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Predictors of Educational Aspiration and Achievement Among Asian, Black, Hispanic, and Caucasian Adolescents

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PREDICTORS OF
EDUCATIONAL ASPIRATION AND ACHIEVEMENT
AMONG ASIAN, BLACK, HISPANIC, AND CAUCASIAN ADOLESCENTS

by

Yanghui Kim Han

A Dissertation Submitted to the Faculty of the Graduate
School of Loyola University of Chicago in Partial
Fulfillment of the Requirements for the Degree of
Doctor of Philosophy

June

1986

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VITA

The author, Yanghui Kim Han, is the daughter of the late Youngkuk Kim and Sung (Lee) Kim. She was born October 1, 1955, in South Korea.

Her elementary and secondary educations were obtained in Seoul, Korea. In September, 1977, she entered Texas Woman's University, receiving the degree of Bachelor of Arts in English Literature in May, 1979. In September of 1979, the author began graduate study in General Experimental Psychology at Texas Woman's University and worked at the animal behavior laboratory as a research assistant. In May 1981, she was awarded the Master of Arts in Psychology from Texas Woman's University.

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TABLE OF CONTENTS

	page
ACKNOWLEDGMENTS	ii
VITA	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	v
LIST OF FIGURES	vi
 Chapter	
I INTRODUCTION	1
General Overview	1
Introduction to the Problem	2
Background Literature	7
Attribution and Locus of Control	7
Sex differences in Attribution	15
Achievement Motivation	19
Ethnic Differences in Locus of Control, Attribution, and Achievement Motivation	22
Educational Aspiration	26
Ethnic Differences in Educational Aspiration	27
Perception of Limited Opportunity	28
Filial Duty Beliefs	29
Academic Potential and Extra-curricular Activities	30
Sex Differences in Aspiration and Achievement Motivation	30
Educational Aspiration and Upward Mobility	33
A Conceptual Framework and Hypotheses	35
Main Hypotheses:	
Aspiration as the Dependent Variable	38
Main Hypotheses:	
Performance as the Dependent Variable	41
Related Hypotheses	45
II METHODOLOGY	50
Overview	50
Respondents	50
Instrument	51
Procedure	56

III	PRELIMINARY ANALYSES	59
	Independent Variables	59
	Intellectual Achievement Responsibility	59
	Control Beliefs	59
	Locus of Control	60
	Achievement Motivation	61
	Awareness of Limited Opportunity	61
	Individual vs. System Blame	61
	Family Status	62
	Family Support	63
	Upward Mobility	63
	Filial Duty	63
	Other Attribution Indices	63
	Ability	66
	Effort	66
	Determination	67
	Study Habit	67
	Class Behavior	67
	Luck	68
	Teacher	68
	Home	68
	East Task	68
	Academic and Nonacademic Activities	69
	Dependent Variables	
	Total Educational Aspiration	69
	Total School Performance	69
IV	RESULTS	71
	Overview	71
	Academic Aspiration as the Dependent Variable	72
	Path Analysis	76
	Hypothesis 1-A: Family Status	80
	Hypothesis 1-B: Parents' Encouragement	81
	Hypothesis 1-C: Upward Mobility	83
	Hypothesis 1-D: Academic Potential	85
	Hypothesis 1-E: Extra-curricular Activities	86
	Hypothesis 1-F: Achievement Motivation	86
	Hypothesis 1-G: Filial Duty Beliefs	87
	Comments on the Causal Models of Aspiration	87
	School Performance as the Dependent Variable	89
	Hypothesis 2-A: Family Status	92
	Hypothesis 2-B: Achievement Motivation	95
	Hypothesis 2-C: Filial Duty Beliefs	95
	Hypothesis 2-D: Limited Opportunity Beliefs	96
	Hypothesis 2-E: Internal Tendency	97
	Hypothesis 2-F: Academic Potential	97
	Hypothesis 2-G: Academic Activities	99
	Hypothesis 2-H: Family Size	99

Hypothesis 2-I: Aspiration	99
Comments on the Causal Models of Performance	100

Related Hypotheses

Hypothesis 3-A:	
Parents' Encouragements and Aspiration	102
Hypothesis 3-B:	
Parents' Education and Aspiration	104
Hypothesis 3-C:	
Parents' Occupation and Aspiration	108
Hypothesis 3-D:	
Parents' Encouragement and Filial Duty	110
Hypothesis 3-E: Interaction between	
Aspiration and Locus of Control	112
Hypothesis 3-F: Interaction between	
Aspiration and Limited Opportunity	113
Hypothesis 3-G:	
Achievement Motivation and Internality	119
Hypothesis 3-H:	
Importance of College and Aspiration	121
Hypothesis 3-I:	
Academic Activities and Performance	123
Hypothesis 3-J: Sex Differences in the Relationship	
between Achievement Motive and Performance	123
Hypothesis 3-K:	
Ethnic Differences in Major Choice	125
Hypothesis 3-L:	
Ethnic Differences in Limited Opportunity Beliefs	132
Hypothesis 3-M:	
Ethnic Differences in Filial Duty	132
Hypothesis 3-N:	
Ethnic Differences in Importance of College	136
V DISCUSSION	141
Overview	141
Part 1: Predictors of Academic Aspirations	141
Family Status and Parents' Encouragement	142
Achievement Motivation and Upward Mobility	146
Beliefs in Filial Duty and Importance of College	147
Academic Potential, Extra-curricular Activities, and Present School Performance	148
Part 2: Predictors of Academic Performance	149
Family Status and Size	149
Achievement Motivation and Filial Duty Beliefs	151
Opportunity Perception and Internal Tendency	152
Academic Potential, Aspiration, and Academic Extra-curricular Activities	154
Part 3: Sex and Ethnic Differences	155
Academic Aspiration and Achievement	155

Family Backgrounds	158
Achievement Motivation and Upward Mobility	162
Filial Duty Beliefs and Importance of College	163
Awareness of Limited Opportunity and Internality	166
Academic Potential and Extra-curricular Activities	168
Part 4: Limitations and Suggestions	169
REFERENCES	176
APPENDIX A: Final Questionnaire	191

LIST OF TABLES

Tables	Page
1. Means, Standard Deviations, and Cases	73
2. Coded and Descriptive Names of Study Variables	74
3. Correlation Matrix for Educational Aspirations	75
4. Correlation Matrix for Academic Performance	91
5. Zero-order and Partial Correlations: Parents' Encouragement and Children's Aspiration	106
6. Zero-order and Partial Correlations: Parents' Education and Children's Aspiration	107
7. Zero-order and Partial Correlations: Parents' Occupation and Children's Aspiration	109
8. Correlations between Parents' Encouragement and Children's Filial Duty Beliefs	111
9. Regression of Academic Expectation on Aspiration, Limited Opportunity Beliefs, (and Interaction)	115
10. Achievement Motivation and Attribution	120
11. Zero-order and Partial Correlations: Importance of College and Aspiration	122
12. Zero-order and Partial Correlations: Academic Extra-curricular Activities and Performance	124
13. Correlations: Achievement Motivation and Performance	126
14. Chi-square for Major Choice by Ethnicity	128
15. Chi-square for Major Choice by Ethnicity: Males	129
16. Chi-square for Major Choice by Ethnicity: Females	130
17. Chi-square for Major Choice by Sex	131
18. ANOVA: Limited Opportunity by Sex and Ethnicity	133

19.	Tukey-HSD Test: Ethnic Differences in the Awareness of Limited opportunity	134
20.	ANOVA: Filial Duty Beliefs by Sex and Ethnicity	135
21.	Tukey-HSD Test: Ethnic Differences in Filial Duty . . .	137
22.	ANOVA: Importance of College by Sex and Ethnicity . . .	138
23.	Tukey-HSD Test: Ethnic Differences in the Perceived Importance of College	139

LIST OF FIGURES

Figures	Page
1. A Conceptual Framework of Academic Aspiration and Achievement	37
2. A Hypothetical Model of Academic Aspirations	39
3. A Hypothetical Model of Academic Performance	42
4. An Initial Model of Academic Aspirations	79
5. A Reduced Model of Academic Aspirations	82
6. A Final Model of Academic Aspirations	90
7. An Initial Model of Academic Performance	94
8. A Reduced Model of Academic Performance	95
9. A Final Model of Academic Performance	104
10. Interaction between Aspiration and Limited Opportunity Beliefs: TALO Dichotomized	116
11. Interaction between Aspiration and Limited Opportunity Beliefs: TALO Trichotomized	118

CHAPTER I

INTRODUCTION

General Overview

The research reported in this paper concerns a study of educational aspirations and achievement among Asian, Black, Caucasian, and Hispanic-American adolescents. Special interest is on the Asian-American youth. The study explores the context in which a high school student's educational aspirations are nourished and in which his/her aspirations and achievement motivations are translated into more concrete behavioral consequences, such as actual academic performance. By examining various individual-level as well as familial-level variables, this study concerns the influence of non-intellectual predictors of academic aspiration and achievement.

Many sociological studies of educational aspirations have been limited in that they primarily focus on generalizing for a particular group as a whole. The focus of these studies is on whether aspirations are "high" or "low" for different groups rather than on the content or context of aspirations. The present research expands

beyond this type of approach by developing a comprehensive theoretical framework of academic aspiration and performance. Using multiple regression analyses to test the hypothesized path models, the author attempted to get a better understanding of the determinants of academic aspiration and performance behavior.

The following section of this chapter provides a brief introduction to the problem with which the present research is concerned. Next, the relevant literature is discussed. The focus of the discussion is on theoretical as well as empirical justifications for investigating those variables that are included in the present research. The last section then presents a conceptual framework and causal models relating student and familial variables to aspiration and achievement. Various research hypotheses are drawn within these frameworks.

Introduction to the Problem

In the last several years, there has been much attention from educators, politicians, and the general public directed to various educational issues. Among these issues is the educational aspirations and achievement of Asian-American minority children. Asian-American students are the fastest-growing minority group in higher education (Newsweek on Campus, 1984). They have carved out a reputation for hard work and academic excellence as illustrated in the following examples.

Time magazine reports that in 1983, Asian-Americans claimed 12 of the top 40 spots in the Westinghouse Science Talent Search (Time, 1983). Some 10% of Harvard's freshman class is Asian-American. Year after year, they outscore other racial groups on the math portion of the Scholastic Aptitude Tests. In 1981, the national norm for math on the SATs was 467, but in California, 68% of Japanese-born students and 66% of Korean-born students scored over 600 (Time, 1982).

Asian-Americans' achievements are considered particularly remarkable given their history in the United States. Asian immigration had begun in the late 19th century. However, until World War II, most Asian immigrants were male workers, who came with the purpose of making their fortune and returning to their homelands. They often left their families back home. Thus only in the past four decades has a sizable Asian-American family structure been created in the United States.

Although some scientists look into probable differences in the genotype between Asian and American babies in order to explain the academic success of the Orientals, most scientists rate nurture over nature as the critical factor. That is, what parents do for their children as the children grow up is considered to be more important than the genes that are transmitted. For example, a series of on-going investigations by Harold Stevenson

(Newsweek on Campus, 1984) and his research team looked at the effect of parental upbringing on Asian and American children's academic achievement.

Generally, people on this "nurture" side believe that the success of Asian-Americans is rooted in a traditional reverence for learning in the Asian culture and the fierce support of family. Sociologist William Liu (Time, 1982), for instance, stressed the importance of cultural conditioning. According to Liu, in the Confucian ethic, which permeates the cultures of China, Korea, and Japan, children believe that scholastic achievement is the only way of repaying the infinite debt to their parents, of showing filial piety.

On the other hand, some researchers contend that the Asian-American's high educational aspiration and push for excellence merely repeats the behavior of other immigrants (e.g., the Jewish) who saw education as the road for acceptance. Here, the emphasis on education is seen as a major avenue for upward mobility. In fact, most Asians believe academic credentials are passports to high occupation, social status, and economic rewards. In a survey of three generations of Japanese immigrants, Levine and Montero (1973) indicated that Japanese educational attainment significantly accounted for occupational achievement, suggesting the role of education in socioeconomic mobility among minority groups. The authors

suggested that well-educated groups tended toward assimilation into the mainstream of American life. On the other hand, those less educated were found to focus their sights more within their ethnic community.

From the foregoing discussion, both available research evidence and anecdotal information seem to suggest functional effects of educational attainment on upward mobility and assimilation into the American society for Asian immigrants. It is also evident that Asian-Americans generally have high educational aspirations and that the pressure for educational success for them is high. A survey report of Korean immigrants in the Philadelphia area confirms this point. According to the survey, respondents reported their second most important reason for coming to America was for the better education of their children (The Joong-Ang Daily News, 1982).

With interests in the educational career orientation and academic achievements among adolescents with different ethnic backgrounds, the present research asks: What are the direct and indirect effects of parents' encouragement on high school students' educational aspiration?; How well does the desire for upward mobility predict academic aspiration?; What relative direct effects do family status, parents' encouragements, beliefs in filial duty (children's feelings that they owe it to their parents to do well in school), achievement motivation, mobility desire, extra-

curricular activities, and one's beliefs in his/her potential for academic performance, have on a person's academic aspiration?; and finally, what are the relative indirect effects of those variables on the same kind of academic outcomes?

The present research is also concerned with whether or not aspirations will eventuate in actual achievement. The answer will depend on many variables such as perceptions of opportunity in the society. In the present research, the perception of limited opportunity is thought to mitigate the relationship between one's aspiration and expectation for one's future academic career. The way a person sees what kind of chances he/she has in the society certainly would affect that person's level of aspiration. At the same time, even if a person has a high level of aspiration, that aspiration may not result in actual achievement depending on his/her perception regarding the availability of means for implementing those aspirations.

With the purpose of finding answers to these types of questions, the present research explicates a model of adolescents' educational aspiration and performance by incorporating attribution theory. As discussed more fully in the following section, this theory deals with how people explain the causes of their behavior and outcomes. In the present study, the impact of a person's perceptions regarding the importance of different attribution factors

(e.g., effort, ability, and determination) in predicting his/her school performance is investigated.

In the past two decades the trend in the study of the academic aspiration and achievement of members of racial minorities has been a growing interest in the causal attribution for performance outcomes (Graham & Long, 1986). In the following section, various theoretical backgrounds for the present research are introduced, starting with attribution theories.

Background literature

Attribution theory and Locus of Control

The present research includes students' tendency to make certain types of causal attributions regarding their own performance behavior as one of its pivotal independent variables. An attribution is the inference that one makes about the causes of behavior-either his/her own or another person's. Attribution theory focuses on how people make intuitive causal judgments, and how these judgments affect subsequent behaviors. Various theoretical models have been developed to delineate the attribution process and its components (Heider, 1944, 1958; Jones & Davis, 1965; Jones & McGillis, 1976; Kelley, 1973; Kruglanski, 1975; Weiner, 1974, 1979, 1985).

All attribution models are based on several fundamental assumptions. First, a person's behavior is thought to be determined in certain ways; it does not just

occur at random. It is also assumed that the underlying causes of a person's behavior can be inferred with some degree of validity from an examination of the action and the situation in which the action took place. Another assumption is that perceivers (or actors) have some reason to engage in a search for the causes of an actor's (or their own) behavior. They have a need to explain and predict events of importance to them, and causal attributions about the behavior help satisfy the need. This assumption was reflected in Heider's statement about trying to make sense out of the manifolds of proximal stimuli. The search for understanding is the basic "spring of action" to Weiner. Kelley points out that this motivational assumption gives attribution theory a definite functional flavor. Another important assumption common to all attribution models is that any behavior is the joint consequence of personal and environmental forces.

Weiner's attribution theory of achievement motivation: Among various attribution theories, one that is most relevant to the present research is that of Weiner (Weiner et al., 1971) which has a direct implication for education. The basic assumption of Weiner's model is that beliefs about the causes of success and failure at an academic achievement task mediate the perception of the task. Moreover, these perceptions about past successes and failures are thought to influence performance level on

subsequent tasks.

According to the initially proposed two-dimensional (internal-external; stable-unstable) model (Frieze & Weiner, 1971), causes of any act can be categorized into four abstract factors: effort, ability, luck, and task difficulty. According to Weiner's classification scheme, perceived ability at a given task is considered to be a function of the degree of past success at that or similar tasks. Therefore, consistency of performance is a salient cue for ability attributions. Task difficulty is inferred from social norms indicating the performance of others at the task. If performance is consistent with the norms, that is, success when others succeed or failure when others fail, the outcome is attributed to the external factor of task difficulty. On the other hand, performance at variance with social norms is likely to be attributed to internal factors.

It is proposed that luck is inferred from the pattern of prior reinforcements. The more random or variable the pattern of outcome is, the higher the probability that luck will be perceived as a causal factor. Regarding the condition necessary for effort attributions, Weiner et al. proposed that covariation of performance with incentive value or with cues such as persistence may lead to effort attributions. Such covariations are also expected to minimize luck attributions.

According to Weiner, each dimension in his model has unique psychological consequences. For example, the locus of causality dimension has been considered to influence the affective reactions of pride and shame. In a success situation, people feel maximum pride and satisfaction when they can attribute their performance to either ability or effort. At the same time, failure attributed to lack of ability or lack of effort results in shame and dissatisfaction. Moreover, attributions of success to good luck or the ease of the task produce less pride, and failure attributed to bad luck or task difficulty produce little shame.

The instability versus stability dimension affects cognitive changes in expectancy following success or failure. For example, when a person perceives his/her success as caused by good luck, the resulting expectancy is that failure might occur in the future since luck is an unstable external factor. Attributions to lack of effort in failure situations, however, result in higher expectancy for future success than attributions to ability. Failure attributed to lack of ability results in low expectancy for future success since one has little control over his/her own ability. However, success attributed to ability produces a high expectancy for future success because ability is a stable cause.

The implication derived from this model is that

persons who consistently perform at a low level would begin to attribute their past failure to a stable factor. This stable attribution for past failure would result in low expectations for future success, which in turn might lead to a maladaptive behavior in task situations and thus to a greater likelihood of continued failure.

Abramson et al. (1978) were particularly interested in this aspect and proposed that attributions of a failure to internal factors cause a greater loss in self-esteem than external attributions. Also, stable attributions are thought to produce more lasting deficits than external attributions, and attributions to global factors result in a greater generalization of performance deficits than specific attributions.

A third dimension of causality was identified earlier by Heider and later incorporated into the achievement domain by Rosenbaum (1972). Rosenbaum argued that the dimension of intentionality was needed to differentiate, for example, mood from effort. Both of these causes are internal and unstable, but quite distinct. Weiner, however, thought that the dimension Rosenbaum had identified was that of "control." His argument was that failure attributed to lack of effort does not mean that there was an intent to fail. Also, effort differs from mood in that only effort is subject to volitional control. Therefore, Weiner proposed a third dimension of causality

that categorizes causes as controllable versus uncontrollable. The controllability of causes influences interpersonal evaluation. For instance, persons anticipate more punishment from others when failure is attributed to personally controllable causes.

Causes theoretically then can be classified within one of eight cells (2 levels of locus x 2 levels of stability x 2 levels of control). All three dimensions of causality affect a variety of emotional experiences, including anger, gratitude, guilt, helplessness, pity, pride, and shame. Expectancy and affect in turn, are presumed to guide motivational behavior. The theory therefore relates the structure of thinking to the dynamics of feeling and action (Weiner, 1985).

Criticisms of Weiner's attribution theory: Weiner's new formulation of a three dimensional attribution theory addresses both self and other perceptions, and intra as well as interpersonal behavior. There have been several criticisms of Weiner's model. Some argue that effort can be either stable or unstable. For example, it is stable when we say "Mike is a hardworking person." Here, effort is regarded as a stable personality factor. But at other times, when it refers to energy expended in seeking success on a particular task, effort can be transient. Also, critics argue whether an external cause can be perceived as controllable. For example, teacher bias (an external,

stable factor) may be controllable, as Weiner suggested, from the part of the teacher, but not from the perspective of the student.

In a recent report, Graham and Long (1986) caution us of the possibility that different individuals might dimensionalize the same causal factor differently. For example, a black student may be perceiving luck as a relatively internal and stable characteristic when he/she says "I'm always an unlucky person." This type of causal judgment may lead to lower expectations for future success. The authors consequently emphasize the importance of process analysis on how a causal structure unfolds as a prerequisite to the assumption of different patterns in attributions among different ethnic groups.

Other problems such as those associated with the independence of dimensions remain unsolved. Despite these problems, Weiner's attribution theory of achievement motivation has significant implications for the practical as well as philosophical aspects of education. Studies generally report consistent findings with Weiner's attributional dimensions and components (Forsyth & McMillan, 1981; Meyer, 1980). In view of this research support and because of the intuitive plausibility of some of its constructs, Weiner's model was used in this study as the basis for identifying variables for causal judgments of performance outcomes.

Locus of control: In conjunction with Weiner's attribution model, the concept of internal versus external locus of control has been incorporated in the present study. The internal versus external locus of control, developed by Rotter (1954), refers to a person's beliefs about control over life events. Some people feel personally responsible for the things that happen to them ("internals"), whereas others feel that their outcomes in life are determined by the forces beyond their control ("externals"). The concept of internal - external locus of control has been studied as an antecedent to educational aspirations, goal striving behavior, and academic performance of minority youth. For example, in the Coleman study (1966), this concept explained more of the variance in achievement among blacks than any other measures included in the study.

Studies generally have found a link between locus of control and achievement in children (Findley & Cooper, 1983; Lefcourt, 1976; Phares, 1976; Uguroglu & Walberg, 1979). Phares (1976), for example, concluded not only that children with an internal orientation achieved better academically but also that this association might be more substantial in children than in adults. Findley and Cooper (1983), further, reported that the relationship was stronger for adolescents than for adults or children and that it was more substantial among males than females.

In view of these past findings, the concept of locus of control seems to have implications for studies of adolescents' achievement-related expectations and behavior. In the present study, two measures are employed in order to tap adolescents' locus of control beliefs: the Intellectual Achievement Responsibility scale (IAR); and the Personal and Ideological Control Beliefs scale.

Sex differences in Performance Attribution

Numerous researchers have used an attributional model to interpret individual differences in achievement related beliefs and behaviors. Various studies reported sex differences in making attributions (Bar-Tal & Frieze, 1977; Feather, 1969; Murray & Mednick, 1975; Nicholls, 1975). Their data suggest that there is a tendency for females to be more external and to make more luck attributions than males, and that females rate their ability less highly than males following success. Many studies found that females generally have lower performance expectations than males even when they have comparable abilities.

However, most investigations in this area with few exceptions (e.g., Halperin & Abrams, 1978; Simon & Feather, 1973) have been conducted in artificial settings. Simon and Feather's study (1973) reported successful students, both males and females, attributed their performance to ability in classroom settings. However, males generally rated their ability higher than females, and only females

who were confident prior to taking their exams attributed their success to ability.

Academic history and performance attributions:

Halperin and Abrams (1978) included in their research an important factor which Simon and Feather did not study: academic histories of the students. They were interested in the effects of perceived inconsistencies between the past and the present performance on the stability dimension of the attribution model. Their findings confirm Lenny's (1977) hypothesis that in a natural setting where feedback is clear, females and males do not differ significantly in their expectations of success. They also found that achievement motivation made a significant, independent contribution to females' expectation of their final exam grade. Also, prior performance was an important determinant of the subjects' attributions. For example, students who were above the median on the prior exams attributed their performance to ability - a finding similar to that of Simon and Feather.

Halperin and Abrams (1978) suggested that females were more perceptive of the discrepancy between their high school performance and their college performance. Since inconsistency in performance tends to encourage the making of unstable attributions according to Weiner's model, the findings by Halperin and Abrams seem to provide at least a partial explanation for the sex differences in performance

expectations.

In a more recent study by Stipek and Hoffman (1980), findings for the girls' expectations for success were in the opposite direction of the findings for the boys. High achieving girls actually claimed to have lower expectations for success than the average or low achieving girls. These findings were consistent with Crandall et al.'s (1965) findings that girls' expectancies for success were negatively correlated with IQ, whereas boys' expectancies for success were positively correlated with IQ. However, in contrast to previous findings, girls overall did not have lower expectations than boys in the study by Stipek and Hoffman.

The authors explained their results that low achieving girls inflate their expectations for success while high achieving girls state low expectations, as being due to two factors. First, girls are found to be more anxious in academic settings than boys (Maccoby & Jacklin, 1974). Second, girls have been shown to be more sensitive to adult approval (Dweck & Bush, 1976). According to Stipek and Hoffman, high achieving girls may react to their anxiety and desire for adult approvals by setting low enough standards (i.e., claim to have low expectations) to assure success. The authors also pointed out that the male experimenter may have elicited different responses from the boys and girls.

The types of performance tasks: Several investigators focused on the type of task as a determinant of sex differences in attribution. For example, the effect of sex linkage of task on evaluations of ability, effort, luck, and task difficulty was examined in studies by Deaux and Farris (1977) and Deaux and Emswiller (1974). These studies reported that males evaluated their ability higher than females, particularly when the task was labeled masculine. Females were more likely to use luck to explain their performance regardless of types of the task. The conclusion was that females tend to make less self-serving attributions and that the differences is greater for masculine tasks.

As Bar-Tal (1978) pointed out, attributional patterns of females may be an important factor that inhibits achievement among females. However, the problem with these studies that looked at individual difference variables to provide evidence for general differences in the attributional style lies in that most of these studies measured subjects' attributions about one achievement outcome. In order to make generalizations about a student's attributional style, measures should be made across a range of achievement as well as nonachievement situations. In recognition of the conceptual problem in many attribution studies assessing attributional tendency by asking respondents to rate the causal importance of

specific factors, thus limiting answers to only those causes provided, the present research employs both closed and open ended questions for performance attributions.

Achievement Motivation

Achievement motivation has been given a great deal of attention in the psychological literature because of its important role in the competitive American society. Achievement motivation is the aspect of personality that is most clearly related to academic achievement. According to Atkinson (1964), the tendency to strive for success is the result of the combined effects of (a) the hope of success, (b) the fear of failure, (c) the perceived probability of success, and (d) the incentive value of the task goal.

