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ABSTRACT

This paper models the educational process by a system of simultaneous equations. The endogenous variables (educational outputs) are a pupil's achievement, participation in a college preparatory program, need for achievement (aspirations), demonstrated motivation (effort), expectations, self-esteem, belief in his ability to control his environment (fate control), perceived parents' expectations, and perceived teachers' expectations. The 48 exogenous variables include pupil demographic and home characteristic measures, peer group characteristics, and teacher and school characteristics. The sample consists of over 14,000 pupils from the Equality of Educational Opportunity Survey (Coleman Report). The model is estimated by two stage least squares and ordinary least squares. The paper attempts to identify the determinants of each educational output and stresses the causal interrelationships among the outputs. (Author)

A SIMULTANEOUS EQUATIONS MODEL OF THE EDUCATIONAL PROCESS RESTRUCTURED: Emphasizing the Role of College Prepatory Programs, Self Esteem, and the Ability to Control One's Environment

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A SIMULTANEOUS EQUATIONS MODEL OF THE EDUCATIONAL PROCESS RESTRUCTURED: Emphasizing the Role of College Preparatory Programs, Self Esteem, and the Ability to Control One's Environment*

Introduction

In this paper, we develop and estimate a simultaneous equation model of the educational process. Currently, the literature contains some simultaneous equations models estimated by Levin (1970), Michelson (1970), Gordon (1973), Parti and Adelman (1974), Anderson and Evans (1974), Boardman (1974), and Boardman et al. (1972, 1973). This paper is an extension of the above referenced works.

Our model contains nine, observed endogenous variables and forty eight exogenous variables. The observed endogenous variables are pupil achievment, participation in a college preparatory program, the need for achievement or aspirations, demonstrated motivation or studiousness, expectations, self esteem, belief in the ability to control one's environment, pupil's perceived parents' expectations, and pupil's perceived teachers' expectations. The set of exogenous variables contains measures of 1) pupil demographics, such as sex, ethnic group, and age, 2) family background characteristics, such as, socio-economic status, information in the home, family structure, order of birth, and reading before school, 3) stability characteristics, such as number of times and the last time the pupil changed school, 4) school peer group characteristics, such as, the racial composition of the school and classroom and the average socio-economic background level of the students, 5) teacher characteristics, such as, the average achievement level of the teachers, teachers' experience, and the number of teachers per pupil, and 6) school characteristics, such as, school facilities, problems in the school, and school

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age.

Stated quite generally, we intend to investigate the relationships among the endogenous variables and to consider the effects of the exogenous variables on the endogenous variables.[1] We shall emphasize the role of the college preparatory program: the characteristics of students in the program and the apparent consequences of presence in the program. None of the studies referenced above considers the college preparatory program. In our previous work, we treated self esteem and belief in the ability to control one's environment as one variable called efficacy. In this paper we consider the two attitudes separately. Thus, we may determine which variable seems most important for improving achievement. Another problem with our previous work was that we included the need for achievement and demonstrated motivation in a single motivational variable. Psychologists emphasize the role of the need for achievement. In this paper, we consider whether this variable seems more important than demonstrated motivation. Due to limited space, combined with insufficient interest, we exclude the results for two estimated equations: the ones where perceived parents' expectations and perceived teachers' expectations are the regressands.

Among the exogenous variables, we shall consider some manipulable variables, in particular, pupil composition of the school, and school and teacher characteristics. Also, we shall consider ethnic group and sex differences.

Our data come from the survey for Equality of Educational Opportunity, which many people call the Coleman report. We estimate the model by two stage least squares. Appendix A contains the variables' descriptions. The results appear in Appendix B.

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1 Basically, this work is exploratory. We estimate many structures but present only the ones which seem intuitively, theoretically, and statistically superior. We believe that it is worthwhile discussing the implications of the results. Of course, in such models, we can never show causation.

2. Outputs of the Educational Process

Many empirical papers treat pupil achievement as the exclusive educational output. Indeed achievement is one of the major outputs. At least, children should be able to read, to write, to understand and use mathematics, and possess some general knowledge. While it is quite easy to define achievement for a particular subject area, it is surprisingly difficult to come up with a definition of achievement which covers all areas. Instead of thinking up our own definition, we use the following definition from the Equalty of Educational Opportunity report, the EEOR.[2] The Educational Testing Service, ETS, which administered the surveys for the EEOR aimed to "...measure those skills which are most important in our society for getting a good job and moving to a better one, and for full participation in an increasingly technical world." (p. 20).

Achievement is an overemphasized output of the educational process. While achievement in school must bear some relationship to future, occupational success, the evidence has failed to show a strong relationship. Among others, Jencks (1972) downplays the role of school achievement in later life. Since achievement is not all - important, let us consider other outputs which the school may affect.

Cognitive psychologists emphasize the role of desires, aspirations, and the need for achievement. Certainly, inherent motivation affects how hard a person tries for success. Ceterius Paribus, greater effort will produce more results. So, some motivational variables are important outputs. It is

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[2] The reader should compare the following definitions with the operational definitions which appear in Appendix A.

important to distinguish between motivation and other variables related to the self. For our purposes anything that a person expresses in terms of a want is a motivational variable.

Some important outputs are variables that reflect what a person thinks about himself, his ability to determine what happens to him, and what he expects will happen to him. These variables include self confidence, a number of self concepts, self esteem, belief in the ability to control one's environment or internal vs. external control, and occupational expectations. In this paper, we exclude self confidence and self concepts.[3] We include self esteem and we adopt the following definition by Coopersmith (1967):

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[3] Considerable confusion surrounds the use of the words "self esteem" and "self concept." Often, these terms are misused. The self concept is really an array of attributes. It consists of a set of cognitions about onself, such as, "I play baseball." Additionally, the self concept usually includes self identities, such as, "I am a white, anglo saxon American." Self esteem refers to feelings of self worth. It consists of evaluations of oneself, such as, "I am able to do many things well." Unlike self concept, self esteem can be reduced to a single dimension. Note that the statement, "I am a good baseball player" reflects both self concept -- "I do play baseball" and self esteem -- "I am good at something." In this paper we exclude self concepts and self confidence because the role of these variables is not well formulated theoretically. Also, we have no measure of them.

> By self-esteem we refer to the evaluation which the individual makes and customarily maintains with regard to himself: it expresses an attitude of approval or disapproval, and indicates the extent to which the individual believes himself to be capable, successful, and worthy. In short, self-esteem is a personal judgement of worthiness that is expressed in the attitudes an individual holds toward himself. (pp. 4-5)

An attitude similar to self esteem is the belief in the ability to control one's environment. Rotter (1954) and Rotter, Seeman, and Liverant (1962) introduced this concept in social learning theory. Rotter et al. distinguished between internal and external control. A person with internal control believes that he has control over his environment while a person with external control believes that he has no control over his environment, and that his experiences result from luck or fate.

Clearly, we have left out some other important affective variables. Also, we exclude variables that reflect the psychic character of students. For example, we have no measures of emotional stability or maturity, which are important outputs and are influenced by the school environment.

Another related omission concerns moral development and value clarification. Recently, Lawrence Kohlberg, a philosopher and psychologist, and Edwin Fenton, an historian and educator, have devoted considerable attention to the way in which the school and school textbooks can develop morals and clarify values. Of course, such outputs are difficult to measure in any circumstances, and we certainly have no measure of them.

There are many educational outputs. We have defined some of them, and we have alluded to others. We mention these outputs in order to place our work in some context, and to realize what we have left out.

3. A Model of the Educat' l Process

Clearly, some outputs of the educational process jointly determine each other. How well a pupil achieves will affect what he thinks about himself, particularly his self esteem. At the same time what a pupil thinks about himself may well contribute to future performance. If the time periods are small or if observations occur only once, we may consder these changes as simultaneous.[4] Some outputs, such as self esteem and belief in the ability to control the environment may be jointly determined, independent of time.

Postulating the relationships among the endogenous variables is a very difficult and challenging task. Some of the key outputs, such as, achievement, the need for achievement, self esteem, internal control, and expectations play central roles in theories of education, psychology, and sociology. However, nowhere do all these variables occur together in a single, unified theory. If, as a result of this work, we have some idea how these variables interact then we shall have made a step forward towards a more general theory than those which exist currently. These ambitious, however, do not help us formulate an initial model.

In order to formulate a model, we need to consider each endogenous variable in turn and shall discuss how we believe the other variables affect the regressand. Table I provides a succinct summary of our prior hypotheses. In this section we focus on the determinants of achievement.

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[4] See Bentzel and Hansen (1955)

One variable which we pay particular attention to is the role of the college preparatory program. College preparatory programs aim to provide students with more exposure to academic work than other programs. Thus, we should expect that participation in a college preparatory program will raise the achievement levels of students who are enrolled in such a program.

Now consider the motivational variables. Increasing the need for achievement can do nothing to decrease a student's academic achievement and may well increase it. As Weiner (1972) says:

> The main behavioral differences between individuals high and low in achievement needs are that individuals in the high motive group are more likely to initiate achievement activities; they work with greater intensity, persist longer in the face of failure, and choose more tasks of intermediate difficulty (instead of easy ones), than persons low in achievement needs. (p. 208)

The role of demonstrated motivation, however, is not so clear. Independent of ability, students who work harder will achieve more, but, in the absence of a control for ability, we may observe a negative correlation between achievement and demonstrated motivation.[5] Students with high ability (which results in high achievement) may feel they can work less hard than students with less

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[5] Unfortunately, no test measures achievement independent of ability. At the same time no satisfactory test measures ability independent of achievement, though biologists may develop good measures of ability in the future. Since the model excludes ability, which must influence achievement, the achievement equation should be regarded as a semi-structural form equation.

ability. An exclusion restriction for demonstrated motivation seems reasonable.

