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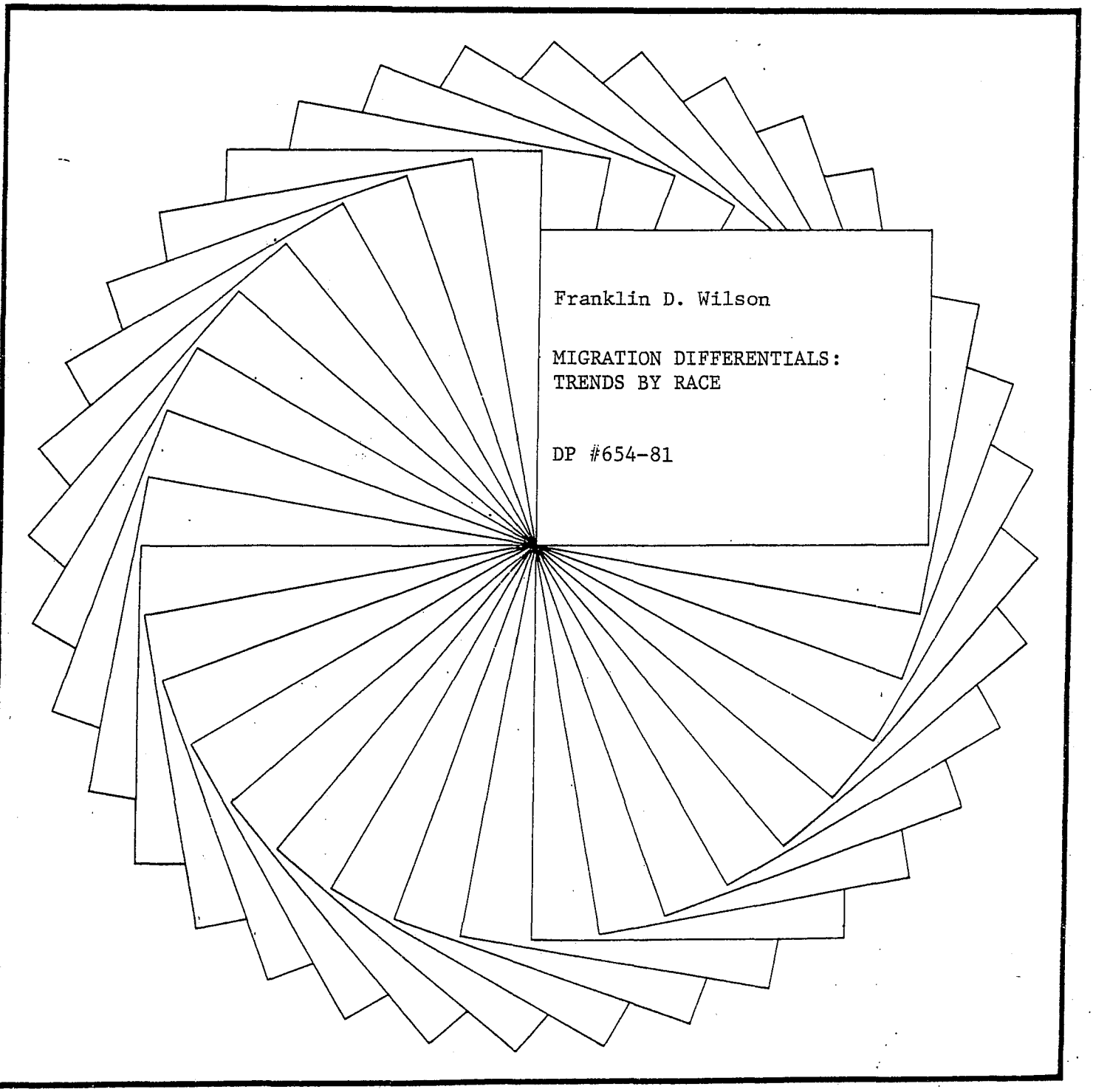

Migration Differentials: Trends by Race

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Abstract

This paper presents analysis of trends in migration differentials by race, age, education, and region between 1965 and 1976. Findings provide further documentation of the increased net flow of populations from the North and East to the South and West regions. Migration differentials with respect to age increased among blacks and decreased among whites of non-Hispanic origins, while migration differentials by educational attainment increased among both racial groups. For the 1965-70 period, it is shown that the propensity to migrate is associated with employment status, e.g., persons who were not in the labor force in 1965 were substantially more likely to migrate. This finding supports the conclusion that migration is associated with entrance into and exit from the labor force.

Migration Differentials: Trends by Race

INTRODUCTION

The study of migration differentials has long been of interest to demographers (see Bogue, 1959). Interest in the subject is motivated in part by recognition of the fact that migrants are not drawn at random from the population at point of origin, nor are they representative of the population at destination. The origin and destination of migrants, and the differences between migrants and nonmigrants, are often manifestations of important transformations occurring in the social, economic, and political structures of a society (Goldscheider, 1971). The redistribution of individuals, in fact, alters the structure of opportunities available in particular localities, and hence creates conditions conducive to the continuous movement of individuals.

This paper reports the results of an analysis of migration differentials that focuses on the periods 1965-70 and 1970-76. In the first part of the analysis, an effort is made to ascertain whether migration differentials with respect to such factors as race, age, education, and region of origin and destination have changed over the two time periods. During the ten-year period under review, there occurred two changes that may have had significant impacts on migration trends. First, in the first half of the 1970s, employment opportunities for college graduates appear to have declined--both the likelihood of finding employment commensurate with level of skill and the economic rewards enjoyed by cohorts entering the labor force are less than in previous decades (Freeman, 1976; Smith and Welch, 1978). This change could have an effect on the selectivity of migration with respect to education and occupation attainment (see Long and Hansen, 1977). Second, the 1970 decade

witnessed the reversal of a population redistribution trend at least a century old--that of net outmigration from the South and nonmetropolitan areas to metropolitan areas in the North and East. There is some evidence to suggest that (1) SMSAs in the South and West have experienced disproportionate increases in the high status segment of their populations (Frey, 1979); and that (2) changes in the selectivity of migration with respect to age, education, and occupation have favored metropolitan areas even in the face of net outmigration to nonmetropolitan areas (Lichter et al., 1979).