As Bar-Tal (1978) indicated, the analysis of the attributional model of achievement-related behaviors provides an example of how factors other than cognitive skills may influence a person's performance behavior. The basic postulate linking attribution to achievement motivation is that individuals whose motive to approach success is greater than their motive to avoid failure will be more likely to attribute success to personal factors than will persons whose motive to avoid failure is greater than their motive to approach success (Friend & Neale, 1972).

Concomitantly, Weiner et al. (1972) proposed that the differential behavior of persons with a high achievement

need versus those with a low achievement need is a consequence of differential perceptions of causes of success and failure. The evidence shows that individuals with a high need for achievement tend to attribute success to ability and effort. On the other hand, persons low on the achievement motive tend to attribute success to external causes (Bar-Tal & Frieze, 1977; Weiner & Kukla, 1970; Weiner & Potepan, 1970).

Many researchers emphasized self-judged ability as an important mediator of the relationship between high achievement motivation and the perception of task outcomes (Kukla, 1972; Toughy & Villemez, 1980; Weiner, 1970). In a study by Kukla (1972), one group of subjects was told that successful performance on an achievement task depended on ability and another group was told that it depended on both ability and amount of effort exerted. The instructions differentially affected the performance of individuals with high and low achievement motivation. Those with a high need for achievement performed significantly better than those with a low need for achievement in the condition that emphasized effort as well as ability. On the other hand, in the situation that emphasized only the importance of ability, persons with high and low need for achievement did not differ in their performance.

Kukla suggested that the subjects' own attributional dispositions might have interacted with the instructions.

Therefore, persons with a high need for achievement who recognized the importance of effort tried harder to succeed when they heard that the outcomes depended not only on ability but also on effort. However, those with low need for achievement did not perceive effort as a determinant of success, and thus, they were not influenced by the instruction that emphasized effort. Finally, the instruction that emphasized ability discouraged subjects in both groups from trying hard because it implied that a person either has or does not have the ability and, therefore, effort would not change outcomes.

Toughy and VILLEMEZ (1980) hypothesized that effort and task outcome determine the ability judgments of high need achievers, but that low need achievers base their ability judgments on task outcome alone. Their findings suggested that subjects differing in achievement motivation arrive at a self-judgment of their own abilities through two separate attribution processes. Findings for low need achievers appear to fit Heider's (1958) common sense view that constant task success entails greater attributions to ability when effort is lower, and vice versa. However, the authors argued that the naive psychology of effort and ability attributions may not apply to subjects who score high in achievement motivation. High need achievers seem to infer their own abilities as a direct function of effort.

Weiner et al.'s (1972) conceptualization of causal perception as an intervening variable between achievement motive and achievement behavior has an important educational implication. Specifically, it suggests a possible educational intervention for school children by modifying their causal perceptions of success and failure (Dweck, 1975; Dweck & Repucci, 1973; Kukla, 1972; Weiner & Sierad, 1975; Weiner et al., 1972). In a recent study, Wilson and Linville (1985) documented one such example. The authors found that attributional interventions improved the performance of college freshmen on both short-term and long-term measures. In their study, presenting freshmen with information, indicating that the causes of low grades in the first year were temporary, led to increases in actual grades in the semester after the studies were conducted. They also found their intervention was more effective for males than for females. In view of the research reviewed in this section, since achievement motivation by itself and in conjunction with attribution processes has been proven to be relevant to academic performance, achievement motivation was included in the causal models being investigated in the present study.

Ethnic Differences in Locus of Control, Attribution and Achievement Motivation

Studies report that cognitive systems pertinent to the achievement motive may be learned differently by

various ethnic and social groups (Coleman et al., 1966; Katz, 1967).

Afro-American students: In a national survey, Coleman et al., found that black students, as opposed to white students, had a lower sense of personal control, especially on the question - "Good luck is more important than hard work for success." Similarly, Strickland (1972) suggested that black students act in a more chance-oriented or risky fashion than the whites, as if their expectancy for future success is only minimally related to their past behaviors.

Friend and Neale (1972) reinterpreted the Coleman report as follows: black students have not learned to attribute success to internal factors, or do not consider these factors to be important in accounting for success. Therefore, black students are more likely to attribute success to transient and chance factors, and to believe that these factors are more important in explaining their performance than are effort or ability.

Friend and Neale argued that it is possible for a person to claim high ability but to believe that his/her high ability was not crucial for his/her performance on a particular task. To test this hypothesis, they employed two methods of assessing attributions: the children's perceptions of both how much ability and effort they demonstrated, and of the relative importance of each of the

factors in mediating their performance. Their findings suggested that, both black and white students attributed equally low ability and effort to themselves given failure and equally high ability and effort given success.

In contrast, when the evaluations of the importance of ability and effort were considered, white children rated the internal factors as more important, especially following failure feedback. Blacks were found to place less importance on internal factors than whites although they perceived their ability and effort levels to equal to those of white children. Both in the Coleman survey and the study by Friend and Neale, the socioeconomic level of the home had only very minor effects.

The above findings confirm Katz's (1969) suggestion that blacks do not develop the cognitive structures that support the efficacy of effort, which implies that blacks may be less perceptive of the covariation between effort and achievement. On the assumptions regarding low academic motivation of black children, Katz (1967) argued that those assumptions are based on (a) various types of personality and cognitive deficits associated with the notion of cultural deprivation, (b) the discontinuity of home and school competency training, and (c) the failure of predominantly black schools to provide the same quality of instruction that is provided in white middle-class schools.

Asian-American students: Although there have been

numerous studies on attribution in relation to achievement motivation, studies involving Asian-American minority children are very scarce. In a cross-cultural study on attribution with Japanese and American adolescents, the most noticeable difference between attributions of responsibility by the Japanese and by the Americans was that produced by the outcome quality variable (Shaw & Iwawaki, 1972). Americans attributed significantly greater responsibilities for a negative outcome than for a positive outcome, whereas Japanese students attributed about the same amount of responsibility for positive and negative outcomes.

The authors suggested that this cultural difference was produced by differences in value orientation (Mastsumoto, 1960; Pelzel & Kluckhohn, 1957), child-rearing practice (Cole, 1966; Caudill & Scarr, 1962), and behavioral tendency (Berrien, 1966) of members of the two culture groups. The difference found by Shaw and Iwawaki may reflect the findings by Caudill and Scarr that the Japanese were committed to corporate family effectiveness and placed greater value on "collateral" relationships than on individual relationships, whereas Americans revealed the reverse pattern. Shaw and Iwawaki's findings are contradictory to that of Berrien (1966). Berrien found that Japanese students were more likely than Americans to accept blame personally when things went wrong. Taken

together, these studies seem to suggest that the Japanese are influenced relatively less than Americans by the quality of the outcome when attributing responsibility.

Educational Aspiration

Aspiration has been defined as "the standard of achievement which an individual sets for himself and which he expects to attain" (Theodorson & Theodorson, 1969). Social scientists stress the association between educational aspiration and social mobility (Havighurst and Neugarten, 1975). Educational aspirations have been thought to be related to the desire to raise one's social status. In other words, education has been viewed as a means for upward mobility for persons who have the ability and opportunities to acquire it.

In a comparative study of Australian, Brazilian, and American subjects, Havighurst and Neugarten (1975) found that Brazil and the United States showed high levels of mobility which were attributed to high educational opportunities. He concluded that education has become a great mechanism for upward mobility in industrial societies because the technological growth enhances the rate of productivity which in turn changes the structure of the labor force to absorb different social levels. In the present study, educational aspiration is treated as a dependent variable as well as one of the predictor variables for academic achievement.

Ethnic Differences in Aspiration

The pattern of low achievement motivation of black children documented in studies (Baughman & Dahlstrom, 1968; Coleman et al., 1966; Pettigrew, 1964) seems to be contradict findings on their educational aspirations. For example, Baughman and Dahlstrom (1968) found rural black boys to have unrealistically high level of aspiration in connection with achievement. Brook et al. (1974) also found higher educational aspirations among blacks than whites. Also, Guggenheim (1969) reported that black children showed significantly greater discrepancies than white children between their expectations for achievement and their actual achievement.

Katz (1969) attempted to explain this discrepancy in terms of socializing agents of academic motivation. He argued that black parents have higher educational aspirations for their children but they devote little effort to their children's educational needs (e.g., help with homework). Katz believed that these parents' aspirations are in the nature of wishful fantasies. These parents do not know how to implement them, but the aspirations have consequences since they somehow get conveyed to the child as expectations he/she is supposed to fulfill. Supporting the Katz argument, Brook et al. (1974, 1979), Pettigrew (1964), and Rosen (1959) reported that

black parents have higher educational aspirations for their children than do white parents.

A number of studies examined how parental aspirations might influence their children. For example, Brook et al. (1974) reported that maternal orientations were potent determinants of adolescents' expectations regardless of socioeconomic status, ethnicity, or sex. Various other studies found that parental stress on education (Bordua, 1960), parental advice (Simpson, 1962), parental expectations (Sewell & Shah, 1968), parental encouragements (Marjoribanks, 1985; Rehberg & Westby, 1967), and parental hopes (Goodale & Hall, 1976) are related to the adolescents' aspirations. Sewell and Shah (1968) found a generational continuity: children of parents with a high educational attainment were found to have higher aspirations than children whose parents had a lower educational attainment. Rehberg and Westby (1967) reported that, through parental encouragement, the education and occupation of the father have an influence on educational aspirations of students and that the larger the family size, the less parental encouragement for children to continue education beyond high school.

Perception of Limited Opportunity

In studying educational aspirations among black and white students, Epps (1969) examined a variable which none of previous studies investigated: the perception of

opportunity. The awareness of limited opportunity concept, originated by Landis and Scarpitti (1965) in their research on delinquency, was found to be a valuable construct in explaining adolescents' aspirations and expectations. In Epps' study (1969), students with low family status were more likely than those with high family status to feel that their opportunities for success were limited. The perception of limited opportunity was also negatively related to school grades. In the present study, the awareness of limited opportunity is considered to play a mediating role in the relationship between aspirations and expectations for future education and also between aspiration and actual performance. It is also considered to have negative impacts on school performance.

Filial Duty Beliefs

Further, the present study examines how adolescents' feelings toward filial duty affect their aspirations and performance. Earlier in this chapter, Asian students' high educational aspirations and achievement were attributed to their reverence for parents and for learning. Although the belief in filial duty has been neglected in the previous research, it is believed by the author to affect adolescents' school related expectations and behavior. The variable has been operationalized in this study by questions such as "I will let my parents down if I do not do well in school."

Academic Potential and Extra-curricular Activities

In addition, the present research incorporates students' belief in academic performance potential and their involvements in extra-curricular activities. The performance potential belief, operationalized by an item asking students what their GPA would be if they tried their best, is considered to directly influence their aspirations and academic achievement. At the same time, the degree of students' involvement in extra-curricular activities, both academic and nonacademic, are considered to have implications for their aspiration and performance. The reason for choosing extra-curricular activities, instead of curricular activities was because students would have more volitional control over the kinds of activities they involve themselves in for the extra-curricular activities than for the curricular activities.

Sex Differences in Educational Aspirations and Achievement Motivation

Generally, sex differences in educational aspiration have been that boys tend to have higher aspirations than girls (Boocock, 1972; Sewell & Shah, 1968). It has been found that even when girls achieve better than boys, boys still tend to display greater confidence than girls in their ability for college work and are more likely than girls to make plans for a college education (Boocock, 1972).

In a study by Brook et al. (1979), males reported higher aspirations than females, but no sex differences were found in the expectation. The lack of sex differences in expectations was attributed to the increasing recognition of greater educational and occupational opportunities available for females (Jersild, Brook, & Brook, 1978). They further maintained the fact that males still had higher aspirations than females indicated that the movement toward sexual equality which had characterized 1970s had not yet had a sufficient impact on females to allow them the higher hopes for success that males aspire to.

In general, women show a weaker relationship between achievement scores and behavioral measures of achievement than men (Hyland, et al., 1985). Regarding sex differences in aspiration and achievement motivation, Hoffman (1972) argued that females have a greater affiliative desire than males (see also Oetzel, 1966; Walberg, 1969) and thus, the conflict between affiliation and achievement occurs more often for women than for men.

With similar beliefs, Horner (1972) developed the concept of the motive to avoid success in an attempt to understand the major unsolved sex differences found in the previous research on achievement motivation and aspirations. The motive to avoid success was conceptualized within the framework of an expectancy value

theory of motivation as a latent, stable personality disposition acquired early in life in conjunction with standards of sex role identity.

It was hypothesized that this motive to avoid success would be significantly more characteristic of females than males (Horner, 1969). She found that highly competent and otherwise achievement motivated women, when faced with a conflict between their feminine image and expressing their competence or developing their abilities, adjust their behaviors to the internalized sex role stereotypes. The fear of success, according to Horner, exists in women because their anticipation of success is accompanied by the anticipation of negative consequences in the form of social rejection or loss of femininity.

While Horner described women as possessing a personality trait of a motive to avoid success that leads to anxiety about success and achievement, others deny this sex-linked disposition (Condry & Dyer, 1976). The alternative Condry and Dyer suggested is that the difficulties women may have in mixed-sex competitive situations are due to characteristics of the situation and the meaning of these situations for the male or female participants. Horner's motive to avoid success (or fear of success) has been interpreted by others (e.g., Feather & Raphelson, 1974; Hyland et al., 1985; Monahan et al., 1974) as a cultural stereotype or belief about sex-inappropriate

behavior (as a cognition rather than a "motive").

At present, sex differences in aspiration and achievement motivation seem to be evident and need much more examination. However, as Sewell and Shah (1968) predicted, with the increasing economic independence of working women and their rising responsibility in the labor force, women's aspirations are most likely to rise in the future.

Educational Aspiration and Upward Mobility

In the present research, academic aspiration is examined in the context of motivation for upward mobility. In America, the social stratification system permits considerable social movement. The flexible class system motivates persons to strive for higher status. According to Himes and Moore (1968), the achievement of status is conditioned by a variety of forces and circumstances in the social milieu. Among the more important variables are the motivation to strive and the availability of opportunities.

In the United States, everyone is expected to show some motivation for upward mobility. Research indicates that although motivations to strive exist in all social groups, it varies in intensity from one group to another (Himes & Moore, 1968). The actual desire for upward mobility may be limited due to inadequate opportunities, faulty perceptions of available opportunities, inability to perceive means of exploiting available opportunities,



actual lack of motivation, or combination of these factors.

The literature reviewed earlier (e.g., Havighurst & Neugarten, 1975) suggests that differences in group mobility are related to the differences in the psychological and cultural orientations toward achievement among ethnic minority groups. Greenstorm (1975) argued that mere membership in an ethnic group can influence the individual's level of aspiration. It is not so much the form of a culture but the content which seems to make a difference.

For example, comparisons of Japanese-Americans and Mexican-Americans in school achievement suggest that even though both ethnic groups place a primary emphasis on the family solidarity, the particular interpretation of other values such as the instrumental value of education, produces culturally-based differences in academic achievement (Kitano, 1969). Elder (1962) also argued that a subgroup membership nurtures certain personality traits, which in turn influence individual mobility aspirations. Taken as a whole, ethnicity seems to strongly affect achievement motivation and educational aspirations, making some ethnic groups more educationally mobile than others.

Most Asian-Americans regard education as the best avenue to recognition and success. The findings by Levine and Montero (1973) reviewed earlier in this paper indicate the role of educational attainment in socioeconomic

mobility. The findings also suggest that well-off groups tend toward assimilation into the mainstream of American life. On the other hand, those less educated and poorer appear to focus their sights more within the ethnic community. This makes sense since upward mobility would mean that ethnic minorities have greater contact with Caucasians in business and social affairs. The data further reflect that among Japanese immigrants, occupational and educational attainments of the first generation (Issei) are related to the achievements of the second and the third generations. The intergenerational mobility patterns show that the Japanese-Americans have increasingly, from one generation to the next, made great strides upward in social mobility.

In view of the literature reported in this chapter, each of these variables of gender, ethnicity, attributional tendency, perception of limited opportunity, achievement motivation, upward mobility desire, academic performance potential belief, filial duty, extra-curricular activities, and family background and encouragements seem to operate on its own or in combination with others to affect educational aspiration and performance. Based on these variables, a conceptual framework has been developed and various predictions are made within this framework.

A Conceptual Framework for the Research and Hypotheses

The framework for explaining aspirations and

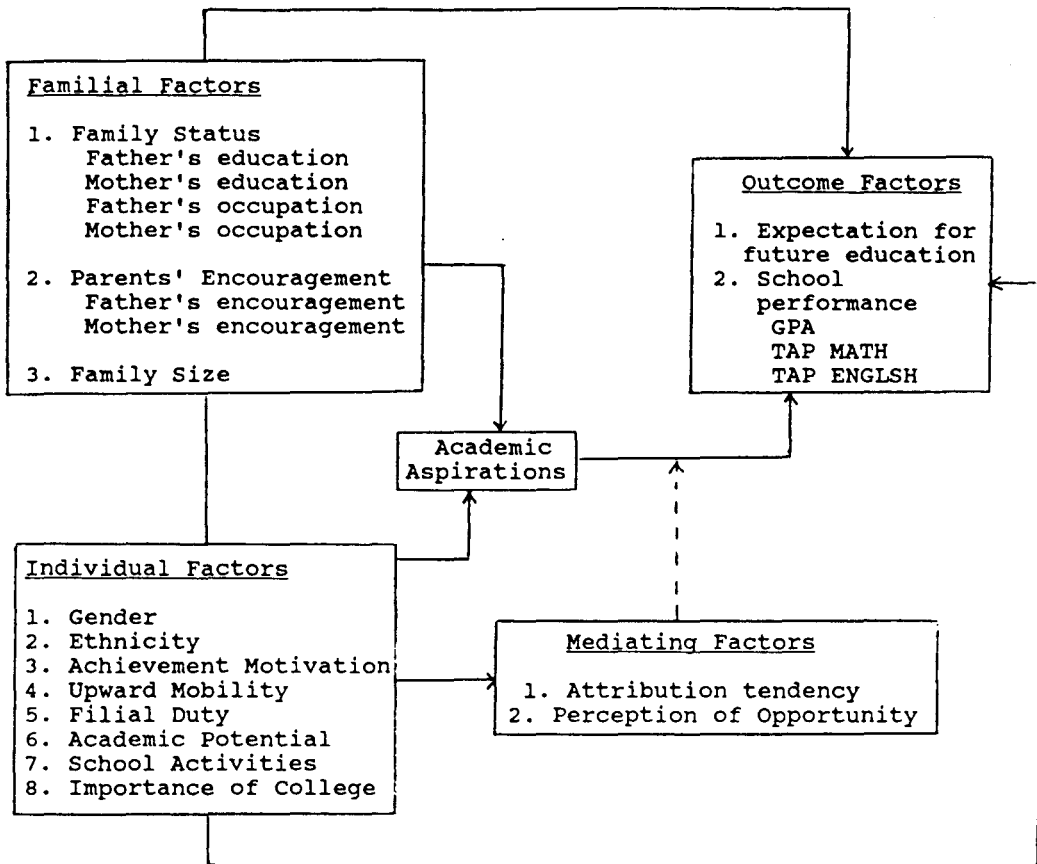
performance includes variables that the study investigated. Those variables include various familial factors (i.e., parents' encouragements for their childrens' education; parents' educational level; parents' occupation; and family size) as well as individual student factors (i.e., gender; ethnicity; beliefs in filial duty; achievement motive; upward mobility; beliefs in potential for academic performance; extra-curricular activities; and beliefs regarding the value of college education) as possible sources of influence on adolescents' educational aspiration and performance.

The later part of the model consists of the relationship between academic aspiration and possible outcome factors: expectation for future academic career, and present academic performance scores. Here, the attributional style and the perception of limited opportunity are treated as mediating variables between aspiration and outcome factors (see Figure 1).

Given the foregoing discussion of past findings and the conceptual framework proposed by the author, two causal models have been drawn: one for educational aspirations and another for academic performance. The path analysis technique allows the testing of hypotheses regarding direct as well as indirect impacts of various predictor variables on educational aspirations and on performance. Path analysis, in terms of standardized regression

Figure 1

A Conceptual Framework of Academic Aspiration and Achievement



coefficients, further illuminates the relationships among the variables in those causal models.

In the following section, those hypotheses drawn for the path models of aspiration and performance are introduced. Finally, additional hypotheses, which were not incorporated into the causal models but concerned with interrelationships among variables and with subgroup differences, are listed.

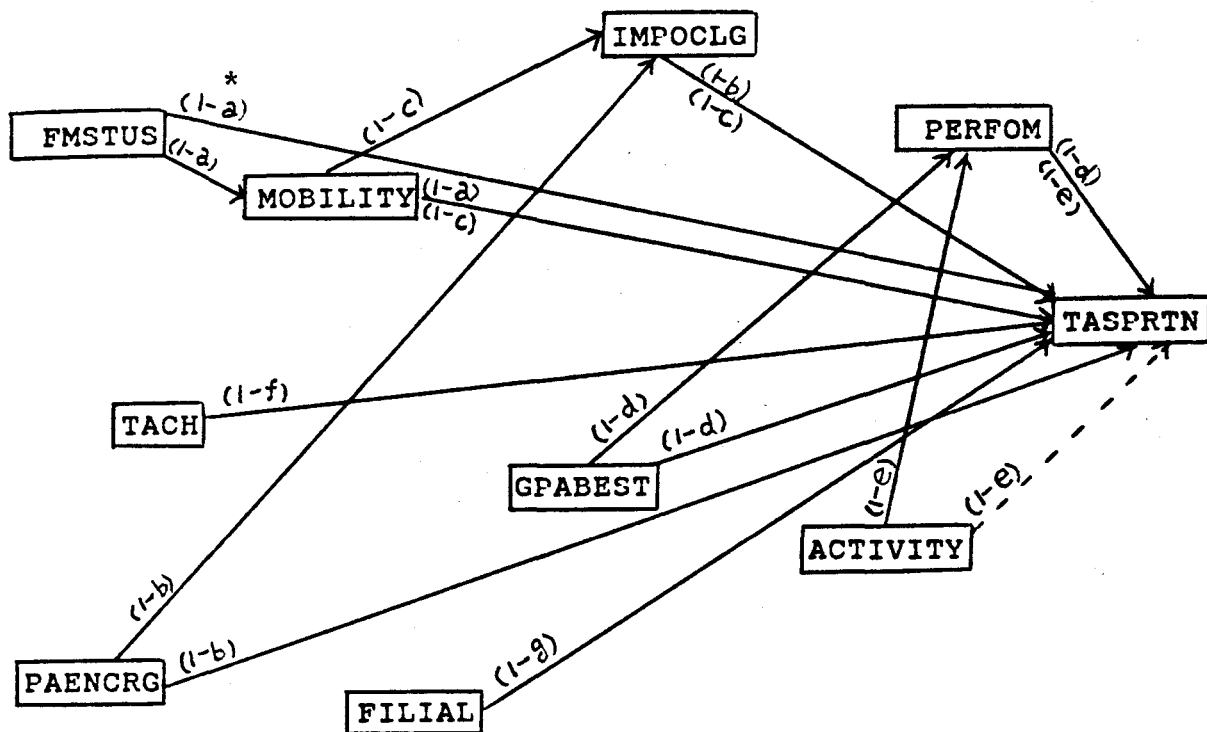
Main Hypotheses: Total Aspiration as the Dependent Variable

The zero-order correlations between each of the nine predictor variables in Figure 2 and aspirations are considered to reflect primarily impacts of the predictor variables on aspiration, rather than the reverse. Given that conceptual ordering, it is predicted that:

Hypothesis 1-A. Family status will have a direct effect on aspirations, controlling for the other eight variables in Figure 2. The finding on the direct effect will corroborate previous reports (e.g., Epps, 1969) that students from high status families are more likely to aspire to go to college, compared to those from low status family. It is also hypothesized that there will be an appreciable indirect influence of family status on aspiration, operating via mobility desire. It is believed that students from low status family will tend to have a higher level of upward mobility desire, and those with high

Figure 2

A Hypothetical Model of Academic Aspiration



mobility desire will have higher educational aspirations.

Hypothesis 1-B. There will be a significant direct effect of parent encouragement on student aspiration when the other eight predictors in Figure 2 are controlled. This result will confirm previous findings (e.g., Marjoribanks, 1985; Rehberg & Westby, 1967). Parent encouragement will also influence students' perception regarding the value of college education, which in turn, will influence students' aspirations. In other words, the indirect effect of parent encouragement on aspiration via importance of college perception is predicted to be significant.

Hypothesis 1-C. The direct impact of upward mobility on aspiration will be greater than the direct effect of any other predictor variable in the causal model of aspiration (Figure 2). There will also be an appreciable indirect effect of mobility on aspiration, operating through the importance of college perception. It is believed that those who want to get ahead in life will tend to see the value of education and thus, tend to aspire to go further in school.

Hypothesis 1-D. The performance potential belief will have a significant direct effect on aspiration, when controlling for the other eight variables in Figure 2. It is assumed that students who believe in their potential will be more likely to have higher aspirations than those

who do not believe in their potential. At the same time, it is predicted that the performance potential belief will influence actual school performance, which in turn, will affect the level of aspiration. In other words, there will be an appreciable indirect effect of the performance potential belief on aspiration via the actual school performance.

Hypothesis 1-E. There will be no significant direct effect of extra-curricular activities on aspiration and the indirect effect of extra-curricular activities on aspiration, operating through school performance will be greater than its direct effect on aspiration.

Hypothesis 1-F. It is hypothesized that achievement motivation will have a significant, positive, and direct effect on aspiration, when controlling for the other eight predictors in Figure 2.