Now consider expectations. Achievement and expectations probably correlate highly. Certainly, good performance provides a reason for high expectations. But a positive attitude towards the future as evidenced by high expectations may contribute to achievement. A self-fulfilling prophecy may exist. People with high expectations may more easily receive information because they may expect to be in a position to make use of it.

A considerable body of evidence suggests an interdependent relationship between achievement and self esteem. After reviewing much of the literature, Purkey (1970) concludes:

> ...A great deal of caution is needed before one assumes that either the self concept (self esteem) determines scholastic performance or that scholastic performance shapes the self concept (self esteem). It may be that the relationship between the two is caused by some factor yet to be determined. The best evidence now available suggests that this is a two-way street, and there is continuous interaction between the self and academic achievement, and that each directly influences the other.

For some reasons why self esteem should affect achievement consider these arguments by Shaftel et al. (1971):

> The child with an inadequate self-concept (self esteem) becomes defensive. Preoccupied with protecting himself against a threatening world, he is not free to explore new challenges nor is he open to problem-solving situations.

> Even though we teach him all the 'steps' in problem-solving, he may not be emotionally free to enter into the process intelligently. He is too busy with the 'unfinished business' of his previous situations. (p. 13)

Hershey and Lugo (1970) follow a similar line of reasoning whey they say, "Once a person feels safe and wanted, he is ready to learn and think more effectively. A positive self concept (self esteem) makes us more open and willing to accept new experiences." (p. 78)

Support for the notion that self esteem affects achievement comes also from the behavioural psychologists. In Walden Two, for example, Skinner (1948) argues implicitly that making people feel good about their achievements (improving their self esteem) will improve performance. (see esp. pp. 250-60).

To consider the effect of belief in the ability to control one's environment (internal control) on achievement, we turn to a different literature. Gozali et al (1973) summarize some previous work:

> There is some evidence that internals, as compared with externals, more actively seek information relevant to problem solving (Davis and Phares (1967)), tend to retain more information when this information is relevant to personal goals (Seeman (1963); Seeman and Evans (1962)), and tend to better utilize information that has been equivalently acquired and retained by internals and externals (Phares (1968)).

The remaining endogenous variables, perceived parents' expectations and perceived teachers' expectations may also have a positive influence on

achievement. Here we have little good theory to draw upon, but we have no reason to suppose that those variables have a negative influence on achievement. Thus, we constrain them to have non-negative coefficients.

To consider each of the exogenous variables in turn would consume too much space. As shown in Table I, we impose few constraints on the coefficients of the exogenous variables. We would hope that all of the variables that reflect good teachers, such as, teachers' average verbal right and teachers' experience would have positive coefficients in the achievement equation. Notice that we include the average socio-economic composition of the school. This variable serves two purposes. First, it reflects the peer group composition. Second, it reduces spurious, self selection effects. Better teachers may obtain the privilege to choose the school in which they teach within a particular region. In general, better teachers will choose the better schools. Thus, teacher quality and school achievement may correlate. If, however, we include a variable that reflects school quality, i.e., a measure of attractiveness to teachers, such as the average pupil socio-economic background, then any observed teacher effects on achievement may be genuine, not spurious.

Exogenous variables that we emphasize are the ethnic variables and sex. As far as achievement is concerned, we may expect whites and Orientals to perform better than the other groups. For the sex variable, we may expect males to perform better than females. While females tend to do better in the earlier grades, many previous studies document that at the onset of puberty and after puberty, males perform better in school than females.

We now leave the determinants of achievement and move on to consider the other outputs. We could consider each of the other equations in detail,

but this would consume too much space and the theory is more poorly formulated for these equations than for the achievement equation. In general, we assume that an endogenous variable can have only a positive, significant coefficient in any of the equations. If, during the estimations, a variable has an insignificant or a negative coefficient, we exclude this variable from the equation. Not all of the constraints require that an endogenous variable must have a significant, positive coefficient. For example, we postulate an exclusion restriction for demonstrated motivation in the achievement equation. Also, we allow expectations to take any sign in the demonstrated motivation equation. These constraints constitute the basis for identification. If all the cells that include a "?" are changed to zero then the model satisfies the rank and order conditions for identification. As we have presented the model, identification is not guaranteed a priori. Each equation of the estimated model turns out to be over identified many times over. The following key explains the notation in Table I.

4. Results

The results appear in Appendix B. For each equation the first column contains the reduced form equation, and the second column contains the structural form equation, estimated by two stage least squares. We obtained the two stage least squares equations by imposing the constraints in Table I.[6] Estimation proceeds recursively. Sometimes, we converge to two different

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[6] Sometimes the second column includes a variable with a t-statistic which is a little less than 1.645 in absolute value. Sometimes a few variables are on the borderline. One can take one variable out, and another becomes significant. One can go in circles without really improving the model at all.

KEY TO TABLE I A PRIORI MODEL OF THE EDUCATIONAL PROCESS

Symbol	Explanation
++	variable must have a positive, significant coefficient (t-statistic greater than 1.645), and we expect it to be positive
++?	as per "++", but we expect a zero coefficient
+	no constraint, but we expect a positive coefficent
—	as per "++", but negative
—?	as per "++?", but negative
-	as per "+", but negative
00	variable is excluded a priori
0	no constraints, but variable probably has a zero coefficient
?	nc constraint, but no prior information

TABLE I: A PRIORI MODEL OF THE EDUCATIONAL PROCESS

Regressand

Regressors	ACH	CPREP	NACH	DEMMOT	EXP	SELFEST	CONTRL
ACH	1	++	++	?	++	++	++
CPREP	++	1	++	?	++	++	++
NACH	++	++	1	++	+	?	?
DEMMOT	CO	++	0	1	++	++?	+
EXP	++	+	+	?	1	++	?
SELFEST	++	++	0	?	++?	1	++
CONTROL	++	++	0	++	++	++	1
PPAEXP	++	++	++	++	++	++	++
PTEXP	++	++	++	++	++?	+	0
SEX	-	?	+	+	-	0	+
AGE	-	-	?	?	-	0	-
SES	+	+	-	-	+	+	+
INFO	+	+	+	+	+	+	+
TWOP	+	+	?	?	?	+	+
NCBAS	-	-	?	?	?	?	-
FL	?	?	?	?	?	+	+
HBS	+	?	+	0	+	+	+
PTAAT	++	0	+	+	+	0	?
PTAS	—	0	-	-	?	0	?
TC	?	0	+	?	-	0	?
NTCHSCL	-	0	-	-	?	-	-
LSTCHSCL	+	0	+	+	?	+	+
AVSES	+	0	0	0	+	+	?
PWPICLY	+	0	+	+	+	?	?
PWPICLY2	-	0	-	-	-	?	?

Table I Continued

Regressors	Regressand: ACH	CPREP	NACH	DEMMOT	EXP	SELFEST	CONTRL	
PWHITE	+	0	+	+	+	?	?	
PWHITE2	-	0	-	-	-	?	?	
TAVR	+	0	+	0	+	+	+	
NTPRPUP	+	0	+	+	+	+	+	
TANYTCH	+	0	+	+	+	+	+	
PWTCHLY	+	0	+	+	+	?	+	
TASEX	+	0	?	?	?	?	?	
TPTC	+	0	?	?	?	?	?	
TPADTN	-	0	?	?	?	?	?	
FACILITS	+	0	+	?	+	+	+	
PROBIMES	-	0	--	?	-	-	0	
AGES	-	0	?	?	-	-	0	
PRPCPREP	00	++	00	00	00	00	00	
TEST	++	00	00	00	00	00	00	
NTCHLV	-	0	?	?	?	?	?	
PRNMADEG	+	0	?	?	+	?	?	
SMSA	+	0	?	?	?	+	+	
NEWENG	?	0	?	?	?	?	?	
MIDATL	?	0	?	?	?	?	?	
LAKES	?	0	?	?	?	?	?	
PLAINS	?	0	?	?	?	?	?	
SEAST	-	0	?	?	?	?	?	
SWEST	-	0	?	?	?	?	?	
NTLKGC	+	+	?	?	+	+	+	

Table I Continued

Regressors	Regressand ACH	CPREP	NACH	DEMMOT	EXP	SELFEST	CONTRL	
TV	-	-	-	-	0	0	0	
CONST.	+	0	?	?	?	?	?	
BLACK	-	?	+	+	?	+	0	
WHITE	+	?	0	?	+	?	+	
AMIND	-	?	?	?	?	?	0	
ORIENT	+	?	?	+	+	-	0	
PRICAN	-	?	?	?	?	?	0	
MEXAM	-	?	?	?	?	?	0	

equations. In such cases, an alternative equation appears in column three. The fourth column is a structural form equation estimated by ordinary least squares subject to some constraints in Table I. This equation is presented for comparison purposes and is rarely discussed further. All references to the reduced form apply to the first column. All references to the structure apply to the two stage least squares results in column two.

The estimated relationships among the endogenous variables is comprehended best by looking at Fig. 1. The lines with arrow heads indicate positive, significant regression coefficients, except for the one from expectations to demonstrated motivation, which indicates a significant, negative coefficient. The most striking feature is the complexity. At the same time one should note that not all of the endogenous variables interact with each other. Achievement, for example, appears to depend on only two endogenous variables: participation in a college preparatory program and belief in the ability to control one's environment. Achievement, itself, feeds back to four variables: self esteem, internal control, college preparatory program, and the need for achievement. So the lines are by no means all double headed.

