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Occupational Income Differentiation in Status Attainment[1]

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ABSTRACT This article proposes and tests, by indirect methods, the hypothesis that the income effects of variables established before and during the early years of the careers of an age cohort increase at least until middle age, because of a progressive differentiation in mean incomes among occupations. In the early years, the main interoccupational income differences are small. By about age 40–50, the incomes of most occupations have more or less plateaued and the differences among them have become large. It would appear that the larger the differences among occupations, the larger the differences among individuals and the larger the logged income effects of certain antecedent variables.

Introduction

Despite differences regarding emphasis, terminology, and clarity of expression, all major stratification theorists from Marx and Weber (Bendix, 1974) and Sorokin (1959) to Svalastoga (1965), Lenski (1966), and Duncan (1968) identify the phenomena—or "content dimensions" (Haller, 1970)—of hierarchical status in strikingly consistent ways. The content dimensions postulated by such thinkers are inclusively summarized by Svalastoga (1965) as economic status, political status, social status, and informational status. For purposes of this research, it is important to note that by whatever name, or in whatever combination with other nominal content dimensions, economic status is centrally located in the conceptual scheme of every stratification theorist. Moreover, whatever else that dimension may include, it certainly encompasses monetary statuses, of which income is one of the most strategic.

Among the objectives of recent research on attainment processes has been the development of an empirically defensible theory of differences in the levels of the variables comprising the status content

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greater impact later in their careers. Indeed, congruent with the work of Featherman (1971), Kelley (1973), and Hauser and Featherman (1977:332–6), most analyses employing cross-sectional samples strongly suggest—although they do not demonstrate—that as one's career unfolds, the income effects of early antecedent variables may well increase. Specifically, analyses of Mexican workers (Carnoy, 1967), of American workers (Morgan *et al.*, 1962; Mincer, 1974; Treiman and Terrell, 1975), of Swedish engineers (Klevmarken, 1972), and of Brazilian managerial and managerial support personnel (Pastore *et al.*, 1975), have all shown higher coefficients of determination of sets of income predictors, which include education, and much higher partial effects of education attainment itself than those reported by Sewell and Hauser. Numerous others have provided suggestive evidence that age (Blaug, 1970; Griliches and Mason, 1973; Taubman and Wales, 1974) and age-related factors such as experience (Mincer, 1974; Treiman and Terrell, 1975) influence the effect of education on income over the course of the life cycle. It seems safe to assume, then, that something collinear with age or years of experience does increase the impact of education—and perhaps other variables—on income differentials. But the reasons for this are obscure.

In this paper we provide an indirect test of the hypothesis that two overlapping factors related to occupational age-income curves account for the initially low, but progressively more substantial, predictive efficiencies of education and other status attainment antecedent variables on the income of young men. These two factors are (1) the instability of the income rank of occupations during the early years in the labor force, an instability which decreases with age, and (2) a more general phenomenon which is responsible for the first, a progressive increase in the absolute differences in earnings among occupations. This we call "age-related occupational income differentiation." It is reasonable to suppose that during the early career years of any age-specific cohort, the age-income curves of their occupations have not yet assumed their distinctive levels and have not yet separated to the extent that they might later on. For example, persons in skilled trades, which do not require much formal education, may begin earning rather substantial incomes quite early in their careers, while those who are going into professions (such as medicine) postpone high incomes until much later. Perhaps the "normal" rank-orders of differences among the income trajectories of many or most occupations are not sorted out until the members of an age cohort are in their middle or late thirties. After this, the age-income discrepancies among occupations might well increase with age. Occupational income differentiation could produce a parallel differentiation in individual incomes.

We propose to investigate this possibility through a series of regressions of a set on projected occupation-specific income differential

