The Relation Between Childhood IQ and Income in Middle Age

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Jencks' (1972) classical study *Inequality* reported a correlation of 0.310 between IQ and income for men in the United States. The present study examines whether this result can be replicated in Britain. Data are reported for a national sample whose intelligence was obtained at the age of 8 years and whose income was obtained at the age 43 years. The correlations between IQ and income were 0.368 for men (n=1280) and 0.317 for women (n=1085).

Key Words: IQ; Income; Inequality; U.S.A.; Great Britain

1. Introduction

The problem of why some people earn more than others, and therefore why there is so much social and economic inequality, has been of major interest in the social sciences of economics, sociology and psychology for decades and even for centuries. Many theories have been advanced to explain income inequality, including the strength of the work ethic, achievement motivation, the socio-economic status of parents, education, luck and intelligence. The contribution to the problem of the last of these – intelligence – is the subject of the present paper.

The classical study of the contribution of intelligence to differences in income is Jencks' (1972) *Inequality*. In this he gave a correlation of 0.310 (corrected for attenuation to 0.349) between IQ and income for a white male non-farm American sample aged 25-65. From this he concluded that IQ differences make a modest but significant contribution to differences in incomes. He concluded also that IQ has a heritability of about 50 per cent, and therefore that genetic factors contribute to income differences. Jencks' study has three shortcomings. First, his sample is not representative of the American population. Second, the sample is for men only. Third, the data for IQ and income

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were obtained at the same time in a sample with an age range of 25-64 years and a median age of 45 years. The direction of causation can be questioned in the Jencks' data. It could be argued that the causation is from income to IQ, on the grounds that individuals with high incomes have more cognitively demanding jobs and that this may increases their intelligence (the "use it or lose it" hypothesis).

In a subsequent study Jencks (1979) examined IQs obtained by males at age 17 and incomes at age 28 years (n= 839) and found a correlation of 0.20. This correlation is substantially lower than of 0.31 obtained in the first study 20. The second study is more satisfying than the first, in that the IQs were obtained 11 years before the incomes and also because it was a national sample obtained from school students excluding drop-outs. However, it has two shortcomings that render it less than ideal. First, it does not include females, and second the age of 28 at which incomes were obtained is rather young. It is probable that the correlation between IQ and incomes is higher in middle age and than in the late 20s. A highly intelligent corporate executive, lawyer, or physician may not earn much more at the age of 28 than a skilled plumber or electrician, but in middle age they will likely earn considerably. This may be the reason why the correlation of 0.20 between IQ and income at age 28 in Jencks' second study is so much smaller than the correlation of 0.31 between IQ and income at age 45 his first study.

In the present paper data are presented on the relation between IQ and income for a British sample. The nature of the sample goes someway to overcoming the shortcomings of Jencks' samples in so far as (1) it is a complete national sample; (2) it includes both males and females; and (3) IQs were obtained at the age of 8 years and the data for incomes were when the sample was aged 43. The interest of the study is to see how far the British data confirm the results obtained some 30 years ago by Jencks' in the United States. Hitherto no data have ever been published on the correlation between IQ and income in Britain.

2.   Method

The data are obtained from the first British national birth cohort study initiated in 1946 by Douglas (1967). The objective of this study was to obtain a sample of all babies born in Britain, obtain a number of

measures (socio-economic status of the parents, birth weights, etc), follow the sample up over a period of years and obtain measures of a number of phenomena including intelligence and educational attainment. Some of the outcomes of this research program have been described by Douglas (1967) and Wadsworth (1991). The initial target sample consisted of all singleton, legitimate and native British babies born in Great Britain (England, Scotland and Wales) in the week 3-9 March, 1946 (thus the sample excluded twins, the illegitimate and babies of foreign born mothers). The number of such babies was found to be 15,416 of whom 93 per cent were contacted. In order to make the study more manageable, the sample was reduced to 5,362 by random elimination of three quarters of those born into manual families. The sampling procedure has been further described by Douglas (1967) and Wadsworth (1991). At the age of 8 years the children were given tests of reading comprehension, word reading, vocabulary and non-verbal picture intelligence. The scores on these four tests have been combined to give a single figure for intelligence. The sample was followed up at the age of 43 years and information obtained on incomes for 3,365.

