achievement potential of 254. However, while these combined changes impressively increase black achievement, parity with whites is not attainable.

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Table 1——Results of step-wise multiple regression analysis of 13 independent variables influencing achieved level-of-living rank of respondents, Washington County, Mississippi, 1971

Attribute	Overall		Black		White	
	Regression coefficient	t-value	Regression coefficient	t-value	Regression coefficient	t-value
Constant	0.93		-85.85		6.80	
Independent variable:[1]						
(1) Race (Black)	-103.39	10.88[a](1)[2]	—	—	—	—
(2) Highest level of education	8.87	5.86[a](2)	9.22	3.76[a](1)	8.23	4.23[a](1)
(3) Spouse's education	8.45	5.11[a](3)	6.97	2.94[a](2)	9.20	3.86[a](2)
(4) Age	1.46	2.42[b](4)	2.39	2.47[b](3)	0.51	0.66
(5) Respondent's age at birth of first child.	0.87	0.79	0.17	0.35	0.93	0.59
(6) Farm residence	5.06	0.58	-28.66	1.79[d](5)	24.84	2.42[b](3)
(7) Town or village residence	- 14.14	1.11	-36.32	2.05[c](4)	8.80	0.46
(8) Farm orientation	- 17.19	1.63	-19.40	1.17	- 9.17	0.66
(9) Town or village orientation	- 13.62	1.08	-16.55	0.76	- 1.67	0.12
(10) Ascribed rank	0.04	0.81	- .03	0.49	0.09	1.45
(11) Middle birth rank	1.58	0.18	2.85	0.21	*	*
(12) Youngest birth rank	5.93	0.52	30.86	1.69	-15.55	1.24
(13) Military service experience	- 1.69	0.18	5.81	.34	- 7.22	0.66
Total R^2		.6134		.3566		.3970
Total cases	(418)		(184)		(234)	

[1]Variable (1) was measured as a score for 1 for Black and 0 for White; variables (2), (3), (4), (5), and (10) were treated as continuous variables with a score value for 1 for each unit of attribute represented; variables (6), (7), (8), (9), (11), (12) and (13) were assigned values of 1 for presence of the attribute. Urban residence and orientation were treated as deletion variables. Oldest birth rank was also treated as a deletion variable.

a = significant at the 0.01 level or beyond. b = significant at the 0.02 level or beyond.
c = significant at the 0.05 level or beyond. d = significant at the 0.10 level or beyond.

[2]Numbers in parentheses denote order of entry into equation.

Table 2 ——Residence-origin characteristics by race and education, Washington County, Miss., 1971