A second aspect of the analysis of migration differentials covered in this paper focuses on the impact of prior labor force activity on migration--specifically, an effort is made to determine whether an individual's previous labor force status--his being in school, not in the labor force, or employed in a particular occupational grouping--affects the odds of his migrating between 1965 and 1970. It has long been suspected that much of the influence of age on the propensity to migrate reflects lifecycle changes, involving either the beginning of a career when young, or the advancement of a career during the middle years. Hence one would expect that once prior labor force experience is controlled, the observed inverse relationship between age and migration will be altered significantly.

In industrial societies in which the allocation of positions and rewards is based primarily on achievement, the economic factor dominates all others in accounting for migration, particularly if the latter involves great distances (see Long and Hansen, 1979; Ritchey, 1976; Shaw, 1975; Lansing and Mueller, 1967). Even in these societies, however, the nature of the influence of the economic factor on migration varies depending on

the age, education, occupation, labor force experience, marital status, and race of the individual. The transition from adolescence to adulthood, for example, is often associated with changes in an individual's position in various types of collectivities, including the family, the school, and the economy. Such changes often require leaving one location or home and journeying to another--to attend school, join the military, take a job, get married, etc.

Entrance into the labor force and the initiation of occupational careers have rather pronounced effects on the migration behavior of the young, contributing to a much higher rate of migration among this age group than any other. In fact, the inverse character of the association between migration and age is simply a manifestation of the differential impact of labor force experience and career trajectories on the activities of individuals as they proceed through the life cycle.

Aside from age, achieved status, reflecting educational and occupational background, also has different effects upon the migration propensity of individuals. The rate of migration is positively related to educational and occupational attainment (Ritchey, 1976; Shaw, 1975; Long, 1973; Lichter et al., 1979; Long and Hansen, 1977). Ritchey (1976:384) notes that this selectivity has two sources. First, higher levels of educational attainment increase an individual's capability of obtaining and analyzing information, in order to assess whether moving to another location will lead to an advance in a career and/or an improvement in socioeconomic standing. Second, the labor market area for persons with differing levels of skills tends to vary from the local to regional and national level. Highly skilled persons are more likely to cross local labor market boundaries in search of employment or to improve their

socioeconomic standing, because their labor is sold on a market which is more geographically dispersed (see also Shaw, 1975).

The dispersed character of the labor market area for highly skilled persons possibly arises from two sources. On the one hand, local and regional inequalities in the supply of persons with high levels of educational and occupational attainment may encourage firms to take these inequalities into account when seeking to fill a vacant position. On the other hand, even in the absence of these inequalities the search behavior of firms for highly skilled persons may be geographically dispersed if it is perceived that potential applicants with similar education and occupational backgrounds may differ significantly in other relevant characteristics, such as job experience, initiative or motivation, leadership potential, etc.

The impact of age, education, and occupation are not the only factors of interest in the analysis of migration differentials (see Goldschneider, 1971). Any factor in which it is possible to observe inequalities in life chances, opportunities, and rewards among subgroupings of a population is likely to be associated with migration if these inequalities manifest themselves over geographic areas. In the U.S., race has been one such factor. The continuous movement of black Americans out of the South since the Civil War reflects their desire to obtain a better standard of living than was available to them at the point of origin. Since World War II, however, the character of black migration has changed significantly, prompting some to argue that migration differentials among blacks are converging with those of whites (see Taeuber and Taeuber, 1965; Himes, 1973). This possibility will be explained further below.

THE CURRENT STUDY

Black and white males 18 years of age and over and living in the 119 largest SMSAs in 1970 are the population subgroups of primary interest in this analysis. The data are taken from the 1970 1/100 PUS file for county groups (5% sample universe) and the 1976 Survey of Income and Education file (SIE). In both surveys, it is possible to identify a particular class of migrants, i.e., those individuals who established residence in another region during the previous five years for the PUS sample and the previous six for the SIE sample. Whether or not an individual is a regional migrant is determined by his response to a question on previous state of residence. An individual is defined as a migrant if he currently lives in a state which is in a different region from his previous state of residence.

For the PUS file, it was necessary to infer an individual's current state/region of residence by first assigning a state/region of residence based on SMSA of residence. In the case of individuals living in the 15 SMSAs that cross state boundaries, another procedure was employed. If an individual lived in such an SMSA, in which it was not possible to separate the SMSA into its state components, a migrant is defined as a person whose 1965 region of residence is different from that of the state which contains the principal central city of the SMSA of current residence. Thus, for example, individuals who lived in Kentucky in 1965 and lived in the Ohio portion of the Cincinnati SMSA in 1970 are not considered migrants, since such a change is assumed to be a move within the same labor market area. Although current state of residence is uniquely identified on the SIE file, the above procedure was also applied in order to maintain compatibility between the definitions of a migrant in the two samples.

There are a number of limitations inherent in the use of the PUS and SIE samples to study migration differentials. First, as indicated in Table 1, a significant number of individuals in both samples did not report their state of previous residence. Somewhat disturbing is the fact that in the PUS sample the number of persons not reporting previous state of residence is twice the number indicated for the SIE sample. This difference is consistent with the findings of Long et al. (1978) that the frequency with which residence changes are not reported has been uniformly higher in the decennial censuses than is true of other national surveys conducted by the Bureau of the Census. In order to correct for any biases in the trends in migration differentials that may result, individuals in the "Not Reported" category were allocated a previous place of residence reflecting that of individuals with similar current region of residence, age, and educational and (when appropriate) occupational backgrounds. For both migration intervals, this procedure leads to an overstatement of the number of migrants.

A second problem with both samples is that it is not possible to identify all categories of multiple and return migrants. The extent of this bias is unknown, but it is clearly possible for an individual to move several times over a five- or six-year interval. A third problem derives from the fact that individuals are selected for analysis on the basis of their most recent place of residence. This biases the analysis of differentials at origin, since region of origin is observed only for those individuals who did not move or who moved to one of the SMSAs included in the two sample universes.