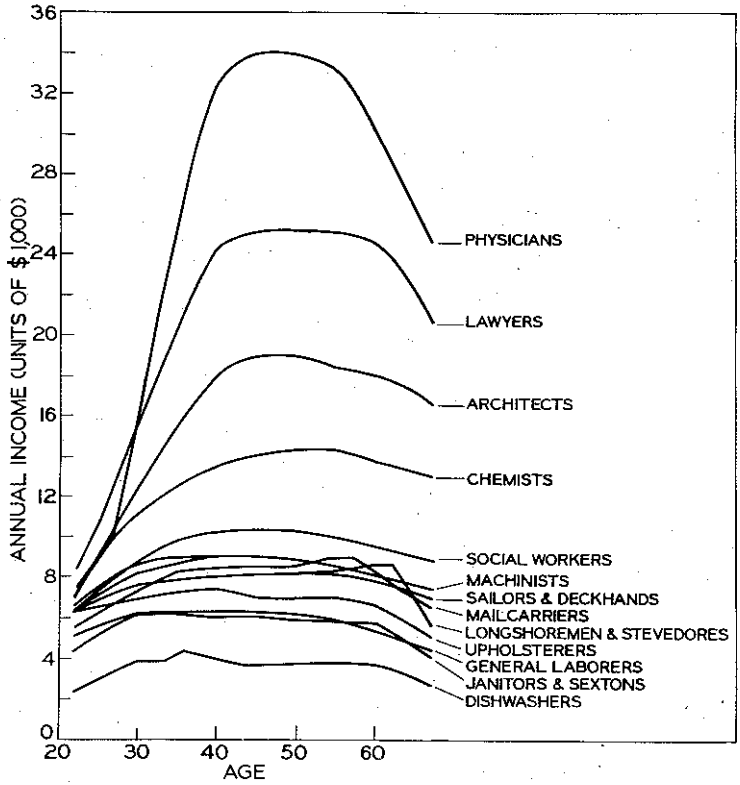

Figure 1. Age-income curves for men in selected occupations (1970).

Details regarding the first body of data have been reported elsewhere (Otto and Haller, 1978). The variables and their means, standard deviations, and intercorrelations are given in Appendix 1. The variable codings were as follows: Respondent's *current occupation* and *father's occupation* were coded in Duncan's (1961) SEI scores. *Mother's* and *father's education* were scored in categories: 0 for less than 8 grades, 1 for 8 grades, 2 for 9 to 11 grades, 3 for 12 grades, 4 for some college, and 5 for college degrees. The *respondent's education* was scored in years of schooling completed, while *mental ability* was assessed with the Cattell IPAT Test of G-Culture Free-Scale 3A in 1957 (Cattell and Cattell, 1950). These measures define a "base" independent variable set and are labelled respectively: OCC, FOCC, MED, FED, EDUC, and MA.

A second set of independent variables, generically called "social-psychological," was also measured. It includes seven variables. Respondent's 1957 level of *occupational aspiration* (LOA) was assessed

score) would be the same number of Z score units different from the mean income of any other age category of his occupation if he were that age today. This assumption does not seem unreasonable. Wage-rates do differ by region (Stolzenberg, 1975), probably over long periods of time. We would suppose, too, that on the whole those who perform most capably in their early careers also do so later on and that those who initially perform poorly because of disinterest, disability, poor training, and the like, will usually continue in this way. In any case, it is safer to make this assumption than it would be to make alternative assumptions.

Thus, a basic assumption guiding this project is that a person's income position relative to the others in the same age category of the same occupational classification will persist through time.

The projected income scores for each respondent for 5-year intervals was a simple linear combination of (a) the age-specific mean income for that person's occupation and (b) the age-occupation-specific standard deviation adjusted for the respondent's normal deviate income departure from his occupation-specific income curve for age 30–34.[5] Hence, the hypothetical projected income for a respondent for the age interval 40–44 was his occupation's mean income for all 1970 male incumbents of that occupation age 40–44, plus or minus the normal deviate departure of his 1971 income from the same occupation mean income of individuals age 30–34 in 1969, times the 40–44 occupation-specific income standard deviation. This procedure was repeated for each of the 5-year age intervals. When applied to the Lenawee County sample, this system yields a series of age-related income scores in which each individual's hypothetical age-income curve follows, usually at a different level, the form of the 1970 cross-sectional age-income curve for his own occupation.

Obviously the analysis assumes that the occupational roles of the American economic system, and the age-specific relative rewards attendent to them, do not change rapidly. The implication is that income means of all occupations, taken at one time, are highly correlated with the same means taken at other times. Intuitively it seems reasonable to assume that the relative average income status of people in different occupations would not change much even over several generations, though the absolute amounts would doubtless change greatly. Occupational income curves may be used, as we do here, to project increases or decreases in age-related income differences among persons, under the heuristic assumption (to be discussed) that individuals remain in their occupations throughout their careers. But

[5] Specifically, $\hat{Y}_i = ZS_i + \overline{Y}_i$, where: $\hat{Y}_i$ = hypothetical projected income for i^{th} 5-year interval (40–44, 45–49, . . . 60–64); Z = normal deviate departure of respondent's 1971 income from occupation-specific mean income for age 30–34; S_i = income standard deviation (based on the six 1/100 census samples) for a given occupation in the i^{th} age interval; and $\overline{Y}_i$ = occupation-specific mean income for i^{th} age interval.

the top of the range, where fewer people are employed.[6] This suggests that the increase in the sizes of the various coefficients would probably not turn out to be very great when calculated for ordinary samples, in which exceptionally remunerative occupations are comparatively rare. This is doubtless the case for the Lenawee County sample, which—though a bit on the high side—still has an occupational status distribution which is not much different from that of the United States as a whole.

