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Chapter Author: Albert E. Beaton

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14. *The Influence of Education and Ability on Salary and Attitudes*

by Albert E. Beaton

INTRODUCTION

Formal education has long been considered an integral part of the life of young Americans. Since the "Old Deluder" act of 1647, free public schools have been available to the American citizenry. Though most groups of citizens agree on the importance of education, the aims of education and the processes by which it achieves its purpose have always been a matter of debate. Some educators think that the aim of education is to train the mind to orderly thought; others argue that education is a practical method for transmitting important facts and skills; still others feel that the main purpose of education is to establish credentials and personal contacts useful in later life. There is furthermore the latent possibility that formal education is in fact irrelevant and that able young people will achieve the ends of education regardless of their schooling. If this is the case, the apparent effects of education result solely from the fact that the able students tend to receive more education.

Although there is no general agreement about all the objectives of formal schooling, some are commonly expected. Most persons, especially those in less-privileged groups, see education as a key to better jobs, higher salaries, and advancement in socioeconomic status—in short, as the route to wealth, position, and the accumulation of more and superior goods. A closely related expectation is that education provides the key to occupational and social advancement and thus to more productive, challenging, and responsible positions in society. It also seems to be widely hypothesized that those with more education tend to be happier and more satisfied in their careers.

However, many expect much more from schooling than the simple accumulation of knowledge and salable skills; they expect the educational process to affect values, ways of perceiving problems, use of leisure time, and general attitudes toward life and

work. Some consider these intangibles to be of paramount importance. It is much more difficult to analyze and document the effect of formal schooling in these areas than in the areas of salable skills, partly because in the former there is no consensus on performance standards. It is not clearly "better" to be liberal than conservative, introverted than extroverted, and so forth, whereas there is general consensus about the proposition that it is better to be rich than poor.

We plan to examine some of the effects of education in this chapter, although the process by which education brings about these effects is beyond the scope of the study. The focus is on the following questions, a few of which have been more intensively analyzed in the chapters in Part One of this volume:

1 Do the more able persons receive more education?

2 Do those persons with more education make more money than those of equal ability and less education?

3 Are those with more education more satisfied in their work?

4 Do those with more education have different attitudes toward life in general?

5 Do those with more education have different views of the factors important to success?

6 Do those with more education have different views about the importance of various aspects of their schooling?

An examination of the effects of education is complicated by the selective distribution of education itself. It can be shown that on the average, those who receive more education have higher aptitude scores, come from families with higher socioeconomic status, and have had more family pressure for educational attainment. If these correlated factors influence attitudes or income, disentangling the effects of education from aptitudes, background, and so on, will tend to be difficult or impossible. A true experiment, in which children of varied abilities, social status, and family pressure are allocated randomly to parents with more or less education, seems neither socially desirable nor feasible. To examine the effects of education, then, we must control as best we can for extraneous influences and keep in mind that other factors may be plausible explanations for particular apparent effects of education.

BASIC DATA

To detect the long-run effects of education, the sample must be restricted to older persons. As indicated in Chapter 3 in this volume, the effects of education on people in their twenties and early thirties are complicated by the late arrival on the labor market of those with more formal schooling; for example, medical students may not begin earning professional salaries until they reach their thirties. One might approach the problem by collecting a sample of mature men today, and then looking into their past to find out how they performed in their youth. However, the data one is likely to find from a random sample of this age group are likely to be so irregular and so difficult to collect as to be of little practical value. The alternative is to find a uniform data base collected years ago and try to collect uniform data on the current performance of sample members. Unfortunately, this procedure is biased by the difficulty—in some cases, the impossibility—of locating people. However, the analysis in this chapter is based on a sample collected in this latter way, which appears to be the more feasible method. This section is intended to give the reader a very brief overview of the basic sample and of the major explanatory variables.

The Sample

The sample used in this study, designated the NBER-TH sample, consists of mature males (45 to 50 years old) presumably near the height of their careers and at the peak of their earning power. Most have long since finished their formal schooling, and the effects of education have thus been stabilized. This sample (described in Appendix A) was chosen because ability information collected when respondents were in their late teens and early twenties can be analyzed in conjunction with earnings, attitudes, and educational-attainment data collected at later points in time. In general, sample members have higher scholastic-aptitude test scores than the population as a whole and are more entrepreneurially minded. About one-quarter of the sample are in each of the educational categories: high school graduates, some college training, college graduates, and some postcollege training.

The men in the sample were all applicants for aviation cadet training in the Army Air Force in 1943. To qualify, a man had to be single, between the ages of eighteen and twenty-six, of at least average mental ability, and in sound physical health. It is important to note that all were volunteers for flight training. Because of segregation policies at that time, the sample is probably entirely white. Seventeen thousand men were in the original sample in

1943. Thorndike and Hagen followed up these men in 1955 and were able to locate approximately 10,000 for their study (Thorndike & Hagen, 1959). The National Bureau of Economic Research received information from about 5,000 of these men in the 1969–1970 follow-up.

We can speculate that the 1970 sample is a somewhat biased subsample from the original group tested in 1943. They are, perhaps, somewhat less mobile and more successful than those who could not be located or who did not respond. The 1970 respondents had slightly higher test scores on the average than those who were located in 1955.

The Variables

After passing the Aviation Cadet Qualifying Test, these men were subjected to a battery of 20 tests, some of which were of a general academic type (reading comprehension, mathematics, etc.) and some of more specific orientation (two-hand coordination, finger dexterity, etc.). The scores on these tests are available for the 10,000 respondents in the Thorndike and Hagen sample. These 1943 test scores and the responses to the NBER questionnaire were used to create the variables described below.

Ability

The study of the effects of education is not tenable without a control for the effects of ability. Perfect control of basic ability is impossible, since no direct measures are available. We have no direct measures of native endowment, nor do we know what portion, if any, of the scores on intelligence tests is genetically or environmentally determined. In any case, most psychologists consider basic ability or intelligence to be a function of more than one set of variables. The school IQ test is widely used as a proxy for basic ability. Strictly speaking, this is a general achievement test that indirectly probes scholastic aptitude. IQ tests are useful in predicting school performance, since it seems reasonable to presume that those persons who have learned more—because of either high basic ability or advantages in lifestyle—will continue to know more and learn more. The relationship of IQ tests and nonscholastic activities is not strongly established. However, imperfect though it may be, scholastic aptitude, or IQ, is the most generally accepted measure of ability available.

This study uses two measures of ability constructed from the

tests administered in 1943. It must be stressed that these are proxies not for innate ability but for ability in the late teens or early twenties. Although we may refer to these measures as ability, they are a summary of test scores that represent accumulated learning, skill in the manipulation of symbols, and, in this unusual test battery, visual acuity and some motor skills. The tests are described in Thorndike and Hagen (1959). There is no reason to believe that these measures are not affected by previous environmental conditions (see Appendix E).