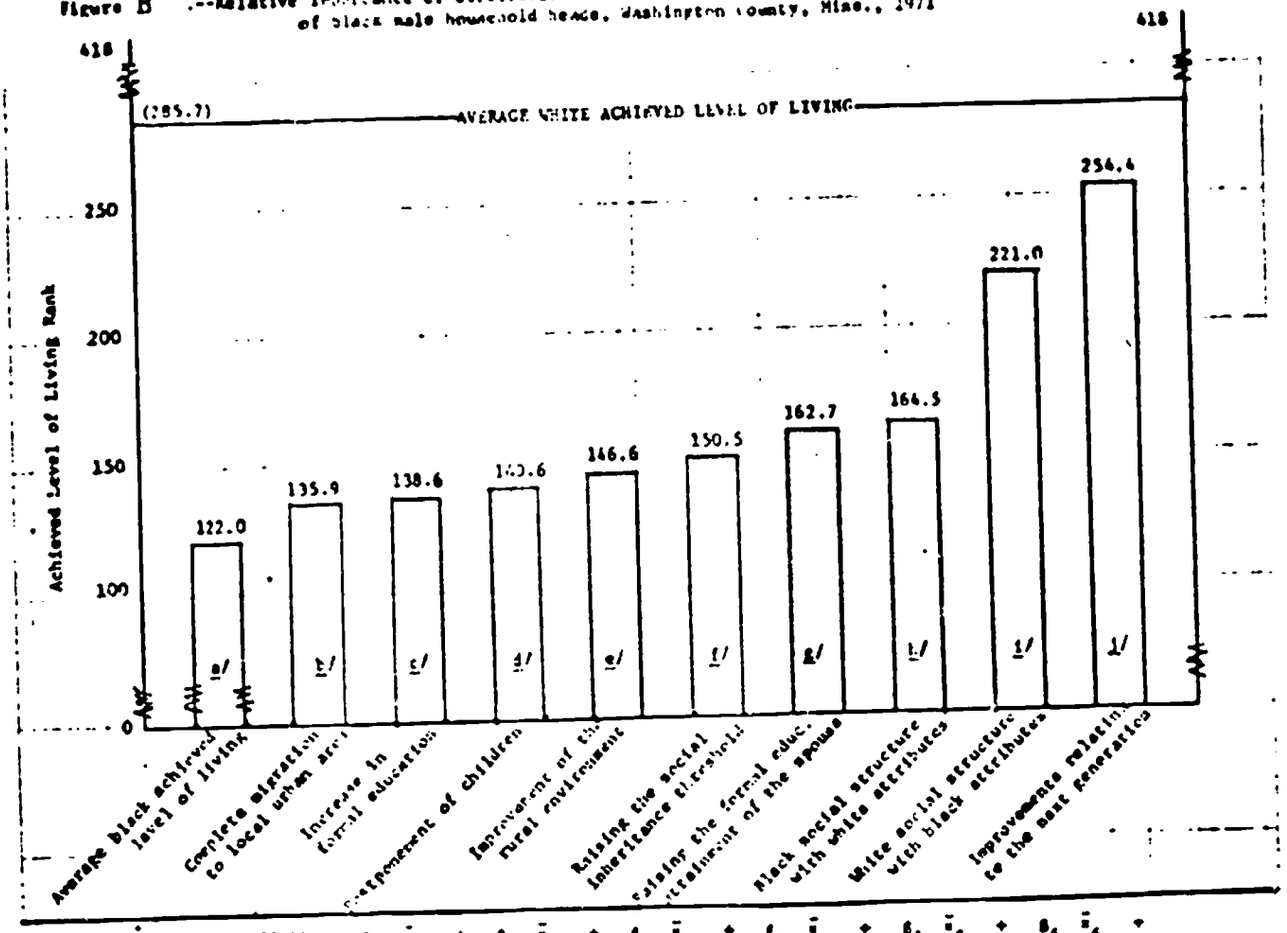
Residence-origin	Cases	Education: 8 years or less	Education: 9-11 years	Education: 12 or more years	Total
	Number	Percent			
Black:					
Farm residents with farm background	49	69	18	12	100
Urban residents with urban background	61	15	29	56	100
Urban residents with farm background	72	42	36	22	100
Percent of total		40	29	31	100
		Number			
Total cases	182	73	53	56	—
		Percent			
White:					
Farm residents with farm background	75	21	23	56	100
Urban residents with urban background	69	6	17	77	100
Urban residents with farm background	66	17	32	51	100
Percent of total		15	24	62	100
		Number			
Total cases	210	31	50	129	—

Table 3———Residence-origin class by occupation and race, Washington Co.,Miss. 1971