Table 1. Migration Status, by Race, 1965-70 and 1970-75 (in percentages)

Region	Blacks					Whites				
	N	Not Migrants	Regional Migrants	Migrants from Abroad	Residence not Reported	N	Not Migrants	Regional Migrants	Migrants from Abroad	Residence not Reported
					PUS					
East	10,058	85.5%	3.5%	2.6%	8.4%	104,389	92.6%	2.6%	1.7%	3.1%
North	10,133	86.7	5.0	0.6	7.7	84,732	91.8	4.3	1.2	2.7
South	13,912	90.0	1.9	0.6	7.4	69,214	86.3	8.1	2.0	3.5
West	4,040	81.0	9.2	1.8	8.0	63,290	86.7	8.1	1.9	3.4
Total	38,143	87.0	4.0	1.3	7.8	321,625	89.9	5.3	1.7	3.1
					SIE					
East	1,123	89.8	3.9	3.5	2.8	12,089	95.0	3.0	1.2	0.8
North	1,696	91.9	5.4	0.8	1.9	14,731	93.8	4.6	0.8	0.8
South	2,819	93.8	3.6	1.1	1.6	9,271	85.6	11.3	1.9	1.3
West	524	76.1	17.7	2.3	3.8	11,851	84.3	12.1	1.9	1.7
Total	6,162	91.0	5.4	1.5	2.1	47,942	90.2	7.4	1.4	1.1

Note: All total population figures are derived from unweighted sample counts. The percentages reported for the SIE are based on weighted population counts.

Source: PUS and SIE.

RESULTS

Age, Education, and Regional Differentials

Table 2 reports estimates of the average annual percentage of persons migrating, by race, for 1965-70 and 1970-76. In both racial groupings, one can observe that the positive relationship between migration and educational attainment and the negative association between migration and age holds for both time periods. The percentage of persons migrating declined for all age and educational categories among blacks, while for whites the percentage of persons migrating increased overall, reflecting greater declines among the lowest educational and youngest age categories (except for the oldest age group). These trends would seem not to be consistent with what one would expect, considering that both the age and educational distributions of the total U.S. male population have been shifting in a direction favorable to migration (see Long and Hansen, 1977). It is quite possible that the economic recession of the first half of the 1970's could have adversely affected the percentage of persons migrating, since there were fewer jobs available. In addition, increases in the educational attainment of the population may not necessarily lead to an increase in the percentage of persons migrating, if the demand for persons with higher levels of education declines or remains constant. Freeman's (1976) argument that employment opportunities for college graduates have declined would seem to be consistent with this observation.

One obvious problem with the trends reported in Table 2 is that the percentage of persons migrating by age and education are not independent of each other. In addition, regional differentials may distort age and educational differences in the percentage of persons migrating. This could occur if the ability of a region to retain and/or attract individuals

Table 2. Average Annual Percentage of Migrants, by Race, Education and Age: 1965-70 and 1970-75[a]

Variables	Blacks			Whites		
	1965-70 (1)	1970-76[b] (2)	Ratio (3) (2/1)	1965-70 (4)	1970-76[b] (5)	Ratio (6) (5/4)
Total	1.76	1.13	0.639	1.12	1.34	1.196
Education						
0-11 yrs school	1.65	0.69	0.419	0.99	0.73	0.737
4 yrs high school	1.82	1.44	0.791	1.24	1.16	0.935
1-3 yrs college	2.02	1.40	0.693	1.55	1.44	1.929
4+ yrs college	2.38	2.10	0.882	2.20	2.22	1.009
Age						
18-24 yrs	2.45	1.57	0.641	1.87	1.57	0.840
25-34 yrs	2.54	1.69	0.665	2.26	1.69	0.748
35-44 yrs	1.17	0.94	0.803	1.25	0.94	0.752
45-54 yrs	1.38	0.89	0.645	0.84	0.89	1.060
55+ yrs	1.27	0.37	0.291	0.83	0.37	0.446

Source: 1970 1/100 PUS for county groups and 1976 Survey of Income and Education.

[a] Excludes Spanish Americans.

[b] Percentages for 1970-76 based on weighted population counts.

varies across age and educational groupings. To check out these possibilities, four multiple-dimensional tables (two for each racial group), giving the percentage of persons migrating by age, education, region of origin or region of destination, and time period, were constructed and subjected to a log-linear analysis. The following equation was applied to the tables (one for region of origin and one for destination region) to obtain estimates of the relative effects of age, education, region, and time on the odds of migrating:

$$\text{Log}_e M = \mu_m + \lambda_A + \lambda_E + \lambda_R + \lambda_T + \lambda_{AE} + \lambda_{AR} + \lambda_{AT}$$

$$+ \lambda_{ER} + \lambda_{ET} + \lambda_{RT}$$

$\text{Log}_e M$ is the natural log of the odds of being a migrant; μ_m is the grand mean effect or the average cell value of M; the parameters λ_A through λ_T represent the main effects of age, education, region, and time period respectively on the log odds of being a migrant; and the parameters λ_{AE} through λ_{RT} represent two-way interaction effects. (Note that parameters for three- and four-way interaction are not included in equation (1).) In the estimation of the parameters of equation (1), the samples for both the PUS and SIE have been weighted to reflect total population counts.

Tables 3 and 4 report chi square values associated with models, as estimated by different versions of equation (1), predicting the log odds of being a migrant at region of either origin or destination. The log-linear chi square values associated with the "total" rows (e.g., the first row) provide a test of the hypothesis that the odds of being a migrant do not vary by age, education, region, and time period. This is the baseline model, which is used to evaluate the efficacy of all other models in

Table 3. Associated Chi Squares Derived from a Model Predicting the Log Odds of being a Migrant for Black Males Aged 18 Years and Over, by Region of Origin and Destination

Effect Parameters	Origin			Destination		
	Log-Linear χ^2	D.F.	$\%\chi^2$ Explained	Log-Linear χ^2	D.F.	$\%\chi^2$ Explained
Total	440,610	159	100.0	409,988	159	100.0
Net main effects [a]						
Total	210,546	148	52.21	174,367	148	57.47
Education	228,171	151	4.00	186,137	151	2.87
Age	278,650	152	15.45	258,240	151	20.46
Region	310,944	151	22.78	280,332	151	25.84
Time	231,434	149	4.74	193,204	149	4.59
Net two-way interactions [b]						
Total	108,678	105	23.12	78,222	105	23.45
Education (x) Age	121,792	117	2.97	91,017	117	3.12
Education (x) Region	123,044	114	3.26	96,135	114	4.37
Education (x) Time	114,681	108	1.36	86,400	117	1.99
Age (x) Region	136,064	117	6.21	107,994	108	7.26
Age (x) Time	113,143	109	1.01	83,314	109	1.24
Region (x) Time	129,415	108	4.70	92,582	108	3.50
Total main and two-way interaction effects	108,678	105	75.33	78,222	105	80.92

[a] The percentage of χ^2 explained by each main effect parameter is derived by taking the difference between the chi square value for total main effects and the chi square value obtained by excluding the main parameter of interest, divided by the total chi square value.