The first general-aptitude measure was constructed through a principal-components analysis. The factor score closest to what is usually meant by scholastic aptitude, or IQ, is called *aptitude.* The aptitude scale has been transformed into a scale similar to that used in IQ tests; that is, the population mean is 100, and the standard deviation is 16. Presuming that the minimum IQ of this sample is 100, the scores have been converted so that the minimum possible score is 100 and the mean of this sample is about 112. The scores were divided by 10 for presentation in the correlation and regression analyses.

For tabular purposes, the individuals in the sample were classified into one of five ability groupings according to the tests taken in 1943.[1] We should note that this sample is limited to the upper half of the nation's male students, and thus measurement of the effects of ability probably will be limited. The lowest group in this aptitude classification is about the average of the male population in general.

The education and occupation (EDOCC) scale

Education is not a simple variable either. We can classify individuals into groups such as "high school" and "college," but this classification does not take into account the variation in the quality of education, which can be large. For example, it is possible for

[1] For this purpose, the three tests most closely related to a conventional IQ test were used: Reading Comprehension, Numerical Operations, and Mathematics. The highest ability group (5) is defined as those with scores on at least two of these tests in the upper quintile and no lowest-quintile mark; the next highest group (4) is defined as those with at least one highest-quintile score and no lowest-quintile mark; the lowest and next lowest groups (1 and 2) are defined comparably with lowest- and highest-quintile criteria reversed; the middle group is everybody else.

students at some high schools to receive training in calculus, whereas some college graduates never study this branch of mathematics. Simple classification by years of education also fails to take into account the type of education, such as engineering, liberal arts, or teacher training. Classification into education groups based on years is therefore a highly imperfect measure of the amount, quality, and intensity of education received. Nonetheless, at this stage of our knowledge we have no other realistic alternative.

Education is still more complex to analyze because of self-selection. In the post-World War II era the GI Bill made higher education possible for many who otherwise would not have attained this type of schooling; on the other hand, the loss of working years created incentives to seek immediate employment for some who might otherwise have gone to college. Thus the "education" variable reflects a desire for advanced education as well as simply increased educational input.

In this study, individuals were sorted into four education groups for tabular purposes: 12 or fewer years, 13 to 15 years, 16 years, and 17 or more years. All sample members were presumed to have the equivalent of a high school education; most had graduated from high school before applying for aviation cadet training. Those who had some post-high school education, such as a vocational training school, a junior college, or incomplete college education, were placed in the 13-to-15 year group. College graduates without further training were classified as having 16 years of education. Those who graduated from college and attended at least some graduate school were placed in the 17-or-more-year group.

An immediate result arising from preliminary analyses of these data was that this simple educational classification did not take into account one very important factor—occupational status—that could easily obscure the effects of education. One needs to make distinctions among respondents who are salaried, self-employed business proprietors, teachers, and self-employed professionals. We therefore extended the educational scale to eight mutually exclusive categories: self-employed with less than a college degree, self-employed with a college degree or more, self-employed professionals, and teachers. We refer to this scale as the EDOCC scale.

In the regression analyses, education and occupation are separated into one variable representing years of education and three dummy variables: one for self-employed businessmen, another for

self-employed professionals, and a third for teachers. Each dummy variable is coded unity for respondents in that group and zero otherwise.

Dependent variables

The other variables used in this chapter have been taken from the 1969–1970 NBER questionnaire. These variables may be organized into sets which are covered in later sections: 1968 (deflated) salary, attitudes toward work, attitudes toward life, attitudes toward determinants of job success, and views on education. These variables will be discussed in some detail in their respective sections. The descriptive statistics—including means, standard deviations, correlation coefficients, the distribution of responses to individual items, and the average salaries of those who responded in a certain way—are shown in the tables.

ANALYSIS

Since regression analysis is critical to further discussion, the basic regression equations are summarized here in Table 14-1. The first two columns contain multiple correlation coefficients showing the association between all 25 dependent variables and the major explanatory variables (column 1) and those variables plus all the interactions involving education and ability (column 2). The next five pairs of columns represent the regression coefficients and associated t-statistics for the five major explanatory variables: aptitude, education in years, self-employment in business, self-employment in professions, and teaching. The following 14 columns represent interaction terms in the same format. The results are discussed under the respective headings, which analyze a particular set of dependent variables.

Regression Estimates

All the regression equations are statistically significant at the .01 level using only the five major explanatory variables except for extracurricular activities, which is significant when all 12 variables are used, and basic skills, which is not significant in either case. The equations in which the seven interaction variables add significantly to the equations with only the five major variables are noted with one asterisk if the addition is significant at the .05 level and with two asterisks if the addition is significant at the .01 level.

The t-statistics indicate the strength of linear relationships of each individual regression coefficient. We shall tend to view t-

TABLE 14-1
Regression equations of 25 variables on aptitude, education, and occupation

	Dependent[a] *variables*		*Independent variables*[b]			
	R_1	R_2	*Aptitude*	*t*	*Education in years*	*t*
1968 Deflated Salary	.376	.380*	1.007	5	0.812	9
Log (salary)	.430	.432	0.031	8	0.027	14
Attitudes toward work						
Enjoy work	.102	.111	−0.012	0	0.015	2
Challenge	.173	.179	0.014	0	0.042	5
Interesting	.144	.149	0.009	0	0.029	3
Compensation	.114	.136**	0.043	2	−0.001	0
Judgment	.172	.181*	−0.018	1	−0.007	0
Responsibility	.179	.190*	−0.031	1	−0.026	3
Advancement	.193	.205**	0.040	1	0.067	6
Attitudes toward life						
Voting	.063	.080	0.008	0	−0.011	1
Politics	.101	.116*	−0.004	0	0.019	2
Freedom	.124	.133	−0.007	0	−0.026	5
Financial security	.098	.110	−0.011	0	0.016	2
Integration	.216	.225*	−0.041	3	−0.056	8
Determinants of job success						
Own performance	.197	.207*	0.031	2	0.016	2
Right connections	.085	.100	−0.114	4	0.034	2
Congeniality	.092	.101	−0.040	2	0.029	3
Luck	.113	.126	0.009	0	0.051	4
College degree	.485	.488*	−0.044	1	0.217	18
Hard work	.229	.233	−0.013	0	0.026	3
Views on education						
Basic skills	.037	.059	−0.012	0	−0.015	2
General knowledge	.175	.185*	−0.021	1	0.064	7
Career preparation	.200	.203	−0.035	1	−0.090	9
Extracurricular activities	.043	.081**	−0.011	0	0.006	0
Social awareness	.089	.096	−0.043	2	−0.008	0