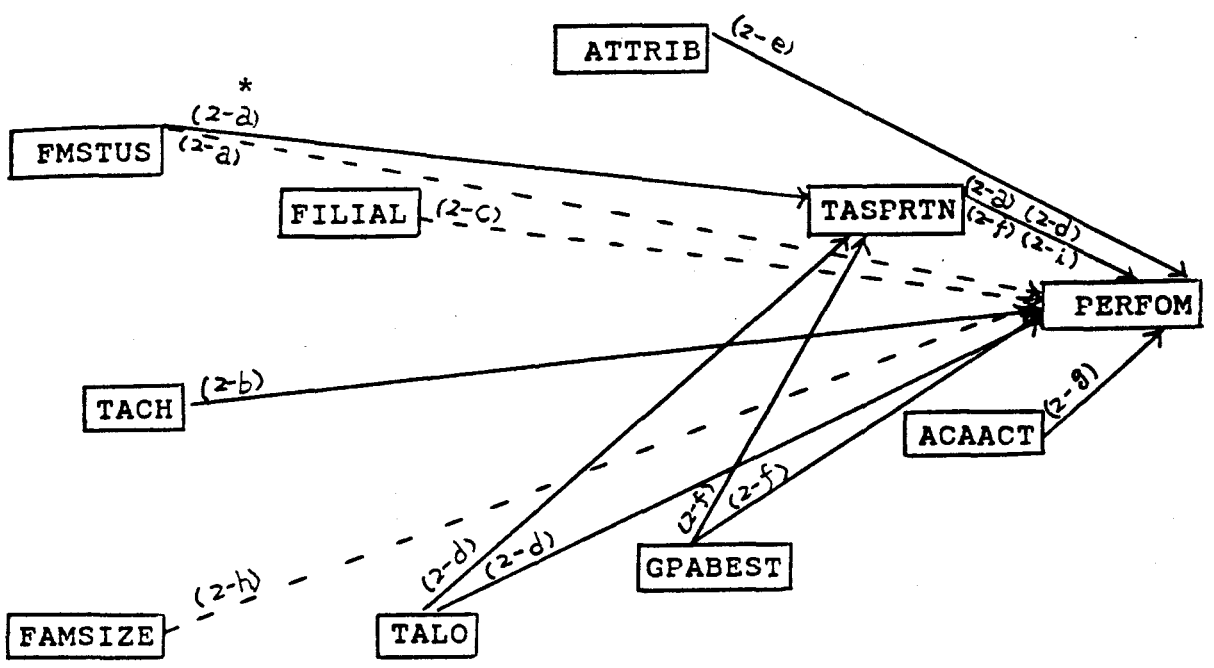
Hypothesis 1-G. Adolescents' beliefs in filial duty will have a significant direct effect on their level of academic aspirations, controlling for the other eight variables in Figure 2. That is, students who believe that their school achievement is important to their parents are predicted to have higher educational aspirations.

Main Hypotheses: Performance as the dependent variable

The zero-order correlations of each of the nine predictor variables in Figure 3 with school performance are considered to reflect primarily the effects of those

Figure 3

A Hypothetical Model of Academic Performance



—————> path with coefficient value $\geq .08$
 - - - -> path with coefficient value $< .08$
 * () hypothesis number

predictor variables on academic performance rather than the reverse. Given that conceptual ordering, it is predicted that:

Hypothesis 2-A. There will be no appreciable direct effect of family status on performance and its indirect effect on performance, operating via aspiration will be greater than the direct effect. That is, family status will affect school performance through its impacts on aspiration. Family status may be positively related to performance, but when it is considered along with other predictor variables, it is assumed to have no significant direct effect on performance.

Hypothesis 2-B. Achievement motivation will have a significant direct effect on performance, when controlling for the impacts of the other eight variables in Figure 3.

Hypothesis 2-C. Filial duty beliefs will have no significant direct effect on performance, when controlling for the other eight variables in Figure 3. Most of its impact on performance will operate indirectly.

Hypothesis 2-D. There will be a significant, negative, and direct effect of the awareness of limited opportunity on performance, when controlling for the effect of the other eight variables in Figure 3. The results will corroborate Epps' (1969) finding of a significant association between awareness of limited opportunity and achievement. It is also predicted that the perception

regarding limited opportunity will affect the level of aspiration, which will in turn, influence the level of academic achievement.

Hypothesis 2-E. The attributional tendency as to the internal versus external locus of control will have a significant direct effect on performance, when controlling for the effect of the other eight variables in Figure 3. The findings of the present study will corroborate previous reports that internals generally achieve better than externals.

Hypothesis 2-F. The direct effect of the performance potential belief on school performance will be appreciable, when controlling for the effect of the other eight variables in Figure 3. It is believed that students who believe in their potential are more likely to exert effort necessary for school achievement and thus, actually perform better in school than those with low potential beliefs. There will also be an appreciable indirect effect of the performance potential belief on actual performance, operating via aspiration.

Hypothesis 2-G. The direct effect of academic extra-curricular activities on performance will be significant, when controlling for the effect of the other eight variables in Figure 3. In other words, students who choose to involve themselves in the academic climate through extra-curricular activities will tend to perform

better in school than those who do not involve themselves in academic extra-curricular activities.

Hypothesis 2-H. It is hypothesized that family size will not have an appreciable direct impact on school performance, when controlling for the other eight predictors in Figure 3. Most of its impact on performance will be indirect.

Hypothesis 2-I. The direct effect of aspiration on performance will be significant, when controlling for the effect of the other eight variables in Figure 3.

Related Hypotheses

Hypothesis 3-A. Parents' encouragements and students' educational aspiration will be positively related, when controlling for parents' education.

Hypothesis 3-B. Parents' education and students' educational aspiration will be positively related, when the effects of sex, ethnicity, and parents' occupation are removed. The results will show significant contribution of parents' education on children's aspiration independent of sex, ethnicity, and parents' occupation.

Hypothesis 3-C. There will be no significant relationship between parents' occupation and aspiration, when controlling for parents' education. It is believed that parents with higher educational attainments tend to hold more prestigious occupations and also tend to more frequently encourage their children to go beyond high

school than do less well educated parents. Thus, when the impact of parents' education are removed, parents' occupation will no longer make a unique contribution to children's aspiration. This finding would support that by Rehberg and Westby (1967) on a significant reduction in the size of correlation between parents' occupation and children's aspiration, after controlling for parents' education.

Hypothesis 3-D. Parents' encouragements and children's belief in filial duty will be positively related, when controlling for sex and ethnicity. It is believed that parents' aspirations and expectations for their children's education will get conveyed to their children through their encouragement, which will then strengthen children's feelings toward filial duty.

Hypothesis 3-E. The relationship between aspiration and expectation will be greater for internals than for externals, suggesting an interaction effect between attribution and aspiration on the determination of expectation. Furthermore, since having an internal orientation means believing in personal control over events, those with an internal tendency will tend to have higher expectations for future outcomes relative to their aspiration than those who tend toward an external orientation.

Hypothesis 3-F. The perception of limited

opportunity will mediate the relationship between aspiration and expectation. The relationship will be greater among those with low awareness of limited opportunity than among those with high awareness of opportunity, suggesting an interaction effect between the awareness of limited opportunity and aspiration on the prediction of expectation. In other words, those who believe their life chances are highly limited will tend to have low expectations relative to their level of aspirations.

Hypothesis 3-G. There will be a positive relationship between achievement motivation and the internal versus external locus of control, when controlling for sex and ethnicity. In other words, high need achievers will tend toward an internal orientation in their causal judgments. This result would support previous findings (e.g., Bar-Tal & Frieze, 1977; Weiner & Kukla, 1970; Weiner & Potepan, 1970).

Hypothesis 3-H. Those with a higher value for college education will show a higher level of aspiration and expectation than those with a lower value for college education, when partialling out the effects of sex, ethnicity, and mobility. Since upward mobility is considered to be highly related to both the value of college and aspiration, it has to be held constant in order to examine the unique association between the value of

college and aspiration.

Hypothesis 3-I. The positive relationship between academic extra-curricular activities and performance will be significant, even when controlling for sex, ethnicity, and aspiration.

Hypothesis 3-J. The relationship of achievement motivation with aspiration and performance will be greater for males than for females, confirming previous findings (e.g., Hyland et al., 1985).

Hypothesis 3-K. Asians will tend toward choosing majors which are more quantitatively oriented rather than majors that require elaborated verbal skills. This tendency will reflect their elevated quantitative scores relative to their verbal scores.

Hypothesis 3-L. Minority children will be more perceptive of limited opportunities than Caucasian-Americans, because they are more likely than Caucasians to experience discriminatory obstacles as well as language and cultural barriers.

Hypothesis 3-M. Asians will have stronger filial duty beliefs than any other ethnic groups, reflecting high reverence for education and for parents, which is embedded in the Asian culture.

Hypothesis 3-N. Minorities will report a higher value for college education than Caucasian-Americans, suggesting a functional value of education in assimilation

to the mainstream in the society shared among the minority high school students. This finding will support previous reports by Levine and Montero (1973).

CHAPTER II

METHOD

overview

The approach considered suitable for the present research was a self report questionnaire that addressed each of the domains of variables discussed in the introduction. Thus, the present study consisted of having students from the ethnic backgrounds of interest fill out a paper and pencil questionnaire, using procedures that would ensure confidentiality. A supplementary source of data about these students collected from school records provided measures of academic performance.

Respondents

The participants in this study were solicited from two public high schools in Chicago: Amundsen High School and Senn Metropolitan Academy. Three hundred and ninety students participated in the study, but data for nine students were discarded since their surveys were not finished. Therefore, the total number of respondents was three hundred and eighty one. Of the total of 381 subjects, 189 were male, 181 were female, and 11 cases had

a missing value for gender. Students' ethnic composition was 4 American-Indian, 89 Asian-Americans, 47 Blacks, 87 Hispanics, 112 Whites, 22 Middle-Easterners, 6 others, and 14 were unknown. The students ranged from tenth and twelfth grades.

Instrument

A 13 page, paper and pencil questionnaire was developed for this study (see Appendix A for a copy of the final version). There were six different sections in the questionnaire. A cover page provided a brief description of the study and asked students to report their ID numbers.

Intellectual Achievement Responsibility The first section included 16 items drawn from Crandall et al.'s Intellectual Achievement Responsibility (IAR) scale (Crandall, Katkovsky, & Crandall, 1965). The IAR scale assesses children's beliefs in reinforcements exclusively in intellectual academic achievement situations. The items limit the sources of external control to those persons who most often come in face-to-face contact with a child (i.e., teachers, peers, or parents).

Control The next section was composed of ten items of which five items measure general ideological beliefs and another five measure beliefs about personal control. The distinction between person and ideological control beliefs was made by Gurin et al. with black college students (Gurin, Gurin, Lao, & Beattie, 1969).

According to Gurin et al. (1969), one's beliefs in personal control do not necessarily parallel his/her beliefs in general ideological control. Especially, ethnic minorities with disadvantages may adopt the general cultural belief about internal control but may find that these beliefs cannot always be applied in their own life situation. On the other hand, whites may be less aware of the inconsistency between cultural beliefs and what works for them. The beliefs in personal control are considered to be one of the most important factors differentiating motivation and performance, whereas beliefs in general ideological control are thought to have no significant impact on motivation and performance.

The items in this control beliefs scale were sampled from the internal-external item pool that was used in Gurin et al.'s analysis. Items with high factor loadings on person control and ideological control dimensions were selected. These items included some questions from Rotter's (1966) Internal-External Locus of Control scale and some items constructed by Gurin et al.

Achievement Motivation The third section of the questionnaire included ten items from Mehrabian's (1972) measures of Achieving Tendency that were developed to assess adolescents' achievement motivation. Using a scale from 1 to 5, subjects are asked to indicate how much they agree or disagree with each statement. In general, the

items in this section measure whether or not one prefers to tackle challenging tasks and the tendency to assume or avoid responsibility for his/her performance.

Limited Opportunity The next section consisted of seven items selected from the Awareness of Limited Opportunity (ALO) scale developed by Landis and Scarpitti (1965). The items are designed to tap adolescents' perception of the opportunities they have in the society. These questions have a Likert-type response scale with five response alternatives ranging from "strongly disagree" to "strongly agree." The original ALO scale has been found to have a split-half reliability coefficient of .84 (Landis & Scarpitti, 1965). The rationale for using these items lies in the possibility that the level of aspiration will be guided by the perception of the life chances in the opportunity structure.

Individual versus System Blame The fifth section had eight items that differentiate individual versus system blame. The distinction between individual versus system blame has been depicted in psychological and sociological analyses of minority groups. Minority groups, especially with low SES, may experience many external obstacles to educational and occupational achievement that have nothing to do with chance. These barriers such as racial discrimination may be perceived as external by minority groups but not as a matter of randomness or luck. On the

contrary, racial discrimination may be perceived as operating quite the opposite of chance, that is, systematically, predictably, and reliably.

The literature generally supports the view that an external orientation, when it involves excessive self-blame or blame of one's racial group, can be damaging to minority group members (Gurin et al., 1969). The social dysfunctionality of such beliefs for minority group members has been noted by sociologists such as Merton (1957). For these reasons it was considered desirable to assess system versus individual blame. The items in this scale were selected from the item pool that was used in Gurin et al's analysis. Items with high factor loadings on the system versus individual blame dimension were selected. Since Asian-American students were the group of primary concern in this study, the questions were rephrased in reference to that group. Only Asian-American students were asked to fill out questions on the individual versus system blame scale.

The Final Section The last section of the questionnaire was developed by the author for the purpose of measuring a variety of familial and individual aspects of students. Respondents were asked about their aspirations and expectations for their level of future academic attainment, their perception of the value of college education, beliefs about filial duty, involvement

with extracurricular activities, occupational aspiration, ethnicity, and birth order.

Aspiration, the idealistic dimension of an educational career orientation, was tapped with the item: "If you had the necessary abilities, grades, money, etc., how far would you like to go in school"? On the other hand, expectation, the realistic dimension of an educational career orientation, was measured with the item: "Considering your abilities, grades, financial resources, etc., how far do you actually expect to go in school"? Similar approaches to measuring these variables can be found in Rehberg and Westby (1969).

Beliefs in filial duty were measured by questions such as: "How upset do you think your parents would be if you get a low grade on an important test such as midterm or final exam"? and "How do you feel about the following statement--I owe it to my family to do well in school"?

In addition, several questions were used to tap self attributions about academic performance outcomes. These included open ended questions on what determine grades and school performance as well as closed ended forced choice questions and rankings of various possible explanations of performance. The options provided for the closed ended items were derived from prior work (e.g., Weiner) and referred to reasons that were either internal or external and either controllable or uncontrollable (e.g., hard work,

easy task, and teacher help).

Also, there was a question asking what GPA students believed they could get if they tried their best. The purpose of this question was to measure students' beliefs in their potential for school performance. It was of interest to see how this potential belief affects the level of aspirations and school achievement. Further, students were asked about their involvement in extra-curricular activities. This question was intended to provide measures of academic as well as nonacademic extra-curricular activities to examine their impact on aspiration and school performance. Finally, questions measuring family socio-economic status and parents' encouragements for students' education beyond high school were included in this section.

Procedure

Prior to the actual testing, a pilot testing was conducted with six students from Stephen Martha High School in Chicago in a group setting. Students were questioned at length about the instrument, including: a) were the instructions and wording easily understood, b) do you think the questions "make sense," c) were open-ended questions concrete enough to answer, d) were the response categories appropriate, e) do you think filling out the questionnaire was fun and beneficial, f) was the questionnaire too long, too short, or just about right, etc. Students were very cooperative and open about their opinions. Based on

responses to these questions, the questionnaire was revised.

The actual testing of the subjects was conducted at appointed times in reserved rooms at Amundsen High School and at Senn Metropolitan Academy. After learning the purpose, procedure, and anticipated benefits of the study, subjects were invited to participate. They were assured that confidentiality would be maintained by compiling the data by code numbers and that all results would be kept confidential and would not be used in any way to reflect upon individual participants.

After subjects were instructed how to answer questions in each section, they filled out the questionnaire. Although there was no time limit for completing the questionnaire, subjects took between 20 and 45 minutes to complete.

Each copy of the questionnaire had an ID slip with a code number. Subjects were asked to put their name, gender, and division number (which specifies subjects' expected year of graduation) on the ID slip and to detach it from the questionnaire and to return it in a box in the testing room. The purpose of having a separate ID slip was to make a roster of participants so that it would be possible to match the demographics on the ID slip with the questionnaire when collecting students' GPA and TAP (Test of Achievement and Proficiency) scores from the school

administration. This way, subjects did not have to put their names on the questionnaire. This procedure elicited suspicions among very few students.

At the end of the testing session, the researcher provided the participants with an explanation as to what the research had been concerned with. In this debriefing session, some students expressed interests in the findings of the study. The researcher invited these students to learn about the results of the study by leaving their names and addresses so that the researcher can send a copy of a summary of the findings.

CHAPTER III

PRELIMINARY ANALYSES

Since the study utilized several different scales and subscales, it was considered appropriate to first report how some of the questions were coded to develop certain scales and what their reliability coefficients were, before proceeding with the main analyses.

Independent Variables

Total Intellectual Achievement Responsibility

A reliability analysis on the sixteen items selected from Crandall et al's IAR scale yielded a Cronbach's alpha value of .57. After six items (items numbered 2, 4, 7, 9, 12, and 16) were deleted, the alpha increased to a more acceptable value of .63. Thus, a composite score for the remaining 10 items was used in the main analysis. The range of possible scores was between a low (meaning more external) of 10 to a high (more internal) of 20.

Total Control Beliefs

The total of 10 items in the control beliefs scale yielded a Cronbach's alpha value of .44. Subsequently, items numbered 2, 6, and 10 were excluded, resulting a

reliability coefficient value of .49. A composite score of the remaining seven items was used in the main analysis. The scores ranged from 7 to 14 with higher scores representing the more internal tendency in the control beliefs. Although this scale consisted of two possible subscales (the person control beliefs subscale and the ideological control beliefs subscale), only the total control scale value was used in the subsequent analysis because the two subscales yielded very low reliability coefficient values (.20 for the person control scale and .39 for the ideological control scale). It should be noted that items in the control beliefs scale are rather ambiguous and deal with global situations, this probably resulted in the low reliability coefficient.

Intellectual Achievement Responsibility and Control Beliefs combined as a Locus of Control Index

The correlation between the Intellectual Achievement Responsibility scale and Control Beliefs scale was .35. The 17 items consisting this locus scale had an acceptable Cronbach's reliability coefficient value of .68. The scores on these two scales were standardized using a z-transformation and the mean of the two standardized scale scores was used as the score for the attributional index of internal versus external locus of control. In regression analyses, this attribution index of internality was used only when separate IAR and control scale scores were not

used in the same analysis.

Total Achievement Motive

This scale consisted of 10 items from Mehrabian's (1972) measures of Achieving Tendency and includes two kinds of questions: one regarding the preference for challenging tasks and another group of items regarding avoiding such tasks. Two items numbered 3 and 5 were deleted in order to raise alpha values. Separate reliability analyses for these two subscales yielded .42 for challenging items and .41 for avoiding items. When these two scales were combined, the reliability coefficient was very low (.20). A composite score for this achievement motivation scale had a range between 8 to 40, lower scores meaning a lower level of achievement motive.

Total Awareness of Limited Opportunity

The Cronbach's alpha on the original seven items in the questionnaire was .53 and when the item number 3 was deleted, the alpha value increased to .56. Thus, a composite score for the remaining six items was used in the subsequent analyses. The range for possible scores was between a low of 6 and a high of 30. Higher scores represent greater perception of limited opportunity in the society.

Individual versus System Blame

There were eight items in the questionnaire differentiating individual versus system blame, which

yielded a Cronbach's alpha value of .41. After deleting the item number 8, the alpha value increased to .51. Therefore, a composite score of the remaining seven items, ranging from 7 to 35, was used in the later analyses. Higher scores mean more individual blame. This variable was used in the analyses involving the Asian-American group only.

Family Status Scale

The four items in the family status scale consisted of father's occupation, mother's occupation, father's educational attainment, and mother's level of educational attainment. In order to calculate the family status score for an individual, the value for father's occupation and the value for mother's occupation were multiplied by the factor weight of 7, and the value for father's education and the value for mother's education were multiplied by the factor weight of 4. A more detailed discussion regarding the factor weights for education and occupation is found in the Two Factor Index of Social Position (Hollingshead, 1965). This family status scale yielded a relatively high Cronbach's alpha value of .83. The mean of weighted values for mother's occupation and father's occupation represented parents' occupation and the mean of weighted values for mother's educational level and father's education is used as parents' level of education. These two variables, parents'

occupation and education, were standardized using a z-transformation and then averaged in order to get a family status scale score for an individual student. The higher the score is, the higher the family status.

Family Support Index

There were two items in the family support index, mother's encouragement and father's encouragement for children's college education. This scale yielded a high Cronbach's alpha value of .84. The two items were added for the scale score, resulting in a possible range of scores between 1 and 12.

Upward Mobility Scale

This scale was developed by using responses for three questions: student's level of occupational aspiration minus the mean of unweighted values for father's occupational level and mother's occupational level.

Filial Duty Beliefs Scale

There were four filial duty questions in the last section of the questionnaire which the author developed. The reliability coefficient for these items yielded a reasonably high value of .70. The mean of these four items was used as a scale value, with a possible range from 1 to 5.

Other Attribution Indices

There were several attribution questions regarding factors contributing to academic success in the last

section of the questionnaire which the author developed. Some of them were open-ended and others were forced multiple-choice. For closed-ended questions, several specific attribution factors and dimensions were asked about, such as effort, ability, and luck.

The answers to the open-ended questions were coded following a sequence of steps in a telescopic coding method: (a) review a large sample of all questionnaires; (b) write down key phrases and patterns of responses; (c) form categories to reflect the most frequent and relevant answers; (d) assign a code to each category. For example, the answers to the questions numbered 6, 10, and 11 (see pages 202 & 203 in Appendix A) were coded as nine different items based on the nine groups of attribution factors subjects mentioned. Thus, if a subject reported both effort and ability for question number 10, he/she received a score of 1 for each effort and ability item and 0 for each of the rest of the seven items. It should be mentioned at this point that the answer for question number 11 (asking the most crucial factor) was multiplied by the factor weight of 3. This weight was determined based on the observation that the mean number of answers that students gave for the question number 10 was three, so when they picked one of these three as the most crucial factor, it seemed reasonable to give the weight of 3 on the factor that they chose. These weighted answers were then combined

with answers on other attribution questions to develop different attribution indices.

Questions numbered 14 and 15 (see pp. 203 & 204 in Appendix A) dealt with attributions of academic success to more specific elements. Each of these two questions were coded as five different items. Readers should be reminded of the fact that these two questions were forced multiple choice questions which means that choosing one of the alternatives also means rejecting other available choices. Due to this particular nature of forced multiple choice questions, the distributions for each of the ten items that were developed out of the two forced choice questions were examined for their skewness. Some of the items that had skewness values greater than the absolute value of 2 were not included in the main analyses. For example, a variable referring to the teacher's mood determining the student's math grade was created from question number 14, option number 5. Thus, if a subject chose option five for question number 14, he/she received a score of 1 for the teacher mood scale. Since very few subjects selected this option as the factor contributing to their getting an A in math, there was very little variability in the responses and the distribution was highly skewed. Therefore, the teacher mood variable was excluded from the subsequent analyses.

Similar procedures were undertaken for question number 19 in the last section of the questionnaire, which

asked subjects to rank order seven different factors for their relative importance in determining academic performance. In the analysis each factor was treated as a separate item. For instance, if the Studying Hard factor got a value of 2 (meaning the second most important factor), the Study Hard variable was coded as 2 on the 1 to 7 continuum. The scores for these seven items were recoded later using a reversed scale for convenience, resulting in higher scores for more importance.

Scores for a given attribution factor were combined across items and reliability analyses were performed. Sometimes, items were deleted to yield the most reliable indices of attribution. Those attribution indices are discussed in the following sections.

Attribution Index for Ability Factor

Initially, there were six items in the ability index about the importance to academic success of being smart and intelligent, with a reliability coefficient value of .38. Three items were deleted in order to raise the reliability value up to a more acceptable value of .63. These ability items were standardized into a z-distribution and then the mean of the three z scores was obtained for each individual case.

Attribution Index for Effort Factor

The effort scale was developed in the same manner as the ability scale and consisted of six items about the

importance of studying hard, trying, and hard work. The reliability coefficient value for the six items was .55. The scores for these six items were first standardized by a z-transformation and then the mean score was obtained from the six z scores to represent an effort scale score.

Attribution Index for Determination Factor

The determination scale was based on responses to three questions such as determination to do well in school and having a goal or ambition to achieve in school. This scale yielded a moderately high Cronbach's alpha value of .71. The total scale score for an individual was the mean of the scores for these items after they were transformed into z scores.

Attribution Index for Habit Factor

The habit scale consisted of four items on the importance of study habit and discipline and had an acceptable alpha value of .60. These four items were also standardized and the mean was obtained from them to represent a habit scale value.

Attribution Index for Class Behavior Factor

The three items such as class attendance, listening carefully to the teacher in class, and participation in the class discussion composed the class behavior scale. These three items had a reliability coefficient value of .54. The scale score for an individual was the mean of the three standardized scores.

Attribution Index for Luck Factor

The six items forming this scale yielded a very low alpha value (.08) and when the distribution was examined the skewness value exceeded the absolute value of 2. The problem was that very few students chose luck factors as contributing to academic performance outcomes. Therefore, this attribution index for luck was not used in the subsequent analysis.

Attribution Index for Teacher Factor

There were also six items in this scale with a Cronbach's alpha value of .44. When three of them were deleted, leaving items on the importance of teacher's help and having a good teacher, the reliability increased to .60. The remaining three items were standardized and the mean was obtained.

Attribution Index for Home Factor

This scale consisted of four items on home environments, family help, and encouragements, with a reliability coefficient value of .56. The mean of these four items was obtained using the same standardization procedure as with other attribution indices.

Attribution Index for Easy Task Factor

The two items on the easy task factor had a very low reliability coefficient value (.16) and its distribution was highly skewed. As with the luck factor, very few students attributed their academic success to the task

being easy. Therefore, this attribution index was not included in the analysis.