Results

As noted earlier, the general conclusion from previous research is that status attainment variables, including education and occupational SEI, do not have a large effect on personal income or earnings during the early to early-middle years of a career (Alexander *et al.*, 1975; Sewell and Hauser, 1975; Otto and Haller, 1978). The hypothesis tested here holds that the income effects of higher education and of entering occupations of higher SEI increase to about age 45, when the income differences among occupations are at their maximum.

Certain patterns of age-income trajectories of different occupations are implied by the hypothesis: (1) the age-income curves of low-paying occupations are relatively flat, income being nearly unrelated to the ages of workers in such occupations; (2) age-income trajectories of highly remunerative occupations rise steeply with age, such that middle-aged and older workers in such occupations make a great deal more than do younger workers. As consequences of these two, (3) the differences in mean income among occupations vary considerably less for younger workers than for older workers; and (4) the "normal" differences in mean incomes of the different occupations appear only among middle-aged and older workers. This last implies that when a cohort is young, the personal incomes of those who have entered eventually high-paying occupations will overlap substantially with the incomes of those of more poorly paid occupations and that the overlap should decline as the years go by. Finally, the hypothesis holds that ability, education, family resources, and other status attainment antecedent variables will show their greatest effects only among mature workers.

The curves in Figure 1 illustrate the main similarities and differences characteristic of the whole set of 335 curves. First, as anticipated, the more poorly paid occupations have curves which are nearly

[6] Among the age-income curves, there are 319 which pertain to men. Of these, only 16 (5 percent) reached a mean of $20,000/year at any age. These were from among the health professions, law, exact sciences, airplane pilots, and stock-and-bond salesmen. Thirty-eight (12 percent) reached between $15,000 and $20,000 at some age. No less than 166 (52 percent) remained below $10,000 throughout the whole age-range. The other 99 (31 percent) reached a high point somewhere between $10,000 and $15,000 at some point on the age range.

Table 1. Coefficients of determination, logged income variables on status of origin, social-psychological, and labor force experience variables (N = 300)*

	Sets of independent variables			
Dependent variable	[Set 1] Status variables and mental ability	[Sets 1 & 2] Status variables, mental ability, and social-psychological variables	[Sets 1 & 3] Status variables, mental ability, and labor force experience variables	All variables
INC31	.146	.161	.147	.161
PINC40	.239	.252	.239	.252
PINC45	.269	.281	.270	.281
PINC50	.276	.289	.276	.289
PINC55	.291	.304	.291	.304
PINC60	.294	.305	.295	.305

* Set 1 includes OCC, EDUC, FOCC, MED, and MA. These are educational and occupational variables, describing an individual's own and his parents' statuses and his mental ability. Set 2 includes GPA, LOA, LEA, PAROCC, PARED, PEERLOA, and PEERLEA. These are educationally and occupationally related social-psychological variables. Set 3 includes MS, EXPMO. (See Appendix I for more complete labels.)

contingency variables defined for Lenawee County sample members add little or nothing to the ability of the base variables to explain annual income at age 31 and projected income differentials at later ages. This is not to say these variables are unimportant. Some of them may transmit the income effects of other variables. Certainly, the social-psychological variables perform important roles in the explanation of educational and occupational statuses, as has been repeatedly (Alexander *et al.*, 1975; Otto and Haller, 1978), although not always (Wilson and Portes, 1975), demonstrated. In any case, these particular social-psychological variables have educational and occupational, not income, hierarchies as their referents, and in this, as well as in the two other data sets in which they have been examined (Alexander *et al.*, 1975; Sewell and Hauser, 1975), they have shown little or no effect on income. Perhaps, as Haller and Portes (1973) hypothesize, social-psychological variables with an income hierarchy as their referent may have effects on income commensurate with those the corresponding social-psychological, educational, and occupational status isomorphs have on their respective objective status variables.

The "career contingency" variables, too, have no apparent effect. This cohort grew up between wars and may, for this reason, have been affected but little by military service. Further, in this cohort any effect of time in the labor force is doubtless negated by the narrow (12-month) maximum difference in age and by the collinearity of this variable with years of education. We presume that these characteristics of the sample explain why our results differ in this regard from

composed of all of the early antecedent variables, which are small and fairly stable. The apparent effects of OCC and EDUC are comparatively large at age 31 ($\beta = .204$ and .125, respectively). They become progressively larger—except for OCC at age 60–64, which drops slightly. The corresponding βs reach .326 and .195 at age 60–64. The beta values for the other five variables change only slightly and, for the most part, inconsistently. Thus the increases in the total apparent effects (R^2) of the base variables on projected income differentials at later ages seem to be due almost wholly to increases in the effects of the respondents' own occupational and education statuses. The results regarding the effects of the variables roughly parallel those obtained by Kelley (1973), Featherman (1971), and Hauser and Featherman (1977). As Kelly puts it, "The monetary rewards of education and occupational attainment are largely deferred until the middle of the life cycle."