Self-employed business		*Self-employed professional*	*t*	*Teacher*	*t*
6.203	13	2.387	2	−5.752	3
0.134	13	0.046	1	−0.175	5
0.112	2	0.083	0	−0.033	0
0.298	6	0.164	1	0.055	0
0.163	3	0.175	1	0.066	0
0.156	3	0.058	0	−0.508	3
0.366	8	0.334	2	−0.565	3
0.326	7	0.282	2	−0.490	3
0.435	7	0.336	2	−0.712	3
−0.054	1	0.062	0	−0.196	1
−0.121	2	0.059	0	−0.206	1
0.003	0	−0.035	0	−0.014	0
0.012	0	0.354	3	0.131	1
0.098	2	0.079	0	−0.065	0
0.314	8	0.247	2	−0.471	3
0.103	1	−0.085	0	−0.108	0
0.074	1	0.309	2	0.126	0
0.277	4	0.165	1	−0.180	0
−0.510	8	0.670	4	0.904	4
0.465	10	0.404	3	−0.295	1
−0.010	0	0.149	1	−0.015	0
−0.035	0	−0.035	0	−0.495	3
0.005	0	0.101	0	0.170	1
0.067	1	0.215	1	0.257	1
−0.039	0	0.192	1	0.237	1

TABLE 14-1 *(Continued)*

	Independent interaction variables[c]					
	Education/ aptitude	*t*	*Education/ business*	*t*	*Education/ profession*	*t*
1968 Deflated Salary	−0.001	0	0.490	2	0.764	2
Log (salary)	−0.001	0	0.008	1	0.010	1
Attitudes toward work						
Enjoy work	−0.005	0	0.001	0	0.040	1
Challenge	−0.014	2	−0.014	0	0.028	1
Interesting	−0.006	0	−0.017	0	0.025	1
Compensation	−0.008	1	0.011	0	0.094	3
Judgment	−0.008	1	0.013	0	0.013	0
Responsibility	−0.011	1	0.010	0	0.054	1
Advancement	−0.027	3	0.010	0	0.012	0
Attitudes toward life						
Voting	0.001	0	−0.025	1	−0.007	0
Politics	0.003	0	−0.028	1	−0.015	0
Freedom	0.001	0	0.006	0	0.035	2
Financial security	0.007	1	0.030	1	−0.041	1
Integration	0.003	0	0.035	2	0.017	0
Determinants of job success						
Own performance	−0.010	1	−0.020	1	0.009	0
Right connections	−0.007	0	0.015	0	−0.060	1
Congeniality	−0.003	0	−0.017	0	−0.051	1
Luck	−0.001	0	0.033	1	−0.094	2
College degree	0.009	0	0.054	2	−0.103	2
Hard work	−0.004	0	−0.030	1	−0.032	1
Views on education						
Basic skills	0.012	2	0.014	0	−0.011	0
General knowledge	0.002	0	0.013	0	−0.019	0
Career preparation	−0.002	0	0.021	1	−0.049	1
Extracurricular activities	0.013	1	0.059	2	−0.071	2
Social awareness	0.000	0	0.010	0	−0.029	0

[a] The dependent variables are discussed in the text.

[b] Some linear independent variables — self-employed business, self-employed professional, and teacher — are coded unity if a respondent is a member of the group and zero otherwise.

[c] The independent interaction variables are the products of the corresponding linear independent variables.

Education/ teacher	*t*	*Aptitude/ business*	*t*	*Aptitude/ professional*	*t*	*Aptitude/ teacher*	*t*
0.346	0	0.440	1	0.098	0	−0.444	0
0.016	1	−0.007	0	0.000	0	−0.015	1
0.056	1	0.009	0	−0.050	1	−0.012	0
0.040	0	−0.041	1	−0.011	0	−0.013	0
0.047	1	−0.031	0	−0.036	0	−0.025	0
0.159	3	0.058	1	−0.016	0	0.035	0
0.141	3	0.016	0	−0.039	0	0.085	1
0.135	2	0.011	0	−0.042	0	0.063	0
0.145	2	−0.061	1	−0.061	0	0.093	1
0.038	1	0.019	0	−0.091	2	−0.020	0
0.138	3	0.038	1	0.039	0	−0.011	0
−0.008	0	−0.035	1	−0.056	1	−0.024	0
−0.008	0	0.016	0	−0.069	1	−0.059	1
−0.031	0	0.026	0	−0.134	3	0.024	0
0.126	3	0.034	1	0.043	0	0.075	1
0.018	0	0.059	1	0.202	2	0.010	0
−0.047	1	0.051	1	−0.009	0	0.049	0
−0.016	0	−0.070	1	0.064	0	0.045	0
−0.089	1	−0.012	0	−0.074	0	−0.038	0
0.068	1	0.056	1	0.066	1	0.067	0
0.008	0	0.022	0	−0.011	0	0.028	0
0.130	2	0.033	0	0.096	1	0.093	1
0.035	0	−0.042	1	0.035	0	−0.090	1
0.051	1	−0.059	1	−0.034	0	−0.054	0
0.039	0	−0.067	1	0.043	0	−0.093	1

statistics greater than 2 as significant for main effects, but to ignore interaction effects unless the entirety of the interaction variables contribute significantly.[2]

Do the More Able Receive More Education?

Before proceeding to examine the effects of education, we must answer two questions previously raised: Is education, in fact, correlated with ability, and does ability provide a possible alternative explanation for education effects found for other variables? The basic data are shown in Table 14-2, which is based on the first 4,353 respondents to the questionnaire. The bottom line of the table gives the number of persons in each EDOCC classification; the last column is the number in each aptitude classification. The individual cells of the table represent the joint distribution of the EDOCC and aptitude scales. The first line is the actual number of persons in each cross-classification; the second line is the number expected if persons were allocated proportionally to the row and column totals; and the third line contrasts the observed and expected cell frequencies by dividing the difference of the observed and expected by the square root of expected frequencies.

Observing first the employed persons, we note that the observed frequency is much larger than we would have expected in the upper left-hand corner, indicating that those in the lower aptitude categories were much more highly represented in the no-college or some-college category. On the other hand, the observed frequencies in the two highest aptitude categories are much higher than expected in the categories of college graduate and some graduate school. A similar pattern is observed for self-employed business proprietors, although the deviations are less marked than those for the salaried group. The professional self-employed group is drawn much more from the higher aptitude group than would be expected if aptitude made no difference. Teachers show no systematic pattern except for being underrepresented at both aptitude group extremes. The chi-square statistic for this table is 204.4 (n.d.f. = 28), which indicates a very small probability that this sample was randomly selected from a population in which there was no relationship between aptitude and EDOCC.