[b] The percentage of χ^2 explained by total two-way interaction was obtained by taking the difference between the percentage of χ^2 explained by total main effects and that explained by two-way interaction effects. The percent of χ^2 explained for each net two-way interaction effect (excluding Total) was obtained by taking the difference between the percentage of χ^2 explained by all two-way interaction effects and the percentage of χ^2 explained by excluding the two-way interaction parameter of interest.

Table 4. Associated Chi Squares Derived from a Model Predicting the Log Odds of Being a Migrant for White Males Aged 18 Years and Over, by Region of Origin and Destination

Effect Parameters	Origin			Destination		
	Log-Linear χ^2	D.F.	$\%\chi^2$ Explained	Log-Linear χ^2	D.F.	$\%\chi^2$ Explained
Total	1,747,635	159	100.00	2,684,567	159	100.00
Net main effects [a]						
Total	398,578	148	77.19	427,140	148	84.09
Education	789,949	151	22.39	761,035	151	12.44
Age	988,781	152	33.77	1,018,808	152	22.04
Region	485,661	151	4.98	1,422,591	151	37.08
Time	404,399	149	0.33	429,433	149	0.09
Net two-way interactions [b]						
Total	99,009	105	17.14	105,854	105	11.97
Education (x) Age	134,120	117	2.00	134,023	117	1.05
Education (x) Region	186,116	114	4.98	140,758	114	1.30
Education (x) Time	107,327	108	4.98	113,495	108	0.29
Age (x) Region	225,969	117	7.26	263,698	117	5.88
Age (x) Time	117,144	109	1.03	121,418	109	0.58
Region (x) Time	146,956	108	2.74	185,265	108	2.96
Total main and two-way interaction effects	99,009	105	94.33	105,854	105	96.06

[a] The percentage of χ^2 explained by each main effect parameter is derived by taking the difference between the chi square value for total main effects and the chi square value obtained by excluding the main parameter of interest, divided by the total chi square value.

[b] The percentage of χ^2 explained by total two-way interaction was obtained by taking the difference between the percentage of χ^2 explained by total main effects and that explained by two-way interaction effects. The percentage of χ^2 explained for each net two-way interaction effect (excluding Total) was obtained by taking the difference between the percentage of χ^2 explained by all two-way interaction effects and the percentage of χ^2 explained by excluding the two-way interaction parameter of interest.

explaining the variation observed in the dependent variable. The "total" for "net main effects" gives the chi square value associated with the addition of the main effects of all independent variables to the baseline model; and the "total" for "net two-way interaction" gives the chi square value associated with the addition of all two-way interaction effects to the model containing the main effect parameters. All other chi square values were obtained by omitting the term for the variable(s) of interest. Thus, for example, the chi square value of (228,171) reported in Table 3 under "Origin" for education represents the combined main effects of age, region, and time period. The difference between this value and that reported for total main effects (e.g., 210,546) divided by the chi square value for "total" (e.g., 440,610) multiplied by 100 gives the net relative percentage of the chi square value for "total" that can be explained by education alone.

Among blacks (Table 3), the model estimated via equation (1) explains 75 and 81 percent of the variation in the odds of being a migrant at origin and destination, respectively. The origin/destination difference reflects primarily variations in the impact of age on the odds of being a migrant, which was greater in the destination comparison. The main effects of education, age, region, and time periods explain 52 and 57 percent of the total variation in the odds of being a migrant at origin and destination, respectively. With respect to individual effects, region stands out as having the largest net relative impact on migration, followed by age, time, and educational attainment. The rather substantial regional effect at both origin and destination indicates that there are sharp inequalities among the migration components of regional populations. The small size of the effect of education indicates that educational differentials played a minor

role in influencing the migration patterns of black males. The two-way interactions among the independent variables explain an additional 23 percent of the variation in the odds of being a migrant; this largely reflects the interaction of region with the other three independent variables. It appears that the age and educational differentials in the odds of being a migrant are affected by region of origin and destination. The region/time interaction indicates that a significant shift occurred in the origin and destination of migrants between the two time periods. The nature and extent of this shift will be discussed shortly, using another set of parameters derived from the estimation exercise.

Table 4 reports similar chi square values for whites (of non-Hispanic origin) for both origin and destination comparisons. The explanatory power of the model is greater: 94 and 96 percent of the variation in the odds of being a migrant can be explained by the model. The interactive parameters account for a smaller percentage of the total variation explained, although those involving region are still the most important. In addition, one can note a considerable difference in the explanatory power of individual variables. In the origin comparison, age emerged as having the strongest net relative impact, followed by education, region, and time period; in the destination comparison, region has the strongest impact followed by age, education, and time period. Some of the differences in the effect of the independent variables upon blacks and whites stand out. First, among whites, in contrast to blacks, the impact of educational differentials on the odds of being a migrant is considerably greater (particularly in the origin comparison), confirming previous findings on the importance of educational attainment in influencing the propensity to migrate. Second, while the impact of age differentials was substantial among blacks, its

magnitude is even greater among whites, with origin/destination differences favoring the origin comparison. Third, the impact of regions on the odds of being a migrant is seven times greater at destination than origin, indicating substantial regional disparities in the stability/mobility composition of the white population at destination. Fourth, among whites, time period has no effect on the odds of being a migrant, indicating very little change in the odds of a person migrating. The main and interaction effect parameter for time period, in contrast to those for the other variables, is actually based on the ratio of the odds of being a migrant in the earlier versus the latter time period, if differences in the volume of migration are held constant. Under this type of specification, differences in the number of observation years over which the log odds are computed have no effect on the estimated parameters.