Academic Activities and Nonacademic Activities

Question number 20 in the last section of the questionnaire (about students' extra-curricular activities in school) was coded as three different items: the number of academic activities, the number of nonacademic activities, and the total number of extra-curricular activities. Although all three variables were used in the correlational analyses, only the academic activity and the nonacademic activity variables were entered in the regression analyses in order to guard against any problems with multicollinearity by using all three variables in the same regression analysis.

Dependent Variables

Total Aspiration Scale

The educational aspiration scale consisted of two items asking how far students would like to go in school if nothing stops them, and how far they expect they will actually go in school. This scale yielded a moderately high Cronbach's alpha value of .70. The mean of these two items was used as the scale value for total aspiration.

Total Performance Scale.

The performance scale consisted of three different performance scores obtained from the high schools where the participating students were enrolled: Grade Point Average,

Math and English scores on the TAP (Tests of Achievement and Proficiency). This performance scale yielded a moderately high Cronbach's alpha value of .76. The three measures were first standardized using a z-transformation and then a mean of the three standardized performance scores was used as the total performance scale score for each student.

CHAPTER IV

RESULTS

overview

This chapter consists of three sections. The first section focuses on the results of path analyses that have been performed testing the hypothetical causal model for academic aspirations. Correlations of academic aspirations (the dependent variable) with predictor variables will be first discussed, followed by discussions on the testing of various hypotheses regarding direct and indirect effects of predictor variables on academic aspirations. Conclusions will be drawn on the final model for academic aspirations.

The second section concerns the results of path analyses performed for the hypothetical causal model for academic performance. Again, correlations of the academic performance measures with predictor variables will be discussed before proceeding with the results concerning the hypotheses on the direct and indirect effects of the predictor variables. A new model of academic performance will be introduced in the conclusion.

The third section deals with results of partial correlational analyses, analyses of variance, Chi-square tests, and Tukey tests of multiple comparisons performed for related and subgroup hypotheses. Special interest will be on the subgroup (sex and ethnic) differences.

PART 1: ACADEMIC ASPIRATIONS as the Dependent Variable

Before proceeding with the discussion on the tests of specific hypotheses, the relationships of the dependent measures with predictor variables will be examined. Means, standard deviations, and number of cases for variables in the present study are listed in Table 1. Table 2 lists names of variables included in the present study along with their coded names. From the correlation matrix based on a Pearson Product Moment correlational analysis (see Table 3), all but two predictors (mother's occupation and achievement motivation) were significantly related to total aspirations. Among those predictors, mobility ($r=.29$), importance of college perception ($r=.44$), total school performance ($r=.28$), and academic potential belief ($r=.28$) had the highest correlations with total aspirations.

It was reported earlier in this paper that the total aspiration variable was developed by combining the aspiration question ("How far would you like to go in school?") and the expectation question ("How far do you think you will actually go in school?"). Examinations of the coefficients separately for aspiration and expectation

Table 1
Means, Standard Deviations, and Cases

VARIABLE	MEAN	SD	CASES
TASPRTN	4.32	1.25	369
ASPRTN	4.68	1.39	369
EXPCTN	3.94	1.44	360
GPA	2.03	.79	352
TAP	32.38	23.10	287
MATH	38.44	24.55	311
ENGLSH	33.61	24.94	311
* PERFORM	.01	.85	352
+ PAEDLVL	8.30	4.50	336
FAEDLVL	2.24	1.38	315
MOEDLVL	1.91	1.09	328
+ PAOCCP	16.92	6.50	277
FAOCCP	2.43	1.01	242
MOOCCP	2.51	1.03	179
PAENCRG	7.25	3.34	378
FAENCRG	3.57	1.84	357
MOENCRG	3.92	1.73	373
FILIAL	3.86	.91	381
* FMSTUS	-.05	.90	350
TIAR	17.29	2.02	381
TCNTRL	11.46	1.71	379
PCNTRL	6.31	1.12	379
IDCNTRL	8.14	1.36	379
* ATTRIB	.01	.80	381
* DTRMTN	.00	.80	381
GPABEST	10.29	1.75	372
GPAOW	7.66	2.29	371
DIFFGPA	2.63	2.10	371
MOBILITY	8.87	8.63	230
FAMSIZE	4.11	1.93	333
BORDER	2.72	1.89	340
MYOCCP	3.70	.92	289
TALO	14.14	4.48	381
DSCRPNY	.73	1.36	360
TACH	24.94	4.11	380
IMPOCLG	5.96	1.60	377
ACAACT	.87	.62	376
ACTIVITY	1.04	1.54	376

Note: * standardized
+ weighted

Coded and Descriptive Names of Study Variables

CODE NAME	DESCRIPTIVE NAME
TASPRTN	Educational aspiration and expectation combined
ASPRTN	Educational aspiration
EXPCTN	Educational expectation
GPA	Grade point average
TAP	Test of Achievement Proficiency composite score
MATH	Score on math subtest of TAP
ENGLISH	Score on English subtest of TAP
PERFORM	GPA, MATH, & ENGLISH combined
PAEDLVL	Parents' level of educational attainment
FAEDLVL	Father's level of educational attainment
MOEDLVL	Mother's level of educational attainment
PAOCCP	Parent's level of occupational attainment
FAOCCP	Father's level of occupational attainment
MOOCCP	Mother's level of occupational attainment
PAENCRG	Parents' encouragement for the child's education
FAENCRG	Father's encouragement for the child's education
MOENCRG	Mother's encouragement for the child's education
FILIAL	Beliefs in filial duty
FMSTUS	Family status (Parents' education and occupation)
FMSIZE	Family size
BORDER	Birth order
TACH	Total Achievement Motivation
TALO	Total Awareness of Limited Opportunity
TIAR	Total Intellectual Achievement Responsibility
TCNTRL	Total Control Beliefs
PCNTRL	Personal Control Beliefs
IDCNTRL	Ideological Control Beliefs
ATTRIB	Internal vs. External Locus of Control (TIAR and TCNTRL combined)
DTRMTN	Attribution index for the Determination factor
GPABEST	Perceived academic potential
MOBILITY	Motivation for upward mobility
MYOCCP	Student's occupational aspiration
DSCRPNCY	Discrepancy between aspiration and expectation
IMPOCLG	Perceived importance of college
ACAACCT	Number of academic extra-curricular activities
ACTIVITY	Number of total extra-curricular activities

Table 3
Correlation Matrix for Educational Aspirations

	TASPRTN	ASPRTN	EXPCTN
	* **		
FMSTUS	.17 (.001)	.13 (.016)	.17 (.002)
PAOCCP	.12 (.045)	.07 (.244)	.13 (.040)
PAEDLVL	.17 (.002)	.14 (.013)	.16 (.004)
FAOCCP	.14 (.033)	.10 (.130)	.13 (.055)
MOOCCP	.05 (.495)	.01 (.936)	.06 (.418)
FAEDLVL	.17 (.002)	.15 (.008)	.15 (.008)
MOEDLVL	.15 (.009)	.12 (.036)	.15 (.008)
PAENCRG	.17 (.001)	.12 (.023)	.17 (.001)
FAENCRG	.18 (.001)	.10 (.060)	.19 (.000)
MOENCRG	.15 (.004)	.13 (.017)	.12 (.019)
TACH	.08 (.148)	.07 (.157)	.08 (.147)
MOBILITY	.29 (.000)	.30 (.000)	.21 (.002)
FILIAL	.15 (.004)	.14 (.006)	.12 (.024)
GPABEST	.26 (.000)	.24 (.000)	.20 (.000)
IMPOCLG	.44 (.000)	.40 (.000)	.39 (.000)
ACTIVITY	.26 (.000)	.23 (.000)	.24 (.000)
ACAACT	.19 (.000)	.13 (.011)	.20 (.000)
PERFOM	.28 (.000)	.23 (.000)	.25 (.000)
GPA	.28 (.000)	.21 (.000)	.27 (.000)
TAP	.22 (.000)	.23 (.000)	.15 (.011)
MATH	.22 (.000)	.19 (.001)	.19 (.001)
ENGLSH	.21 (.000)	.22 (.000)	.13 (.023)

* correlation coefficient

** significance level

revealed that, in general, predictors had similar correlations with aspiration and expectation, providing a rationale for combining aspiration and expectation as the measure of total aspirations. However, there were few predictors which tended to be more highly related to expectation than to aspiration (e.g., father's encouragement), while others (e.g., mobility) tended to be more highly related to aspiration than to expectation.

Since some of these variables are intercorrelated it is possible that some of these zero-order associations are partially artifactual in nature. Later in this chapter, partial correlations are generated as a basis for further discussion on the relationships among variables in the present study. Since the testing of hypotheses regarding predictors of aspiration and performance relied on path analyses, a brief introduction of the path analytic technique will be presented.

Path Analysis

Path analysis, developed by Wright (1934) and adapted in sociological research by Duncan (1966), has been used in the development of linear causal models by the method of path coefficients. The focus is on the interpretation of direct and indirect effects of variables rather than on the discovery of causes. Figure 4 exemplifies a diagrammatic representation of a system in which some of the variables are assumed to be dependent on those variables preceding

them in the assumed causal sequence. In the path diagram, one way arrows are used to lead each determining variable to each variable dependent on it. Unanalyzed correlations between variables not dependent on other variables in the system are connected with a curved two-headed arrow (see Figure 7). The numeric values outside the parentheses are path coefficients ("beta weights" or "standardized regression coefficients") and the numeric values within the parentheses are simple zero order correlation coefficients. A path coefficient stands for the direct effect of a designated factor on the dependent variable, while all other factors in the path model are held constant.

In a path scheme, assumptions as to ordering of the variables and about the uncorrelated residual factors are made explicit. Thus, it is possible to determine what portion of a correlation between two variables is due to the direct effect of a causal variable and what part of it is due to indirect effects. Path analysis enables us to decompose the correlation between two variables into a sum of simple and compound paths with some of these compound paths being substantially meaningful indirect effects and others perhaps not. A compound path is equal to the product of the simple paths comprising it. A direct effect is represented by a path coefficient for the link between two variables. All indirect effects are compound paths.

Several criteria have been used in the literature as

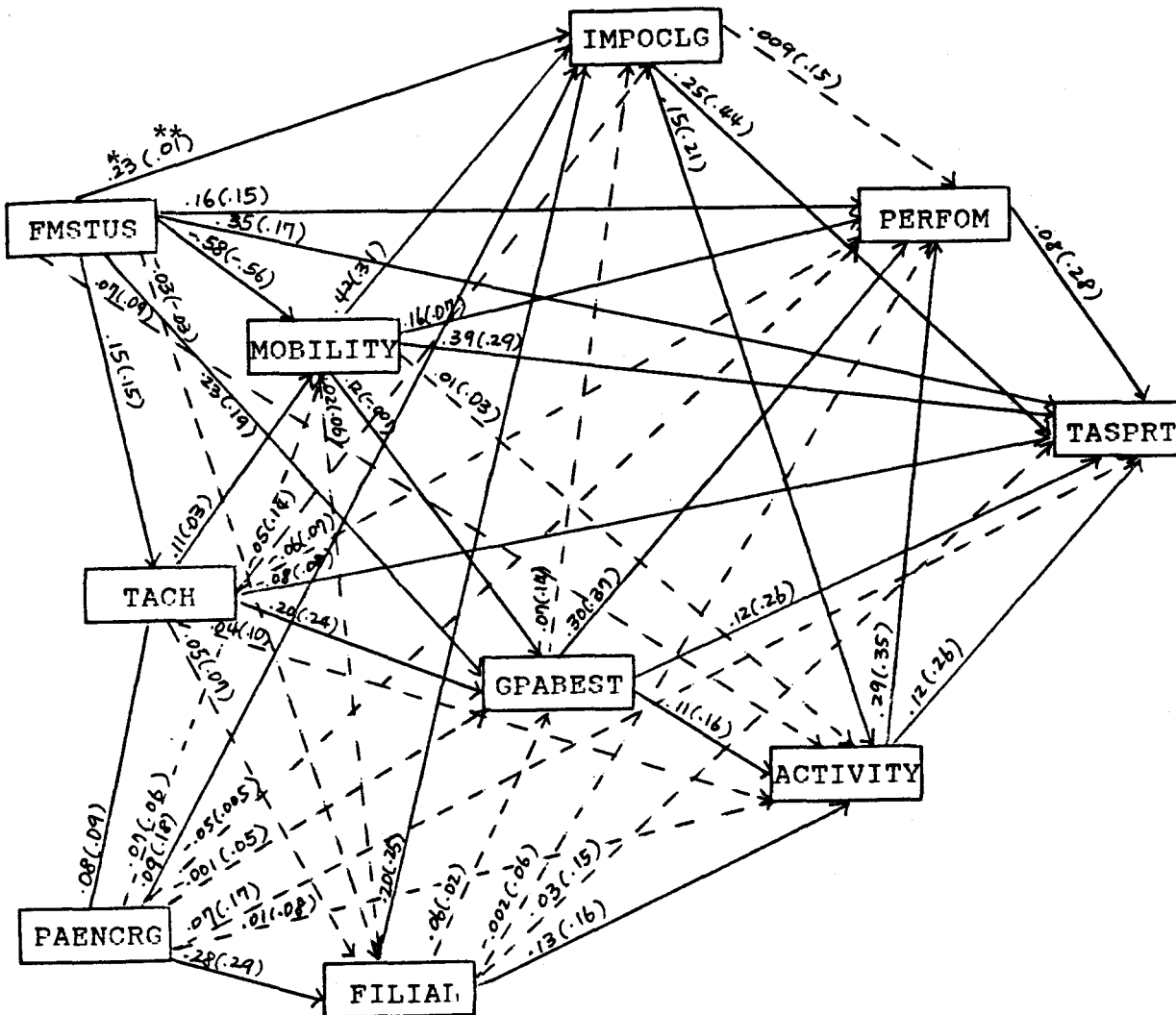
a basis for deciding whether or not the size of a direct effect (a path coefficient) of a certain variable is meaningful. Using statistical significance as a criterion has a problem in that small path coefficients may be found significant when the analysis is based on large samples. Another approach, recommended by Land (1969) is that path coefficients less than .05 may be treated as not meaningful. What may be considered meaningful by one researcher may be considered not meaningful by another researcher. In the present study, path coefficients greater than or equal to .08 are considered meaningful or appreciable, following Bachman and O'Malley (1986).

Figure 4 is based on a series of eight regressions:

1. Achievement motivation (TACH) was regressed on family status (FMSTUS) and parents' encouragements (PAENCRG);
2. Upward mobility (MOBILITY) was regressed on family status, parents' encouragements, and achievement motivation;
3. Filial duty beliefs (FILIAL) on FMSTUS, PAENCRG, TACH, and MOBILITY.

Similarly, each of the following variables: academic performance potential belief (GPABEST), importance of college perception (IMPOCLG), extra-curricular activities (ACTIVITY), present school performance (PERFOM), and total academic aspirations (TASPRTN), was regressed on the variables that preceded it. With the resulting path model, it is possible to examine the hypotheses about predictors of academic aspiration as described below.

Figure 4
An Initial Model of Academic Aspiration



———→ path with coefficient value ≥ .08
 - - - → path with coefficient value < .08
 * path coefficient
 ** zero order correlation coefficient

Hypothesis 1-A: Family status

One's family status was predicted to have a significant direct impact on his/her total aspiration, when controlling for the other eight predictor variables in the path model for aspiration. Family status was also predicted to indirectly affect academic aspiration via mobility desire.

According to the hypothesis, one should find a path coefficient value greater than or equal to .08 for the link from FMSTUS to TASPRTN. In the present results, the value is .35 (see Figure 4), and therefore, the first part of the hypothesis is confirmed. A person's family status has a substantial impact on its own on his/her academic aspiration.

The second part of the hypothesis dealt with the indirect effect of family status on aspirations operating through mobility desire. In order to figure indirect effects of family status, the sum of products of the coefficients on the paths leading from family status to the dependent variable (aspiration) via the particular mediator of interest (in this case, mobility) is needed. It should be noted that when a path model consists of as many variables as in the present model, the calculation of indirect effects of a variable becomes extremely complicated because it involves so many links. Thus, in order to simplify the calculation of indirect effects, a

new figure was constructed (Figure 5) by deleting the links from Figure 4 which have path coefficient values less than .08.

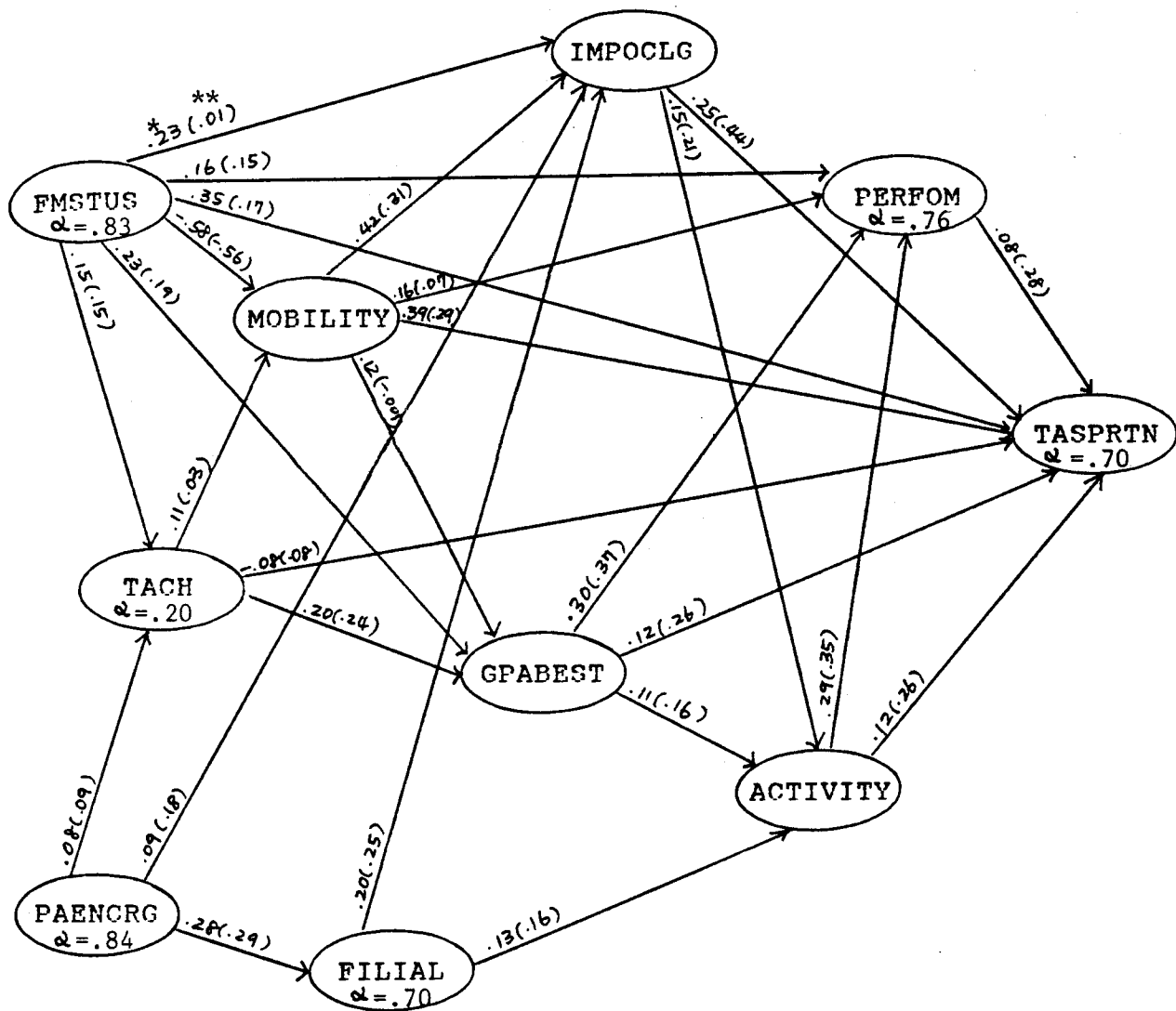
According to Figure 5, the indirect effect of family status via mobility on aspiration can be obtained by following calculation: $(-.58 \times .39) + (.15 \times .11 \times .39) + (.15 \times .11 \times .42 \times .25) + (.15 \times .11 \times .42 \times .15 \times .12) + (.15 \times .11 \times .42 \times .15 \times .29 \times .08) + (.15 \times .11 \times .12 \times .12) + (.15 \times .11 \times .12 \times .11 \times .12) + (.15 \times .11 \times .12 \times .30 \times .08) + (.15 \times .11 \times .12 \times .11 \times .29 \times .08) + (.15 \times .11 \times .16 \times .08) + (-.58 \times .16 \times .08) + (-.58 \times .42 \times .25) + (-.58 \times .42 \times .15 \times .12) + (-.58 \times .42 \times .15 \times .29 \times .08) = -.2211$. The result shows a substantial, negative, indirect effect of family status on aspirations operating via mobility desire. These results yield support for the hypothesis 1-A. One's family status has strong direct and indirect effects on aspiration and its indirect effect via mobility is negative, due to the high negative correlation between family status and mobility desire.

Hypothesis 1-B: Parents' encouragements

It has been predicted that the direct effect of parents' encouragement and its indirect effect via the belief in the importance of college on academic aspirations would be appreciable. However, the direct effect of parents' encouragement on aspirations as represented by a path coefficient value of .07 in Figure 4 is not large

Figure 5

A Reduced Model of Academic Aspiration



→ path with coefficient value $\geq .08$

* path coefficient

** zero order correlation coefficient

α : reliability coefficient

enough to support the first part of the hypothesis. The zero order correlation between the two variables ($r=.17$) minus the direct effect stands for the total indirect effects of parents' encouragement on aspirations ($.17 - .07 = .10$). In this case, parents' encouragement affects students' aspirations slightly more indirectly than they do directly.

In order to test the second part of the hypothesis, the indirect effect of parents' encouragement on aspirations operating through the importance of college belief was calculated as $(.08 \times .11 \times .42 \times .25) + (.08 \times .11 \times .42 \times .15 \times .29 \times .08) + (.08 \times .11 \times .42 \times .15 \times .12) + (.09 \times .25) + (.09 \times .15 \times .29 \times .08) + (.09 \times .15 \times .12) + (.28 \times .20 \times .25) + (.28 \times .20 \times .15 \times .29 \times .08) + (.28 \times .20 \times .15 \times .12) = .039$. These results do not support the hypothesis. Although parents' encouragements have an appreciable total indirect effect on aspirations, neither its direct effect nor indirect effect via the importance of college belief is large enough to be meaningful.

Hypothesis 1-C: Upward mobility

It has been predicted that the direct impact of the upward mobility desire on total academic aspiration will be greater than direct effects of any of the following variables: family status (FMSTUS), parents' encouragements (PAENCRG), achievement motivation (TACH), filial duty

belief (FILIAL), academic performance potential belief (GPABEST), importance of a college education (IMPOCLG), extra curricular activities (ACTIVITY), and the actual school performance (PERFOM). It is also predicted that mobility desire will have an appreciable indirect effect on aspirations operating via the perception of the importance of college.

In order to test this hypothesis, the total aspiration (TASPRTN) was regressed on the nine predictor variables and path coefficients were compared (see Figure 5). MOBILITY had a beta weight of .39, which was greater than that of any other variable in the model. Therefore, the first part of the hypothesis 1-C was supported. Next to the MOBILITY factor, the family status factor had the highest path coefficient value, followed by the perceived importance of college as the third. It seems that a person's upward mobility desire had the most direct influence on his/her academic aspiration in the present results.

The indirect effect of mobility on aspiration via the perception of the importance of college was obtained by the following calculation: $\{(.42 \times .25) + (.42 \times .15 \times .12) + (.42 \times .15 \times .29 \times .08)\} = .11$. These results yielded support for the hypothesis that mobility desire has a strong direct effect on aspirations as well as an appreciable indirect effect operating through the

perception of the importance of college.

Hypothesis 1-D: Academic performance potential belief

The belief in the potential for academic performance (GPABEST) was predicted to have a significant direct effect as well as a significant indirect effect via present school performance on aspirations. According to Figure 5, the path linking GPABEST to TASPRTN has a path coefficient value of .12. Based on the criterion for meaningfulness employed in the present study, this finding yields support for the hypothesis that a student's belief in his/her performance potential has significant impact of its own on his/her academic aspirations. However, when the path coefficient was compared to the zero-order correlation coefficient of .26, it is revealed that the performance potential belief, like parents' encouragements, is more likely to influence total academic aspiration indirectly ($.26 - .12 = .14$) than directly (.12), even though the difference is rather small.

By multiplying the path coefficient for the link between GPABEST and PERFOM and that for the link between PERFOM and TASPRTN and adding the result to the value obtained by multiplying the path coefficients for the link between GPABEST and ACTIVITY, for the link between ACTIVITY and PERFOM, and for the link between PERFOM and TASPRTN, $(.30 \times .08) + (.11 \times .29 \times .08) = .027$, the indirect effect of the belief in academic potential on total aspirations

operating through present school performance was obtained. This value of .027 is not large enough to support the second half of the hypothesis. It seems that the indirect effect of the academic performance potential belief on total aspirations via present school performance is rather small.

Hypothesis 1-E: Extra-curricular activities

The first half of the hypothesis concerns a non-significant direct effect of a student's involvement in extra-curricular activities (ACTIVITY) on his/her total academic aspiration (TASPRTN) and the second half of the hypothesis regards the relative impacts of the indirect effect of ACTIVITY on TASPRTN through present school performance and the direct effect of ACTIVITY on TASPRTN.

First, the direct effect, according to the Figure 5, was found to be significant (path coefficient = .12). Second, the indirect effect was obtained by multiplying the path coefficients .29 and .08, resulting a non-meaningful value of .0232. The results do not yield support for the hypothesis. The number of extra-curricular activities has an impact of its own on academic aspiration but its indirect effect operating via PERFOM is quite trivial.