We conclude, not surprisingly, that there is a relationship be-

[2] Statistical significance is not a strictly appropriate concept here since neither random sampling nor other statistical assumptions are met. However, we shall use the measures of significance, t-statistics and F-statistics, as measures of strength of association and hence as indicators of relationships worth pursuing.

TABLE 14-2 *Joint occurrence of ability, education, and occupation*

	Salaried employees				*Self-employed*				
	≤12 yr	*13–15 yr*	*16 yr*	*17+ yr*	*≤16 yr ed.*	*16+ yr. ed.*	*Prof.*	*Teachers*	*Total N*
Ability 1									
O	172	151	107	42	97	25	30	20	644
E	117.5	115.5	136.4	74.1	81.1	42.3	42.3	34.8	
△	5.0	3.3	−2.5	−3.7	1.8	−2.7	−1.9	−2.5	
Ability 2									
O	208	198	206	92	154	72	51	66	1,047
E	191.0	187.8	221.8	120.5	131.8	68.8	68.8	56.5	
△	1.2	0.7	−1.1	−2.6	1.9	0.4	−2.1	1.3	
Ability 3									
O	279	271	331	191	196	110	115	96	1,589
E	289.8	285.1	336.6	182.9	200.0	104.4	104.4	85.8	
△	−0.6	−0.8	−0.3	0.6	−0.3	0.5	1.0	1.1	
Ability 4									
O	99	126	179	97	75	55	59	38	728
E	132.8	130.6	154.2	83.8	91.6	47.8	47.8	39.3	
△	−2.9	−0.4	2.0	1.4	−1.7	1.0	1.6	−0.2	
Ability 5									
O	36	35	99	79	26	24	31	15	345
E	62.9	61.9	73.1	39.7	43.4	22.7	22.7	18.6	
△	−3.4	−3.4	3.0	6.2	−2.6	0.3	1.8	−0.8	
Total N	794	781	922	501	548	286	286	235	4,353

NOTE: The line labeled *O* represents observed counts, *E* represents expected counts, and $\triangle = \frac{O - E}{\sqrt{E}}$ is a measure of discrepancy.

tween aptitude and EDOCC in this sample and that, on the whole, those in the higher aptitude categories were more likely to attend college than those in the lower aptitude categories. We note also that a sizable number of persons in the lowest group (of average ability in the population) do graduate from college and go on to graduate school and the professions.

Do the More Educated Receive Higher Salaries?[3]

A man's salary is an extremely complex function of many things, including his occupation, the region of the country in which he resides, the opportunities available to him at change points in his work career, and a host of other factors. The relationship between education and salary is further complicated by personal decisions such as the selection of less remunerative but preferred occupations or factors such as the existence of property income, which may reduce or eliminate the need for a salary. Any relationship between education and salary may be influenced by the differential aptitude of those in different educational categories. Thus we ask the more specific question: Do persons with more education receive larger salaries than those of equal ability but with less education?

Table 14-1 contains two regression equations that measure the relationship between salary and the logarithm of salary with the explanatory variables. Interaction terms are included to detect differential slopes of some explanators at different levels of others.

Salary is measured in thousands of dollars. Statistically, both the multiple correlation of salary and the log of salary are highly significant. Salary does not, of course, have a Gaussian distribution; thus the logarithmic transformation tends to deemphasize the occasional very large salary. Salaries have already been trimmed, in the sense that those greater than $100,000 were set at $99,999, while the deflation to 1955 dollars further reduced the maximum possible salary to about $85,000. In both cases, the multiple correlations indicate substantial predictability from these few variables.

The t-statistics associated with the regression coefficients may be used as a rough measure of the importance of the individual regression coefficients. Almost all the major variables in these regression equations have t-values greater than 2, and in some cases they are very much greater. The largest t-statistic in the salary

[3] This analysis is essentially descriptive. For an economic analysis, see Chaps. 2 to 5 in this volume.

equation is associated with the business proprietors' regression coefficient, which indicates that self-employed businessmen had average earnings of $6,203 more than salaried employees after adjustment for education and ability. The significant positive interaction of education and business proprietorship indicates that the gap between self-employed and other employed is larger for the more educated. The same type of relationship also holds, but to a lesser degree, for self-employed professionals. The effects of self-employment must be interpreted with self-selection in mind. It seems reasonable that this group represents mostly *successful* self-employed, since those who failed in business would probably have taken a salaried position by this age. The effect may not, therefore, be considered an estimate of the gain in salary that would occur if the salaried employees randomly switched to self-employment.

Education has the next highest effect. Under the assumptions of the linear model, the regression coefficients of .812 indicate that persons with more education have higher salaries; over the range of this sample (from 12 to 20 years of education) those with an additional year of education averaged over $800 more than those with a year less, making the difference over the eight-year span more than $6,000. Since these are partial regression coefficients, this effect is additive to that of ability.

Ability also has an important effect independent of education. Assuming that the ability measure is roughly equivalent to an IQ scale, we can say that those persons with IQ's 10 points higher averaged around $1,000 more in salary. Since there is no interaction of education and ability, this difference is apparently not related to levels of education.[4]

The teachers in the sample are at a special disadvantage. Teachers earn almost $6,000 less than others of equivalent ability and education.

The regression of the log of salary on these same variables indicates roughly the same important factors, except that the logarithmic scale manages to cancel out the interaction effects.

The effects of ability, education, and employment status on salary can be seen more graphically in Table 14-3. Panel A contains a table of effects for average salary. Notice that both the weighted means and the effects of ability increase monotonically with in-

[4] The model estimated in Chapter 5 finds evidence of interaction between education and ability, and Taubman and Wales find limited interaction.