While the chi square values reported in Tables 3 and 4 indicate the relative magnitude of the effect exerted by the variables considered, they do not describe the pattern of variation that exists within levels of these variables. To analyze patterns, another set of statistics generated from the estimation of equation (1) is employed. The statistics used here are the additive log probabilities or the log odds of being a migrant (as opposed to a nonmigrant), expressed as deviations from the average cell means. Tables 5 and 6 report these statistics, which are transformations of the original statistics obtained from the estimation exercise. The coefficients contained in these tables were obtained by adding the average odds of being a migrant if one is black, old, or college-educated, for example, with the interaction of black, old, college-educated, etc. with time period. The latter statistic reflects changes in the odds of being a migrant with respect to a given category during the 1965-70 interval versus

Table 5. Log-Linear Additive Coefficients Indicating the Odds of Being a Migrant in 1965-70 and 1970-76: Black Males, by Age, Education, Region of Origin and Destination, and Time Period

Variables	Origin		Destination	
	1965-70	1970-76	1965-70	1970-76
Education				
0-11 yrs	-.0294	-.1974	.0423	-.1475
4 yrs high school	-.0993	-.0217	-.1130	.0004
1-3 yrs college	.0449	.0195	-.0455	-.0559
4+ yrs college	.0837	.1995	.1162	.2020
Age				
18-24 yrs	.2132	.2440	.2978	.2828
25-34 yrs	.3487	.3587	.2632	.2632
35-44 yrs	-.0657	.0585	-.1351	.0021
45-54 yrs	-.2810	-.2153	-.1868	-.1054
55+ yrs	-.2121	-.4459	-.2390	-.4770
Region				
East	-.1155	.1833	.0628	-.1586
North	-.1427	-.1399	-.0210	-.0982
South	.4065	.1667	-.3538	-.0962
West	-.1484	-.2100	.3120	.3532
Time (1965-70)	.0384	.0384	.0762	.0762
Grand Means Effect	8.778	8.778	8.929	8.929

Table 6. Log-Linear Additive Coefficients Indicating the Odds of Being a Migrant in 1965-70 and 1970-76: White Males, by Age, Education, Region of Origin and Destination, and Time Period

	Origin		Destination	
Variables	1965-70	1970-76	1965-70	1970-76
Education				
0-11 yrs	-.0982	-.1866	-.0915	-.1745
4 yrs high school	-.0637	-.0903	-.0958	-.0804
1-3 yrs college	.0244	-.0042	-.0196	.0036
4+ yrs college	.2259	.1927	.2069	.2513
Age				
18-24 yrs	.2136	.1192	.2206	.1300
25-34 yrs	.2826	.2748	.2843	.2857
35-44 yrs	-.0206	.0994	-.0217	.0857
45-54 yrs	-.1912	-.1734	-.1973	-.1707
55+ yrs	-.2844	-.3199	-.2854	-.2854
Region				
East	-.0871	.0627	-.2725	-.4349
North	.0702	.1006	-.0910	-.2238
South	.1447	-.0041	.2071	.3731
West	-.1278	-.1592	.1563	.2857
Time (1965-70)	-.0124	-.0124	.0076	.0076
Grand Means Effect	11.3353	11.3353	11.3222	11.3222

the 1970-76 interval.

Age and educational differentials in the odds of being a migrant by race, time period, and origin and destination can be summarized simply. The odds of being a migrant vary positively with educational attainment and inversely with age, which is consistent with the results of previous studies. Time period differences indicate greater inequalities among people of different ages and educations in the most recent time period, but these differences are not always significant because the standard errors of the estimates from the most recent period are larger.

Regional differentials in the odds of being a migrant by time period and race are much greater. Among blacks, the odds of being a migrant were limited to the South in the 1965-70 period, but in the 1970-76 period, blacks living in the East were slightly more likely to migrate than blacks in the South. The odds of a black leaving the South and migrating to a metropolitan area in the 1970-76 period were less than half those prevailing during the 1965-70 period. For destination, the West was the only region in which the odds of being a migrant were strongly positive. However, note that the odds of being a migrant declined in the North and East, but increased substantially in the South. A reasonable interpretation of these results could be that fewer blacks are leaving the South, more are leaving the East, and fewer are choosing the North and East as destination points. In the case of whites, reductions in outmigration from the South and increases in outmigration from the North and East occurred at an earlier period than among blacks. Regional differentials in the odds of migrating increased among whites at destination, and are much greater in magnitude than those observed for origin. The odds of being a migrant are strongly positive in the South and West, and negative in the

East and North. These migration trends among blacks and whites are consistent with those observed previously, indicating that substantial changes are occurring in population redistribution trends across regions (see Long and Hansen, 1977 and 1979; Frey, 1979).

The size of the percentage reduction in the total chi square value associated with the interaction term for age and region indicates age compositional differences in the origin and destination streams. That is, age groups are leaving different origin points and are not choosing the same destination points. This is partially confirmed by the log odds coefficients reported in Table 7. These coefficients for destination regions were obtained from a model specifying main and two-way interaction effects, and represent the sum of the partial coefficients for age, region, and the interaction of age and region, controlling for education and time period. In the case of blacks, one can note that the odds of being a migrant at destination are above average for those less than 35 years old in the East, North, and West, and above average for those between 35 and 54 years old in the West. Hence, it is clear that the age composition of the black population migrating to the West is more heterogeneous than the movement to the North or East. Among whites, one can observe that the odds of being a migrant in the West and South are positive for all age groups. But note also that whites less than 35 years of age are slightly more likely to select the West as a destination point, while those above the age of 44 years are more likely to select the South. This greater influx of whites at the older ages to the South probably reflects movements to retirement centers (see Long and Hansen, 1979; Long and DeAre, 1980).

Table 7. Log-Linear Additive Coefficients Indicating the Odds of Being a Migrant by Race, Age, and Region of Destination: 1965-70 and 1970-76 Combined[a]

Age	Blacks				Whites			
	East	North	South	West	East	North	South	West
18-24 yrs	.3278	.3591	-.2347	.0438	-.1987	.0904	.3920	.4175
25-34 yrs	.2547	.3660	-.1100	.6106	.0494	-.1845	.3923	.5138
35-44 yrs	-.2491	-.1203	-.1825	.2861	-.2786	-.0949	.2536	.2479
45-54 yrs	-.2352	-.3802	-.1251	.1561	-.5658	-.3237	.1410	.0100
55+ yrs	-.3378	-.5227	-.4727	-.0987	-.7750	-.6433	.2715	.0844

[a] The coefficients were obtained by summing the partial coefficients for categories of age, region, and the interaction of age and region, controlling for education and time period effects.