3. Results

The correlations between intelligence at age 8 and incomes at age 43 years were 0.368 for men (n=1280) and 0.317 for women (n=1085). The higher correlation for men than for women is not statistically significant.

4. Discussion

There are six points of interest in these results. First, the correlation of 0.368 between IQ and income for men in Britain is closely similar to that of 0.310 for men in Jencks' (1972) first study, although the British correlation is a little higher. The lower correlation obtained by Jencks is almost certainly due in part to a restriction of range arising from the omission of farm workers from his sample. Nevertheless, the present results confirm Jencks' (1972) pioneering study.

Second, Jencks gave only the correlation between IQ and income for men, while the British data give the correlation for both men and women. The correlation between IQ and income is a little lower for women (0.317) than for men (0.368). This is probably not unexpected

because many intelligent women devote much of their energies to raising children rather than on career advancement with the result that typically they do not secure the high incomes of men. Perhaps the most interesting feature of these results is that the correlation between IQ and income is not much lower for women than it is for men.

Third, the present data showing correlations between IQs obtained at the age of 8 years and income in middle age is more satisfying than Jencks' correlation for IQs and income obtained at the same, since it overcomes a possible objection in Jencks' data regarding the direction of causation (it could be argued in Jencks' data the direction of causation is from income to IQ on the "use it or lose it" hypothesis).

Fourth, Jencks' (1979) second study is more satisfying than his first in so far as the IQs were obtained at age 17 and incomes at age 28 years, showing that the direction of causation must be from IQ to income. But it is less satisfying than his first in so far as the correlation of 0.20 is so much lower. The likely reason for this may be that the age of 28 is too young to capture the full magnitude of the predictive power of IQ as a determinant of income. The present data confirm this in so far as they combine the stronger points in Jencks' two studies while avoiding the weaker features: the IQ data were obtained in childhood (unlike Jencks' first study) while the income data were obtained in middle age (unlike Jencks' second study).

Fifth, the correlation between intelligence and income may be considered quite small. Nevertheless, the effect of a correlation of this magnitude between IQ and income is to produce substantial differences in the earnings of high and low IQ groups. As Jencks (1972, p. 222) noted, men inducted in the Korean War who had been tested and scored above the 80th percentile for intelligence, representing IQs of 110 and over, had personal incomes when they returned to civilian life 34 percent above the national average. Conversely, the military inductees who scored below the 20th percentile on intelligence, representing IQs of below 90, had personal incomes when they returned to civilian life approximately 34 percent below the national average.

Six, the likely explanation for the positive correlation between IQ and incomes is that people with high IQs work more efficiently and productively than those with low IQs. The first major review of

American studies of this relationship was published by Ghiselli (1966). His conclusions were that virtually all studies found some positive correlation between IQs and ratings of job proficiency and that the magnitude of the correlation depended on the complexity of the job. For the least complex jobs, such as sales, service occupations, machinery workers, packers and wrappers, the correlations between intelligence and job proficiency lay in the range between 0 and .19. For jobs of intermediate complexity, such as supervisors, clerks and assemblers, the correlations lay in the range between .20 and .34. For the most complex jobs, such as electrical workers and managerial and professional occupations, the correlations lay in the range between .35 and .47. Subsequent meta-analyses of the association between IQ and job proficiency have been published by Schmidt and Hunter (1998) who report correlation of .51 for studies in the United States, and by Salgado, Anderson, Moscoso et al. (2003) who report correlation of .25 for studies in Europe. People with higher IQs who work proficiently are likely to be better remunerated than those with lower IQs who work less proficiently.

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