TABLE 14-3
Relation between current salary (1968 deflated) and education, ability, and occupational status

Panel A: Analysis of mean values

	Education of salaried employees			
	≤12 yr	*13–15 yr*	*16 yr*	*17+ yr*
Ability 1	(137)	(120)	(89)	(36)
	0.948	2.338	−0.046	−0.842
Ability 2	(177)	(166)	(179)	(84)
	0.526	−0.119	0.414	0.310
Ability 3	(241)	(236)	(291)	(159)
	0.663	−0.607	0.830	0.719
Ability 4	(84)	(105)	(163)	(88)
	−0.334	−1.488	−0.781	1.759
Ability 5	(31)	(27)	(88)	(74)
	−1.803	−0.123	−0.418	−1.945
TOTAL N	(670)	(654)	(810)	(441)
Effect	−5.785	−3.146	−0.847	−0.412
Weighted mean	10.491	12.678	15.635	16.424

Panel B: Analysis of median values

	Education of salaried employees			
	≤12 yr	*13–15 yr*	*16 yr*	*17+ yr*
Ability 1	(172)	(151)	(107)	(42)
	0.98	1.22	−0.46	−0.46
Ability 2	(208)	(198)	(206)	(92)
	0.29	0.55	0.19	0.24
Ability 3	(279)	(271)	(331)	(191)
	−0.01	−0.41	0.05	−0.37
Ability 4	(99)	(126)	(179)	(97)
	−0.38	−1.23	0.06	0.91
Ability 5	(36)	(35)	(99)	(79)
	−0.99	−0.22	0.05	−0.43
TOTAL N	(794)	(781)	(922)	(501)
Effect	−4.58	−2.36	−0.34	0.69
Weighted median	9.12	11.01	13.41	14.65

creases in ability. There seem to be larger differences between salaries at the extremes of the ability scale. Salary also increases monotonically with education for both employed and self-employed. The big difference here seems to be between the college-educated and the non-college educated. The most unusual group in the table are the highest-ability noncollege-graduate self-employed business-

Education of self-employed businessman		*Self-employed*			*Ability*	*Weighted*
12–15 yr	*16+ yr*	*professional*	*Teachers*	*Total N*	*effect*	*mean*
(70)	(17)	(19)	(20)			
−2.663	0.542	−0.851	0.574	(508)	−2.199	12.919
(105)	(55)	(31)	(55)			
−2.109	2.421	−2.061	0.619	(852)	−0.766	14.505
(130)	(82)	(80)	(73)			
−1.736	−1.122	1.083	0.170	(1,292)	−0.580	14.942
(54)	(38)	(41)	(32)			
−1.110	0.025	2.428	−0.499	(605)	0.547	15.985
(21)	(22)	(23)	(14)			
7.617	−1.866	−0.599	−0.863	(300)	2.997	18.632
(380)	(214)	(194)	(194)	(3,557)		
3.841	6.366	4.558	−4.575		16.484	
18.350	22.709	21.412	11.707			15.037

Self-employed businessman		*Self-employed*			*Ability*	*Weighted*
12–15 yr	*16+ yr*	*professional*	*Teachers*	*Total N*	*effect*	*median*
(97)	(25)	(30)	(20)	(644)		
0.55	0.88	−2.96	.23		−1.56	10.66
(154)	(72)	(51)	(66)	(1,047)		
−0.09	0.02	−1.85	0.70		−0.70	12.06
(196)	(110)	(115)	(96)	(1,589)		
−0.78	1.14	0.09	−0.60		−0.07	12.67
(75)	(55)	(59)	(39)	(728)		
−1.07	1.09	1.72	−1.15		0.65	13.27
(26)	(24)	(31)	(15)	(345)		
1.31	−3.23	2.85	0.70		1.80	15.18
(548)	(286)	(286)	(235)	(4,353)		
−0.05	3.99	5.41	−2.44			13.94
13.18	18.50	19.00	11.03			12.62

men, whose average salary is far above that of any other group in the table.

Panel B shows median effects. A median analysis tends to de-emphasize extremely large salaries, and so the medians are in general lower than the equivalent means. The relationships, however, are the same as in the table of means, with the exception of the

TABLE 14-4 ***Questionnaire items for attitudes toward job***

In this section we want to find out how people feel about their work. Just circle the number that best describes your own evaluation. The numbers constitute a scale ranging from 5 (highest, best, etc.) to 1 (lowest, worst, etc.).

	High				*Low*	
Do you enjoy your work?	(5)	4	3	2	1	18
Does your work provide a challenge?	(5)	4	3	2	1	19
Is your work interesting?	(5)	4	3	2	1	20
For the items listed below, how does your total work experience to date compare with what you expected when you first started? (3 = about as expected)						
Financial compensation	5	4	(3)	2	1	21
Requirement for independent judgment	(5)	4	3	2	1	22
Responsibility	(5)	4	3	2	1	23
Prospects for advancement	5	4	(3)	2	1	24

NOTE: The most common response is circled.

high-ability noncollege-graduate self-employed businessmen, who are now no longer the highest-salaried group.

Our conclusions, then, are that education and ability both contribute to salary in later life. There are indicators that the more able a man is, the more salary he has, regardless of education, and that the more education a man has, the more salary he receives, regardless of ability. Those who are successfully self-employed follow the same general relationship, but at a much higher level of remuneration. The teachers generally receive substantially less salary.

Are the More Educated More Satisfied at Work?

To test whether persons with more education are happier and feel more challenged by their work, seven questions were asked. These are shown in Table 14-4.

The regression of these items on the explanatory variables is presented in Table 14-1. The magnitudes of the multiple correlations are much smaller than those for salary. One reason for this is the homogeneity of response of the sample. Table 14-5 shows the number of persons responding in each category. Of the total sample, 59 percent responded in the highest possible category for the enjoyment of work, and about 88 percent responded in one of the top two categories. Thus almost all persons respond that they enjoy their work, and there can be little difference between the more or less educated or between the more or less able. The distribution of responses is similar for all items except those dealing with financial

TABLE 14-5
Responses to questionnaire items on attitudes toward job

	Number	*Percent distribution*	*Mean salary*
Enjoy work?			
1	50	1.0	11.2263
2	65	1.3	12.8007
3	496	10.0	12.3209
4	1,437	28.9	14.0508
5	2,929	58.9	16.4036
Work challenging?			
1	93	1.9	10.3173
2	127	2.6	10.3957
3	525	10.6	12.2776
4	1,136	23.0	13.4381
5	3,078	62.1	16.7440
Work interesting?			
1	60	1.2	11.1242
2	95	2.0	11.4588
3	567	11.4	12.7870
4	1,335	27.0	13.3989
5	2,900	58.5	16.7372
Financial compensation			
1	109	2.2	9.6190
2	449	9.1	11.0635
3	1,712	34.5	12.2969
4	1,501	30.3	14.8627
5	1,185	23.9	21.9786
Independent judgment			
1	54	1.1	11.0483
2	204	4.1	11.0904
3	1,356	27.5	13.6093
4	1,505	30.5	13.9745
5	1,810	36.7	18.1240
Responsibility			
1	39	0.8	12.7826
2	190	3.8	11.9103
3	1,189	24.1	13.7002
4	1,365	27.6	13.5217
5	2,160	43.7	17.4811

TABLE 14-5 *(continued)*

	Number	*Percent distribution*	*Mean salary*
Advancement			
1	368	7.5	11.2538
2	556	11.4	11.3509
3	1,741	35.6	13.5897
4	1,088	22.3	15.3702
5	1,131	23.2	20.4778

compensation and prospects for advancement. We are therefore trying to find differences due to education, ability, and employment status on items on which almost all respondents agreed.