MIGRATION AND PREVIOUS LABOR FORCE ACTIVITY

It was noted previously that the propensity to migrate is directly related to participation in the labor force, either in the form of entrance into, exit from, or alterations in occupational careers. Often these changes are associated with migration because of the requirements of a particular job, spatial inequalities in employment opportunities, or because individuals simply wish to spend their retirement years at another location. The inclusion of a measure of labor force participation that reflects the status of individuals just before migrating should alter the previously observed inverse relationship between age and migration, because some of the influence of age on migration is associated with life cycle changes, particularly those that mirror changes in labor force status.

The PUS file for 1970 (5 percent sample universe) provides an opportunity to assess partially the impact of prior labor force activity on the propensity to migrate. Respondents were asked to provide information on their activities five years ago (e.g., 1965)--whether they were working at a job, in the armed forces, or in college. Responses to these questions, combined with the age of respondents, were used to construct a variable I have labeled "labor force activity in 1965." Moreover, I should emphasize that this variable does not tell us what the majority of migrants were doing just prior to moving. Clearly the labor force activity of some of these individuals changed between 1965 and just prior to their moving. Hence the labor force activity measures which can be constructed from the PUS sample will in all likelihood yield rather conservative estimates of the impact of prior labor force status on migration.

Table 8 presents the percentage of persons migrating between 1965 and 1970, by race and labor force activity in 1965. The labor force activity

Table 8. Percentage that Migrated Between 1965 and 1970, by Race and Labor Force Status in 1965

Labor Force Activity in 1965	Percentage Migrated	
	Blacks	Whites
Employed	4.01	4.29
Not employed	15.62	12.56
School/military	13.86	13.74
Not in labor force/NC[a]	16.77	11.10
Total	8.79	6.74

Source: PUS

[a] This category includes persons who were unemployed and those whose labor force status in 1965 was not reported (NC = not classifiable).

variable was constructed as follows: persons classified as being in the labor force include individuals who were 25 years of age and over, and 18 to 24 years of age (if they were not in college), and who indicated that they were at work in 1965. Persons in the "in school/military" category include persons who were less than 18 years of age in 1965, persons in college without a job, and in college with a job but less than 25 years of age in 1965; and persons in the military. The "not in the labor force/not classifiable" category is a residual, and includes persons not classified as being in the labor force, in school or in the military in 1965.

The percentages reported in Table 8 clearly indicate an association between employment status in 1965 and migration. Males who were not employed in 1965 were three times more likely to have migrated than those who were employed. Within the Not Employed category, a higher percentage of black males not in the labor force were migrants, while among whites a higher percentage of those in school or the military were migrants. These percentages are gross estimates; they do not take into account variations by age and educational attainment, factors which one would expect to have significant effects on the association between employment status and migration.

At issue is whether the addition of information on labor force activity in 1965 improves upon our ability to predict the odds of an individual being a migrant. Accordingly, an equation with the same specifications as equation (1) was applied for each racial group, to a multiple classification table that included age, education, region of origin (or destination), labor force activity in 1965, and migration status as variables. Tables 9 and 10 report the chi square values derived from the log-linear exercise by race, and region of origin and destination.

Overall, the main and two-way interaction parameters explain 90 and 94 percent of the variations in the odds of a black or a white being a migrant between 1965 and 1970, respectively. For the net main effect parameters for both racial groups, labor force activity in 1965 is by far the most important variable in explaining the odds of an individual migrating between 1965 and 1970. The addition of labor force activity also alters the impact of age, education, and regions (compare Tables 9 and 10 with Tables 3 and 4). The impact of age is reduced considerably for both racial groups, and that of education is reduced for whites.

The addition of labor force activity in 1965 not only reduced the overall impact of age and education on the odds of being a migrant, it also altered the log odds ratios associated with categories of these variables. This alteration can be observed in the differences between the log odds coefficients reported for columns headed Net_1 and Net_2 in Tables 11 and 12. Generally, controlling for labor force activity reduced the differentials in the odds of being a migrant with respect to the age and educational categories (compare Net_1 and Net_2 coefficients). Of particular interest is the fact that the sign of the log odds coefficient for the youngest age group changed to negative once labor force activity was controlled except for blacks at destination. I interpret this to mean that the migration of the young is associated with the transition from school to work and a period of experimentation.

The effects of age and previous labor force activity on the odds of being a migrant are not independent of each other. This is indicated by the fact that the interactional effects of these variables explain approximately 5 percent of the variation in the odds of being a migrant

Table 9. Associated Chi Squares Derived From a Model Predicting the Log Odds of Being a Migrant for Black Males Aged 18 Years and Over, by Region of Origin and Destination: 1965-1970

Effect Parameters	Origin			Destination		
	χ^2	D.F.	$\%\chi^2$ Explained	χ^2	D.F.	$\%\chi^2$ Explained
Total	3589.88	239	100.00	3355.17	239	100.00
Net main effects						
Total	714.06	227	80.11	681.68	227	79.68
Education	765.95	230	1.45	733.46	230	1.54
Labor force activity in 1965	2149.69	229	39.99	2142.57	229	43.54
Age	1018.95	231	8.49	998.64	231	9.44
Region	1654.97	230	26.21	1420.25	230	22.01
Net two-way interactions						
Total	342.96	174	10.34	315.32	174	10.92
Education (x) Labor Force	357.33	180	0.39	332.13	180	0.50
Education (x) Age	352.75	186	0.27	324.55	186	0.27
Education (x) Region	398.50	183	1.54	351.69	183	1.08
Labor Force (x) Age	475.35	182	3.68	468.94	180	4.58
Labor Force (x) Region	399.58	180	1.57	360.57	182	1.35
Age (x) Region	444.29	186	2.82	373.99	186	1.75
Total main and two-way interaction effects	342.96	174	90.44	315.32	174	90.60

Table 10. Associated Chi squares Derived From a Model Predicting the Log Odds of Being a Migrant for White Males Aged 18 Years and Over, by Region of Origin and Destination: 1965-1970