Residence origin class 1/	Profes-sionals	Mana-gers	Crafts-men	Cleri-cal and sales	Opera-tives	Service workers	Laborers: except farm	Farm Oper-ators	Farm Labor-ers	Pct. of total	Total Cases
					Percent						
Farm residents with farm background....											
Black.....	—	2.0	—	—	51.0	2.0	8.2	4.1	32.7	100.0	49
White.....	5.3	6.7	21.3	1.3	20.0	—	4.0	28.0	13.3	100.0	75
Urban residents with urban background...											
Black.....	11.5	3.3	11.5	14.8	39.3	6.6	11.5	—	1.6	100.0	61
White.....	29.0	18.8	8.7	14.5	14.5	1.5	8.7	2.9	1.4	100.0	69
Urban residents with farm background....											
Black.....	1.4	2.8	1.4	5.5	41.7	6.9	36.1	—	4.2	100.0	72
White.....	13.6	4.6	27.3	18.2	21.2	7.6	6.1	1.5	—	100.0	66
					Number						
Total											
Black.....	8	5	8	13	79	10	37	2	20	—	182
White.....	33	21	40	23	39	6	13	24	11	—	210
					Percent						
Percent of total											
Black.....	4.4	2.8	4.4	7.1	43.4	5.5	20.3	1.1	11.0	100.0	—
White.....	15.7	10.0	19.1	11.0	18.6	2.9	6.2	11.4	5.2	100.0	—

[1] The farm resident with urban background class is deleted due to insufficient cases.

Figure B .--Relative importance of structural and personal attributes relating to achieved level of living of black male household heads, Washington County, Miss., 1971



a/ $\hat{Y} = -85.85 + \beta_1 \bar{x}_1 + \beta_2 \bar{x}_2 + \beta_3 \bar{x}_3 + \beta_4 \bar{x}_4 + \beta_5 \bar{x}_5 + \beta_6 \bar{x}_6 + \beta_7 \bar{x}_7 + \beta_8 \bar{x}_8 + \beta_9 \bar{x}_9 + \beta_{10} \bar{x}_{10} + \beta_{11} \bar{x}_{11} + \beta_{12} \bar{x}_{12}$

($\hat{Y}$: Average Black Achieved Level of Living)

Where: $\bar{x}_1$ = Average highest year education completed
$\bar{x}_2$ = Average highest year of spouse's education
$\bar{x}_3$ = Age of respondent
$\bar{x}_4$ = Age of respondent at birth of first child
$\bar{x}_5$ = Farm residence
$\bar{x}_6$ = Town or village residence
$\bar{x}_7$ = Farm orientation
$\bar{x}_8$ = Town or village orientation
$\bar{x}_9$ = Average ascribed rank or social inheritance
$\bar{x}_{10}$ = Middle birth rank
$\bar{x}_{11}$ = Youngest birth rank
$\bar{x}_{12}$ = Military service status

Estimates of the effects of each succeeding condition presented in the histogram were made as follows:

b/ Complete migration to local urban area: $\beta_4 \bar{x}_4$ and $\beta_7 \bar{x}_7$ were deleted.

c/ Increase in formal education: $\beta_1 \bar{x}_1$ was substituted with white coefficient and mean.

d/ Postponement of children: $\beta_4 \bar{x}_4$ was substituted with white coefficient and mean.

e/ Improvement of the rural environment: $\beta_6 \bar{x}_6$ and $\beta_7 \bar{x}_7$ were substituted with white coefficients and means.

f/ Raising the social inheritance threshold: $\beta_9 \bar{x}_9$ was substituted with white coefficients and mean.

g/ Raising the formal education of the spouse: $\beta_2 \bar{x}_2$ was substituted with white coefficient and mean.

h/ Black social structure with white attributes: all white means were substituted, but black coefficients were retained.

i/ White social structure with black attributes: black means were retained, but white coefficients were substituted.

j/ Improvements relating to the next generation: white coefficients and means were substituted for: $\beta_2 \bar{x}_2$, $\beta_4 \bar{x}_4$, $\beta_9 \bar{x}_9$; $\bar{x}_1$ was set equal to 12 years and the white coefficient was applied; $\beta_5 \bar{x}_5$, $\beta_6 \bar{x}_6$, $\beta_7 \bar{x}_7$, $\beta_8 \bar{x}_8$ were deleted. Deletion of these variables implies a condition of urban residence and urban orientation.