The most interesting factor in the regression analysis is the set of large t-values associated with the dummy variable for self-employed businessmen. Self-employed businessmen, when compared with salaried employees, claim to enjoy their work more, find their work more challenging and interesting, and find the financial rewards, requirements for independent judgment, responsibility, and prospects for advancement all better than they expected. The self-employment factor is, then, quite important in determining attitudes toward work. The self-employed professionals tended to respond higher than the salaried subjects on the requirements for independent judgment, responsibility, and prospects for advancement.

Those with more years of education tended to find their work more enjoyable, more challenging, and more interesting than those with less education and to feel that their chances for advancement were better, although the former group tended to feel that they had less responsibility than they expected when they started. Teachers responded about the same as the salaried as far as enjoying work and finding work challenging and interesting were concerned, but had negative coefficients on the other four items. They felt that the financial compensations were less, that the requirements for independent judgment were less, and that the responsibility and prospects for advancement were less than when they started. We should note that the teachers in this sample are not typical of teachers in general, since they are all males, whereas most teachers are female. Also, perhaps the teachers are men who are disappointed at not being school administrators at their present age.

The interaction between education and teaching indicates that these negative views are less strongly held by the teachers with more years of education.

The scores on aptitude tests in 1943 have but slight relationship to the responses on these items. In only one place is the regression coefficient significant: Those with higher aptitude scores are more likely to feel slightly better paid than they originally expected to be.

Since education and ability seem to be poor predictors of response to these seven items, what does determine whether persons claim to enjoy work? The answer seems to be in Table 14-5, which shows an almost perfectly monotonic relationship between average salary and response to these items. Persons who enjoyed their work and found it both challenging and interesting were those with the highest salaries. The ones who responded that they were better paid, that their work required the most independent judgment, and that they had the most responsibility and the best prospects for advancement compared with initial expectations were also better paid on the average. In most cases the difference between those who gave the highest response and the other groups is quite substantial, even though the number responding in the latter fashion was also large. Apparently, then, a man's salary has much to do with his attitudes toward his work or, conversely, a man's attitudes toward his work have much to do with his salary.

Education and Attitudes toward Life

As was mentioned at the beginning of this chapter, many persons expect much more from education than salable skills or success in careers. Some of these expectations may be manifest in such factors as participation in civic affairs, political persuasion, and attitudes toward social movements such as the youth revolution, toward society's concern with financial security, and toward the problem of racial segregation. To tap these areas, five questions (shown in Table 14-6) were asked, and the results are presented in Table 14-7. Most of these men always vote in local, state, and national elections; consider themselves middle-of-the-road to moderately conservative; and feel that young people have too much freedom, that most people have about the right amount of (or perhaps too much) concern for financial security, and that the races are integrating either at about the right pace or too rapidly.

Regression analyses of these items were performed to identify differences in attitude related to differences in education and in aptitude. The questions concerning politics, young people's free-

TABLE 14-6
Questionnaire items on attitudes toward life

3. Please indicate with an X which of the following best describes your voting habits:		
Always vote in local, state, and national elections	☒	51-1
Always vote in national elections, sometimes in state and local ones	☐	-2
Usually vote in national elections	☐	-3
Sometimes vote in national elections	☐	-4
Seldom vote in any elections	☐	-5
4. Do you think of yourself as politically conservative or liberal?		
Very conservative	☐	52-1
Moderately conservative	☒	-2
Sometimes conservative, sometimes liberal	☐	-3
Moderately liberal	☐	-4
Very liberal	☐	-5
In this section we would like you to indicate your attitude about various social and economic problems. Please check the appropriate box and feel free to add additional explanation where necessary.		
1. Do you feel that young people today have too much freedom, too little, or about the right amount?		
Too much	☒	53-3
About right	☐	53-2
Too little	☐	53-1
2. Do you feel that people today are too much concerned with financial security, too little, or what?		
Too much	☒	54-3
About right	☐	54-2
Too little	☐	54-1
3. During the past 10 years or so, do you think that the pace of racial integration has been too fast, too slow, or about right—considering the welfare of the country as a whole?		
Too fast	☒	55-3
About right	☐	55-2
Too slow	☐	55-1

NOTE: The square corresponding to the most common response is marked with an X.

dom, financial security, and racial integration had significant education effects, but only the integration responses were significantly related to ability.

The voting-habits question had little variance, thus providing little opportunity to discriminate among the education groups.

TABLE 14-7
Response to questionnaire items on attitudes toward life

	Number	*Percent distribution*	*Mean salary*
Voting habits			
1	3,860	77.4	15.0095
2	924	18.5	15.9208
3	98	2.0	16.3191
4	33	0.7	14.7070
5	71	1.4	15.5623
Political views			
1	420	8.5	15.4199
2	2,212	44.5	15.1846
3	1,540	31.0	14.8452
4	690	13.9	15.7035
5	107	2.2	17.5776
Amount of freedom			
1	71	1.4	15.3920
2	1,588	32.1	16.0161
3	3,293	66.5	14.7970
Financial security			
1	1,331	27.0	14.9470
2	1,790	36.3	15.9165
3	1,816	36.8	14.6153
Integration			
1	863	17.6	16.7969
2	1,972	40.2	15.4639
3	2,076	42.3	14.3111

Seventy-seven percent of the respondents indicated that they always vote in local, state, and national elections, and another 18.5 percent indicated that they always vote in national elections, but only sometimes in state and local elections. The overall average scale measure was approximately 1.3, which is near the "always-vote" side of the five-point scale. There were no discernible patterns of differences among the aptitude groups or the EDOCC categories.

The political philosophy question is related to education. A value of 3 on the scale indicates "sometimes conservative, sometimes liberal"; lower numbers indicate a more conservative persuasion, and higher numbers a more liberal one. The average value over the entire sample of 2.56 indicates an average somewhere between

middle of the road and moderately conservative. The more educated respondents tend to be slightly more liberal than the less educated, although even the average of those in the highest education groups did not reach the middle-of-the-road category. The self-employed businessmen were noticeably more conservative than the others. The regression also indicates that the more educated teachers tend to be more liberal. It is interesting to note that the ability measure does not seem to predict responses to this item.

A majority of the respondents indicated a belief that young people today have too much freedom. This response was indicated by 66.5 percent of all respondents; the average response was 2.6 on a three-point scale. The regression analysis indicates a substantial relation with education, for there is a tendency for the more educated employees to be relatively closer to the "about-right" response. Teachers and self-employed professionals are the closest to the about-right position. Again, the ability measure has no apparent relationship.

