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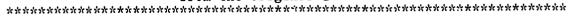   Analysis; Disclosure; *Error Patterns; *Family
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                *Research Problems; School Surveys; Student Financial
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ABSTRACT
                A study was conducted by New York's Broome Community
College (BCC) to compare student-reported parental income with income
reported by the students' parents on their 1982 tax records. Student
reports of parental income were obtained from a survey administered
to students entering BCC in fall 1983. The college had parents'
federal income tax records on file for the 126 students from this
group who applied for financial aid. Six variables were chosen as
being potentially useful in explaining the accuracy of reports of
parental income: age, sex, average grade in high school, education of
father, occupation of father, and intended major. The sample included
only one married and one black student, who were subsequently removed
from the sample. Compared with similar studies on the subject,
students in the BCC study were more likely to estimate their parents'
income accurately: 37.3% checked the accurate income class on the
entering-student survey; 29.4% underreported income; and 33.3%
overreported it. Over 65% of the respondents were within $6,000 of an
accurate response. Accurate responses were more likely to be given by
females, students whose fathers had a low job status and/or a high
school education or less, students with a B average in high school,
and students enrolled in a non-transfer major. The study findings
suggested that students who apply for financial aid are more accurate
in estimating their parents' income than the general population of
students, and that students from disadvantaged backgrounds report
more accurately than students from higher socioeconomic backgrounds.
The most important limitation of this study is that the all-white
sample is not representative of the heterogeneous student population
of community colleges. (KP)

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RESPONSE ERRORS IN REPORTS OF PARENTAL INCOME

BY COMMUNITY COLLEGE FRESHMEN

by

Richard Romano
Luis Moreno

Working Paper Series
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ABSTRACT

This study investigates the accuracy of student reported parental income, taken from a survey, against the actual parental income taken from their tax records of 1982. Previous research has shown such survey data to be invalid. The present study shows such reports to be valid for a selected sample of college freshmen. A simple regression produced a correlation coefficient of .74 between the parents' actual income and their children's reports of that income. A stepwise regression using six demographic or background variables did not improve the fit. The sample of 126 students under study were all white, unmarried, and first-time, full-time college freshmen who had applied for financial aid at a community college in upstate New York. Practical implications of this finding are discussed.

KEY WORDS: Survey research; Social mobility;

Validity of income survey data

RESPONSE ERRORS IN REPORTS OF PARENTAL INCOME
BY COMMUNITY COLLEGE FRESHMEN

Introduction

Studies of social stratification often rely on offspring
reports of parental characteristics as a means of identifying
social origins and measuring intergenerational mobility. The
variables most commonly measured are the father's educational
attainment, occupational status, and income (Blau & Duncan
1967, Duncan 1961, Hauser & Featherman 1977). The accuracy
of these reports, almost always based on surveys, is critical
to the validity of this research.

In an article published some time ago, Borus and Nestel
(1973) studied the response bias in the first two of these
variables. In their national sample of males between the
ages of 14 and 24, and their fathers, they found a high
degree of agreement between the reports of the two groups on
both the father's educational attainment and occupational
status. Studies like this one have given researchers
confidence that the information obtained from surveys on
these two variables is reasonably valid. Such is not the
case for the third variable, income (Borus 1966, Kayser &
Summers 1973).

It is generally acknowledged that students' reports of
parental income are neither valid nor reliable. In one of
the most influential studies of this kind, Kayser and Summers

(1973) compared the estimates of youths with the reports of
their parents on several measures of socioeconomic status,
including income, over a three year period. For all
variables, except for the fathers' income, the youths'
reports proved to be both reliable and very stable over time.
The reports of income, however, were statistically unrelated
to the reports of their fathers' and were regarded as
invalid. Fifty percent of youths overreported their fathers'
income while twenty-two percent underreported it
(see Table 1).

The general perception that youths of all ages give
invalid and unreliable estimates of parental income is based
on very limited research. The evidence which does exist is
based on studies which usually compare the reports of youths
against the reports of their parents rather than against more
objective measures of income such as tax records.

The present study does just that. It investigates the
accuracy of student reported parental income against the
income reported by their parents on their federal income tax
returns for a small sample of Fall 1983 entering freshmen at
a community college in upstate New York. These tax returns
are part of the students' financial aid file which is kept
confidential for a seven year period by the college. The
"age" of this income data is thus accounted for by the fact
that these tax records have just recently become available
for research.