Conclusion

The main finding is that there is indeed reason to believe that the effects of occupation and education on personal income may become substantially greater as occupational income differentiation increases with age. We turn now to some of the implications of this analysis.

- While the reasoning and results are consistent with previous findings, we believe they go further. Recall that among poorly paying occupations, the curves are very nearly flat. Among the better paid, they rise sharply. The higher an occupation's mean income the more it increases with age. Again, note that blue-collar incomes are relatively similar to each other, not a single blue-collar occupation shows a general rise sufficient to provide its average middle-aged or elderly members with more than $5,000 per year more than its youngest. Yet there are enormous differences among the white-collar occupations.

While the principles governing the variations in the sizes and shapes of income curves seem not to have been worked out yet, it is certainly clear that each occupation has its own characteristic mean age-income curve—that there is an earnings structure specific to each occupation. This means that as long as a person is employed as a worker in a particular occupation, he is subject to the general norms governing the allocation of earnings to all workers in that occupation. In other words, a worker's "earnings career" is largely determined by the earnings career pattern of his occupation. When he offers himself for employment, his options are, of course, conditioned by what prospective employers think he can do. Jobs requiring complex and unusual skills will go to those who can make a convincing case that they have them or can learn them. Obviously, each such occupation will have a level and type of training appropriate to it. Some jobs require many years of increasingly specialized preparation. But whether little

plains a maximum of only about 30 percent of the variance in personal income when educational and occupation status and other standard antecedent variables are employed as regressors. How might we improve our explanatory power? Two lines of attack seem promising.

One is the exploration of causes and consequences of career shifts. The technique we have used here may have led to an underestimation of the effects of career maturation on income differentials. Many people change occupations at least once during their careers (Slocum, 1974), and when they do they probably tend to enter occupations whose age-income trajectories are higher than those they left. Such opportunities presumably would come to the better prepared, brighter, more ambitious people. Career shift phenomena should thus be examined systematically to determine just how they fit into income status attainment processes.

But this possibility does not seem likely to add much to our ability to explain a large new increment of the variance in income. It would seem that new variables, as yet unspecified, must be added to the regressors. Perhaps new explanatory power might be gained by adding income variables analogous to those which have been so effective in explaining educational and occupational attainment. The analogs would be income aspiration differentials among youth and income expectation differentials among their "significant others" (Haller *et al.*, 1974). Perhaps, too, new variables which might come into being during the middle and later portions of the careers may exert effects. For example, in other research it has been found that occupational influence level, a variable describing power within organizations, has an effect on standardized hourly wages which is partly independent of formal occupational preparation and work experience (Pastore *et al.*, 1975). The introduction of such variables as these, together with more comprehensive attempts to incorporate what we have learned about occupational income differentiation, may offer promising prospects for increasing our ability to explain the process of income status attainment.

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social-psychological, labor force contingency and income variables

X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}	$\bar{X}$	S.D.
											46.827	25.305
											33.037	21.923
											2.601	1.325
											2.256	1.357
											13.670	2.373
											20.849	5.003
											36.467	12.724
											1.129	1.183
											4.774	2.083
											6.410	1.662
1.0											39.519	9.297
.711	1.0										2.678	1.686
.268	.350	1.0									2.084	.812
−.159	−.168	−.110	1.0								.433	.496
−.215	−.223	−.453	−.403	1.0							118.010	34.599
.120	.200	.221	−.055	−.232	1.0						4.078	.190
.165	.244	.286	−.081	−.291	.983	1.0					4.132	.212
.176	.252	.303	−.082	−.317	.973	.995	1.0				4.137	.217
.180	.258	.298	−.092	−.314	.968	.992	.995	1.0			4.129	.224
.190	.267	.304	−.091	−.328	.960	.986	.991	.993	1.0		4.114	.236
.183	.255	.306	−.098	−.326	.955	.980	.986	.989	.989	1.0	4.092	.240

performance; X_{14} military service (dummy variable − 1 = yes); X_{15} labor force experience; X_{16} income (log); X_{17} projected income age 40–44 (log); X_{18} projected income age 45–49 (log); X_{19} projected income age 50–54 (log); X_{20} projected income age 55–59 (log); X_{21} projected income age 60–64 (log).