Effect Parameters	Origin			Destination		
	χ^2	D.F.	$\%\chi^2$ Explained	χ^2	D.F.	$\%\chi^2$ Explained
Total	14518.65	239	100.00	16375.95	239	100.00
Net main effects						
Total	2945.02	227	79.72	3409.50	227	79.18
Education	3936.21	230	6.83	4288.01	230	5.36
Labor force activity in 1965	8552.36	229	38.63	8888.32	229	33.46
Age	5138.58	231	15.11	5629.95	231	13.56
Region	3847.41	230	6.22	5704.71	230	14.02
Net two-way interactions						
Total	758.64	174	15.05	965.52	174	14.92
Education (x) Labor Force	1089.91	180	2.28	1374.59	180	2.49
Education (x) Age	943.75	186	1.27	1196.62	186	1.41
Education (x) Region	1191.32	183	2.98	1101.97	183	0.83
Labor Force (x) Age	1579.41	182	5.65	1774.61	182	4.94
Labor Force (x) Region	867.77	180	0.75	1420.99	180	2.78
Age (x) Region	1196.02	186	3.01	1676.75	186	4.34
Total main and two-way interaction effects	758.64	174	94.77	965.52	174	94.10

Table 11. The Log Linear Additive Coefficients Indicating the Odds of Being a Migrant: Black Males, 1965-1970, by Education, Age, Labor Force Activity in 1965 and Region of Origin and Destination

Variables	Origin			Destination		
	Gross[a]	Net[b] $_1$	Net $_2$	Gross[a]	Net[b] $_1$	Net $_2$
Education						
0-11 yrs	-.1163	.0031	-.0760	-.1163	.0514	-.0383
4 yrs high school	-.0548	-.1196	-.1234	-.0548	-.1001	-.0986
1-3 yrs college	.0277	.0063	.0084	.0277	-.0357	-.0220
4+ yrs college	.1434	.1103	.1919	.1434	.0845	.1589
Age						
18-24 yrs	.2054	.2410	-.0116	.2054	.2925	.1040
25-34 yrs	.2240	.3993	.2571	.2240	.3184	.1971
35-44 yrs	-.1852	-.0394	.0351	-.1852	-.1482	-.0572
45-54 yrs	-.0963	-.1991	-.0198	-.0963	-.2170	-.0794
55+ yrs	-.1479	-.4018	-.2608	-.1479	-.2456	-.1645
Region						
East	-.2093	-.1011	-.1027	.0588	.0955	.0864
North	-.2288	-.1149	-.1012	.0755	.0491	.0639
South	.4145	.4447	.3741	-.4414	-.3976	-.3871
West	.0236	-.2297	-.1702	.3070	.2530	.2368
Labor force activity in 1965						
Employed	-.4825		-.5423	-.4825		-.5650
School/military	.1897		.3394	.1897		.2970
Not employed/NA	.2928		.2030	.2928		.2679

[a] Represents the zero effects of each variable.
[b] Obtained from a cross-classification that did not include labor force activity in 1965.

Table 12. The Log-Linear Additive Coefficients Indicating the Odds of Being a Migrant: White Males, 1965-1970, by Education, Age, Labor Force Activity in 1965, and Region of Origin and Destination

Variables	Origin			Destination		
	Gross[a]	Net[b] $_1$	Net $_2$	Gross[a]	Net[b] $_1$	Net $_2$
Education						
0-11 yrs	-.1957	-.0980	-.1096	-.1957	-.0864	-.0934
4 yrs high school	-.0796	-.0744	-.0191	-.0796	-.0823	-.0191
1-3 yrs college	.0414	-.0125	-.0203	.0414	-.0287	-.0357
4+ yrs college	.2339	.1850	.1489	.2339	.1974	.1431
Age						
18-24 yrs	.1930	.2096	-.0908	.1930	.2348	-.0672
25-34 yrs	.2989	.2796	.1312	.2989	.2830	.1407
35-44 yrs	-.0234	-.0169	.1544	-.0234	-.0208	.1655
45-54 yrs	-.2296	-.1982	.0424	-.2296	-.2213	.0294
55+ yrs	-.2389	-.2741	-.2372	-.2389	-.2857	-.2685
Region						
East	-.1271	-.0822	-.0854	-.2740	-.2782	-.2402
North	.0340	.0674	.0886	-.0759	-.0995	-.0516
South	.1709	.1442	.1480	.1848	.2165	.1737
West	-.0778	-.1294	-.1512	.1650	.1612	.1182
Labor force activity in 1965						
Employed	-.3822		-.4912	-.3832		-.4948
School/military	.2518		.3432	.2518		.3435
Not employed/NA	.1314		.1480	.1314		.1513

[a]Represents the zero effects of each variable.
[b]Obtained from a cross-classification that did not include labor force activity in 1965.

(see chi square statistics reported in Table 9 and 10). Table 13 presents log odds coefficients for black and white males, respectively, that take into account both the main and interactional effects of age and previous labor force status on the odds of being a migrant. With these coefficients it is possible to determine whether the inverse relationship observed between age and the odds of being a migrant is constant across categories of previous labor force status. One can note that for both racial groups, age differentials in the odds of being a migrant vary substantially by previous labor force status. Those odds are substantially below average for persons who were employed in 1965, and substantially above average for persons in school/military or not in the labor force in 1965. Although the odds of being a migrant does vary substantially by age, controlling for previous labor force status wipes out the previously observed inverse character of the relationship. The odds of being a migrant varies directly with age for persons who were employed in 1965; the relationship between age and the odds of being a migrant for persons who were in school/military in 1965 is curvilinear for whites and erratic for blacks; and age differentials in the odds of being a migrant for individuals not in the labor force in 1965 exhibit no clear pattern for either racial group.

Table 13. Log-Linear Coefficients Indicating the Odds of Being a Migrant: Black Males and White Males, 1965-1970, by Age, Labor Force Activity in 1965, and Region of Origin and Destination

Age	Black Males			White Males		
	Employed	School/ Military	Not in Labor Force/NC	Employed	School/ Military	Not in Labor Force/NC
			Origin			
18-24 yrs	-.2211	-.0312	.2422	-.2991	-.0823	.0297
25-34 yrs	-.1941	.5316	.4014	-.2537	.4534	.2943
35-44 yrs	-.5380	.3208	.2229	-.4765	.6392	.2775
45-54 yrs	-.8788	.4748	.2270	-.6790	.5701	.3046
55+ yrs	-.7504	.6682	.4750	-.8275	.2592	-.2100
			Destination			
18-24 yrs	-.1384	.0131	.4258	-.3043	-.0565	.0611
25-34 yrs	-.2542	.4357	.4270	-.2588	.4788	.2871
35-44 yrs	-.6328	.2133	.1011	-.4852	.6317	.2602
45-54 yrs	-.9875	.3699	.4419	-.6830	.5447	.2991
55+ yrs	-.8033	.5550	-.1664	-.8474	.2898	-.2173

NC = Not classifiable

Note: These estimates were obtained from models which included education and region, and in which age and labor force status in 1965 were treated as one classification.