Hypothesis 1-F: Achievement motivation

It was hypothesized that an adolescent's achievement motivation would have significant, positive, and direct impacts on his/her total academic aspiration. According to

the results, the direct impact of achievement motive on aspirations is negative (-.08), which was unexpected. Thus, the hypothesis is not supported even though the size of the effect is appreciable. By comparing the negative direct effect to the zero order correlation of .08, it seems that the negative direct effect of achievement motivation is over-ridden somewhat by its positive indirect effect $\{.08 - (-.08) = .16\}$. These results show that achievement motivation influences the level of academic aspiration more indirectly than it does directly.

Hypothesis 1-G: Filial duty belief

A student's beliefs in filial duty were predicted to have a significant direct effect on his/her total aspiration. Based on the regression of TASPRTN on the nine variables in Figure 4, it was found that the FILIAL factor had a very small direct effect on total aspirations (path coefficient value of .03). This result does not yield support for the hypothesis. Although the zero order correlation between the filial duty belief and total aspiration is .15, it seems that most of the impact that the filial duty belief has on total aspiration occurs indirectly $(.15 - .03 = .12)$.

Comments on the Initial and Final Causal Models of Aspiration

So far hypotheses concerning direct and indirect effects of various predictor variables for academic

aspirations have been discussed. In the last regression performed for the causal model of academic aspirations (Figure 5), five out of the nine predictor variables had significant R square changes. Those variables were the perception of the importance of college, present school performance, mobility desire, family status, and extra-curricular activities, accounting together for 36% of the variance in the total aspiration ($\underline{MR}=.60185$, $\underline{F}=23.85$, $p < .0001$). Entering the remaining four variables (parents' encouragements, achievement motivation, filial duty beliefs, and academic potential beliefs) along with those five significant variables in a regression resulted in the $\underline{MR}=.61891$ (\underline{R} square =.38304). With these results, it can be concluded that the present hypothetical model of academic aspiration (Figures 4 and 5) explains approximately 38% of the variance in predicting the total aspiration. Among the nine variables, the perception of the importance of college was found to be the best predictor of academic aspiration, accounting for 20% of the variance alone.

Since the present research involved many variables that were not necessarily included in the hypothetical causal model (Figure 2) for academic aspirations, it was of interest to see what other variables might have some predictive power for the dependent variable. Thus, a series of path analyses were employed to further examine

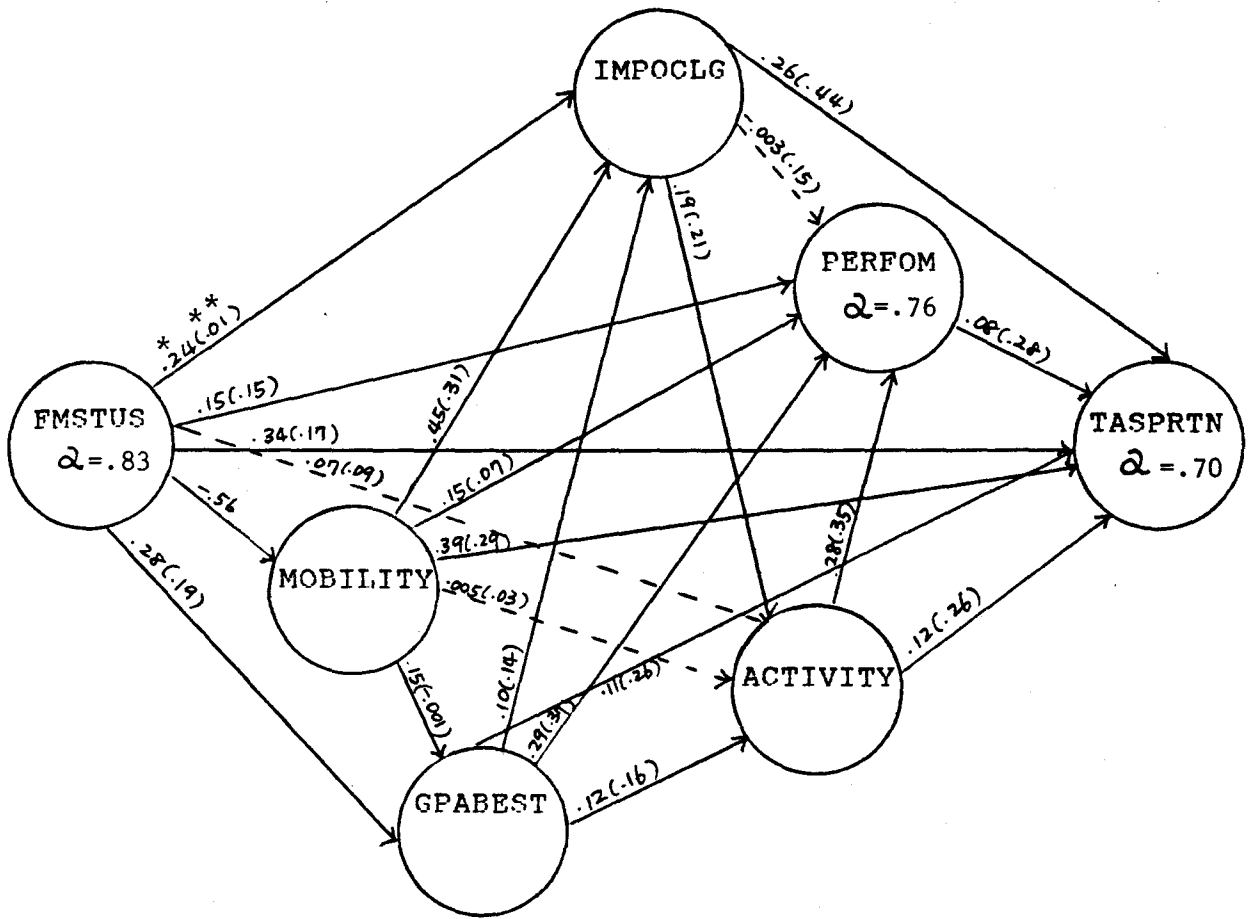
the impact of the variables which have not been initially included in the hypothetical causal model. For the prediction of total aspirations, however, none of the other variables had significant predictive power. The next step was then to simplify the hypothetical causal model (Figures 4 and 5) in order to develop a more efficient causal model, one which has a fewer number of variables and still has a predictive power close to that of the hypothetical model. The final model of academic aspirations (Figure 6) was hence developed by removing three variables from the original model. The variables which did not contribute any significant R-square increase (i.e., parents' encouragement, achievement motivation, and beliefs in filial duty) were removed. The remaining six predictor variables accounted for 37% of the variance ($MR = .6096$) in the dependent variable.

PART 2: SCHOOL PERFORMANCE as the Dependent Variable

In this section, relationships of the dependent measures of school performance with the predictor variables will be examined first, and then discussions of the results of path analyses performed in order to test hypotheses regarding the impact of the predictor variables will follow. According to the Pearson product moment correlation coefficients as shown in Table 4, the total performance index has significant positive relationships with family status ($r=.15$), beliefs in the potential for

Figure 6

A Final Model of Academic Aspiration



MR = .6096
 α : reliability coefficient
 * path coefficient
 ** zero order correlation coefficient
 ———→ path with coefficient value $\geq .08$
 - - - → path with coefficient value $< .08$

Table 4

Correlation Matrix for Academic Performance

	PERFOM	GPA	TAP	MATH	ENGLISH
	* **				
FMSTUS	.15(.007)	.10(.067)	.25(.000)	.15(.010)	.20(.001)
PAOCCP	.16(.012)	.11(.077)	.24(.000)	.17(.009)	.19(.003)
PAEDLVL	.11(.051)	.07(.237)	.22(.000)	.13(.031)	.17(.004)
FAOCCP	.19(.004)	.15(.024)	.26(.000)	.22(.002)	.20(.004)
MOOCCP	.09(.234)	.03(.726)	.21(.014)	.09(.283)	.20(.014)
FAEDLVL	.12(.045)	.07(.214)	.22(.000)	.16(.012)	.16(.009)
MOEDLVL	.10(.093)	.06(.285)	.19(.002)	.09(.124)	.18(.004)
TACH	.07(.179)	.04(.410)	.11(.054)	.07(.223)	.09(.119)
FILIAL	.06(.291)	.07(.196)	-.07(.267)	.02(.668)	-.02(.751)
DTRMTN	.26(.000)	.13(.016)	.38(.000)	.22(.000)	.38(.000)
ATTRIB	.06(.261)	.05(.327)	.12(.048)	.01(.804)	.15(.010)
GPABEST	.37(.000)	.40(.000)	.31(.000)	.28(.000)	.25(.000)
TASPRTN	.28(.000)	.28(.000)	.22(.000)	.22(.000)	.21(.000)
ASPRTN	.23(.000)	.21(.000)	.23(.000)	.19(.001)	.22(.000)
EXPCTN	.25(.000)	.27(.000)	.15(.011)	.19(.001)	.13(.023)
ACAACT	.40(.000)	.43(.000)	.31(.000)	.31(.000)	.25(.000)
FAMSIZE	-.14(.017)	-.09(.133)	-.20(.001)	-.11(.074)	-.21(.001)
TALO	-.20(.000)	-.14(.009)	-.31(.000)	-.14(.017)	-.31(.000)

* correlation coefficient

** significance level

academic performance ($r=.37$), total aspirations ($r=.28$), and academic extra-curricular activities ($r=.40$). However, correlations of the total performance index with achievement motivation, beliefs in filial duty, and the attributional index for the internality are not significant.

The total performance index shows significant negative relationships with family size ($-.14$) and with the perception of limited opportunity ($-.20$). These findings suggest that students who come from a large family and who believe that their opportunities are highly limited are less likely to do well in school, when compared to those who are from a small family and who do not perceive their opportunities to be highly limited.

Since the total performance index was developed based on three different performance scores (grade point average, the math on the Tests of Achievement and Proficiency (TAP), and the English on TAP), it was of interest to see how each of these separate performance measures was related to the predictor variables. It is interesting to note that some of the predictors (e.g., family status, achievement motivation, determination, family size, and the limited opportunity perception) are more strongly related to TAP than to the GPA, whereas others (e.g., academic potential beliefs, total aspirations, and academic extra-curricular activities) are more strongly related to the GPA than to

TAP.

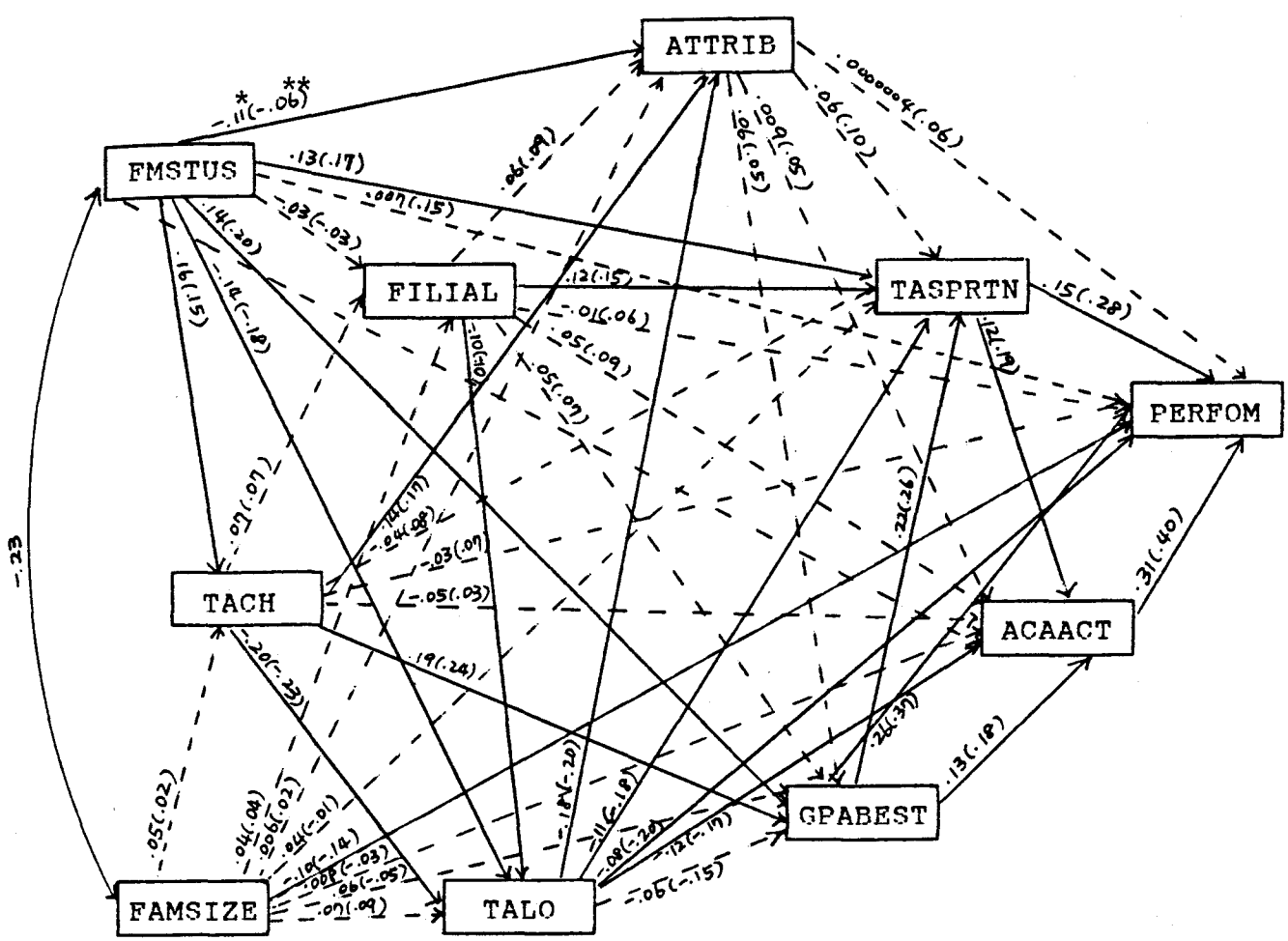
Academic aspiration has a slightly higher correlation with TAP ($r=.23$) than with GPA ($r=.21$), whereas the more realistic dimension of academic expectation has a higher correlation with GPA (.27) than with TAP (.15). Also, aspiration is more highly related to ENGLISH (.22) than to MATH (.19), whereas expectation is more highly related to MATH (.19) than to ENGLISH (.13). Before proceeding with the discussion of the hypotheses on predictors of academic achievement, the reader should be reminded that as with aspirations, a path model for performance was created from a series of regression analyses (see Figure 7) and that this initial model was reduced for simplicity by deleting non-significant paths (see Figure 8).

Hypothesis 2-A: Family status

It was predicted that there would be no appreciable direct effect of family status (FMSTUS) on school performance (PERFOM), and the indirect effect of family status on performance will be greater than the direct effect of FMSTUS on PERFOM. According to the Figure 8, based on eight regression analyses, family status (FMSTUS) has a path coefficient of .007, suggesting a non-appreciable direct effect of family status on the total performance index. Simply by subtracting .007 from the zero order correlation coefficient value of .15, one gets the idea that family status affects the total performance

Figure 7

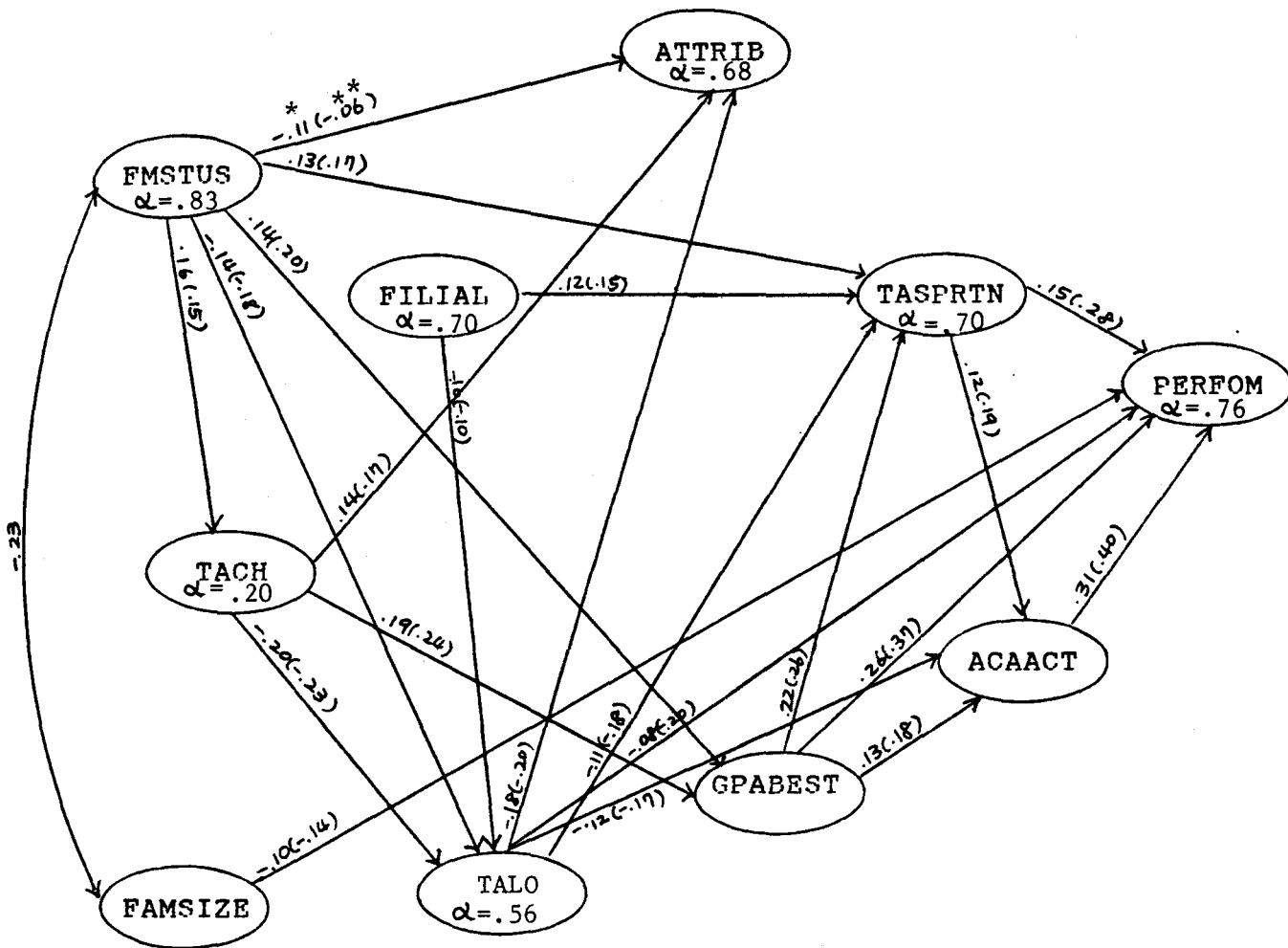
An Initial Model of Academic Performance



—————> path with coefficient value ≥ .08
 - - - - -> path with coefficient value < .08
 * path coefficient
 ** zero order correlation coefficient

Figure 8

A Reduced Model of Academic Performance



→ path with coefficient value $\geq .08$

* path coefficient

** zero order correlation coefficient

α : reliability coefficient

indirectly ($.15 - .007 = .143$) rather than directly. These results yield support for the hypothesis. Family status does not have an appreciable direct impact on performance and its indirect effect on performance is substantially greater than its direct effect.

Hypothesis 2-B: Achievement motivation

It had been hypothesized that one's achievement motivation would have a significant direct impact on his/her school performance. In the regression of the total performance index on the nine predictor variables in Figure 7, the direct effect of achievement motivation (TACH) on performance (PERFOM) is found to be slightly negative (path coefficient = $-.028$). This result does not yield support for the hypothesis. This slightly negative direct effect is somewhat overshadowed by the indirect effect, resulting in a total effect of $.07$ (zero order correlation), although the effect size is still small. An adolescent's achievement motivation affects his/her academic performance slightly more indirectly ($.07 - (-.028) = .098$) than directly.

Hypothesis 2-C: Filial duty beliefs

One's belief in filial duty was predicted to have no significant direct effect on his/her school performance. The direct effect of filial duty beliefs on performance is essentially zero according to Figure 7 (path coefficient = $-.01$), and thus the hypothesis is supported. According to

the results, whether a student believes that he/she has to do well in school for the sake of his/her family does not directly influence his/her actual school performance. Also, an examination of the total effect (.06) suggests that filial duty beliefs do not have an appreciable indirect impact on school performance $\{.06 - (-.01) = .07\}$.

Hypothesis 2-D: Limited opportunity beliefs

It has been hypothesized that the beliefs in limited opportunities will have a significant, negative, and direct effect on the total performance measure (PERFOM). The awareness of limited opportunity has also been predicted to influence performance indirectly through its impact on aspirations. Figure 8 reveals that the belief in limited opportunities has a path coefficient of $-.08$ based on a regression of PERFOM on the nine predictor variables. This result supports the first half of the hypothesis. However, when comparing the size of the direct effect to the size of the zero-order correlation coefficient of $-.20$, it seems that the belief in limited opportunity influences performance somewhat more indirectly $\{-.20 - (-.08) = -.12\}$ than it does directly.

In order to test the second part of the hypothesis, at least three regression analyses were necessary: First, regression of total aspirations on all the variables preceding it; second, regression of ACAACT on all the variables preceding it; third, regression of performance on

all the nine predictors in the system. The indirect effect of the perception of limited opportunity (TALO) via total aspirations (TASPRTN) on performance (PERFOM) was obtained by a calculation as follows: $(-.11 \times .12 \times .31) + (-.11 \times .15) = -.021$. This result does not yield support for the second half of the hypothesis. One's perception of limited opportunity influences his/her level of academic performance directly but it does not have an appreciable indirect effect on school performance operating through his/her academic aspirations.

Hypothesis 2-E: Internal tendency

One's general attributional tendency was predicted to have a direct effect on his/her school performance. From Figure 7, the internal tendency factor (ATTRIB) was found to have a very negligible impact on school performance (path coefficient = .0000004), a result which does not support the hypothesis. It seems that one's attribution tendency as measured by the Intellectual Achievement Responsibility scale and by the personal and general ideological control beliefs scales does not have any significant direct or indirect effect on one's academic performance.

Hypothesis 2-F: Performance potential beliefs

The direct effect of the belief in academic performance potential (GPABEST) on the actual performance was predicted to be significant. Also, it was hypothesized

that the academic potential belief would have an appreciable indirect effect on school performance operating through academic aspirations.

The first part of the hypothesis is supported by the results of a regression of PERFOM on the nine predictor variables in Figure 8. GPABEST has a path coefficient value of .26 for PERFOM, which suggests that the variable has a fairly strong influence on the performance measure on its own. A student's belief regarding his/her potential for academic performance seems to be a good predictor for his/her actual school performance.

The indirect effect of performance potential on school achievement via aspirations was obtained by adding two multiplications: a multiplication of path coefficients for the links between GPABEST and TASPRTN and between TASPRTN and PERFOM plus a multiplication of path coefficients for the links between GPABEST and TASPRTN, between TASPRTN and ACAACT, and between ACAACT and PERFOM: $(.22 \times .15) + (.22 \times .12 \times .31) = .04118$. This result does not support the second part of the hypothesis. An examination of the zero order correlation and the path coefficient of the performance potential belief (GPABEST) for the actual performance (PERFOM) reveals that GPABEST affects PERFOM more directly than indirectly. Even though there seems to be some indirect effects of academic performance potential on actual school performance, its

indirect effect via total academic aspiration is not meaningful.

Hypothesis 2-G: Academic activities

The direct effect of academic extracurricular activities (ACAAC) on total academic performance (PERFOM) was hypothesized to be significant. A path coefficient of .31 in Figure 8 suggests a fairly strong influence of ACAAC on its own for PERFOM, thus supporting the hypothesis. In fact, the results of path analyses show that academic extra-curricular activities is the best predictor of the academic performance, accounting for 16% of the variance alone ($F=56.75$, $p < .00001$).

Hypothesis 2-H: Family size

It has been hypothesized that family size will not directly affect total academic performance. The path coefficient value of $-.10$ (see Figure 7) represents that family size does have an appreciable direct effect on students' school performance. When this direct effect size was compared to the zero-order correlation coefficient value of $-.14$, it is evident family size affects school performance operates directly rather than indirectly ($-.14 - (-.10) = -.04$). These findings do not support the hypothesis 2-H.

Hypothesis 2-I: Aspirations

The direct effect of aspirations on school performance was predicted to be significant. The path coefficient

value of .15 in Figure 7 supports the hypothesis that one's aspiration affects his/her academic performance directly.

Comments on the Initial and Final Causal Models of Performance

The present hypothetical causal model for school performance (Figures 7 and 8) accounts for 29% of the variance in the prediction of academic performance. Among the nine predictor variables, one's involvement with academic extra-curricular activities, belief in school performance potential, total academic aspirations, and family size were entered at the pin level of .050, together accounting for 28% of the variance. Adding the remaining five variables (attributional index of the internality, beliefs in filial duty, achievement motivation, beliefs in limited opportunities, and family status) did not increase the variance explained significantly and resulted in the total 29% of the variance accounted for ($MR = .5339$).

Since the ideal causal model would have fewer variables which can account for as much variance as a model with more variables, efforts were taken in order to develop a more simplified and efficient causal model. The variables which were not initially included in the hypothetical model for academic performance (Figures 7 and 8) were, therefore, examined in a series of path analyses.

Unlike for the causal model of academic aspirations, there were other variables which had been left out in

aspiration affects his/her academic performance directly.

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Unlike for the causal model of academic aspirations, there were other variables which had been left out in previous regressions and later found to increase

previous regressions and later found to increase significant R-squares in the prediction of school performance. As can be seen in Figure 9, the final causal model for school performance consists only six predictor variables together which account more variance (MR = .6298) than all of nine variables in the hypothetical model could account for (MR = .5339). Thus, Figure 9 is a more efficient model than Figure 5 (or 7) is.