Data Base and Variables

Student reports of parental income were obtained from a survey administered to students entering Broome Community College, a unit of the State University of New York, in the Fall 1983 semester (Romano 1985). As part of the orientation and registration process, students came to the campus during the months of June, July, and August preceding the Fall semester. Within a controlled environment, students were given 45 minutes to complete a multiple response, 34 question, survey form. Information was collected on the family background of the students, their needs, aspirations, and reasons for entering college. In all, 90 variables were obtained. Answers from 1463 of the students indicated that they would be full-time students and were without previous college experience (first-time, full-time students). This group represented 93.7% of that particular cohort who enrolled in the Fall 1983 semester. From this group, 126 respondents were randomly selected for this study. These respondents were among the 563 who gave usable responses to the question on family income. All 126 of the students in our sample had applied for, but did not necessarily receive, financial aid. This last condition resulted in a very selective sample but they were the only group for which the college had parents' federal income tax records on file. These tax records were manually checked for data on the actual income of one or both parents for 1982. Thus, the present study is based on a selected sample of the total

student population at the college. It includes only white, first-time, full-time students who applied for financial aid.

Of the 90 variables obtained on this sample of respondents, the following were chosen as being potentially useful in explaining the accuracy of reports of parental income. These seven variables are among those commonly used in research on social mobility.

AGE - The eleven age brackets used in the survey form ranged from: "(1) 18 or under" to "(11) 60 or over." Our sample of 126 respondents contained 113 who were 18 or under and only 6 who were 20 or over. This distribution is not representative of the college population but is not unusual given the fact that we were looking at only first-time, full-time students. Since we had the birthdays of all respondents, for the subsequent regression analysis a nearly continuous variable was created by converting all ages into months.

SEX - Our sample contained 50.5% females and 49.5% males, about the same as the entire college population.

HIGH SCHOOL AVERAGE (H.S.A.) - This was student reported. Respondents were asked to check one of eight classes from: "(1) A or A+" to "(8) D or lower." In our sample 37.3% reported A+ or B+ averages and 15.9% reported a C+ or below average in high school. This distribution was about the same as that of the college's overall entering student population for that year.

EDUCATION OF FATHER (EDFATH) - Respondents were asked to check one of eleven standard U.S. Census categories. In our sample 21.5% had fathers with less than a high school education and 14.9% had fathers with a bachelor's degree or higher. Fathers of students in our sample had a lower level of education than those of the college's overall entering student population for that year.

OCCUPATION OF FATHER (OCCFATH) - On the survey students were asked to write in their father's job title and describe the nature of his work. These responses were classified using the standard 3-digit U.S. Census occupational codes. These in turn were coded using Duncan's socioeconomic index (Duncan 1961) as adjusted to the 1970 Census codes by Hauser and Featherman (1977) to determine the father's occupational status. Finally, the Duncan index was grouped into high, medium, and low job status categories for this study.* Of the 106 students who answered this question, 47.2% were in the lowest category and 9.4% were in the highest. Fathers of students in our sample had a lower level of job status than those of the college's overall entering student population for that year.

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* Scores on the Duncan Index range from a high of 96.0 to a low of 0.0. For this study a low status job= 0.0 to 32.3, a middle status job= 32.4 to 64.7, and a high status job = 64.8 to 96.0.

COLLEGE CURRICULUM (COLLCURR) - Respondents were asked to indicate, from a list of 50 choices, their intended curriculum at the college. Responses were then classified into either transfer or non-transfer programs; 34.3% indicated they intended to enroll in a transfer program, while the remaining 65.6% said they did not.

REPORTED PARENTAL INCOME** (REPINC) - On the survey students were asked to report the before-tax income of both parents. A family income variable was created by adding the class marks of both parents' income classes. A respondent's estimate of parental income was counted as correct if the actual income fell within the income class checked on the

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** The question was: To the best of your knowledge which of the following intervals most closely describes your parents' or guardians' income last year? Include total annual income before taxes from all sources. Check one response for each parent even if you are not dependent upon your parents for financial support.

The intervals were: (1) not employed, (2) less than 3,000, (3) 3,000 to 5,999, (4) 6,000 to 8,999, (5) 9,000 to 11,999, (6) 12,000 to 14,999, (7) 15,000 to 17,999, (8) 18,000 to 20,999, (9) 21,000 to 23,999, (10) 24,000 to 26,999, (11) 27,000 to 29,999, (12) 30,000 to 34,999, (13) 35,000 to 39,999, (14) 40,000 and over, (15) Don't know/not applicable.

survey form. Correct responses were coded as 0, while a response one class higher than the actual income was coded as +1, one class below as -1, etc. In the few cases where the income of only one parent was reported, it was checked against the income tax records of that parent rather than the family income.

ACTUAL PARENTAL INCOME (ACTINC) - These figures were obtained from federal income tax records for 1982.