DISCUSSION

The results from the analysis of migration differentials yielded a number of important findings.

First, regional differentials in the origin and destination of migrants to SMSAs increased between 1965-70 and 1970-76 among blacks and whites (of non-Spanish origin). These regional differentials are the consequence of population redistribution trends which are resulting in shifts in the concentration of populations to the West and South regions. Among whites, the impact of region is reflected primarily in the destination comparison. In other words, regional differentials in the origins of white migrants during both 1965-70 and 1970-76 were less pronounced than those observed at destinations for these intervals. Northern and eastern versus southern and western differences in the destination of white migrants increased substantially between 1965-70 and 1970-76, confirming previously reported findings of the increased migration of whites to the two latter regions. In the case of blacks, the odds of a black leaving the South during the 1970-76 period were less than half those observed for the 1965-70 period, while the odds of a black leaving the East during the latest period increased. During both time periods, black migrants were selecting the West as their destination point.

There can be little doubt that changes in the origin and destination of black migrants since the 1960s signals a reversal in the historic pattern of South to North/East migration flows. The ability of the South to retain its black population, and the increased outflow of blacks from the East, indicates that the migration pattern of blacks is changing in response to general changes in regional employment opportunities. Moreover, as regional inequalities in the employment opportunities

available to blacks decline or are eliminated altogether, we will in all likelihood witness a convergence of the migration patterns of blacks and whites.

Findings for the relationships among migration, age, and education are consistent with results from previous studies: a positive association between educational attainment and the odds of being a migrant, and an inverse one between age and the odds of being a migrant. It should be noted, however, that age and educational differentials in the odds of being a migrant are not constant across regions; regions are contributing differentially to the association observed between the odds of being a migrant, and age and education. These regional differences are particularly striking for age. For example, the age composition of black migrants to the West is much more heterogeneous than that of blacks who migrated to the North and East, and who tend to be younger. Among whites, although all age groups are moving to the South and West, southern destination is dominated by persons 45 years of age and over, and the western destination is dominated by persons less than 35 years of age. I would suspect that these region/age differences, particularly among whites, parallel age differences in the reasons individuals give for choosing particular destinations. For example, the greater influx of whites at older ages to the South is probably associated with movement to retirement centers.

Age differentials in the odds of being a migrant decreased among whites but increased among blacks between 1965-70 and 1970-76. The odds of a white aged 18-24 years and a black aged 55 years and over migrating in the latest period were about half those observed for the earlier period. In the case of education, differences between the lowest and highest

educational groups increased between the two periods, particularly among blacks. If favorable labor market conditions for the college-educated declined during the first half of the 1970 decade, as Freeman (1976) suggests, this change did not result in a decline in the rate at which these individuals migrated across regions to SMSAs during this period. A more likely possibility is that reduced demand for labor because of the economic recession could have had the effect of reducing the number of persons who migrated without the immediate prospects of a job; this is consistent with the finding that there has been a decline in the percentage of migrants with less than a high school education.

Previous labor force activity is substantially related to migration behavior. Participation in the labor force in 1965 significantly reduced the chances of a person migrating. Persons most likely to migrate were in transitional categories in 1965, e.g., in school, in the military, or not in the labor force. The addition of previous labor force experience to a previous model reduced the ability of age and education to explain variations in the odds of being a migrant. In addition, age and educational differentials in the odds of being a migrant were reduced considerably. The inverse character of the association between age and the odds of being a migrant disappears altogether once previous labor force activity is controlled. I interpret these results as supporting the observation that the often observed inverse effect of age on the propensity to migrate reflects life cycle differentials in labor force activities.

References

Bogue, Donald J. 1959. Principles of Demography. New York: Wiley.

Freeman, Richard B. 1976. The Overeducated American. New York: Academic Press.

Frey, William H. 1979. The Changing Impact of White Migration on the Population Composition of Origin and Destination Metropolitan Areas. Demography 16:219-237.

Goldscheider, Calvin. 1971. Population, Modernization, and Social Structure. Boston: Little, Brown & Company.

Himes, Joseph S. 1971. Some Characteristics of the Migration of Blacks in the United States. Social Biology 18:359-369.

Lansing, John B. and Eva Mueller. 1967. The Geographical Mobility of Labor. Ann Arbor: Survey Research Center, Institute for Social Research, University of Michigan.

Lichter, Daniel T., Tim Heaton, and Glenn Fuguitt. 1979. Trends in the Selectivity of Migration Between Metropolitan and Nonmetropolitan Areas:1955-1975. Rural Sociology 44:645-666.

Long, Larry H. 1973. Migration Differentials by Education and Occupation Trends and Variations. Demography 10:243-258.

_____ and Diana DeAre. 1980. Migration to Nonmetropolitan Areas. Special Demographic Analysis; CDS-80-2. Washington, D.C.: Superintendent of Documents.

_____, Celia G. Boertlein, and Kristin A. Hansen. 1978. Quality of Census Data on Internal Migration: An International Comparison. Paper presented at the annual meeting of the American Statisical Association, August 14-17.

_____ and Kristin A. Hansen. 1977. Migration Trends in the United States since 1935. Paper presented at the annual meeting of the International Union for the Scientific Study of Population, Mexico City, August 7-13.

_____. 1979. Reasons for Interstate Migration. Current Population Reports: Special Studies: Series P-23; No. 81.

Ritchey, P. Neal. 1976. Explanations of Migration. Annual Review of Sociology 2:363-404.

Shaw, R. Paul. 1975. Migration Theory and Fact. Philadelphia: R. Paul Shaw and Regional Science Research Institute.

Smith, James P. and Finis Welch. 1978. The Overeducated American? A Review Article. Santa Monica, Calif: The Rand Corporation, Paper No. P-6253.

Taeuber, Karl E., and Alma F. Taeuber. 1965. The Changing Character of Negro Migration. American Journal of Sociology 70:429-441.