As expected, achievement seems to depend on being in a college preparatory program and internal control. Interestingly, neither self esteem, the need for achievement, nor expectations seem to have independent, direct effects. In our original work, we treated self esteem and internal control as one variable. Some support for this convenience comes from the reasonably high correlation between these variables, which is evidenced by the high t-statistics for these variables in the fourth column equations for self esteem and internal control. However internal control has a relatively small

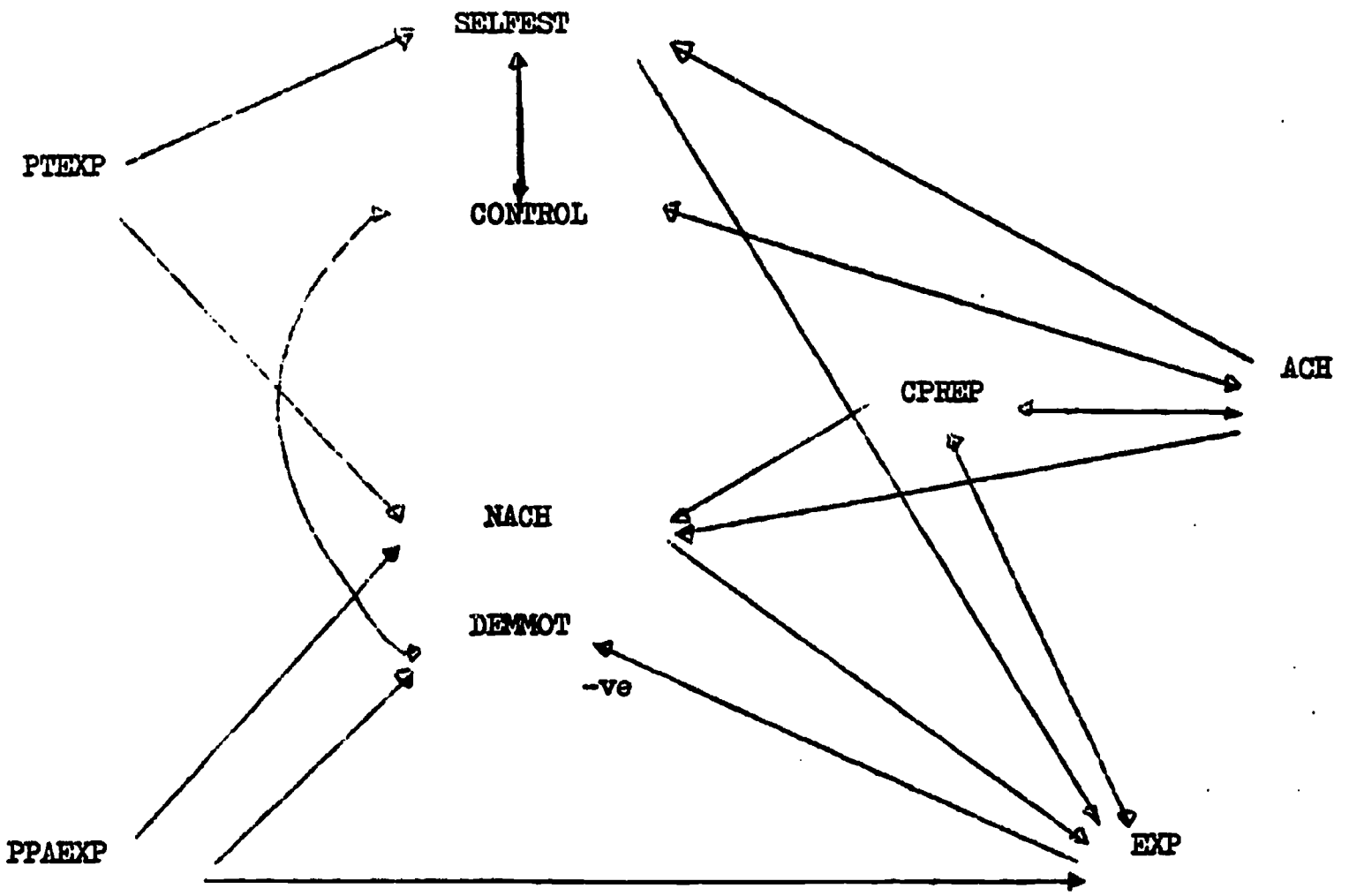

Figure 1 : A graph of the relationships among the endogenous variables, except the determinants of perceived parents' and teachers' expectations.

t-statistic in the TSLS self esteem equation as does self esteem in the TSLS internal control equation. Also, Fig. 1 shows that these variables play quite different roles. For high achievement, control is the more important.

It is interesting to consider the motivational variables. Neither the need for achievement nor demonstrated motivation seem to affect many of the other endogenous variables. Surprisingly, they seem to have no relationship to each other. Also, these variables depend on many other endogenous variables, while they appear to influence few of the other outputs.

The major role of the college preparatory program is its apparent effect on achievement. Being in this program really does seem to improve achievement. At the same time one should note that a student must perform average or above in order to place in a college preparatory program. Participation in a college preparatory program appears also to raise expectations and the need for achievement.

Before leaving the discussion of the endogenous variables, it is worth mentioning that the imposed constraints in Table I are binding only for the achievement equation. In all other cases, an endogenous variable does not appear in the final tabulations because it had an insignificant coefficient when it was included in the equation. This result is quite surprising when one looks at the number of variables we excluded from the structural form equation that we estimated by ordinary least squares, because they violated the constraints in Table I.

5. Results for selected exogenous variables

Let us now consider the results for the exogenous variables. Unfortunately, we cannot summarize the results in a single diagram or table. To a great extent the results in Appendix B speak for themselves. Here we plan

to concentrate on the apparent influences of some exogenous variables.

One variable which sometimes enters the equations with a large t-statistic is sex. The results show that in the twelfth grade males achieve higher scores than females. However, females are particularly well motivated; they have a high need for achievement and seem to work hard. Also, females believe they have much more control of their environment than males. Interestingly no significant sex differences exist in expectations, self-esteem, and participation in a college preparatory program.

Another variable which has comparatively large regression coefficeints and t-statistics is socio-economic background. Quite reqsonably, students with a high socio-economic background have high achievement, expectations, belief in their ability to control their environment, and are more likely to participate in a college preparatory program than students with a low socio-economic background. Motivational variables, however, seem to be higher for students with a low socio-economic background. Perhaps, disadvantaged students depend more on education as a path to mobility than do advantaged students. Thus, the student with a low socio-economic background has more at stake, which makes him want more and try more. Interestingly, self-esteem seems independent of socio-economic background.

The ethnic composition of the classroom and the school are variables which attract considerable attention. Many parents are concerned about the effects of bussing, on achievement in particular. Our results suggest no simple solution. The coefficients for the racial composition of the school variables suggest that a school which has neither a minority nor a majority of whites is the worst ethnic mix for high achievement. Thus, on average, integrated schools may have lower achievement levels than schools which are

predominantly white or predominantly black. At the same time, one should note that schools with an ethnic mix may have students with a higher need for achievement, higher demonstrated motivation, higher expectations, and higher self esteem, than schools which are all white or all black. In short, the effects of integration appear extremely complex, and require much more thorough analysis of the individual ethnic groups, before we can make firm policy suggestions.

We are on much firmer grounds making policy suggestions about variables related to teacher characteristics and school characteristics. Teachers' average verbal ability level stands out as one variable that seems highly related to pupil achievement. While teachers' average verbal achievement has a negative coefficient in the college preparatory equation, its size in the achievement equation suggests clearly that improving the verbal (and presumably the other intellectual) abilities of teachers would be worthwhile. Teachers' experience seems positively related to pupil achievement, self esteem, internal control, demonstrated motivation, and expectations. While there may be few good, immediate substitutes for experience, more research should aim at identifying the advantageous nature of experienced teachers, which, once identified, may be taught to future or inexperienced teachers.

Another school characteristic with mainly positive, apparent influence is the number of teachers per pupil. Fewer teachers per pupil would increase pupil achievement and students' demonstrated motivation. It would be easy for school boards to improve the pupil teacher ratio. However, we have not, nor do we intend to do so here, estimated the cost-effectiveness of this proposal.

One school policy variable which enters all of the reduced form equations with positive coefficients is the proportion of students in a college preparatory program. These programs seem very productive. Allowing or encouraging more students to take these programs may have beneficial consequences for these additional students. While this action may lower the benefits of these programs to those students who are already enrolled in such programs, expansion of college preparatory programs seems a reasonable proposition, which should be studied more fully.

Finally, one should note that problems in the school seem to have negative effects on achievement, expectations, and the need for achievement. Schools function poorly when there are constant disruptions and schools should take effective action to reduce problems in the school.

6. A discussion of some ethnic differences

Appendix B shows clearly a wide divergence in the values of the endogenous variables among different ethnic groups. Historical and cultural experiences help to explain these ethnic differences. While we have not made an exhaustive historical and cultural study of each ethnic group we will highlight the experiences of two groups, the Orientals and the Puerto Ricans. These examples indicate how any final explanation of ethnic differences must include a detailed study of each ethnic group's culture and history. We selected the Orientals and Puerto Ricans because the former obtained consistently positive structural form coefficients and the latter obtained consistently negative structural form coefficients.