RACE AND MARITAL STATUS - This data was available but did not generate sufficient variation to be useful. Our sample contained one black (the college is 97% white) and one married student. These students were removed from the sample.

The use of these variables allowed us to study the extent of the response errors in reporting parental income and to test whether these errors were systematically related to the background correlates of the respondents.

RESULTS

The results of this study can best be understood when they are compared to others. As mentioned above, previous studies have shown that students give reliable answers when questioned about their father's occupation and education but not income. Table 1 below reports the results of a typical study by Kayser and Summers (1973) of these three variables. Using students from the same age group as our study, Kayser and Summers reported a correlation coefficient of .563 for offspring reports of their fathers' income. Our correlation

of .74 indicates that student reports of family income are valid. Thus, compared with previous studies, our research shows that students are much more likely to estimate the income variable accurately. In fact, students in our sample were more likely to check the accurate income class on a survey than they were either to underreport or overreport parental income (37.3% vs. 29.4% and 33.3% respectively). Moreover, if we look at those respondents who were within one class of an accurate response, we find that 65.9% either checked the right class on the survey form or were within one class, above or below, an accurate response. In the latter case, it means that respondents were most likely to have over or under-estimated their parents' income by between one and six thousand dollars. Table 2 gives some additional descriptive statistics on our sample.

When we analyzed the background characteristics of the group who gave accurate responses to the income question (37.3% of our sample), some interesting difference arose. Accurate respondents were:

1. More likely to be females.

2. More likely to have fathers with a low job status.

3. More likely to have fathers with a high school education or less.

4. More likely to have a B average in high school as opposed to an A or C average.

5. More likely to be enrolled in a non-transfer college program.

(Previous studies of the population from which this

sample is drawn have shown that non-transfer

programs attract lower ability students from lower

SES backgrounds).

It appears that females from lower socioeconomic

backgrounds with average high school grades report their

parents' income most accurately. Table 3 gives a percentage

breakdown of accurate and inaccurate responses by background

characteristics.

A preliminary simple regression of the actual parental

income against the student-reported parental income yielded

the following regression equation and statistics:

Actual Income = 5688 + 0.637 Reported Income

$r = 0.74$ $t = 5.07$ for constant

$t = 12.17$ for slope $F = 148$.

All significant below the .001 level

In the next part of our investigation, we used a

stepwise multiple regression procedure, using the first seven

variables identified above as predictors of actual parental

income. No order was specified for either entry or removal

of variables. Table 4 shows that the only predictor detected

by this routine as highly significant was, not surprisingly,

the reported income. (The SIG T column contains the two-tail

P-values of each variable.) All other variables were of no

consequence in improving predictability. The intercept

coefficient was not significant here due to centering of the

income data. The regression obtained a multiple R of 0.71.

Lastly, we ran the regression again, but with reported income deleted from the predictor list. This time, the routine identified the OCCFATH variable as significant (P = .05), but such a regression was able to explain only 3% of the total variability of the data.

Summary and Implications

Previous studies of the accuracy of offspring reports of parental income show that such reports are invalid and tend to overestimate income. The present study examines the same issue and shows that these reports are more accurate than previously thought but are still not as valid as offspring reports of their fathers' occupation or education. Faced with a survey question that asks respondents to check the income class of their parents, the respondents in this study were more likely to give an accurate response than to either overestimate or underestimate it. Still, less than 40% of the responses were accurate, although 65.9% came within six thousand dollars (1982) of being correct. A simple regression produced a correlation coefficient of .74 between the parents' actual income, taken from tax records of 1982, and their children's reports of that income. A stepwise regression was run but none of the six demographic or background variables helped to improve the fit between student reported and actual parental income.

The sample of 126 under study was all white, unmarried, and primarily 17 to 18 years of age. All were first-time,

full-time, college freshmen who had applied for, but did not
necessarily receive financial aid for the Fall 1983 semester
at an up-state New York community college.

The results of this study seem to suggest that students
who apply for financial aid are more accurate in estimating
their parents' income than the general population of
students. Within this group, students from disadvantaged
backgrounds report more accurately than students from higher
socioeconomic backgrounds. Looking at those students who
gave accurate responses to a question about their parents'
income, we found that they were more likely to be female and
to have fathers with only a high school education or less and
who held low status jobs.