It was noticeable that when students' ethnicity was entered in the regression analysis as dummy-coded variables (see Cohen & Cohen, 1975 for details on the procedure), Asian and Caucasian ethnic variables were found to have significant predictive power for school performance. These two ethnic groups had been found to have higher performance scores than Blacks and Hispanics. Also, among different attributional indices, it was the attributional index for determination (DTRMTN in Figure 9) that had a significant predictive power. When these three new variables were entered in the regression, family status, family size, achievement motivation, the limited opportunity perception, and the attributional index for internality did not account for any significant amount of variance, and thus were left out of the final model.

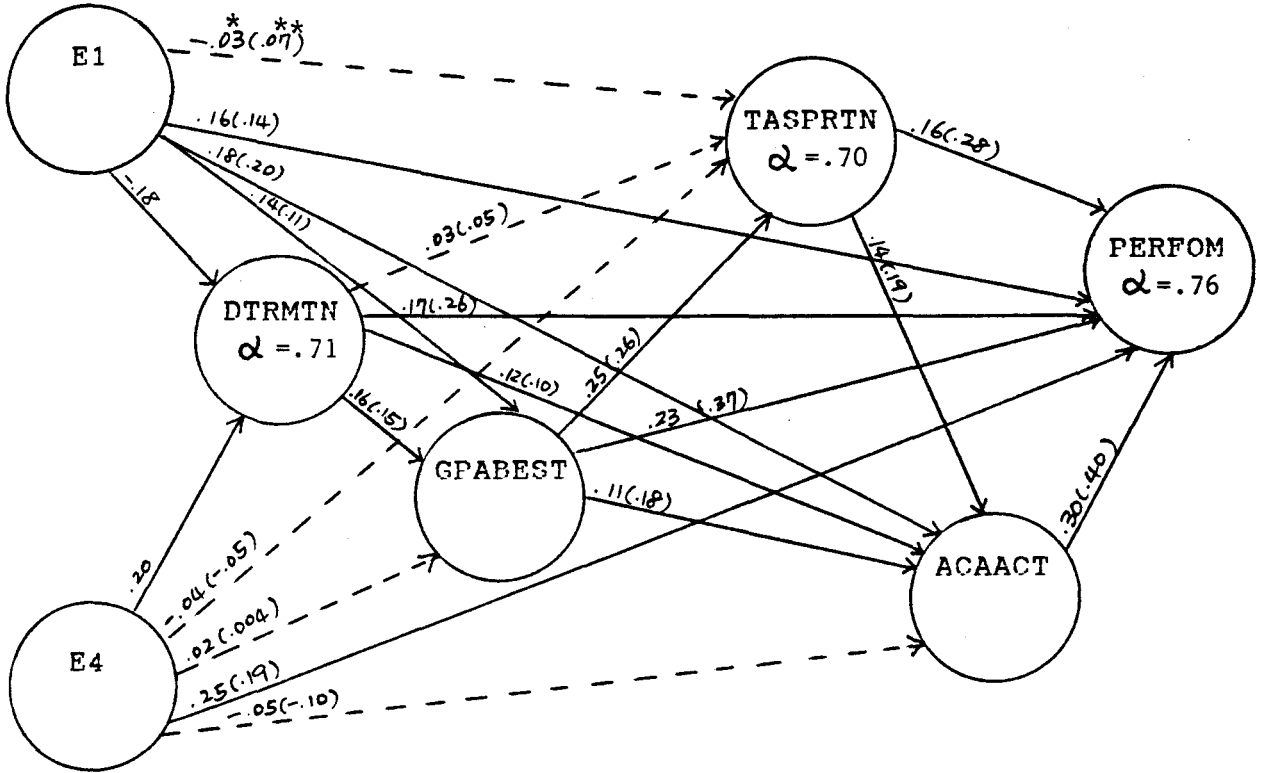
PART 3: RELATED HYPOTHESES

Hypothesis 3-A: Partial correlations between parents' encouragement and aspirations

It had been predicted that parents' encouragement and

Figure 9

A Final Model of Academic Performance



MR = .6298

E1: Asians versus others

E4: Whites versus others

α : reliability coefficient

* path coefficient

** zero order correlation coefficient

————→ path with coefficient value $\geq .08$

- - - - -> path with coefficient value $< .08$

students' educational aspiration would be positively related, when controlling for parents' educational level. As shown in Table 5, parents encouragement is positively related to the total aspiration ($r=.17$), aspiration (.12), and expectation (.17). When the effects of sex, ethnicity, and parents' education were removed using a partial correlation, the correlation coefficients did not decrease, thus supporting the hypothesis. In general, it seems that father's encouragement (see Table 5) is slightly more influential ($r=.19$) than mother's encouragement ($r=.12$) for the realistic academic career orientation (expectation). But for the idealistic academic career orientation (aspiration), mother's encouragement and father's encouragement had similar influences.

Hypothesis 3-B: Partial correlations between parents' education and aspirations

Parents' educational levels and students' educational aspirations were predicted to be positively related when the effects of sex, ethnicity, and parents' occupations were removed. The zero-order correlations of parents' educational level with the total aspiration, aspiration, and expectation are .17, .14, and .16 respectively (see Table 6). Controlling for sex and ethnicity did not change the coefficients much but when the effects of parents' occupation were removed, the coefficients decreased to .12, .12, and .11. These results indicate that when partialling

Table 5

Zero-order and Partial Correlations:
Parents' Encouragements and Children's Aspiration

	ZERO ORDER	CONTROL SEX	CONTROL ETHNICITY	CONTROL EDUCATN
BOTH PARENTS				
	* **			
TASPRTN	.17(.001)	.17(.001)	.17(.001)	.17(.003)
ASPRTN	.12(.023)	.12(.021)	.12(.023)	.11(.042)
EXPCTN	.17(.001)	.17(.001)	.17(.002)	.17(.003)
FATHER'S				
TASPRTN	.18(.001)	.18(.001)	.17(.001)	.16(.006)
ASPRTN	.10(.060)	.10(.059)	.10(.056)	.08(.143)
EXPCTN	.19(.000)	.19(.000)	.19(.001)	.18(.002)
MOTHER'S				
TASPRTN	.15(.004)	.15(.004)	.15(.004)	.15(.008)
ASPRTN	.13(.017)	.13(.013)	.13(.018)	.12(.026)
EXPCTN	.12(.019)	.13(.019)	.13(.018)	.12(.029)

Note: TASPRTN: academic aspiration and expectation combined
 ASPRTN: academic aspirations
 EXPCTN: academic expectations
 * correlation coefficient
 ** significance level

Table 6

Zero-order and Partial Correlations:
Parents' Education and Children's Aspiration

	ZERO ORDER	CONTROL SEX	CONTROL ETHNICITY	CONTROL OCCUPATN
BOTH PARENTS				
	* **			
TASPRTN	.17(.002)	.17(.002)	.17(.002)	.12(.046)
ASPRTN	.14(.013)	.13(.017)	.14(.012)	.12(.055)
EXPCTN	.16(.004)	.16(.004)	.16(.004)	.11(.077)
FATHER'S				
TASPRTN	.17(.002)	.17(.003)	.17(.003)	.12(.079)
ASPRTN	.15(.008)	.15(.010)	.15(.007)	.12(.078)
EXPCTN	.15(.008)	.15(.008)	.15(.009)	.10(.129)
MOTHER'S				
TASPRTN	.15(.009)	.14(.010)	.15(.009)	.14(.062)
ASPRTN	.12(.036)	.12(.044)	.12(.035)	.14(.066)
EXPCTN	.15(.008)	.15(.008)	.15(.009)	.14(.068)

Note: TASPRTN: academic aspiration and expectation combined
 ASPRTN: academic aspiration
 EXPCTN: academic expectation
 * correlation coefficient
 ** significance

out the effects of parents' occupation, two of three correlations became non-significant. The correlation between total aspirations and parents' education, with parents' occupation controlled, is still significant and, therefore, supports the hypothesis at least partially. The results also reveal that parents' occupation is highly related to parents' education ($r=.58$) and also consistently related to students' aspiration ($r=.14$) and expectation ($r=.16$). By removing the effects of parents' occupation, some of the artifactual relationships of parents' education with students' aspiration and expectation has been removed. The effects of controlling for father's occupation on its correlations with aspirations were slightly greater than the effects of controlling for mother's education on its correlations with aspirational measures (see Table 6).

Hypothesis 3-C: Partial correlations between parents' occupation and aspirations

It has been predicted that there will be no significant relationship between parents' occupations and students' aspiration when controlling for parents' educational levels. Table 7 lists correlation coefficients of parents' occupation with the total aspiration, aspiration, and expectation. Controlling for sex and ethnicity did not change the correlations much, but when the effects of parents' education were partialled out, the correlation coefficients decreased from .12 to .03 for the

Table 7

Zero-order and Partial Correlations:
Parents' Occupation and Children's Aspiration

	ZERO ORDER	CONTROL SEX	CONTROL ETHNICITY	CONTROL EDUCATN
BOTH PARENTS				
	* **			
TASPRTN	.12(.045)	.12(.047)	.12(.047)	.03(.642)
ASPRTN	.07(.244)	.07(.254)	.07(.237)	-.01(.860)
EXPCTN	.13(.040)	.13(.041)	.12(.045)	.04(.514)
FATHER'S				
TASPRTN	.14(.033)	.14(.038)	.14(.037)	.05(.471)
ASPRTN	.10(.130)	.09(.151)	.10(.120)	.01(.828)
EXPCTN	.13(.055)	.13(.056)	.12(.069)	.05(.479)
MOTHER'S				
TASPRTN	.05(.495)	.05(.515)	.05(.479)	-.05(.550)
ASPRTN	.006(.936)	.002(.975)	.004(.954)	-.08(.292)
EXPCTN	.06(.418)	.06(.420)	.07(.378)	-.04(.645)

Note: TASPRTN: academic aspiration and expectation combined
 ASPRTN: academic aspiration
 EXPCTN: academic expectation
 * correlation coefficient
 ** significance

total aspiration, from .07 to -.01 for aspirations, and from .13 to .04 for expectations. These results support the hypothesis that when controlling for sex, ethnicity, and, especially, parents' education, there is no significant correlation between parents' occupation and students' aspiration measures.

It seems that parents' occupation level makes very little independent contribution to the dependent variables. The same type of reductions resulted for the relationships of father's occupation with students' aspiration and expectation, when controlling for father's education (see Table 7). For the relationships of mother's occupation with students' aspiration and expectation, even zero-order correlations were non-significant and when mother's education was partialled out, the correlations became slightly negative (see Table 7).

Hypothesis 3-D: Partial correlations of parents' encouragements with filial duty beliefs

Parents' encouragement and students' beliefs in filial duty were predicted to be positively related, when the effects of sex and ethnicity are removed. The results of a partial correlation is reported in Table 8. All three correlations of the filial duty belief with parents' encouragement, father's encouragement, and mother's encouragement remained significant when sex and ethnicity were controlled, thus lending support for the hypothesis.

Table 8

Correlations between Parents' Encouragements
and Children's Filial Duty Belief

	ZERO ORDER	CONTROL SEX	CONTROL ETHNICITY	CONTROL BOTH
	* **			
PAENCRG	.29 (.000)	.29 (.000)	.28 (.000)	.28 (.000)
FAENCRG	.26 (.000)	.26 (.000)	.26 (.000)	.26 (.000)
MOENCRG	.24 (.000)	.24 (.000)	.24 (.000)	.24 (.000)

Note: PAENCRG: father and mother's encouragements combined
 FAENCRG: father's encouragements
 MOENCRG: mother's encouragements
 * correlation coefficient
 ** significance

Generally, results indicate that the degree of parents' encouragement for children's education is positively related to children's feelings that their school achievement is important to their parents and that they owe it to their family to do well in school.

Hypothesis 3-E: Interaction between aspiration and internality

The relationship between aspiration and expectation was predicted to be greater for internals than for externals, due to the expected interaction effect between aspiration and attribution on the prediction of the expectation. It should be remembered that there were five scores on the internality factor based on three attribution scales: the total scale score on the Intellectual Achievement Responsibility (TIAR), the total scale score on control beliefs (TCNTRL), the subscale score on person control beliefs, the subscale score on ideological beliefs, and the composite score for TIAR and TCNTRL standardized and combined (ATTRIB).

In order to test this hypothesis, a series of multiple regression analyses were performed. First, for the interaction effect of ATTRIB and ASPRTN on EXPCTN, EXPCTN was regressed on ATTRIB and ASPRTN; then, EXPCTN was regressed on ATTRIB, ASPRTN, and a multiplicative term of ATTRIB * ASPRTN. Whether the addition of the multiplicative term in the regression significantly

increased the size of R square was examined. The same procedure was employed with TCNTRL, PCNTRL, IDCNTRL, and TIAR. The results show that none of the interaction terms were significant in accounting for variance in academic expectation, thus the hypothesis was not accepted. It seems that, contrary to the author's prediction, the internality factor does not mediate the relationship between aspiration and expectation.

Hypothesis 3-F: Interaction effects between limited opportunity perception and aspiration

The perception of limited opportunity was predicted to interact with aspiration to affect expectation. That is, the relationship between aspiration and expectation was predicted to be greater for those with low awareness of limited opportunity than for those with high awareness of limited opportunity, due to a possible interaction between the limited opportunity perception and aspiration on the prediction of expectations.

The test of this hypothesis was performed by employing multiple regression analyses. First, expectation was regressed on aspiration (ASPRTN) and the perception of limited opportunity (TALO); second, expectation was regressed on aspiration, limited opportunity perception, and the multiplicative term of ASPRTN * TALO, and then the increase in R square that is due to the addition of the multiplicative term was examined.

As shown in Table 9, the interaction term resulted in a significant increase in R square. Once the interaction between aspiration and the perception of limited opportunities was found significant in the prediction of expectation, the next step was to examine the nature of the interaction. First, cases were dichotomized into high TALO and low TALO groups using a median split so that two groups would have approximately same percentage of cases. Next, separate regression equations were obtained for the high TALO and low TALO groups employing two multiple regression analyses. For the low TALO group, the equation was $Y_1 = 1.3306 + .58363X$. For the high TALO group, the equation obtained was $Y_2 = 1.3896 + .5187X$. The point of intersection was calculated using a formula: $(a_1 - a_2)/(b_2 - b_1) = .9087$. This intersection does not fall within the range of expectation the author is interested in (which is 1 to 6), and thus the interaction is determined to be ordinal. Plotting the regression lines followed next (see Figure 10). According to Figure 10, it seems that for those whose aspirations are low, the level of perception of limited opportunities does not make much difference in the prediction of expectation. But for students whose aspirations are high, their level of perception of limited opportunities comes to play a role by interacting with their aspirations. The separate regressions and Figure 10 reveal that the correspondence between aspiration and

Table 9

Regressions of Academic Expectation
on Aspiration, Limited Opportunity Beliefs, (and Interaction)

WITHOUT THE INTERACTION TERM								
STEP	VARIABLE	MR	RSQ	SIG	RSQCH	SIGCH	BETA IN	CORR

1	ASPRTN	.5358	.29	.000	.2871	.000	.5358	.5358
2	TALO	.5478	.30	.000	.0130	.010	-.1151	-.1857

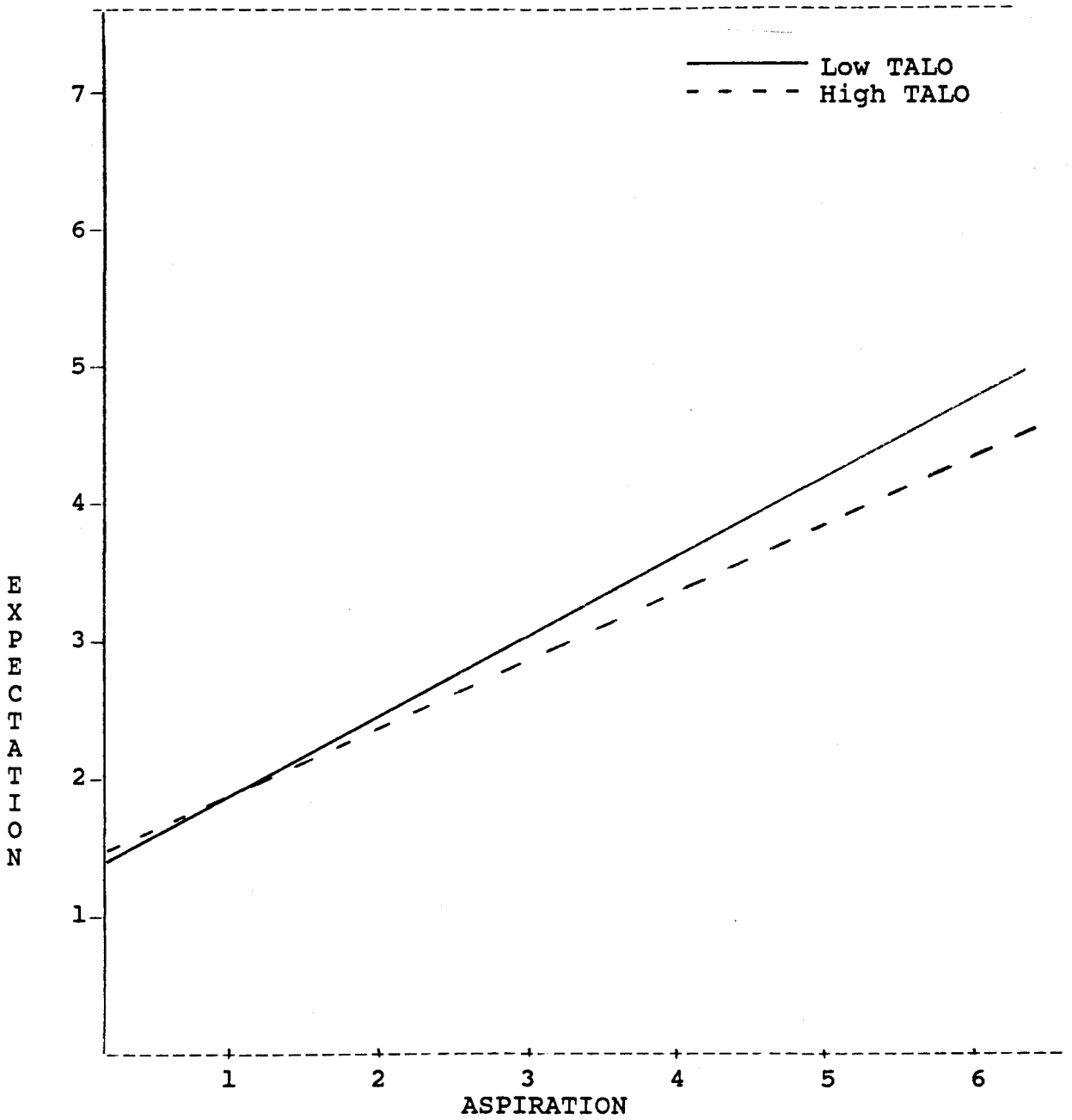
WITH THE INTERACTION TERM								
STEP	VARIABLE	MR	RSQ	SIG	RSQCH	SIGCH	BETA IN	CORR

1	ASPRTN	.5358	.29	.000	.2871	.000	.5358	.5358
2	INTASAL	.5503	.30	.000	.0157	.005	-.1613	.2395
3	TALO	.5507	.30	.000	.0005	.626	.0762	-.1857

Note: ASPRTN: academic aspiration
 TALO: awareness of limited opportunity
 INTASAL: multiplicative term of aspiration and TALO

Figure 10

Interaction between Aspiration and Limited Opportunity
Beliefs: TALO Dichotomized



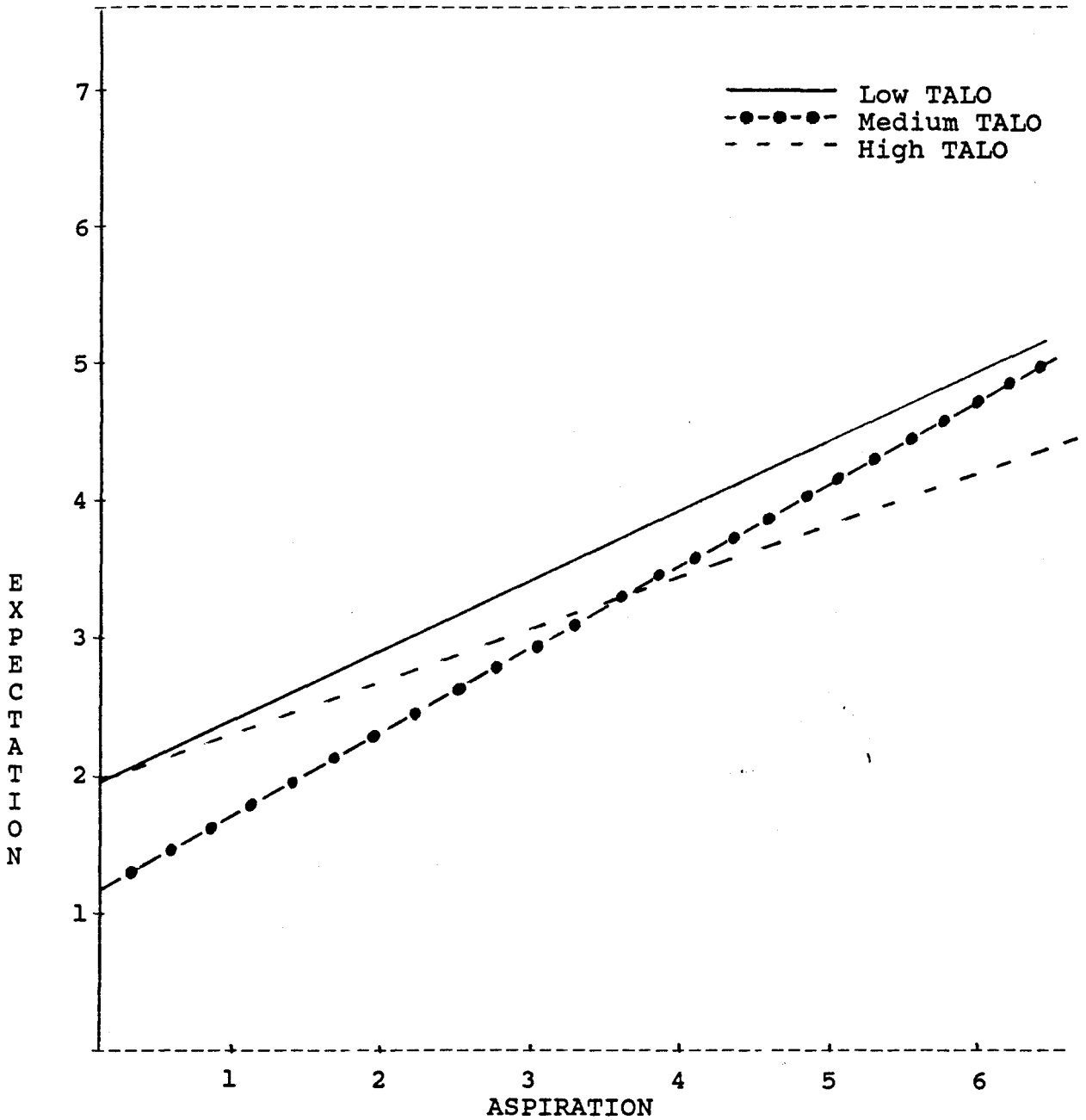
expectation is greater for people who report less awareness of limited opportunity than for those who report greater awareness of limited opportunity.

It was of interest to see the form of this interaction when the cases were trichotomized into low, medium, and high limited opportunity groups. Cumulative percentages of cases for TALO were used to split the cases into three groups and then three multiple regression analyses were performed in order to get separate equations for low, medium, and high TALO groups. The results show that for the low TALO group, the equation was $Y_1 = 1.629847 + .553517X$; for the medium TALO group, $Y_2 = 1.115862 + .5990074X$; and for the high TALO group, $Y_3 = 1.651080 + .447662X$.

The points of intersections for the three equations were obtained by following the same procedure described earlier. It turned out that the intersections for the low and medium TALO groups (11.30) and for the low and high TALO groups (15.60) fall outside the range of the interest but the intersection for the medium and high TALO groups, which is 3.76, falls within the range, proving a disordinal interaction for the medium and high TALO groups. As evident in Figure 11, the relationship between aspiration and expectation is the strongest for the medium TALO group, intermediate for the low TALO group, and the weakest for the high TALO group.

Figure 11

Interaction between Aspiration and Limited Opportunity
Beliefs: TALO Trichotomized



Taken together, these results support the hypothesis that one's beliefs in limited opportunity mediate the relationship between his/her academic aspiration and expectation and that the relationship is higher for the persons who believe they have a better chance in the society than for those who believe they have a highly limited opportunity in the society. Further analyses of the interaction effects reveal more interesting findings. That is, it is better to have a moderate perception of limited opportunity than to have a very high or very low perception of limited opportunity.

Hypothesis 3-G: Correlations between achievement motivation and internality

One's achievement motivation was predicted to be positively related to his/her attributional tendency. That is, those with high achievement motivations are thought to be more internal than those with low achievement motivations.

Table 10 shows the results of partial correlation analyses. Achievement motivation consistently has positive relationships with all the attribution measures; the relationship is the strongest with the beliefs in person control. The achievement motivation has a positive but non-significant relationship with general ideological control beliefs. Generally, high need achievers have a tendency toward making internal causal attributions, and

Table 10

Achievement Motivation and Attribution

	ZERO ORDER	CONTROL SEX	CONTROL ETHNICITY	CONTROL BOTH
	* **			
TIAR	.13(.014)	.12(.018)	.13(.013)	.13(.016)
TCNTRL	.15(.004)	.14(.006)	.14(.009)	.13(.014)
PCNTRL	.27(.000)	.25(.000)	.27(.000)	.25(.000)
IDCNTRL	.09(.083)	.10(.069)	.08(.141)	.08(.132)
ATTRIB	.17(.001)	.17(.001)	.17(.001)	.16(.002)

Note: TIAR: Intellectual Achievement Responsibility scale
 TCNTRL: internal vs. external control beliefs
 PCNTRL: personal control beliefs
 IDCNTRL: general ideological control beliefs
 ATTRIB: TIAR and TCNTRL standardized and combined
 * correlation coefficient
 ** significant level

this tendency is the strongest when making causal judgements for things that matter personally ($r=.25$) and the weakest for judgments about general ideological matters ($r=.08$). Furthermore, these tendencies hold up when gender and ethnicity are controlled via partial correlation analysis (see Table 10).