Orientals rank highest in achievement, college preparatory programs, demonstrated motivation, and expectations. The 1960 and 1963 census data

indicated that Orientals possess more years of schooling than all other racial groups and had a median income only $99 less than the white mainstream which has a much higher income than blacks, Puerto Ricans, Indians, and Mexican Americans. (Levine & Montero, 1973, p. 35) The experience of Orientals in the United States contributes to their present position.[7] From the early twentieth century, Orientals enjoyed considerable economic and educational success. Immigrant Orientals arrived in the United States with developed entrepenurial skills and educational attainment. In 1900, approximately 81% of the Japanese came from prefectures in Japan where 51% of the men had at least eight years of education. (Levine & Montero, 1973, p. 40) None of the other groups we analyzed arrived with such educational baggage. Orientals enthusiastically sought admittance to the economic mainstream through education. Between 1900 and 1920 inability to speak English on the part of adult Japanese immigrants dropped from 62% to 15%; between 1920 and 1930 school attendance by Japanese Americans between the ages of 5 and 20 caught up and surpassed even the white native born. (Modell, (1974), p. 21)

Orientals initially entered the West Coast labor market either in agriculture, mining or railroad labor. However, discrimination and exclusion policies

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7 Often our Oriental examples represent research on the Japanese. We realize cultural differences exist between Japanese and Chinese. However, most of the pertinent research focuses on the Japanese and the Coleman data do not differentiate between Japanese and Chinese.

forced them to migrate to urban areas and to enter service related industries such as laundries, restaurants, hotels, and domestic service. While entry timing into the booming California labor market helped, Oriental businesses flourished due to their economic and social organization. Orientals formed partnerships and employed rotating credit associations to support new business enterprise. This entrepenurial organization did not prevail among other groups such as the blacks, who repeatedly formed solo entrepreneurships and started banks which soon failed. The Oriental family and clan promoted trade guilds which organized locations of Oriental business to prevent undue competition. Seattle, Washington, exemplified the enormous early economic success of Orientals, where in 1919, Japanese owned 47% of hotels and 24% of grocery stores. By 1940, 40% of Japanese men in Los Angeles were self employed.[8] Economic success among Orientals continues to the present. This historical economic success justifies the observed high expectation coefficients for Orientals. They have come to expect success.

The family and clan not only contributed to economic success but also promoted high motivation and educational success among their children. As Light (1972) says "Oriental children are enjoined to study hard and achieve scholastic eminence in order to bring credit to their family and to their ethnic group." (p. 188) Circles of significant others praise and chastize Oriental youth in terms of impersonal achievements in school. However, while such evaluation of impersonal achievement promotes educational achievement and motivation, such evaluation does not necessarily promote individual self-esteem. Low self-esteem also finds its roots in the concentration camp experience of

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8 See Light (1972) p. 8-10.

the 1940's which brought about a rejection of culture of the elder generation and led to a drive for assimilation into the white cultural mainstream.[9] We may note further that these experiences would hinder the development of a sense of control over one's environment.

Finally, the high proportion of Orientals in college preparatory programs also possess cultural antecedents. Of second generation Japanese, 57% gained some college training and of third generation Japanese 88% gained college professional training.[10] Thus an historical and cultural sketch of Orientals parallels the magnitudes and signs of the structural form coefficients for Orientals.

The history of economic and educational attainments for Puerto Ricans are meager in comparison to Orientals and other racial groups. The 1960 census indicated that Puerto Ricans had a median income considerably less than whites, blacks, and other nonwhite groups (Fitzpatrick, 1971, pp. 59-60). Puerto Rican unemployment in 1960 averaged 9.9% whereas whites and blacks had 5% and 6.9% respective unemployment (Moynihan, 1970, p. 116). The 1960 census indicated low educational attainment; for example, in New York Puerto Ricans possessed less years of education than any other ethnic or racial group (Fitzpatrick, 1971, p. 136).

Unlike the Orientals, Puerto Ricans immigrated with little educational or entrepenurial-industrial skills. Three-fifths of the Puerto Rican immigrants could not speak English (Mills, 1950, p. 143). Most Puerto Ricans arrived in the 1940's and 1950's and received unskilled and semi-skilled jobs. More Puerto Rican migrants were women than men which forced them into an even lower position in the market structure. Earlier immigrant groups already

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[9] See Modell (1974) p. 29.

[10] See Levine and Montro (1973) pp. 44-45

dominated service-related industries in cities. Two-thirds of the immigrant Puerto Ricans were, by mainland standards, black, and faced similar segregation and discrimination as did the urban black migrant. (Mills, 1950, p. 90) Puerto Ricans and blacks received the discriminatory position that Orientals held earlier.

A heritage of low economic achievement may explain Puerto Ricans' low achievement, need for achievement, and motivation. However, this external low economic position appears not to have lessened Puerto Ricans' expectations. One possible explanation for the high observed expectations lies within the Puerto Rican value system.

The basic value of Puerto Rican culture consists of a form of individualism unlike the United States' individualism based on competition and attainment of external economic and social status. (Fitzpatrick, (1971), p. 90) Puerto Ricans immigrated from a two class society of little social mobility in which expectations centered around the acquisition of respect in one's ascribed economic position. Until recently employment opportunities in the United States far surpassed opportunities in Puerto Rico. Thus, when Puerto Ricans come to the United States they may have unreasonably high expectations. This Puerto Rican emphasis on the inner qualities and respect in assigned social position may also explain the insignificant coefficient for Puerto Ricans in the self esteem equation. Even though a Puerto Rican may hold externally a low economic position, peer group respect may promote individual self esteem.[11]

Whereas the Oriental family and peer group values external status acquired through education and economic attainment, the Puerto Rican family and peer group values internal status acquired through personal dignity and

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[11] The white perception of Puerto Ricans as blacks which reinforces ethnic identity may also, in turn, promote an individual ethnic self-esteem.

respect. This fact combined with Puerto Rican reliance on a family network rather than the prevailing organized economic system reliance of the white mainstream account for low control of the environment.

Puerto Rico fatalism leads to an acceptance of many events as inevitable; and lessens both the belief in their ability to control their environment and their sense of personal guilt for failure. (Fitzpatrick (1971), p. 92) Also, both fatalism and Catholicism may lower the need for achievement of Puerto Ricans. As Rosen (1969) indicates, the need for achievement is significantly lower for Catholics than for Protestants, Greek Orthodox, and Jews. (p.13

7. Conclusion

Our analyses have shown that the educational process has multiple, interrelated outputs. Belief in the ability to control one's environment and participation in a college preparatory program seem to exert important influences on achievement. Self esteem and internal control seem to play quite different roles, although they correlate highly with each other. The pupil's need of achievement seems influenced by many of the endogenous variables, but it affects only expectations.

We have shown that variables associated with the school, such as the racial composition of the classrooms, teachers' ability, teachers' experience, the number of teachers per pupil, and problems in the school all seem to have important effects on the endogenous variables. Improving the quality of the teachers in the school will apparently have major beneficial effects on school outputs. We can offer no clear cut policies about the otpimal racial composition. In order to suggest policies on this issue, one should consider the ethnic groups individually. Some results appear in Boardman (1974), but

this work treats self esteem and belief in the ab'lity to control the environment as one variable; it treats the need for achievement and demonstrated motivation as one variable, and it excludes participation in a college preparatory program. Next, we plan to estimate a model using the ninth grade data.

APPENDIX A: VARIABLES' DESCRIPTION

Variable Name	Mean	Standard Deviation	Description
Endogenous Variables:			
ACH	0.322	3.657	Achievement; an index constructed from the number of correct verbal, general informational, reading, nonverbal and mathematical answers ($\alpha \simeq 0.91$)[1]
CPREP	0.378	0.485	College preparatory program; in a college preparatory program = 1, otherwise (general or vocational) = 0.
NACH	0.022	1.608	Need for achievement; an index constructed from how far the pupil wants to go in school, how good the student wants to be in school, how happy to quit school ($\alpha \simeq 0.56$)
DEMMOT	0.011	1.594	Demonstrated motivation; an index constructed from number of hours study and how often pupil stays away because he doesn't want to come ($\alpha \simeq 0.40$)
EXP	0.071	1.677	Expectations; an index constructed from occupational expectations and plans about college ($\alpha \simeq 0.56$)

[1] All indices come from the first component of a principal components analysis. The indices correlate positively with each other. The variables appear in the same order as the magnitude of the absolute value of their loadings. Thus, verbal right loads higher than general informational right which, in turn, loads higher than reading right, etc. The number in parentheses equals approximately coefficient α. See Cronbach (1951).

Variable Name	Mean	Standard Deviation	Description
SELFEST	0.045	2.075	Self esteem; an index constructed from sometimes student feels he cannot learn, teachers go too fast, would change to be someone different, able to do many things well, assessment of own ability ($\alpha \simeq 0.65$)
CONTROL	0.054	1.552	Internal control or belief in the ability to control one's environment; an index constructed from good luck is more important than hard work for success, everytime get ahead something stops me, whatever education hard to get job ($\alpha \simeq 0.59$)
PPAEXP	0.052	2.340	Perceived parents' expectations; an index construction from education mother wants student to have, education father wants student to have, how well father wants student to do in class, and how well mother wants student to do in class ($\alpha \simeq 0.76$)
PTEXP	-4.269	1.609	Perceived teachers' expectations; teachers expect student to be one of the best in class = -2,...., good enough to get by = -8.
SEX	2.999	0.998	Sex; male = 2, female = 4
AGE	4.047	0.906	Age; less than 14 = 1,..., 20 or older = 7
SES	0.212	2.311	Socio-Economic Background; an index constructed from father's and mother's educational level, father's occupational level, encyclopedia in home, attended kindergarten school, number of people per room in the house, attended Nursery schoo and number of hours work for pay ($\alpha \simeq 0.65$)

Variable Name	Mean	Standard Deviation	Description
INFO	0.131	1.744	Available Information in the Home; an index constructed from number of books in home, daily newspaper in home, number of magazines in home, dictionary in home, and trips to library ($\alpha \simeq 0.54$)
TWOP	0.651	0.477	Two Parents; two parents alive and living at home = 1, otherwise = 0.
NOBAS	2.808	2.128	Number of Older Brothers and Sisters; none older = 1,...,8 or more older = 9.
FL	3.219	1.066	Foreign Language; frequently speak a foreign language out of school = 1,..., never speak a foreign language = 4.
RBS	2.411	1.201	Reading Before School; not read before going to school = 1,..., regularly read before going to school = 4.
PTAAT	1.707	1.025	Parents Attend PTA: parents not go to PTA = 1,..., parents go most of the time = 4.
PTAS	1.994	1.114	Parents Talk About School; parents talk about school once a day = 1,..., parents never or hardly ever talk about school = 4.
TC	0.758	0.428	This City; spent most of life in this city or town = 1, otherwise = 0.
NTCHSCL	2.588	1.525	Number of Times Changed School; never changed school = 1,...,changed school four or more times = 5.