There is a slight relationship between education and self-employed professionalism on the question concerning financial security. The average response was close to the about-right category. There is a very slight tendency for the more educated and self-employed professionals to feel that people today are too much concerned about financial security.

The racial-integration question has a strong relationship with education and also with ability and self-employment. The integration-is-proceeding-too-fast category was chosen by 42.3 percent of the high-ability self-employed men, but the about-right category was close behind with 40.2 percent. There is a slight tendency for the higher-aptitude groups to be closer to the about-right point than lower-aptitude groups. The relationship with education is monotonic for salaried employees; that is, the more educated groups are more likely to respond closer to the about-right category, whereas the less educated tend to be closer to the too-fast category. The self-employed businessmen tend to be slightly nearer the too-fast category. These results should be read in light of the fact that only 17.6 percent of this all-white sample responded that the pace of integration is too slow.

The average income for different responses (Table 14-7) shows no general pattern. The very liberal group, although few in number, have a substantially higher average salary than the other groups. The about-right category had a slightly higher average salary for the question about young people's freedom and financial security.

Those who believe that integration is taking place too slowly had a higher average salary.

Although these results generally indicated in Table 14-6 are true for all EDOCC and aptitude groups, there is a slight tendency for the more educated to be closer to the middle of the road in political views and to be closer to the middle of the scale on the questions about young people's freedom and racial integration. The higher aptitude groups are also closer to the middle of the road on young people's freedom and racial integration, but are slightly more likely to rate themselves as conservative.

Education and Attitudes toward Job Success

Although we cannot hope to disentangle the factors that lead to success in the work force, we have polled persons of varying success (or income) as to the factors they consider important. The items are shown in Table 14-8, and the results are presented in Table 14-9. The regression analyses in Table 14-1 show a number of strong relationships for different explanatory variables although none of the multiple correlations (except having a college degree) is high.

Overall, there is a strong tendency for respondents to consider performance and hard work to be the major factors contributing to success in their position; getting along with people and having a college diploma are ranked as very important, whereas being lucky is considered least important.

The average response was 4.4 on the five-point scale for one's own performace. The self-employed businessmen and professionals rank this item quite a bit higher than the salaried employees, and there is also a tendency for the higher aptitude and education

TABLE 14-8
Questionnaire items on attitudes toward job success

Below is a list of possible requirements for achieving success in a particular job or profession. Indicate on the scale where your own type of work should be ranked. That is, to what degree does success in your work depend on: (3 = average importance for success)

Your own performance	(5)	4	3	2	1	25
Having the right connections	5	4	(3)	2	1	26
Being able to get along with people	(5)	4	3	2	1	27
Being lucky or unlucky	5	4	3	2	(1)	28
Having a college diploma	(5)	4	3	2	1	29
Working hard	(5)	4	3	2	1	30

NOTE: The most common response is circled.

TABLE 14-9
Responses to questionnaire items on attitudes toward job succes

	Number	*Percent distribution*	*Mean salary*
Own performance			
1	36	0.7	9.0764
2	67	1.4	9.9690
3	611	12.4	11.5320
4	1,334	27.0	13.9599
5	2,886	58.5	16.8198
Right connections			
1	920	19.0	15.9037
2	911	18.8	15.1177
3	1,595	32.9	15.2248
4	804	16.6	15.0765
5	622	12.8	14.5190
Getting along with people			
1	57	1.2	10.3632
2	107	2.2	12.9458
3	743	15.1	13.5613
4	1,620	33.0	15.3865
5	2,378	48.5	15.8694
Being lucky			
1	2,049	42.8	14.3135
2	940	19.6	15.3421
3	1,278	26.7	16.1031
4	326	6.8	16.8149
5	199	4.2	16.7712
College diploma			
1	828	17.2	14.2584
2	475	9.8	14.8062
3	1,280	26.5	15.6079
4	871	18.0	15.4279
5	1,372	28.4	15.5552
Working hard			
1	107	2.9	10.0377
2	140	2.9	11.3763
3	733	15.0	12.7895
4	1,343	27.4	14.3549
5	2,580	52.6	16.7918

groups to rank it higher than the less able or less educated. Teachers tend to think their own performance less important. The sample as a whole, however, ranked one's own performance very important; even the lowest aptitude or EDOCC groups had an average rank of more than 4.

There is a strong correlation between ability and the importance placed upon having the right connections. The more able persons rank connections less important than the less able. There is a slight but opposite relation with education.

The question of being able to get along with people had significant negative regression coefficients for ability, indicating that the more able tend to consider congeniality less important. However, the more educated as well as the self-employed professionals consider congeniality more important. This reversal seems to indicate that the most able consider ability sufficient, whereas the others consider congeniality an additional asset.

Luck is judged to be of below-average importance to all aptitude and EDOCC groups. There is a strong education effect, since the higher the education, the higher luck is rated, up to the graduate school level. The self-employed also rate luck more important than the salaried. There is no particular relationship between ability and belief in luck.

The importance of a diploma displays a striking effect. Those with more education consider a diploma much more important than those with less education. Self-employed professionals and teachers consider the diploma very important. The self-employed businessmen seem to think the diploma is relatively unimportant. The ability effect is quite small.

Hard work is considered important by nearly everyone in the sample. The more educated as well as the self-employed businessmen and professionals rate this higher than the less educated and the salaried. There is no discernible pattern for ability.

The respondents who placed great importance upon their own performance and hard work had substantially higher average salaries (Table 14-9); those who placed importance upon getting along with people and having a college diploma had slightly higher salaries on the average. There is also a slightly higher mean salary for those who think luck is important. The differences in mean salary for the responses to the question about having the right connections were very slight, but the lowest average salary is for the group who thought the right connections to be very important.

TABLE 14-10 ***Questionnaire items on attitudes toward education***

3. Based on your own personal experience, what do you think high schools and colleges should concentrate on? Indicate your choice by circling the appropriate number on the scale from 5 (very great importance) to 1 (very little importance).

	Great importance				*Little importance*	*Effects*
Basic skills (reading, mathematics, etc.)	(5)	4	3	2	1	67
General knowledge (history, literature, science, etc.)	5	(4)	3	2	1	68
Career preparation (vocational, professional, etc.)	(5)	4	3	2	1	69
Activities (school clubs, newspapers, sports, etc.)	5	4	(3)	2	1	70
Social awareness (current social problems, community action, etc.)	5	4	(3)	2	1	71

NOTE: The most common response is circled.

To summarize, this sample considers its own performance and hard work the most important factors in achieving success. Being educated and getting along with people are also considered important; having the right connections is deemed of little importance; and luck is considered hardly important at all. The self-employed rate most items higher than the salaried, except for the importance of a diploma. There is a tendency for the more educated salaried employees to rate all items higher than the less-educated salaried employees. The higher-ability respondents rate their own performance higher and the importance of contacts and luck lower than those of lower ability.