Hypothesis 3-H: Partial correlations between importance of college perception and aspirations

Persons who value a college education highly were predicted to have higher aspirations and expectation, compared to those who value a college education less, when the effects of sex, ethnicity, and mobility are removed. Table 11 shows that strong relationships exist for the importance of college belief with total aspirations, aspiration, and expectation. Holding sex and ethnicity constant did not affect the correlations but when the effects of mobility desire were removed, the correlations decreased slightly. These results support the hypothesis that those who think a college education is important are more likely to aspire and to expect to go further in school compared to those who do not think a college education is important, when their sex, ethnicity, and mobility desire are controlled. Table 11 also presents the relative correlations of the importance of college belief with aspirations for males and females. Females show consistently higher correlations than males. It seems that

Table 11

Zero-order and Partial Correlations:
Importance of College Belief and Aspiration

	TASPRTN	ASPRTN	EXPCTN
ZERO-ORDER: BOTH SEXES	.44	.40	.39
CONTROL SEX	.44	.40	.39
CONTROL ETHNICITY	.44	.41	.39
CONTROL MOBILITY	.39	.34	.35
CONTROL ALL	.39	.35	.35
ZERO-ORDER: MALES	.33	.31	.26
ZERO-ORDER: FEMALES	.53	.56	.50

Note: all correlations are significant at .000 level.
 TASPRTN: academic aspiration and expectation combined
 ASPRTN: academic aspiration
 EXPCTN: academic expectation

one's beliefs in the importance of a college education is a better predictor for the academic aspiration and expectation for females than it is for males.

Hypothesis 3-I: Partial correlations between academic extra-curricular activities and school performance

A positive relationship between academic extracurricular activities and total school performance was predicted, when controlling for sex, ethnicity, and total aspirations. Table 12 shows consistently high correlations for academic extra-curricular activities (ACAAC) with the four academic performance measures (PERFOM, GPA, TAP, MATH, and ENGLSH). The relationship is the strongest with GPA and the weakest with the English subtest score on the TAP. The removal of the effect of total aspiration decreased the correlations more than the removal of sex or ethnic effects did. However, even when the effects of all three variables were removed, the correlations remained fairly high. These results yield support for the hypothesis that those who are more involved with academic extra-curricular activities in their school tend to perform better academically than those who are less involved with those activities.

Hypothesis 3-J: Sex differences in relationships between achievement motivation and school performance

It was predicted that achievement motivation will have a greater relationship with school performance for males than

Table 12

Zero-order and Partial Correlations:
Academic Extra-curricular Activities and Performance

	ZERO ORDER	CONTROL SEX	CONTROL ETHNICITY	CONTROL TASPRTN	CONTROL ALL
PERFOM	.40	.39	.41	.36	.38
GPA	.43	.43	.42	.40	.39
TAP	.31	.31	.36	.28	.33
MATH	.31	.32	.32	.28	.30
ENGLSH	.25	.25	.32	.22	.29

Note: all correlations are significant at .000 level.
 PERFOM: GPA, MATH, and ENGLSH standardized and combined
 GPA: grade point average
 TAP: Test of Achievement and Proficiency composit score
 MATH: math subscale score on TAP
 ENGLSH: English subscale score on TAP

for females as reported in the previous literature. According to Table 13, there are only weak relationships of achievement motivation with different performance measures. However, there seem to be some sex differences but the differences are not consistent. For instance, males show a higher relationship between their achievement motivation and their TAP (Test of Achievement and Proficiency, $r=.17$) than females do ($r=.06$). However, on their grade point average, females show a higher relationship between their achievement motivation and their GPA ($r=.15$) than males do ($r=-.03$). Taken together, these findings do not necessarily support the hypothesis that achievement motivation has stronger relationships with school performance measures for males than for females.

Hypothesis 3-K: Ethnic differences in major choices

Asians were predicted to show a tendency toward choosing majors that are quantitatively oriented more than majors that are verbally oriented, when compared to other ethnic groups. In order to test this hypothesis, college majors that require quantitative skills and do not require elaborated verbal and interpersonal skills were grouped together, consisting of majors such as physical or natural sciences, math, computer, engineering, medicine, and nursing. On the other hand, majors that require high verbal and interpersonal skills were grouped together, consisting of majors such as arts and humanities, history,

Table 13

Correlations:
Achievement Motivation and School Performance

	ALL	MALES	FEMALES
	* **		
PERFOM	.07(.179)	.04(.604)	.13(.098)
GPA	.04(.410)	-.03(.656)	.15(.053)
TAP	.11(.054)	.17(.043)	.06(.481)
MATH	.07(.223)	.03(.674)	.08(.321)
ENGLSH	.09(.119)	.10(.188)	.11(.200)

Note: PERFOM: GPA, MATH, and ENGLSH standardized and combined.

GPA: grade point average

TAP: Tests of Achievements and Proficiency composit score

MATH: math subtest score on TAP

ENGLSH: English subtest score on TAP

* correlation coefficient

** significance level

social science, law, and business. For convenience, the first group will be referred as "Hard majors" and the second group will be referred as "Soft majors."

Next, a chi-square test of statistical significance was employed in order to determine whether Asians actually choose the "Hard majors" more so than whites do. Also, ethnic differences were examined by controlling for sex effects using another two chi squares. Tables 14, 15, and 16 report the results of three chi square analyses. It is evident that Asians do choose majors that require quantitative skills more frequently than majors that require verbal or interpersonal skills. Hispanics revealed a weaker tendency in the preference for "hard majors" over "soft majors." On the other hand, blacks and whites tend to choose majors that require verbal or interpersonal skills more frequently than majors that require quantitative skills. These ethnic differences are still evident when controlling for sex effects, with one exception for Hispanic females who do not show the tendency toward choosing "hard majors" (Tables 15 and 16). For Hispanic females, sex differences override ethnic differences. According to Table 17, females tend to choose "soft majors" more than "hard majors" and the reverse pattern is evident for males. However, this sex difference is not present among Asian females (see Table 16) for whom ethnic differences override sex differences. These

Table 14

Chi-square for Major Choice by Ethnicity

	ASIANS	BLACKS	HISPANICS	WHITES
	OBS (EXP)	OBS (EXP)	OBS (EXP)	OBS (EXP)
BOTH SEXES				
SOFT MAJORS	24 (36.9)	26 (20.5)	28 (29.7)	48 (38.9)
HARD MAJORS	48 (35.1)	14 (19.5)	30 (28.3)	28 (37.1)

CHI SQUARE = 16.80 df = 3 p < .0001

Note: SOFT MAJORS: arts, humanities, English, history, social science, law, & business.
 HARD MAJORS: physical science, math, computer, engineering, medicine, & nursing.

OBS: observed frequencies
 EXP: expected frequencies

Table 15

Chi-square for Major Choice by Ethnicity: Males

	ASIANS	BLACKS	HISPANICS	WHITES
	OBS (EXP)	OBS (EXP)	OBS (EXP)	OBS (EXP)
SOFT MAJORS	11 (16.4)	15 (10.2)	11 (12.9)	15 (12.4)
HARD MAJORS	26 (20.6)	8 (12.8)	18 (16.1)	13 (15.6)

CHI-SQUARE = 8.71 df = 3 p < .03

Note: SOFT MAJORS: arts, humanities, English, history, social science, law, & business.
 HARD MAJORS: physical science, math, computer, engineering, medicine, & nursing.

OBS: observed frequencies
 EXP: expected frequencies

Table 16

Chi-square for Major Choice by Ethnicity: Females

	ASIANS	BLACKS	HISPANICS	WHITES
	OBS (EXP)	OBS (EXP)	OBS (EXP)	OBS (EXP)
SOFT MAJORS	12 (18.5)	11 (9,8)	16 (15.6)	32 (27.1)
HARD MAJORS	20 (13.5)	6 (7.2)	11 (11.4)	15 (19.9)

CHI-SQUARE = 7.80 df = 3 p < .05

Note: SOFT MAJORS: arts, humanities, English, history,
social science, law, & business.
HARD MAJORS: physical science, math, computer,
engineering, medicine, & nursing.

OBS: observed frequencies
EXP: expected frequencies

Table 17

Chi-square for Major Choice by Sex

	MALES	FEMALES
	OBS (EXP)	OBS (EXP)
SOFT MAJORS	56 (66)	79 (69)
HARD MAJORS	76 (66)	59 (69)

CHI-SQUARE = 5.35 df = 1 p < .02

Note: SOFT MAJORS: arts, humanities, English, history
social science, law, & business.
HARD MAJORS: physical science, math, computer,
engineering, medicine, & nursing.

OBS: observed frequencies
EXP: expected frequencies

results, in general, support the hypothesis.

Hypothesis 3-L: Ethnic differences in limited opportunity beliefs

Minorities are predicted to be more perceptive of limited opportunities than Caucasian-American adolescents. Analysis of variance (see Table 18) with independent variables of ethnicity and sex and the dependent variable of the limited opportunity perception (TALO) reveals a significant ethnic main effect ($F=8.934$, $df= 3$, $p < .0001$). Next, multiple comparisons were performed using Tukey procedures in order to pinpoint which ethnic groups differ on the dependent measure. The results show (see Table 19) that differences lie between Asian and White groups, Asian and Black groups, and Hispanic and White groups. There is not a significant difference between blacks and whites according to Tukey tests, although blacks have a slightly higher mean score than whites (see Table 19). Asians have the highest perception of the limited opportunity among the four ethnic groups, Hispanics rank the second highest, blacks the third, and whites have the lowest perception of limited opportunity. These results support the hypothesis at least partially.

Hypothesis 3-M: Ethnic differences in filial duty beliefs

Asians were predicted to have higher filial duty beliefs than any other ethnic students. ANOVA results (Table 20) show a significant ethnic main effect on the

Table 18

ANOVA: Limited Opportunity Perception
by Sex and Ethnicity

SOURCE	SS	DF	MS	F	prob.
MAIN EFFECTS	543.311	4	135.828	7.355	.000
SEX	22.226	1	22.226	1.204	.273
ETHNIC	494.937	3	164.979	8.934	.000
2-WAY INTERACTION					
SEX BY ETHNIC	21.031	3	7.010	0.380	.768
EXPLAINED	564.342	7	80.620	4.366	.000
RESIDUAL	5835.692	316	18.467		
TOTAL	6400.034	323	19.814		

Table 19

Tukey-HSD Test: Ethnic Differences in
Awareness of Limited Opportunity

GROUP	N	MEAN	SD	SE	GROUPS DIFFER			
					1	2	3	4
1. ASIAN	89	15.43	4.28	.45		*		*
2. BLACK	47	12.96	3.86	.56				
3. HISPANIC	87	14.63	4.72	.51				*
4. WHITE	112	12.52	4.15	.39				

p < .05

Table 20

ANOVA: Filial Duty Beliefs by Sex and Ethnicity

SOURCE	SS	DF	MS	F	prob.
MAIN EFFECTS	10.264	4	2.566	3.210	.013
SEX	.344	1	.344	.431	.512
ETHNICITY	9.240	3	3.080	3.852	.010
2-WAY INTERACTION					
SEX BY ETHNIC	2.766	3	.922	1.153	.328
EXPLAINED	13.030	7	1.861	2.328	.025
RESIDUAL	252.650	316	.800		
TOTAL	265.680	323	.823		

belief in filial duty ($F=3.852$, $df=3$, $p < .010$). Further, Tukey multiple comparisons (see Table 21) show the differences are significant between the white and Hispanic groups, the white and Asian, and the white and black groups. Examination of the means in Table 21 for the four ethnic groups reveal that blacks have the highest beliefs in filial duty, Asians the second, Hispanics the third, and the whites have the lowest beliefs in filial duty. Although blacks have a slightly higher mean than Asians, it should be noted that the results of Tukey multiple comparisons did not reveal a significant mean difference between Asians and blacks. These results seem to lend partial support for the hypothesis in that Asians have a significantly higher filial duty beliefs than whites.

Hypothesis 3-N: Ethnic differences in the importance of college perception

It has been predicted that minorities will report a higher value for college education than Caucasian adolescents. Analysis of variance results (see Table 22) confirm the hypothesis with a significant ethnic main effect ($F=8.263$, $df=3$, $p < .000$). Further, Tukey procedures were employed to find where the differences lie (Table 23). The results show that whites and Hispanics differ from each other, whites and Asians differ, and also whites and blacks differ from each other in their beliefs regarding the importance of college education. According

Table 21

Tukey-HSD Test:
Ethnic Differences in Filial Duty Beliefs

GROUP	N	MEAN	SD	SE	GROUPS DIFFER			
					1	2	3	4
1. ASIAN	89	3.99	.82	.09				*
2. BLACK	47	4.04	.86	.12				*
3. HISPANIC	87	3.94	.94	.10				*
4. WHITE	112	3.60	.91	.09				

p < .05

Table 22

ANOVA: Importance of College
by Sex and Ethnicity

SOURCE	SS	DF	MS	F	prob.
MAIN EFFECTS	60.955	4	15.239	6.198	.000
SEX	1.151	1	1.151	.468	.494
ETHNIC	60.955	3	20.318	8.263	.000
2-WAY INTERACTION					
SEX BY ETHNIC	.672	3	.224	.091	.965
EXPLAINED	61.626	7	8.804	3.581	.001
RESIDUAL	772.063	314	2.459		
TOTAL	833.689	321	2.597		

Table 23

Tukey-HSD Test: Ethnic Differences in
Perceived Importance of College

GROUP	N	MEAN	SD	SE	GROUPS DIFFER			
					1	2	3	4
1. ASIAN	89	6.36	1.1989	.1271				*
2. BLACK	45	6.42	.9167	.1367				*
3. HISPANIC	87	6.09	1.5222	.1632				*
4. WHITE	112	5.40	1.9703	.1862				

p < .05

to Table 23, blacks have the highest mean, Asians the second, Hispanics the third, and whites have the lowest mean on the perception of the importance of college. These results yield support for the hypothesis that minority groups perceive a college education as more important than Caucasian-American students do.

CHAPTER V

DISCUSSION

Overview

This study has examined the effects of various individual as well as familial factors on academic aspirations and performance among high school students from different ethnic groups. The major aims were to test the causal models for academic aspirations and performance that the author proposed. The study further examined sex and ethnic differences in several variables in order to explore their possible impacts on achievement related expectations and behavior. The following discussion has been divided into four sections: predictors of academic aspirations; predictors of academic achievement; sex and ethnic differences; and the final section on limitations of the present study, problems in assuming a certain causal sequence in path models, and suggestions for future studies.

PART 1: Predictors of Academic Aspirations

Nine predictors were included in the initial path model of academic aspirations and were examined for their direct as well as indirect impact on academic aspirations and expectations. Those variables consisted of family

status, parents' encouragements, achievement motivation, upward mobility, beliefs in filial duty, the belief in academic performance potential, the perceived importance of college, participation in extra-curricular activities, and present school performance.

Family Status and Parents' Encouragement *

The present study found confirming evidence for the hypothesis regarding direct and indirect impacts of family status on academic aspirations. A student's family status, measured by both parents' educational and occupational attainments, directly affected his/her educational aspirations. Also, family status influenced aspiration indirectly, through its impact on the upward mobility desire.

The findings on the direct impact of family status suggest that students with a higher family educational and occupational background will have a higher level of aspiration than those who come from a lower status family. However, its indirect effect on aspiration operating through the upward mobility desire works negatively. In other words, adolescents from a lower status family have a higher upward mobility desire and those with a high upward mobility desire tend to aspire more highly than persons with a low upward mobility desire.

These findings are consistent with previous reports (e.g., Brook et al., 1974, 1979; Epps, 1969; Rehberg & Westby,

1967; Sewell et al., 1957; Sewell & Shah, 1968) that children from a high status family tend to have higher educational aspirations than those from a lower status family. Sewell and Shah labeled the tendency for children of parents with a high educational attainment to have higher aspirations than those whose parents have a lower educational attainment "a generational continuity." Sewell et al. further found a positive relationship between family status and the level of educational aspirations, when controlling for intelligence.

When parents' education and occupation were examined separately, parents' educational attainments were more strongly related to children's aspirations than parents' occupations were. On the basis of the analysis of partial correlations, this study also revealed that the parents' education was a partial determinant of parents' occupation and that parents' occupation had no significant impact on children's aspirations independent of parents' educations.

When the impact of father and mother was examined separately, the more influential role was played by father for the present samples. The mean father's education level was higher than the mean mother's education level. As to the relative importance of father and mother in children's aspirations, findings have not been consistent. For example, according to Kahl (1953), the attitude of the father represented the pre-eminent factor differentiating

lower class boys who aspired to go to college from those who did not. In the lower class family, Kahl argues that the father who is disappointed with his own life accomplishment advises his son the next step up requires more education.

Ellis and Lane (1963), however, reported the reverse pattern of parental dominance in the lower class family. In their study, the mother was the dominant influence for the child's educational aspirations. The authors argued that the tendency to identify with mother rather than father in seeking an educational career suggested a distinctive authority pattern that may characterize lower class families. They further supported their argument by the fact that the mother's educational level was markedly higher than that of the father in lower class families. Based on the findings reported here, it seems logical to assume that parental dominance partly depends on which parent has a higher level of educational attainment. In general, the present study lends support to the claim that values specific to different status milieu influence the level of educational aspirations. The findings also justify the growing recognition of the importance of familial factors in the development of adolescents' academic career orientations.

In the present study, parents' encouragement for their children's education was associated with children's

academic aspirations. However, when considered along with other predictors of academic aspirations in the path model, parents' encouragement did not have strong unique impacts on children's aspiration. It seems that parents' encouragement may affect children's aspirations more indirectly than directly.

Previous studies generally reported high associations between parents' encouragement level and children's aspirational level (e.g., Kahl, 1962; Marjoribanks, 1985; Rehberg & Westby, 1967). In Marjoribank's study, the relationship was higher for the mother-support score than for the father-support score. In the present study, however, father's encouragement had more influence than mother's encouragement did. Furthermore, this study suggested that father's encouragement and mother's encouragement may not mean the same thing for the children. For example, father's encouragement was more highly related to expectation (a more realistic concept of educational career orientation) than to aspiration (a more idealistic concept of educational career orientation) among both male and female adolescents. However, mother's encouragement showed a higher relationship with aspiration than with expectation for males, whereas for females, mother's encouragement was related to aspiration and expectation similarly. One speculation about these findings is that when father, usually being the one who supports the family,

encourages his child, the child expects that the father will provide or help with financial resources for his/her college education. Or, perhaps the father, having a higher level of education, acts as a model for children regarding their actual educational attainment.

Achievement Motivation and Upward Mobility Desire

One result of the present study that surprised the author was that both zero-order correlation and path coefficients revealed very little impact of achievement motivation for academic aspirations. It is possible that the achievement motivation scale in the present study failed to provide an accurate indication of one's achievement motivation due to the scale's very low reliability. The previous findings on the pattern of low achievement motivations among black children were contradictory to their high educational aspirations. Taken together, these findings suggest that one's achievement motivation may not be a good indicator of his/her educational aspirations.

Regarding the effects of the upward mobility desire on educational aspirations, the path analysis revealed that the direct effect of the upward mobility desire was greater than that of any other predictor variable in the path model. Students who want to get ahead in life were more likely to want to go further in school. It was assumed that a student's upward mobility would affect his/her

perception regarding the importance of college, which in turn, would affect whether or not he/she wants to go further in school. This assumption has been supported by the significant indirect effect of upward mobility on academic aspirations operating through the importance of college perception. The strong association between the upward mobility desire and academic aspiration suggests an instrumental value of education, a finding consistent with previous reports (e.g., Levine & Montero, 1973).

There has been a general assumption in the sociological literature that achievement motivation may be an important determinant of one's upward mobility. Using the thematic apperceptive (TAT) measures of achievement motivation, developed by McClelland et al. (1953), Crockett (1962) found that the strength of achievement motivation was related to upward mobility among sons of lower class families. In the present study, although zero-order association between achievement motivation and the mobility desire was not significant, the path coefficient of achievement motivation for the mobility desire clearly suggested that achievement motivation made a direct contribution to upward mobility.

Beliefs in Filial Duty and Importance of College

The zero-order association of filial duty beliefs with academic aspirations suggested that the degree to which children believed that their school achievement was

important for their parents had a significant influence on their educational aspirations. However, when filial duty beliefs were considered along with other predictor variables in the proposed causal model of academic aspirations, the direct impact of filial duty beliefs was not significant. These results indicate that the beliefs in filial duty affect one's aspirations, but do so indirectly rather than directly. It was also evident that filial duty beliefs were highly related to the level of parents' encouragements regardless of sex and ethnicity of the respondents.

The present study also revealed a strong association between filial duty beliefs and the importance of college perception. Both zero-order correlation and path coefficients suggested strong direct as well as indirect impacts of the perceived importance of college on adolescents' educational career orientation.

Academic Performance Potential, Extra-Curricular Activities,
and Present School Performance

Since these three predictors (academic potential belief, extra-curricular activities, and school performance) were closely related to one another, the unique contribution of each to academic aspirations was considered necessary. Consistently with the prediction, students who had a higher performance potential belief were more likely to want to go further in school than those who

had a lower performance potential belief. One's performance potential beliefs seemed to have an appreciable impact on his/her aspirations operating both directly and indirectly.

The author also considered students' involvement with extra-curricular activities to have a significant relationship with their educational aspirations and the present study confirmed that prediction. Both zero-order correlation and path coefficients between the extra-curricular activities variable and aspirations suggested that the variable was indeed a good indicator for high school students' educational aspirations. Furthermore, the present study revealed that a student's level of school achievement affected whether or not he/she wanted to go to college.

PART 2: Predictors of Academic Performance

Predictors that were tested in the path model of academic performance included family status, family size, achievement motivation, beliefs in filial duty, awareness of limited opportunity, attributional tendency regarding internal versus external locus of control, academic performance potential beliefs, educational aspirations, and academic extra-curricular activities.

Family Status and Size

Family status had a significant association with the

total performance index. When its relationships with separate performance scores were examined, family status showed the highest correlation with the composite score on the Tests of Achievement and Proficiency (TAP), the second highest with English subtest on TAP, the third highest with math subtest on TAP, and the lowest correlation with the grade point average (GPA). These findings corroborated Epps' (1969) that family status was more strongly related to verbal ability than GPA. It is reasonable to assume that GPA and TAP are indicators for two different kinds of academic performance. TAP consists of six different subtests, including reading, math, writing expression, use of information, social science, and science. TAP is a one-shot measure of a more general pattern of academic proficiency, whereas the GPA is based on performance over a period of time. Also, the GPA is more directly related to effort than TAP is. TAP, as with most other standardized achievement tests, seems to emphasize verbal ability.

Family status had a significant association with performance but when its direct contribution to academic performance was examined in the path model, holding the other eight predictor variables constant, it turned out that family status had very little impact on its own for school performance. Therefore, family status was found to affect school performance more indirectly than directly.

The present study also revealed that family size was

negatively related to the performance measures and that its relationship was stronger with TAP than with GPA and also stronger with English than with math scores. In the path model, it had appreciable direct as well as indirect contributions to performance. These two family background variables (status and size) tended to affect general measures of academic proficiency and the verbal measure more than they affected the grade point average and the quantitative measure of achievement. Since parents with higher education and more prestigious occupations tend to have fewer children (Rehberg & Westby, 1967), a negative relationship was expected between family status and its size, which was confirmed in the present study.

Achievement Motivation and Filial Duty Beliefs

Neither achievement motivation nor beliefs in filial duty had strong associations with achievement measures except for the correlation between achievement motivation and the TAP composite score. Both variables had nonsignificant direct influence on school performance according to the results of path analyses in the present study. In view of the continued interest in this construct and of the relevance that achievement motivation is presumed to hold for performance related expectations and behavior, these findings were rather unexpected. Later in the discussion on sub-group differences, it will be shown that achievement motivation has different impacts on

performance for different ethnic adolescents.

Opportunity Perception and Internal Tendency in Attribution

The present study also concerned whether or not a student's academic aspirations will result in actual achievement. The assumption was that if a student believes that his/her desired goals are not attainable through available means, the disparity between the level of aspirations and life chances in the opportunity structure will result in the lack of goal-striving behavior necessary for actual achievement.

The findings in the present study confirmed the author's prediction that the awareness of limited opportunity is negatively related to actual performance measures (the path coefficient was $-.08$ and the zero-order correlation was $-.20$). Its adverse impact was greater on the TAP composite and verbal scores than on the GPA and quantitative scores. Again, one's beliefs regarding his/her chances in the society affected generalized academic proficiency measures more than they did GPA. The path analysis showed that the awareness of limited opportunity had direct as well as indirect impacts on school performance, suggesting that a student's pursuit for achievement was closely adapted to the opportunity provided by the society.

In the present study, the awareness of limited opportunity was closely related to the internal versus

external locus of control, a variable which supposedly has a prominent relevance in studies of minority groups. Persons with higher perceptions of limited opportunity showed an external tendency in their attributions. Surprisingly enough, however, the attributional index of internal - external locus of control did not have any appreciable impacts on academic performance. It should be remembered that this attributional index for internality consisted of two subscales: Intellectual Achievement Responsibility scale and control beliefs scale. Examinations of the relationships of each of these subscales with performance measures revealed that the score on the Intellectual Achievement Responsibility scale was not related to any of the performance measures. On the other hand, the control beliefs were strongly related to the TAP composite score and to the English subtest score. Since the Intellectual Achievement Responsibility (IAR) scale taps attributional tendency in academic situations only, one would expect that if attributional tendency had any associations with school performance measures, the relationship would be higher with IAR than with control beliefs scale. Nevertheless, scores on IAR were not related to performance measures in this study. It is possible that IAR items, although designed for adolescents, were too simplified in the wording and hence did not appeal to these high school students in a realistic sense.