Variable Name	Mean	Standard Deviation	Description
LSTCHSCL	6.005	1.656	Last Time Changed School; changed school within a year = 2,..., changed school five or more years ago = 7.
AVSES	0.2119	1.035	Average Socio-Economic Background.
PWPICLY	3.209	1.455	Proportion of White Students in Class Last Year; no whites = 1,..., all white = 5.
PWPICLY2	12.416	8.801	PWPICLY**2
PWHITE	7.024	4.041	Proportion of white students in the school; no white = 1,..., all white = 12.
PWHITE2	65.666	51.811	PWHITE**2
TAVR	24.522	2.202	Teachers' Average Verbal Right; teachers' average verbal right for all teachers in the school.
NTPRPUP	0.043	0.008	Number of Teachers Per Pupil.
TAMYTCH	4.448	0.676	Teachers' Average Number of Years Teaching; No years teaching = 1,..., 30 or more years = 8.
PWTCHLY	3.702	1.608	Proportion of White Teachers Last Year; no white teachers = 1,..., all white teachers = 5.
TASEX	2.922	0.275	Teachers' Sex; all males = 2,..., all females = 4.
TPTC	0.431	0.248	Proportion of Teachers from This City; all from this city = 1,...,none from this city = 0.
TPADTN	0.114	0.145	Teachers' Problems with Administration; lack of effective leadership = 1, ..., no problem = 0.

Variable Name	Mean	Standard Deviation	Description
FACILITS	12.526	1.643	School Facilities; a combination of principal's responses about library, auditorium, gymnasium, laboratories, etc.
PROBLEMS	167.84	2.389	Problems in the school; a combination of principal's responses about problems of damage, discourtesy and violence to teachers, racial tension, stealing, drugs, and drink (high value means many problems)
AGES	4.790	1.737	Age of school; main classroom less than one year old = 1,..., more than 39 years old = 7.
PRPCPREP	0.378	0.144	Proportion of students in College preparatory program
TEST	1.730	0.465	Test; school gives intelligence tests and standardized achievement tests = 2, school gives intelligence or standard achievement tests = 1, otherwise = 0.
NTCHLV	2.151	1.381	Number of Teachers who Leave; less than 5% left = 1,..., more than 50% left = 7.
PRNMADEG	4.211	0.633	Principal has M.A. Degree; no degree = 1,..., Doctorate = 6.
SMSA	1.304	0.460	Standard Metropolitan Statistical Area; within metropolitan area = 1, otherwise = 2.
NEWENG	0.030	0.170	New England; New England States = 1, otherwise = 0.

Variable Name	Mean	Standard Deviation	Description
MIDATL	0.215	0.411	Mid Atlantic; Mid Atlantic States = 1, otherwise = 0.
LAKES	0.155	0.362	Great Lakes; Great Lakes States = 1, otherwise = 0.
PLAINS	0.039	0.194	Plains; Plains States = 1, otherwise = 0.
SEAST	0.205	0.404	Southeast; South Eastern States = 1, otherwise = 0.
SWEST	0.091	0.287	Southwest; South Western States = 1, otherwise = 0. (Farwest excluded)
NTLKGC	2.588	1.255	Number of Times Talk to Guidance Counselor; not once = 1,..., six or more times = 5.
NHWTV	3.990	2.109	Number of Hours Watch T.V.; not watch T.V. = 1,..., 4 or more hours a day = 7.
CONST	1.000	0.000	Constant
BLACK	0.263	0.440	Black; Black = 1, otherwise = 0.
WHITE	0.290	0.454	White; White = 1; otherwise = 0.
AMIND	0.062	0.241	American Indian; Native American = 1; otherwise = 0.
ORIENT	0.088	0.284	Oriental; Oriental = 1, otherwise = 0.
PRICAN	0.075	0.264	Puerto Rican; Puerto Rican = 1, otherwise = 0.
MEXAM	0.149	0.356	Mexican American; Mexican American = 1, otherwise = 0. (Students who fail to put themselves in any one of the above categories constitute the excluded category)

Coefficients of Determination:

ABBREVIATION	DESCRIPTION
MLR2	This is the R^2 based on the TSLS, estimated structural form coefficients and the actual values of the endogenous variables.
R2	This is the R^2 based on the TSLS, estimated structural form coefficients and the predicted values of the endogenous variables.

APPENDIX B

COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OF VARIABLES IN THE ACHIEVEMENT EQUATIONS

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural Form II (TSLS)	Structural Form (OLS)
CPREP		1.881 (9.758)		1.749 (33.779)
NACH				0.210 (11.866)
DEMMOT				
EXP			0.168 (1.766)	0.081 (4.870)
SELFEST				0.205 (16.460)
CONTROL		0.963 (11.118)	1.236 (8.749)	0.298 (18.266)
PPAEXP				0.102 (8.928)
PTEXP				0.093 (6.637)
SEX	-0.214 (-9.077)	-0.325 (-11.924)	-0.400 (-10.822)	-0.171 (-8.286)
AGE	-0.337 (-12.422)	-0.148 (-5.427)	-0.147 (-4.988)	-0.148 (-6.335)
SES	0.251 (18.523)	0.097 (6.347)	0.144 (7.295)	0.066 (5.512)
INFO	0.151 (8.969)			0.001 (0.097)
TWOP	0.163 (3.118)			0.083 (1.860)
NOBAS	-0.106 (-9.092)	-0.046 (-4.081)	-0.043 (-3.482)	-0.063 (-6.302)
FL	-0.133 (-5.304)	-0.042 (-1.719)	-0.104 (-3.635)	0.008 (0.393)
RBS	0.101 (4.724)			-0.002 (-0.113)
PTAAT	-0.128 (-5.212)			-0.166 (-7.927)
PTAS	0.132 (5.793)			0.224 (11.360)
TC	0.103 (1.729)			0.075 (1.467)
NTCHSCL	0.015 (0.848)	0.058 (3.584)	0.053 (2.995)	0.034 (2.241)
LSTCHSCL	0.117 (7.260)	0.066 (4.314)	0.054 (3.183)	0.060 (4.338)
AVSES	0.120 (3.154)	0.314 (10.889)	0.325 (10.100)	0.334 (10.215)
PWPICLY	-0.279 (-2.220)		-0.058 (-2.096)	0.060 (0.555)
PWPICLY2	0.042 (2.180)			-0.011 (-0.573)

ACHIEVEMENT EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural Form II (TSLS)	Structural Form (OLS)
PWHITE	-0.038 (-0.802)	-0.093 (-2.439)	-0.138 (-3.345)	-0.092 (-2.279)
PWHITE2	0.011 (3.044)	0.014 (4.763)	0.018 (5.717)	0.015 (4.919)
TAVR	0.188 (9.871)	0.172 (10.815)	0.179 (10.014)	0.205 (12.556)
NTPRPUP	11.930 (3.167)	11.877 (3.712)	13.459 (3.990)	13.530 (4.201)
TANYTCH	0.154 (3.570)	0.069 (1.947)	0.061 (1.580)	0.071 (1.935)
PWTCHLY	0.063 (2.416)			0.012 (0.528)
TASEX	0.087 (0.831)			0.059 (0.661)
TPTC	0.025 (0.173)			0.024 (0.195)
TPADTN	0.875 (5.050)	0.675 (4.365)	0.782 (4.619)	0.857 (5.782)
FACILITS	-0.046 (-2.854)			-0.020 (-1.448)
PROBLEMS	-0.033 (-2.935)	-0.025 (-8.197)	-0.018 (-5.116)	-0.036 (-3.803)
AGES	-0.020 (-1.196)			-0.015 (-1.049)
PRPCPREP	2.137 (10.178)			-0.195 (-1.054)
TEST	0.208 (3.468)	0.246 (4.736)	0.256 (4.656)	0.297 (5.790)
NTCHLV	0.080 (4.066)	0.049 (2.814)	0.043 (2.277)	0.048 (2.884)
PRNMADEG	-0.174 (-4.399)	-0.175 (-4.831)	-0.156 (-3.881)	-0.223 (-6.585)
SMSA	0.080 (1.132)			0.024 (0.401)
NEWENG	-0.311 (-1.952)			-0.095 (-0.694)
MIDATL	-0.220 (-2.281)	-0.153 (-2.343)		-0.199 (-2.403)
LAKES	-0.092 (-1.065)			-0.045 (-0.610)
PLAINS	0.363 (2.674)	0.199 (1.680)	0.226 (1.774)	0.248 (2.138)
SEAST	-0.372 (-3.345)	-0.401 (-5.220)	-0.342 (-4.146)	-0.520 (-5.461)
SWEST	-0.166 (-1.536)	-0.311 (-3.663)	-0.357 (-3.932)	-0.443 (-4.779)
NTLKGC	0.222 (11.306)			-0.001 (-0.045)

ACHIEVEMENT EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII (TSLS	Structural Form (OLS)
TV	-0.063 (-5.664)		-0.029 (-2.460)	0.018 (1.871)
CONST.	0.355 (0.177)			0.795 (0.461)
BLACK	-0.473 (-4.426)	-0.772 (-8.079)	-0.750 (-7.153)	-0.838 (-9.144)
WHITE	1.277 (11.980)	0.642 (6.057)	0.618 (4.957)	0.876 (9.588)
AMIND	-0.202 (-1.532)	-0.398 (-3.319)	-0.374 (-2.872)	-0.300 (-2.669)
ORIENT	1.477 (12.101)	0.921 (8.127)	1.088 (8.958)	0.966 (9.220)
PRICAN	-0.617 (-4.867)	-0.640 (-5.555)	-0.694 (-5.574)	-0.558 (-5.152)
MEXAM	-0.734 (-6.711)	-0.764 (-7.663)	-0.787 (-7.177)	-0.839 (-6.771)
P2	0.4058	0.4022	0.3998	0.5662
MIR2	0.4058	0.5529	0.5253	0.5662

COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OR VARIABLES IN THE COLLEGE PREPARATORY EQUATIONS

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural Form II (TSLS)	Structural Form (OLS)
ACH		0.036 (8.292)		0.039 (33.449)
NACH				0.026 (9.182)
DEMOT				0.008 (3.729)
EXP		0.134 (15.370)		0.076 (31.563)
SELFEST				
CONTROL				
PPAEXP				0.017 (9.059)
PTEXP				-0.0003 (-0.153)
SEX	-0.021 (-5.960)			-0.003 (-1.003)
AGE	-0.033 (-7.975)			-0.003 (-0.920)
SES	0.049 (23.675)	0.017 (6.357)		0.019 (10.531)
INFO	0.024 (9.420)			0.000 (0.137)
TWOP	0.014 (1.764)			-0.002 (-0.327)
NOBAS	-0.007 (-4.231)			0.001 (0.586)
FL	-0.044 (-11.666)	-0.020 (-5.949)		-0.023 (-7.064)
RBS	0.008 (2.458)			-0.005 (-1.678)
PTAAT	0.008 (2.101)			0.003 (0.968)
PTAS	-0.006 (-1.714)			0.006 (1.995)
TC	-0.0003 (-0.037)			-0.0004 (-0.047)
NTCHSCL	-0.008 (-2.921)	-0.006 (-2.456)		-0.007 (-2.893)
LSTCHSCL	0.003 (1.149)	-0.006 (-2.850)		-0.008 (-3.755)
AVSES	-0.071 (-12.246)	-0.064 (-12.810)		-0.063 (-12.738)
PWPICLY	-0.049 (-2.553)	0.006 (1.457)		-0.009 (-0.551)
PWPICLY2	0.008 (2.661)			0.002 (0.768)

COLLEGE PREPARATORY EQUATIONS(continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural Form II (TSLS)	Structural Form (OLS)
PWHITE	0.008 (1.152)	-0.003 (-2.176)		0.003 (0.481)
PWHITE2	-0.001 (-1.013)			-0.0004 (-0.803)
TAVR	-0.001 (- 0.241)	-0.005 (-1.974)		-0.003 (-1.320)
NTPRPUP	-0.047 (-0.082)			-0.285 (-0.579)
TANYTCH	0.002 (0.374)	-0.014 (-2.792)		-0.012 (-2.048)
PWTCHLY	-0.001 (-0.315)	-0.007 (-2.031)		-0.010 (-2.896)
TASEX	-0.003 (-0.211)	-0.025 (-1.885)		-0.018 (-1.354)
TPTC	-0.021 (-0.973)			-0.032 (-1.682)
TPADTN	0.002 (0.069)			-0.023 (-1.015)
FACILITS	-0.003 (-1.366)			0.0002 (0.112)
PROBLEMS	0.002 (0.892)	0.003 (7.113)		0.003 (2.359)
AGES	-0.001 (-0.425)			-0.001 (-0.232)
PRPCPT.EP	0.939 (29.565)	0.689 (23.418)		0.708 (25.686)
TEST	-0.007 (-0.733)			-0.002 (-0.263)
NTCHLV	0.003 (1.060)			-0.003 (-1.055)
PRNMADEG	0.008 (1.255)			0.007 (1.314)
SMSA	-0.006 (-0.579)	-0.010 (-1.195)		-0.010 (-1.140)
NEWENG	-0.003 (-0.125)	0.039 (2.023)		0.053 (2.555)
MIDATL	0.020 (1.342)	0.052 (5.541)		0.059 (4.649)
LAKES	0.018 (1.391)	0.046 (4.503)		0.049 (4.363)
PLAINS	0.016 (0.764)			0.012 (0.665)
SEAST	0.025 (1.496)	0.042 (3.681)		0.038 (3.597)
SWEST	0.033 (2.012)			0.011 (0.808)
NTLKGC	0.030 (10.093)			0.003 (1.057)

COLLEGE PREPARATORY EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural Form II (TSLS)	Structural Form (OLS)
TV	-0.018 (-10.891)	-0.009 (-5.557)		-0.008 (-5.379)
CONST.	0.135 (0.444)			-0.094 (-0.357)
BLACK	0.051 (3.176)	0.032 (2.828)		0.022 (1.573)
WHITE	0.070 (4.316)			0.003 (0.242)
AMIND	0.036 (1.786)	0.023 (1.618)		0.027 (1.578)
ORIENT	0.155 (8.396)	0.043 (3.170)		0.048 (2.984)
PRICAN	-0.011 (-0.583)			0.011 (0.643)
MEXAM	-0.019 (-1.162)	0.022 (1.895)		0.023 (1.623)
R2	0.2266	0.2260		0.4261
MIR2	0.2266	0.4406		0.4261

COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OF VARIABLES IN THE NEED FOR ACHIEVEMENT EQUATIONS

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural Form II (TSLS)	Structural Form (OLS)
ACH		0.056 (3.427)		0.050 (13.904)
CPREP		0.295 (2.443)		0.223 (9.354)
DEPNOT				0.210 (33.347)
EXP				0.213 (29.546)
SELFEST				0.023 (4.169)
CONTROL				-0.002 (-0.228)
PPAEXP		0.383 (12.721)		0.236 (47.502)
PTEXP		0.451 (7.566)		0.055 (8.783)
SEX	-0.024 (-2.086)	0.122 (9.015)		0.028 (2.978)
AGE	-0.141 (-10.497)			-0.028 (-2.721)
SES	0.100 (14.888)	-0.046 (-4.958)		-0.022 (-4.124)
INFO	0.148 (17.813)	0.024 (2.597)		0.032 (4.985)
TWOP	0.036 (1.399)	-0.071 (-2.723)		-0.071 (-3.562)
NOBAS	-0.029 (-4.948)			0.006 (1.372)
FL	-0.087 (-7.047)	0.021 (1.774)		0.007 (0.760)
RBS	0.073 (6.947)			0.014 (1.749)
PTAAT	0.040 (3.289)			-0.008 (-0.814)
PTAS	-0.135 (-12.024)			0.002 (0.171)
TC	0.048 (1.615)	0.041 (1.526)		0.050 (2.220)
NTCHSCL	0.013 (1.444)			0.029 (3.386)
LSTCHSCL	0.077 (9.615)	0.040 (5.515)		0.035 (5.649)
AVSES	-0.132 (-6.992)			-0.051 (-3.513)
PWPICLY	-0.164 (-2.634)	0.019 (3.551)		-0.016 (-0.335)
PWPICLY2	0.029 (2.970)	-0.025 (-3.059)		0.005 (0.668)

NEED FOR ACHIEVEMENT EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural Form II (TSLS)	Structural Form (CLS)
PWHITE	0.005 (0.202)	-0.028 (-5.395)		-0.009 (-0.501)
PWHITE2	-0.003 (-1.599)			-0.001 (-0.754)
TAVR	-0.046 (-4.877)	-0.018 (-2.101)		-0.031 (-4.211)
NTPRPUP	-2.013 (-1.080)			-0.718 (-0.501)
TANYTCH	0.039 (1.836)			-0.023 (-1.410)
PWTCHLY	0.086 (6.605)	0.051 (4.126)		0.041 (4.128)
TASEX	0.028 (0.544)			-0.043 (-1.073)
TPTC	0.104 (1.444)			0.082 (1.476)
TPADTN	-0.049 (-0.569)			-0.031 (-0.466)
FACILITS	-0.008 (-0.967)			0.006 (0.927)
PROBLEMS	-0.004 (-0.730)	-0.008 (-1.588)		-0.005 (-1.075)
AGES	0.010 (1.185)	0.017 (2.472)		0.013 (2.014)
PRPCPREP	1.073 (10.322)			0.103 (1.251)
TEST	-0.145 (-4.909)			-0.057 (-2.494)
NTCHLV	0.024 (2.524)			0.012 (1.574)
PRNMADEG	0.043 (2.173)			0.026 (1.743)
SMSA	-0.010 (-0.508)			-0.041 (-1.541)
NEWENG	-0.383 (-4.860)			-0.161 (-2.661)
MIDATL	-0.176 (-3.684)			-0.044 (-1.209)
LAKES	-0.171 (-3.996)			-0.044 (-1.339)
PLAINS	-0.087 (-1.298)			-0.059 (-1.143)
SEAST	0.207 (3.756)	0.096 (2.435)		0.153 (3.505)
SWEST	0.373 (7.000)	0.135 (3.080)		0.193 (4.575)
KGC	0.127 (13.092)			0.025 (3.275)

NEED FOR ACHIEVEMENT EQUATION (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII (TSLS)	Structural Form (OLS)
TV	-0.076 (-13.694)	-0.016 (-2.804)		-0.023 (-5.432)
CONST.	1.532 (1.540)	2.493 (2.810)		1.334 (1.744)
BLACK	0.499 (9.440)	0.191 (4.683)		0.188 (4.609)
WHITE	0.199 (3.781)			0.039 (0.949)
AMIND	0.144 (2.219)	0.118 (2.352)		0.093 (1.860)
ORIENT	0.394 (6.528)	0.156 (3.031)		0.009 (0.193)
PRICAN	-0.069 (-1.107)			-0.044 (-0.903)
MEXAM	-0.071 (-1.316)	0.093 (2.399)		0.031 (0.755)
R2	0.2471	0.2465		0.5566
MIR2	0.2471	0.5952		0.5566

COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OF VARIABLES IN THE DEMONSTRATED MOTIVATION EQUATIONS

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII (TSLS)	Structural Form (OLS)
ACH				-0.045 (-9.932)
CPREP				0.108 (3.604)
NACH				0.310 (33.823)
EXP		-0.360 (-4.968)		0.017 (1.838)
SELFEST				-0.023 (-3.309)
CONTROL		0.261 (4.515)		0.078 (8.494)
PPAEXP		0.622 (15.723)		
PTEXP				
SEX	0.266 (22.361)	0.388 (19.080)		0.254 (22.259)
AGE	-0.079 (-5.760)			-0.037 (-2.866)
SES	0.009 (1.266)	-0.088 (-7.825)		-0.021 (-3.228)
INFO	0.118 (14.006)	0.034 (2.768)		0.072 (8.866)
TWOP	0.120 (4.579)			0.110 (4.421)
NOBAS	-0.039 (-6.658)			-0.031 (-5.516)
FL	-0.033 (-2.596)			-0.006 (-0.515)
RBS	0.045 (4.201)			0.021 (2.102)
PTAAT	0.059 (4.758)	0.054 (3.182)		0.041 (3.486)
PTAS	-0.200 (-17.446)			-0.150 (-13.664)
TC	0.049 (1.638)			0.037 (1.284)
NTCHSCL	-0.026 (-2.889)	-0.029 (-2.595)		-0.026 (-3.020)
LSTCHSCL	0.072 (8.898)	0.046 (4.365)		0.050 (6.427)
AVSES	-0.056 (-2.934)			0.0003 (0.015)
PWPICLY	0.195 (3.087)	0.382 (6.216)		0.237 (3.932)
PWPICLY2	-0.020 (-2.078)	-0.050 (-5.188)		-0.028 (-3.028)

COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OF VARIABLES IN THE DEMONSTRATED MOTIVATION EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural Form II (TSLS)	Structural Form (OLS)
PWHITE	-0.039 (-1.648)	-0.033 (-5.244)		-0.042 (-1.870)
PWHITE2	-0.001 (-0.602)			0.0002 (0.146)
TAVR	-0.009 (-0.920)			0.012 (1.335)
NTPRPUP	0.040 (0.021)	4.670 (2.215)		1.292 (0.719)
TANYTCH	0.101 (4.642)	0.069 (2.780)		0.091 (4.431)
PWTCHLY	0.074 (5.595)			0.046 (3.656)
TASEX	0.057 (1.094)			0.050 (0.998)
TPTC	-0.026 (-0.348)			-0.060 (-0.862)
TPADTN	0.020 (0.234)			0.062 (0.752)
FACILITS	-0.015 (-1.871)			-0.014 (-1.855)
PROBLEMS	0.005 (0.917)			0.005 (0.899)
AGES	0.014 (1.624)	0.035 (3.589)		0.010 (1.269)
PRPCPREP	0.292 (2.769)			-0.078 (-0.761)
TEST	-0.138 (-4.584)			-0.082 (-2.880)
NTCHLV	-0.019 (-1.878)	-0.026 (-2.195)		-0.025 (-2.624)
PRNMADEG	-7.394 (-3.716)	-0.080 (-3.221)		-0.093 (-4.941)
SMSA	0.133 (3.753)	0.140 (3.828)		0.135 (4.022)
NEWENG	0.059 (0.738)	0.337 (3.698)		0.173 (2.274)
MIDATL	-0.033 (-1.717)			-0.027 (-0.579)
LAKES	-0.124 (-2.848)	-0.060 (-1.346)		-0.068 (-1.643)
PLAINS	-0.024 (-0.356)			0.011 (0.164)
SEAST	0.163 (2.912)			0.083 (1.524)
SWEST	0.193 (3.548)			0.0 (1.146)
NTLKGC	0.046 (4.618)			0.002 (0.251)

COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OF VARIABLES IN THE DEMONSTRATED MOTIVATION EQUATIONS

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII (TSLS)	Structural Form (OLS)
TV	-0.043 (-7.633)			-0.019 (-3.554)
CONST.	-1.866 (-1.847)	-2.374 (-9.549)		-2.198 (-2.292)
BLACK	0.484 (9.005)	0.138 (2.890)		0.293 (5.717)
WHITE	0.112 (2.084)			0.068 (1.326)
AMIND	0.039 (0.597)			-0.031 (-0.495)
ORIENT	0.534 (8.704)	0.367 (5.921)		0.429 (7.328)
PRICAN	0.012 (0.193)			0.003 (0.058)
MEXAM	0.062 (1.120)	0.099 (2.155)		0.050 (0.960)
R2	0.2092	0.2079		0.2885
MIR2	0.2092	0.2644		0.2885

COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OF VARIABLES IN THE EXPECTATIONS EQUATIONS

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII (TSLS)	Structural Form (OLS)
ACH				0.020 (5.048)
CPREP		0.820 (7.883)		0.622 (32.170)
NACH		0.163 (2.621)		0.260 (29.546)
DEMMOT				0.018 (2.525)
SELFEST		0.246 (4.425)		0.100 (16.290)
CONTROL				0.048 (5.928)
PPAEXP		0.153 (5.291)		0.089 (15.122)
PTEXP				0.021 (2.986)
SEX	-0.081 (-6.730)			-0.035 (-3.399)
AGE	-0.125 (-8.985)	-0.020 (-1.619)		-0.018 (-1.554)
SES	0.171 (24.648)	0.057 (7.148)		0.067 (11.332)
INFO	0.130 (15.100)	0.033 (3.801)		0.036 (4.956)
TWOP	0.047 (1.754)			-0.006 (-0.258)
NOBAS	-0.030 (-4.984)	-0.006 (-1.258)		-0.005 (-1.001)
FL	-0.142 (-11.068)	-0.053 (-4.691)		-0.059 (-5.556)
RES	0.063 (5.792)			0.008 (0.843)
PTAAT	0.091 (7.273)	0.060 (5.598)		0.067 (6.519)
PTAS	-0.084 (-7.200)			-0.009 (-0.954)
TC	-0.070 (-2.280)	-0.083 (-3.225)		-0.091 (-3.601)
NTCHSCL	-0.026 (-2.772)	-0.025 (-3.412)		-0.022 (-2.897)
LSTCHSCL	0.038 (4.610)			0.0003 (0.041)
AVSES	-0.070 (-3.590)	0.055 (3.855)		0.048 (2.977)
PWPICLY	-0.275 (-4.263)	-0.034 (-3.036)		-0.098 (-1.848)
PWPICLY2	0.058 (3.782)			0.009 (1.132)

EXPECTATIONS EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII(TSLS)	Structural Form (OLS)
PWHITE	0.092 (3.842)	0.043 (2.491)		0.072 (3.660)
PWHITE2	-0.006 (-3.534)	-0.003 (-2.063)		-0.004 (-2.968)
TAVR	-0.033 (-3.347)			-0.018 (-2.249)
NTPRPUP	-0.056 (-0.303)			0.048 (0.302)
TANYTCH	0.070 (3.182)	0.027 (1.685)		0.029 (1.611)
PWTCHLY	0.027 (1.981)			-0.011 (-0.963)
TASEX	0.105 (1.961)	0.067 (1.546)		0.083 (1.900)
TPTC	0.068 (1.178)			0.080 (1.303)
TPADTN	-0.073 (-0.826)			-0.076 (-1.048)
FACILITS	-0.018 (-2.234)			-0.006 (-0.885)
PROBLEMS	-0.010 (-1.761)	-0.012 (-2.647)		-0.011 (-2.344)
AGES	0.003 (0.298)			0.004 (0.546)
PRPCPREP	1.276 (11.862)			-0.008 (-0.084)
TEST	-0.057 (-1.868)			0.009 (0.364)
NTCHLV	0.026 (2.591)			0.009 (1.129)
PRNMADEG	0.076 (3.738)	0.003 (1.806)		0.050 (2.972)
SMSA	0.022 (0.622)			0.011 (0.380)
NEWENG	-0.327 (-4.004)	-0.119 (-1.874)		-0.156 (-2.331)
MIDATL	-0.283 (-5.724)	-0.252 (-7.549)		-0.247 (-6.093)
LAKES	-0.244 (-5.495)	-0.193 (-5.738)		-0.196 (-5.378)
PLAINS	-0.065 (-0.930)	-0.100 (-1.695)		-0.090 (-1.568)
SEAST	-0.095 (-1.669)	-0.161 (-4.320)		-0.197 (-4.212)
SWEST	0.132 (2.336)			-0.054 (-1.184)
NTLKGC	0.174 (17.296)	0.048 (3.506)		0.065 (7.671)

IMPUTATIONS EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII(TSLS)	Structural Form (OLS)
TV	-0.056 (-9.827)			-0.005 (-1.020)
CONST.	2.196 (2.133)	1.632 (2.010)		1.891 (2.236)
BLACK	0.260 (4.745)			0.004 (0.097)
WHITE	0.118 (2.154)	-0.063 (-1.711)		-0.084 (-1.873)
AMIND	0.140 (2.078)	0.107 (2.236)		0.083 (1.493)
ORIENT	0.373 (6.041)	0.154 (3.210)		0.063 (1.219)
PRICAN	0.048 (0.736)	0.103 (2.249)		0.099 (1.849)
MEXAM	-0.130 (-2.328)	-0.052 (-1.408)		-0.057 (-1.239)
R2	0.2587	0.2583		0.5014
MIR2	0.2587	0.5135		0.5014

COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OF VARIABLES IN THE SELF-ESTEEM EQUATIONS

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII(TSLS)	Structural Form (OLS)
ACH		0.085 (4.863)		0.081 (15.883)
CPREP				
NACH				0.026 (2.434)
DEMNOT				
EXP				0.161 (15.601)
CONTROL		0.144 (2.294)		0.542 (55.223)
PPAEXP				
PTEXP		0.967 (15.752)		0.250 (28.147)
SEX	-0.025 (-1.555)			-0.072 (-5.424)
AGE	-0.131 (-7.002)	0.030 (1.455)		0.190 (1.246)
SES	0.089 (9.522)			-0.007 (-0.897)
INFO	0.100 (8.676)			0.011 (1.106)
TWOP	0.010 (0.292)			-0.035 (-1.197)
NOBAS	-0.016 (-2.012)			0.021 (3.191)
FL	-0.062 (-3.595)			-0.011 (-0.751)
RBS	0.134 (9.130)	0.052 (3.204)		0.053 (4.413)
PTAAT	0.026 (1.541)			0.023 (1.676)
PTAS	-0.025 (-1.579)			-0.004 (-0.313)
TC	0.042 (1.030)			0.012 (0.345)
NTCHSCL	0.005 (3.905)			0.021 (2.060)
LSTCHSCL	0.051 (4.617)	0.014 (1.335)		-0.001 (-0.094)
AVSES	-0.093 (-3.563)			-0.042 (-1.969)
PWPICLY	-0.539 (-6.235)			-0.[illegible]2 (-4.869)
PWPICLY2	0.080 (5.991)			0.[illegible]9 (4.492)

SELF-ESTEEM EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII (TSLS)	Structural Form (OLS)
PWHITE	0.137 (4.251)	0.094 (3.924)		0.116 (4.435)
PWHITE2	-0.009 (-3.551)	-0.006 (-3.118)		-0.008 (-4.029)
TAVR	-0.011 (-0.867)			-0.028 (-2.603)
NTPRPUP	-0.334 (-0.129)			-1.059 (-0.504)
TANYTCH	0.147 (4.958)	0.078 (2.887)		0.063 (2.636)
PWTCHLY	0.031 (1.706)			-0.015 (-1.038)
TASEX	0.009 (0.124)			-0.014 (-0.240)
TPTC	-0.083 (-0.829)	-0.278 (-3.199)		-0.159 (-1.950)
TPADTN	0.064 (0.538)	0.212 (1.833)		-0.040 (-0.412)
FACILITS	-0.050 (-4.581)	-0.023 (-2.212)		-0.030 (-3.248)
PROBLEMS	0.001 (0.180)			0.003 (0.539)
AGES	-0.006 (-0.535)			-0.002 (-0.191)
PRPCPREP	0.532 (3.686)			-0.115 (-0.975)
TEST	-0.039 (-0.941)			-0.011 (-0.341)
NTCHLV	0.031 (2.313)			-0.002 (-0.141)
PRNMADEG	0.072 (2.642)			0.072 (3.254)
SMSA	0.160 (3.312)	0.079 (1.810)		0.071 (1.800)
NENENG	-0.051 (-0.462)			0.105 (1.184)
MIDATL	0.226 (3.407)	0.209 (4.355)		0.331 (6.148)
LAKES	0.069 (1.155)			0.149 (3.080)
PLAINS	0.329 (3.522)	0.172 (2.014)		0.196 (2.587)
SEAST	0.131 (1.708)			0.107 (1.728)
SWEST	0.151 (2.023)	-0.117 (-1.924)		0.010 (0.163)
NTLKGC	0.261 (19.336)	0.075 (4.342)		0.061 (7.278)

SELF-EXPLANATORY EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII(TSLS)	Structural Form (OLS)
TV	-0.051 (-6.640)			-0.016 (-2.525)
CONST.	-0.896 (-0.649)	3.228 (9.781)		1.064 (0.948)
BLACK	0.178 (2.424)	0.095 (1.974)		0.078 (1.302)
WHITE	0.322 (4.402)			-0.090 (-1.505)
AMIND	-0.175 (-1.942)	-0.187 (-2.695)		-0.219 (-2.987)
ORIENT	-0.027 (-0.324)	-0.228 (-3.208)		-0.382 (-5.572)
PRICAN	-0.106 (-1.213)			-0.038 (-0.536)
MEXAM	-0.101 (-1.341)			0.002 (0.032)
R2	0.1286	0.1275		0.4257
MIR2	0.1286	0.4341		0.4257

[illegible] COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OF VARIABLES IN THE CONTROL OF THE ENVIRONMENT EQUATIONS

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII(TSLS)	Structural Form (OLS)
ACH		0.117 (9.659)	0.150 (14.657)	0.071 (18.490)
CPRNP				
MACH				-0.011 (-1.329)
DEMOT		0.138 (4.614)	0.129 (4.504)	0.061 (8.477)
EXP				0.039 (4.996)
SELFEST		0.095 (2.094)		0.313 (55.286)
PPAREXP				
PTEXP			0.245 (9.164)	0.023 (3.275)
SEX	0.154 (13.130)	0.144 (10.276)	0.156 (10.526)	0.165 (16.108)
AGE	-0.129 (-9.520)	-0.066 (-4.715)	-0.043 (-3.072)	-0.053 (-4.570)
SES	0.056 (8.324)	0.017 (2.105)		0.003 (0.512)
INFO	0.061 (7.253)	0.016 (1.715)		0.006 (0.836)
TWOP	0.053 (2.044)			0.030 (1.350)
NOBAS	-0.041 (-7.120)	-0.023 (-3.989)	-0.021 (-3.690)	-0.025 (-5.129)
FL	0.004 (0.335)	0.030 (2.763)	0.046 (4.057)	0.041 (3.872)
RBS	0.083 (7.851)	0.052 (4.501)	0.046 (4.609)	0.028 (3.137)
PTAAT	-0.028 (-0.233)	-0.024 (-2.101)	-0.031 (-2.717)	-0.035 (-3.393)
PTAS	-0.007 (-0.657)			0.006 (0.599)
TC	0.059 (1.995)			0.039 (1.539)
NTCHSCL	-0.027 (-2.961)	-0.023 (-3.506)	-0.028 (-3.509)	-0.026 (-3.469)
LSTCHSCL	0.054 (6.697)	0.028 (3.472)	0.023 (2.966)	0.024 (3.476)
AVSES	-0.045 (-3.390)	-0.049 (-3.211)	-0.044 (-2.739)	-0.180 (-1.112)
PWPICLY	-0.071 (-1.129)	0.025 (2.052)	0.025 (1.943)	0.113 (2.305)
PWPICLY2	0.013 (1.594)			-0.014 (-1.662)

COEFFICIENTS AND t-STATISTICS, IN PARENTHESES, OF VARIABLES IN CONTROL OF THE ENVIRONMENT EQUATIONS

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII (TSLS)	Structural Form (OLS)
PWHITE	0.007 (0.293)			-0.035 (-1.762)
PWHITE2	0.0001 (0.068)			0.002 (1.590)
TAVR	0.027 (2.811)			0.019 (2.305)
NTPRPUP	-1.054 (-0.562)	-2.906 (-1.959)	-3.134 (-2.139)	-1.846 (-1.157)
TANYTCH	0.077 (3.614)	0.036 (2.039)		0.011 (0.579)
PWTCHLY	0.059 (4.541)	0.040 (3.783)	0.049 (4.334)	0.040 (3.625)
TASEX	0.021 (0.412)			0.006 (0.143)
TPTC	0.029 (0.392)			0.048 (0.781)
TPADTN	0.196 (2.273)			0.120 (1.634)
FACILITS	-0.013 (-1.682)			0.008 (1.144)
PROBLEMS	0.002 (0.381)			0.004 (0.835)
AGES	-0.006 (-0.740)			-0.004 (-0.512)
PRPCPREP	0.310 (2.961)			-0.072 (-0.806)
TEST	-0.005 (-0.153)			0.004 (0.175)
NTCHLV	0.025 (2.595)	0.016 (1.915)		0.010 (1.154)
PRNMADEG	-0.025 (-1.276)			-0.034 (-2.051)
SMSA	0.136 (3.894)	0.096 (3.288)	0.084 (3.136)	0.071 (2.376)
NEWENG	-0.057 (-0.724)			-0.011 (-0.165)
MIDATL	-0.054 (-1.122)			-0.094 (-2.292)
LAKES	-0.043 (-1.001)			-0.042 (-1.151)
PLAINS	0.195 (2.885)	0.136 (2.412)	0.133 (2.291)	0.068 (1.190)
SEAST	0.009 (0.157)			-0.015 (-0.314)
SWEST	0.099 (1.842)	0.096 (2.207)		0.043 (0.974)
NTLKGC	0.173 (17.712)	0.114 (7.394)	0.099 (10.079)	0.084 (7.9[illegible])

COMPARISON OF THE ENVIRONMENT EQUATIONS (continued)

Variable Name	Reduced Form (OLS)	Structural Form (TSLS)	Structural FormII (TSLS)	Strucutral Form (OLS)
TV	-0.018 (-3.231)			0.007 (1.539)
CONST.	-2.535 (-2.533)	-1.155 (-5.812)		-2.143 (-2.516)
BLACK	0.113 (2.134)			0.055 (1.214)
WHITE	0.480 (9.051)	0.204 (5.002)	0.166 (4.400)	0.277 (6.102)
AMIND	0.084 (1.280)			0.148 (2.652)
ORIENT	0.325 (5.351)			0.186 (3.571)
PRICAN	0.006 (0.097)			0.082 (1.531)
MEXAM	0.030 (0.544)		0.089 (2.579)	0.117 (2.531)
R2	0.1820	0.1813	0.1809	0.4087
MIR2	0.1820	0.3033	0.3116	0.4087

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