Education and Attitudes toward Education

Table 14-10 shows the questions asked to get an idea of what these men consider important in education. The results are presented in Table 14-11.

Overall, the sample considered basic skills to be most important for high schools and colleges to concentrate on. The average score was 4.7 on the five-point scale. The next most important item was career preparation, with a mean of 4.1. The mean response on general knowledge was approximately 3.8; for social awareness it was 3.4; and for extracurricular activities it was 2.7. Thus the sample considered the three R's most important.

The basic-skills item had no discernible pattern of responses.

The multiple correlation of the item is the only insignificant correlation found for all 12 variables. All groups averaged over 4.6 on this item. Only one-half of 1 percent thought basic skills of little importance.

The general-knowledge item has a significant education effect:

TABLE 14-11 ***Responses toward questionnaire items on attitudes toward education***

	Number	*Percent distribution*	*Mean salary*
Basic skills			
1	23	0.5	13.7591
2	49	1.0	15.4878
3	313	6.3	15.2990
4	717	14.4	14.3001
5	3,869	77.8	15.3842
General knowledge			
1	56	1.1	13.7289
2	240	4.8	14.6053
3	1,686	34.0	14.3015
4	1,748	35.2	15.0597
5	1,233	24.8	16.8074
Career preparation			
1	90	1.8	17.6643
2	187	3.8	19.5077
3	980	19.7	16.6765
4	1,253	25.2	15.3043
5	2,453	49.4	14.1440
Activities			
1	639	13.0	14.3441
2	1,203	24.3	15.0254
3	2,242	45.3	15.4388
4	641	13.0	15.6034
5	223	4.5	14.9870
Social awareness			
1	301	6.1	15.5967
2	605	12.2	15.5662
3	1,709	34.5	15.3468
4	1,426	28.8	15.0475
5	918	18.5	14.8050

The more educated a respondent, the more important he considers general knowledge. Teachers also value general knowledge more highly. Ability and self-employment do not show strong effects.

Career preparation was ranked in one of the two highest categories by nearly 75 percent of the respondents. There is a strong tendency for the more educated person to think career preparation is less important.

Nearly 70 percent of the respondents circled either the second or the third category for activities, indicating a tendency to think school clubs, newspapers, sports, and so forth, of middling or little importance.

Sixty-three percent of the respondents circled the third or fourth category for social awareness, attributing a middling to slightly more than middling importance to awareness of current social problems, community action, and so on. A negative relationship with ability was observed.

There is no particular salary differential on the basic-skills item, although the data show a slight tendency for those who think general knowledge more important to receive higher salaries. On both the career-preparation and activities items, the relationship between response and salary is curvilinear, with the extreme positions receiving lower salaries than the middle. The group that thought social awareness of very great importance had the lowest average salary.

The sample is fairly uniform in its attitudes toward education. The three R's are most important, with career preparation and general knowledge not far behind. Social awareness is considered of modest importance, and extracurricular activities of little importance. These attitudes have no relationship to aptitude. There is a tendency for the more educated to think general knowledge and activities more important and to consider career preparation and social awareness less important.

SUMMARY This sample represents a group of fairly successful men of above-average intelligence at the prime of their earning careers. The following briefly summarizes the answers to the questions we initially posed:

1 The more able persons are in fact more likely to receive more education than the less able, although a fairly sizable number of persons in the lowest aptitude group (about average for the population in

general) received college degrees and went to graduate school, and some entered the professions.

2 Those persons with more education do, on the average, receive larger salaries than those of equal ability but with less education. It is also true that for a given level of education, there is a tendency for the more able persons to receive larger salaries.

3 The sample as a whole enjoyed their work, especially those who were self-employed in business. The more educated persons found that their work was more challenging and more interesting and that it offered more chance for advancement than they expected when they started out in work, but they felt that they had somewhat less responsibility than they anticipated.

4 Although the sample as a whole is moderately conservative, there is a tendency for the more educated to be more nearly middle-of-the-road in politics and to be more likely to feel that young people have about the right amount of freedom, that people are not overconcerned about financial security, and that the pace of racial integration is about right.

5 A very large proportion of the sample felt that their own performance was the key to success. Persons with more education tended to consider the attainment of a college degree very important. They also considered having the right connections, congenial manners, and good luck important, but less so than the other factors.

6 Almost the entire sample felt that high schools and colleges should concentrate on the basic skills. The more educated persons tended to feel that general knowledge was more important and career preparation less important than those with less education. Education was not a significant factor in explaining the responses to the questions on extracurricular activities and social awareness.

Since ability was used as a controlling variable, we are in a position to make some comments about the effects of general ability on these variables. Aptitude as a whole is a less-forceful variable than education, although it has many significant effects after adjustment for education. As has been pointed out above, persons with higher aptitude scores tend to earn more money, given the same number of years of education. Persons with higher aptitude scores tend to feel that they are better compensated and are given less responsibility than they expected when they started out in

business. They have slightly more middle-of-the-road views on integration than the less able. The more able consider their own performance important for success, but do not believe that having the right connections and congeniality are as important as those in the sample with lower aptitudes believe them to be. The more able are also less interested in the teaching of social awareness than those with lower ability scores.

Perhaps the most striking group in the study are the self-employed businessmen. Remembering that these men are those who are still self-employed in their forties, their salaries are substantially higher than the salaries of others with equivalent aptitude and education. They seem to enjoy their work more—much more. They are slightly more conservative politically and more likely to feel that integration is proceeding too quickly. They feel that all the factors contributing to success are important except for the college degree. Their beliefs about what high schools and colleges should accomplish do not seem to differ from those of the rest of the sample.

The self-employed professionals are better paid than others with equivalent ability and education except for the self-employed businessmen. The former tend to feel strongly on the questions concerning the use of independent judgment, having responsibilities, and opportunity for advancement. They also tend to feel that people are overly concerned with financial security. They rate their own performance, congeniality, hard work, and a college degree as being important. They do not differ from the sample as a whole in their views toward education.

The teachers in the sample receive substantially less income than others of equivalent aptitude and education. They tend to feel that they receive less compensation and have less opportunity for independent judgment, less responsibility, and less chance for advancement than they had expected when they began in their profession. Teachers do not seem to differ much from the sample in general in political and social views. However, they feel that a college degree is more important, and their own performance less important, than the rest of the sample. The only preponderance for teachers on attitudes toward education is their feeling that more emphasis should be placed on general knowledge.

Reference

Thorndike, Robert L., and Elizabeth P. Hagen: *Ten Thousand Careers,* John Wiley & Sons, Inc., New York, 1959.