We are not able to explain why the students in this
sample tended to report parental income more accurately than
that reported in similar studies, but we hypothesize that
during the process of filling out the applications for
college financial aid, parents are more likely to share
income information with their children. If this is true,
then survey data of these reports for all students attending
college would vary somewhat as the eligibility requirements
for student aid is expanded or contracted. From 1960 to
1990, for instance, the accuracy of reports would have
increased. We might also expect that certain segments of the
total college population would report parental income more
accurately than others. Because students entering public 2-
year colleges are from lower socio-economic backgrounds, and

are therefore more likely to apply for financial aid, they would report parental income more accurately than the total population of students entering 4-year colleges. Since higher income students also seem to be more likely to overestimate parental income, this would mean that the actual income gap between two and four year college students is not as wide as is commonly reported.

Researchers who use time-series data of student reports of parental income should take note of the results of this study. The most important source of information for national data in this area comes from the annual survey of college freshmen done under the supervision of Alexander Astin at UCLA for the American Council on Education (Austin).

The results of that survey, released each Fall, not only shape popular perceptions about the changing character and attitudes of American college students, but also have spawned a large body of academic research. Astin does report his results in a disaggregated way, separating 2 and 4- year and public and private colleges, but researchers often aggregate this information for their own studies. One case in point is a recent article in the American Economic Review concerning the impact of changing student financial aid on college enrollments (McPherson & Schapiro 1991). The authors do an econometric analysis of U.S. higher education enrollments and college costs net of aid for the 1974-84 period, and aggregate all income reports. In searching for data on parental income, the authors utilize Astin's freshmen survey

because they find that it is "the only consistently reported annual data on net costs and income" (p. 311). While the conclusions of that study do not depend on the accuracy of the students' reports of parental income at any point in time, they will be affected if the accuracy varies over time. The results of the present study suggest that they will, depending on financial aid eligibility requirements, and that the differences in the accuracy of such reports need to be taken into consideration.

The most important limitation of this study is that our all-white sample is not representative of the heterogeneous student population now entering the nation's colleges. An urban, culturally mixed group of students might produce a different pattern of results. This is particularly true of the 2-year college population which enrolls a larger percentage of minority students than the average 4-year college.

TABLE 1

Percentage of Accurate and Inaccurate Estimates of Children by Father's Occupation, Father's Education, and Father's or Parental Income.

Variables	Kayser & Summers (7)	This Study
Father's Occupation		
Overreport	25	
Accurate	50	
Underreport	25	
Father's Education		
Overreport	15	
Accurate	61	
Underreport	24	
Income	(Father's)	(Parental)
Overreport	50	33
Accurate	28	37
Underreport	22	29

TABLE 2

Descriptive Statistics

	Actual Income	Reported Income
N	126	126
MEAN	17726	18889
MEDIAN	17157	16500
STDEV	8778	10163
MAX	41594	45000
MIN	256	1500
FIRST QUARTILE	10669	10500
THIRD QUARTILE	23562	27000

TABLE 3

Number and Percentage of Accurate and Inaccurate Estimates by

Children of Parental Income, by Child's Background Characteristics.

Respondent's Characteristics	Accuracy of Report number of responses (%)		
	Overreport	Accurate	Underreport
SEX (n=126)			
Male (47.6%)	23 (38)	19 (32)	18 (30)
Female (52.4%)	19 (29)	28 (43)	19 (29)
Total	42 (33.3)	47 (37.3)	37 (29.4)
AGE (n=126)			
18 or under (n=113)	40 (35)	41 (36)	32 (28)
19	2 (29)	2 (29)	3 (43)
20 or over	0	4 (67)	2 (34)
COLLEGE CURRICULUM (n=125)			
Transfer	14 (33)	18 (42)	11 (26)
Non-transfer	28 (34)	28 (34)	26 (32)
HIGH SCHOOL AVERAGE (n=126)			
A+ to B+	17 (36)	18 (38)	12 (26)
B to B-	19 (32)	21 (36)	19 (32)
C+ or lower	6 (30)	8 (40)	6 (30)
EDUCATION OF FATHER (n=121)			
Less than High School	7 (27)	11 (42)	8 (31)
High School Graduate	18 (34)	20 (37)	16 (30)
Some College	8 (35)	9 (39)	6 (26)
B.A. degree or higher	8 (44)	4 (22)	6 (33)
OCCUPATION OF FATHER (N=106)			
Low SES	20 (40)	19 (38)	11 (22)
Middle SES	15 (33)	16 (35)	15 (33)
High SES	5 (50)	3 (30)	2 (20)

TABLE 4

Stepwise Regression; Dependent Variable = Actual Income

Variable	Coefficient	Sig T
Intercept	92.507*	.882
Reported Income	0.609	.000
Sex	0.059	.409
Occupation Father	0.065	.360
H.S.A.	-0.0515	.470
Education Father	-0.037	.605
Curriculum	0.025	.729
Age	- .00771	.914

* centered

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