Performance Potential Beliefs, Aspiration, and Academic
Extra-curricular Activities

A student's belief in his/her potential for school performance was highly related to his/her actual performance. According to the path analysis, this belief influenced adolescents' school performance both directly and indirectly. It was also found that this belief in performance potential was more strongly related to GPA than to the TAP composite score. A possible explanation for this finding would be that the potential belief was measured by the item asking students what their grade point average would be if they tried their best. The wording of the question may have led subjects to gauge their answers by their actual GPA.

Again, one's aspirations were significantly related to the level of his/her actual performance. Finally, the present study proposed that for the prediction of school performance, academic extra-curricular activities, as opposed to non-academic extra-curricular activities or both academic and non-academic extra-curricular activities combined, would play an important role. According to the path analysis, this variable indeed was a very good indicator for high school students' academic performance. It was highly associated with all of the achievement measures and the association was the highest with the grade point average than with any other performance

measures in the study. Students who chose to involve themselves in the academic climate through their extra-curricular activities tended to achieve higher in school than those who do not get themselves involved in academic extra-curricular activities. This extra-curricular activities variable has been neglected in the previous studies of adolescents' educational achievement but the present study illustrates the potential fruitfulness of considering extra-curricular activity factors in the analysis of adolescents' academic achievement.

PART 3: Sex and Ethnic Differences

Academic Aspirations and Achievement

Educational aspirations were generally high for all four ethnic groups, about 75% of these high school students desired to go to four year college or beyond. Regarding more realistic educational career expectations (expectations on the level of education they thought they will actually attain), 56% of the students expected that they will make it through four year college or graduate school.

Although males had slightly higher aspirations and expectations than females, the differences were not statistically meaningful. Means for different ethnic groups showed that Asians had the highest level of total aspirations, Hispanics the second, blacks the third, and whites the lowest, but again these differences were not

statistically meaningful. When aspirations and expectations were examined separately, however, ethnic differences emerged more strongly in the more realistic educational career orientation (expectations). On the question tapping the level of educational attainment students thought they will actually attain, Asians scored the highest, Hispanics the second, blacks the third, and whites the lowest. Overall, this study did not corroborate previous observations of significantly higher aspirations among males than females and among blacks than whites (Baugham & Dahlstrom, 1968; Boocock, 1972; Brook et al., 1974; Gist & Bennett, 1963; Hindelang, 1970; Lott & Lott, 1963; Moerk, 1974; Sewell et al., 1957; Sewell & Shah, 1968).

Significant ethnic differences existed in all of the four achievement measures in the present study. First, on the grade point average, Asians had the highest score, whites had the second highest score, Hispanics the third highest score, and blacks had the lowest grade point average. The mean score on the Tests of Achievement and Proficiency composite scale (TAP) was the highest for whites, the second highest for blacks, the third for Asians, and the lowest for Hispanics. Further, on the math subtest of TAP, Asians scored the highest, whites the second, Hispanics the third, and blacks scored the lowest. Finally, on the English portion of TAP, whites had the

highest score, blacks the second, Hispanics the third, and Asians had the lowest score.

These mixed ethnic differences on different performance indices suggest that a researcher should not be too hasty to overlook the characteristics of the performance measures when he/she is making conclusions regarding ethnic differences. Generally, Asians showed the highest performance on GPA and on the math portion of TAP, blacks showed the lowest GPA but not necessarily the lowest in verbal scores, and whites tended to score the highest in verbal achievement measure.

These findings corroborate previous reports on high quantitative skills and generally lowered verbal performance among Asian-American students (Sue & Frank, 1973). The Asians' lowered verbal performance has been attributed to their bilingual background, values emphasizing restraint in verbal expression in the Asian culture, and limited communication patterns at home, due to the possibility that Asian parents do not speak English as well as their children (Sue, 1973; Sue & Frank, 1973; Watanabe, 1973). According to Sue and Frank, the tendency toward an elevated quantitative score among Asian-American children may also reflect a compensatory mode of expression.

It was of interest to see whether these achievement patterns were reflected in the choice of majors among Asian

students. In the present study, Asians expressed greater interests in studying physical science, math, computer science, engineering, nursing and medicine, and expressed considerably less interests in social science, arts, humanities, business, and law. These findings reveal that Asians tend to avoid majors that require some degree of self-expression, communication in oral or written form, and interpersonal skills. Majors they are attracted to such as physical science, math, computer science, and medicine rely more on individual activities than on verbal interactions. This tendency is certainly consistent with their elevated quantitative skills relative to their lower verbal skills.

The present study also found a sex and ethnic group interaction effect on the grade point average, that is, Asian girls had the highest GPA, Asian boys the second, and white girls the third. For blacks and Hispanics, however, boys had a higher grade point average than girls.

Family Backgrounds

On the family status index, the present study found that blacks had the highest family status, Asians the second, whites the third, and Hispanics had the lowest family status. It should be recalled that the family status index consisted of four items on mother and father's educational and occupational attainments. Ethnic differences were evident in parents' level of education as well as in their occupation. Asian parents had the highest

level of educational attainment, blacks the second, whites the third, and Hispanic parents had the lowest educational attainment. The findings on the highest educational level among Asian parents were consistent with previous reports. For example, in the 1980 census data, one-third of all Asian-Americans aged 25 and over had attended college for four or more years, compared with 17.1% of Caucasians and 8.4% of blacks.

On parents' occupation, however, black parents held the most prestigious occupations, Asians the second, whites the third, and Hispanic parents held the least prestigious occupations. These results show that the blacks and whites in the present sample are very unrepresentative of those two ethnic populations in general and this may provide a partial explanation for some of the unexpected findings of the present study: blacks had a higher level of educational expectation than Caucasians did. Had the respondents been selected from suburban high schools, whites might have had been shown to have higher expectations than blacks.

It was of interest to see whether father or mother played a more dominant role in children's educational aspirations and expectations. For all four ethnic groups, fathers had a higher level of education than mothers. However, mothers had higher occupation than fathers among black and white subjects, whereas among Asian and Hispanic

students, fathers held more prestigious jobs than mothers. The pattern in the parental dominance was more obvious among Asian and white families but less so in black and Hispanic families. In Asian families, the father had more influence on children's aspirations and expectations than the mother, whereas the reverse pattern was found in white families. In general, family status had fairly strong relationships with adolescents' aspirations and it played a more important role for black children's aspirations than for children in any other ethnic groups.

The study also found that family status was related to school performance in general and the correlation was the highest for Hispanic children ($r=.30$). However, for black children, there was no association between family status and school performance. Considering that the family status factor had the strongest relationship with aspirations among black children ($r=.23$), the latter finding was certainly unexpected. In black families, the socio-economic status of the family affected children's aspirations positively but it failed to have the same kind of influence on their actual school performance. These results seem to corroborate Katz's (1969) argument that black parents have high aspirations for their children but they do not actually help their children implement these aspirations or help with their children's educational needs. For Hispanics, however, whose mean family status

was the lowest among four ethnic groups, family status had the most impact on students' performance among the four ethnic groups.

Regarding parents' encouragement for children, this study revealed no significant ethnic effects. When father's and mother's encouragements were examined separately, however, the ethnic differences were evident in father's encouragement. Specifically, Asians had the most encouragement from their fathers, blacks the second, Hispanics the third, and whites had the lowest. Mothers generally encouraged their children more frequently than fathers for all ethnic groups in the present study. Although previous studies (e.g., Brook et al., 1974) reported that parents' aspirations were higher for boys than for girls, this study found no differences in parental encouragement for boys and girls.

Parents' encouragement was most influential for white children's aspirations ($r=.27$), the second most influential for black children ($r=.22$), the third for Asians ($r=.18$), and the least for Hispanic children ($r=.07$). Children's school performance was not related to parents' encouragement when the ethnicity was pooled. However, when the relationships of parents' encouragement with children's academic achievement measures were examined for each ethnic group, among Asians, Hispanics, and whites, parents' encouragement was related to children's academic

achievements weakly but positively. However, surprisingly, black students' academic achievement was negatively related to their parents' encouragement ($r=-.17$). There is no doubt that these ethnic differences in the relationships between parents' encouragements and children's achievement cancelled each other, resulting in non-significant relationship between the two variables overall. These results taken together indicate that the ethnicity of students interacts with many other factors that affect their educational aspirations and performance behavior.

Achievement Motivation and Upward Mobility

Regarding achievement motivation, the present study found that males tended to have a significantly higher level of achievement motivation than females. However, there were no significant ethnic differences. When the associations of achievement motivation with aspirations were examined for each ethnic group, achievement motivation had more relevance for Hispanic students ($r=.17$) than for any other ethnic groups in the study. Also, achievement motivation was somewhat negatively related to black students' aspirations ($r=-.08$).

Again, although achievement motivation was only slightly related to school performance in general, when the association was examined for each ethnic group, achievement motivation was most strongly related to Hispanic students' performance ($r = .29$), the second for blacks ($r=.22$), the

third for whites ($r=.14$), and a slightly negative association was found with Asian students' performance ($-.06$). In view of these findings, it seems that ethnicity interacts with achievement motivation to differentially affect adolescents' educational aspiration and performance. The finding also suggested that achievement motivation played a more significant role in Hispanic adolescents' aspiration and achievement than in any other ethnic groups.

In the present study, the desire for upward mobility was a very important determinant of adolescents' educational aspirations, the finding which illustrated an instrumental value of education. This seemed to be true for all ethnic subgroups in the study. These findings support previous reports (e.g., Levine & Montero, 1973). Also, in a Carnegie Council poll (in Time, Sept., 1982), 67% of students cited that the essential purpose of their education was to get a better job. The idea that education provides better jobs seems to promise potential rewards for the students who aspire to go college in all ethnic groups.

Filial Duty Beliefs and Importance of College

The degree to which a student believed his/her school performance was important to the family was related to the level of his/her educational aspirations but not to the actual performance. However, it also depended on the ethnicity of the student. First, the filial duty beliefs differed in their strength among different ethnic

adolescents. Blacks, Asians, and Hispanics had significantly stronger beliefs in filial duty than whites, although there were no sex differences. These beliefs were related to the total aspirations more strongly among blacks ($r=.43$) than Asians ($r=.23$), Hispanics ($r=.10$), or whites ($r=.09$). These results indicated that although the filial duty belief was not a very good predictor for the educational aspiration when all students were considered together, it may be the best predictor for black students' aspirations.

The filial duty beliefs affected school performance among Hispanics ($r=.26$) and Asians ($r=.17$). However, whether or not a student believed his/her doing well in school meant a lot for the family did not affect school performance among black or white adolescents. These findings reflect a strong emphasis on family solidarity among Asian and Hispanic families (Kitano, 1969).

It seemed reasonable to assume that parents' encouragement would affect filial duty beliefs. The findings validated this assumption and also revealed that this might be more true for the Asian group than for any other ethnic groups. Parental encouragement was related to filial duty beliefs at the highest degree among Asians ($r=.39$), the second highest among Hispanics ($r=.27$), the third among whites ($r=.20$), the lowest among blacks ($r=.18$). Earlier in this paper, it was suggested that the

Confucian ethic which permeates the Asian culture might stimulate or implement the filial duty beliefs among Asian adolescents. High reverence for scholarship and for the elderly are embedded in the Confucian ideology and this may explain the strong association between parental encouragements and the filial duty beliefs among Asian adolescents.

As to the importance of college perception, blacks and Asians held the strongest beliefs, whereas whites held the weakest perception. The perception of the importance of college accounted for the most variance in academic aspirations in the present study. Furthermore, it was found that although whites had the lowest perception of the importance of college, their perception affected their level of aspirations more strongly ($r=.57$), compared to blacks, Hispanics, or Asians.

This perception also affected school performance of adolescents in all ethnic groups. The present study also found that although there were no sex differences in the perception of the importance of college or in the level of aspirations, the importance of college perception affected aspirations more strongly among females ($r=.56$) than among males ($r=.33$). It seems that among males, aspirations were guided by factors other than the perception of the importance of college more than among females. It was assumed that one of those factors would be the perception

regarding life chances in the society, a topic which the next discussion focuses on.

Awareness of Limited Opportunity and Internality

A student's perception regarding the limited opportunity in the society negatively influenced his/her aspiration as well as school performance. It was also found that Asian adolescents had the highest perception of the limited opportunity, Hispanics the second, blacks the third, and whites had the lowest perception. This finding indicated that minority children perceived their life chances being limited more so than white children did, probably because of the language or cultural barriers and discriminatory obstacles they experience in the host society.

The perception of limited opportunity had a significant impact on adolescents' aspirations and performance across all ethnic groups. However, its impact on aspirations was much greater for males ($r=-.27$) than for females ($r=-.09$), although its impact on school performance was similar for both sexes. Considering that there were no sex differences in the level of aspirations or in the perception of limited opportunity, it seems that aspirations were guided by the perception regarding life chances in the society more so for males than for females.

This study also found that in general, the tendency to make internal versus external attributions did not

affect the level of aspiration or school performance. There were some ethnic differences in the attribution tendency. On the Intellectual Achievement Responsibility scale, for instance, whites showed the most external tendency, Asians the second, and Hispanic and blacks were most internal. On the control beliefs scale, Asians were most external, blacks the second, and Hispanics and whites were most internal. These findings did not confirm previous findings (Coleman et al., 1966; Friend & Neale, 1972; Lefcourt, 1966, 1970) that black children tended to make external attributions when compared to white children and that Asians were not more external than whites (Han, 1985).

It should be remembered that this study examined several attributional factors other than the internal-external locus of control. Regarding the EFFORT factor, there were no ethnic or sex differences. However, on the ABILITY factor, Asians considered ability being important in school performance more so than whites (the second), blacks (the third), or Hispanics (the fourth) did. Whites thought of the determination factor most importantly and Asians thought the least of the determination factor for school performance.

When the relationship of internality with aspiration was examined, it varied depending on ethnicity. For instance, internality was related to blacks' aspirations

most positively ($r=.32$), Hispanics the second ($r=.21$), Asians the third ($r=.10$), and it affected whites' aspiration negatively ($r=-.11$). Again, internality was associated to the aspirations of males significantly more ($r=.21$) than of females ($r=.0002$).

Internality was also related to school performance at different degrees for different ethnic groups. Generally, Hispanics' performance was most strongly influenced by the internality factor ($r=.26$), blacks the second ($r=.17$), and Asians and whites' performance was not related to the internality factor. Similarly, this internality factor had a positive influence on performance among males ($r=.20$), but its influence on females' performance was slightly negative ($r=-.06$). There is no doubt why the attribution index for internality did not have an impact on aspirations or performance in the initial analysis pooling ethnicity and sex together. Sex and ethnicity interacted with the attributional tendency to differentially affect aspirations and performance.

Academic Performance Potential and Extra-curricular Activities

There were no ethnic or sex differences in the beliefs in academic performance potential. This belief was significantly related to aspirations and to performance regardless of sex and ethnicity. This study also found that high school students' involvement with extra-

curricular activities was a good indicator for their educational aspirations and school achievement. Asians had the highest involvement in extra-curricular activities, blacks the second, whites the third, and Hispanics the lowest. Blacks had the highest involvement in non-academic extra-curricular activities, Asians the second, whites the third, Hispanics the lowest. Asians had the most involvement in academic extra-curricular activities, Hispanics the second, blacks the third, and whites the lowest.

Involvement with academic activities was highly related to Asians' aspirations ($r=.31$) and performance ($r=.60$). Among Hispanics, blacks, and whites, this variable was highly related to the performance level, but not to their aspirations. As indicated earlier in this paper, high school students who choose academically oriented activities (e.g., language, math, or science clubs) tend to perform better in school.

PART 4: Limitations and Suggestions

The present research attempted to delineate various demographic and behavioral correlates to help in understanding adolescents' educational aspirations and achievement. In this study, the author has made certain assumptions regarding causal sequences among variables in order to construct and to test causal (path) models of educational aspirations and performance. This presents

some problems especially with data collected at one point of time because of the possibility that a certain temporal sequence does not exist in reality in the way suggested by the path model. Some of the variables that were considered as antecedents of a variable may act simultaneously with the dependent variable or may actually be consequences of it. For example, in the hypothetical causal model for academic aspirations, achievement motivation was treated as an antecedent of upward mobility. Previous research (e.g., Crockett, 1962) indicated that achievement motivation is an important determinant of upward mobility. However, it is possible that experiencing upward mobility increases the strength of one's achievement motivation.

The same possibility exists for the academic performance potential belief being treated as an antecedent of school performance. A student with a higher belief in his/her performance potential would try harder, and therefore perform better than those who do not believe in their potential. However, it may also be true that getting good grades in school boosts a student's beliefs in his/her academic potential. A similar possibility exists with the attribution factors being treated as determinants of performance when in fact may be consequences.

Unfortunately, the present study lacks time-sequential data and, therefore, the author cannot provide empirical substantiations for one or the other

interpretation. However, it should be kept in mind that the main purpose of path analysis is not deducing causal relations but to interpret quantitative information on the basis of theoretical considerations that the researcher has. A complete analysis of the social and psychological setting of educational aspirations would require examinations of different stages of the life cycle. This research is concerned with a single period of time and hence, does not provide ways to find out the extent to which aspirations are actually carried out in the future.

Another crucial limitation of the present research has to do with sampling. As revealed earlier in this chapter, ethnicity and sex interacted with variables, resulting in differential relationships among variables. One of the critical reasons for the path models not being able to account for more variance in aspirations and performance is probably because of the large variability in the relationships of predictors with dependent variables across different ethnic groups. In many instances in the present study, two variables (e.g., achievement motivation and performance) were related to each other in opposite directions depending on the ethnicity of students, and thus cancelled each other when the analysis was performed for all ethnic groups together. Interactions among variables for each group would have been the most credible analysis in this comparative study. A causal model that

successfully explains academic aspirations among white adolescents may not be equally effective for members of minority ethnic groups.

Although the author attempted to examine relationships among variables within each ethnic group, unfortunately, the limited sample size in each ethnic group did not allow for more advanced subgroup analyses such as testing path models for each ethnic group. Future comparative studies should obtain samples large enough to allow testing of different causal models for each ethnic group. If that is not feasible, the study should perhaps be limited to a racially homogenous sample.

It has been mentioned earlier in this chapter that blacks and whites in the present sample are not representative of those two ethnic populations in general, especially in respect to family status. The reader should keep this sampling bias in mind when making generalizations about the findings of the present study to blacks and whites in general.

Another limitation of the present study is that it did not involve parents in order to obtain their own responses as to parental encouragement and aspirations for their children's educational career. In view of the heavy emphasis on familial influence on the development of adolescents' academic aspirations and performance behavior, this study would have benefitted by including parents in

the sample.

Finally, it is possible that there are more powerful predictors of adolescents' educational aspirations and school achievement other than those variables included in the present research. For example, teacher's expectations for each individual student, students' class attendance, their curricular activities, or peer influence might be valuable in the analysis of adolescents' aspirations and achievement. A potentially profitable future study on adolescents' aspirations and performance should be longitudinal and use sensitive family and school measures by involving parents as well as teachers in the sample.

Despite these limitations, the present study makes a unique contribution to the understanding of educational aspiration and achievement among different ethnic adolescents, by incorporating variables which have not been examined previously. For example, the belief in filial duty is a new concept. Although this filial duty variable did not have a strong direct impact on aspiration and performance, it was shown to have an appreciable indirect impact on aspiration. Also, the present study found the possibility of the mediating role of the filial duty variable in the relationship between parents' encouragement and children's aspiration.

Also, the present study examined the impact of adolescents' perception of limited opportunity on their educational

aspiration and achievement. Only one previous study on educational aspiration investigated this opportunity perception variable (see Epps, 1969), but Epps' analysis was limited to zero-order correlations. On the other hand, the present study presented an appreciable direct and indirect impact of this variable on academic performance by employing the path analytic technique. Furthermore, the present study illustrated the potential fruitfulness of considering extra-curricular activities in the analysis of adolescents' academic aspiration and performance.

The final comments concern the findings on minority students. In the present study, Asian, black, and Hispanic high school students had slightly higher levels of aspirations than Caucasian students. These minority youth also perceived their life chances as limited more so than white students did. In view of these results, rising aspirations of these minority students would often result in subsequent frustrations. Teachers and counselors need to help these adolescents to make realistic decisions about their educational career and to cope with their frustrations. Teachers and counselors should also assure these students that the discrepancy between their goals and opportunity is one of the challenges in life rather than a forbidding factor. Finding ways of producing positive changes in educational aspirations, expectations and performance among adolescents is a very formidable task

which requires continued research effort.

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APPENDIX A

ID NUMBER _____

STUDENT QUESTIONNAIRE

This study is about high school students' educational experience. Your opinions on this subject are very important. Please answer every question as honestly and accurately as possible. If you wish to comment on any questions or explain your answers, please use the margins. If you have trouble understanding any questions, feel free to ask questions.

You may be assured of complete confidentiality. The questionnaire has an identification number for analysis purposes and your name will never be placed on the questionnaire.

THE FOLLOWING QUESTIONS DESCRIBE A NUMBER OF COMMON EXPERIENCES MOST STUDENTS HAVE IN THEIR DAILY LIVES. THESE STATEMENTS ARE PRESENTED ONE AT A TIME, AND FOLLOWING EACH ARE TWO POSSIBLE ANSWERS. FOR EACH STATEMENT, CHOOSE THE ONE ANSWER THAT MOST OFTEN DESCRIBES WHAT HAPPENS TO YOU. PUT A CHECK IN FRONT OF THAT ANSWER. BE SURE TO ANSWER EACH QUESTION ACCORDING TO HOW YOU REALLY FEEL.

1. If a teacher passes you to the next grade, would it probably be
 a. because she liked you, or
 b. because of the work you did?
2. When you do well on a test at school, is it more likely to be
 a. because you studied for it, or
 b. because the test was especially easy?
3. When you have trouble understanding something in school, is it usually
 a. because the teacher didn't explain it clearly, or
 b. because you didn't listen carefully?
4. Suppose you did better than usual in a subject at school. Would it probably happen
 a. because you tried harder, or
 b. because someone helped you?
5. Suppose you study to become a teacher, scientist, or doctor and fail. Do you think this would happen
 a. because you didn't work hard enough, or
 b. because you needed some help, and other people didn't give it to you?
6. When you learn something quickly in school, is it usually
 a. because you paid close attention, or
 b. because the teacher explained it clearly?

7. If a teacher says to you, "Your work is fine," is it usually
_____ a. something teachers usually say to encourage pupils,
or
_____ b. because you did a good job?
8. When you find it hard to work arithmetic or math problems at school, is it usually
_____ a. because you didn't study well enough before you
tried them, or
_____ b. because the teacher gave problems that were too
hard?
9. When you remember something you heard in class, is it usually
_____ a. because you tried hard to remember, or
_____ b. because the teacher explained it well?
10. When you don't do well on a test at school, is it usually
_____ a. because the test was especially hard, or
_____ b. because you didn't study for it?
11. If a teacher didn't pass you to the next grade, would it probably be
_____ a. because she "had it in for you," or
_____ b. because your school work wasn't good enough?
12. Suppose you don't do as well as usual in a subject at school. Would this probably happen
_____ a. because you weren't as careful as usual, or
_____ b. because somebody bothered you and kept you from
working?
13. Suppose you became a famous teacher, scientist or doctor. Do you think this would happen
_____ a. because other people helped you when you needed it,
or
_____ b. because you worked very hard?

14. When you find it easy to work arithmetic or math problems at school, is it usually
- _____ a. because the teacher gave you especially easy problems, or
- _____ b. because you studied your book well before you tried them?
15. When you forget something you heard in class, is it usually
- _____ a. because the teacher didn't explain it very well, or
- _____ b. because you didn't try very hard to remember?
16. If a teacher says to you, "Try to do better," is it usually
- _____ a. because this is something she might say to get pupils to try harder, or
- _____ b. because your work wasn't as good as usual?

FOR EACH OF THE FOLLOWING PAIRS OF STATEMENTS, PLEASE CHECK THE ONE STATEMENT YOU AGREE WITH MORE. IN SOME CASES, YOU MAY FEEL THAT NEITHER a NOR b IS RIGHT OR BOTH a AND b ARE RIGHT BUT PLEASE TRY TO CHOOSE THE ONE STATEMENT THAT YOU AGREE WITH MORE.

1. _____ a. In the case of the well-prepared students, there is rarely if ever such a thing as an unfair test.
- _____ b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
2. _____ a. I have often found that what is going to happen will happen.
- _____ b. Trusting the fate has never turned out as well for me as making a decision to take a definite course of action.
3. _____ a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
- _____ b. Getting a good job depends mainly on being in the right place at the right time.

4. _____ a. What happens to me is my own doing.
_____ b. Sometimes I feel that I don't have enough control over the direction my life is taking.
5. _____ a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
_____ b. Who gets to be the boss depends on who has the skill and ability, luck has little or nothing to do with it.
6. _____ a. When I make plans, I am almost certain I can make them work.
_____ b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
7. _____ a. Knowing the right people is important in deciding whether a person will get ahead.
_____ b. People will get ahead in life if they have the goods and do a good job; Knowing the right people has nothing to do with it.
8. _____ a. In my case, getting what I want has little or nothing to do with luck.
_____ b. Many times we might just as well decide what to do by flipping a coin.
9. _____ a. People who don't do well in life often work hard, but the breaks just don't come their way.
_____ b. Some people just don't use the breaks that come their way. If they don't do well, it's their own fault.
10. _____ a. Many times I feel that I have little influence over the things that happen to me.
_____ b. It is impossible for me to believe that chance or luck plays an important role in my life.

PLEASE INDICATE THE DEGREE OF YOUR AGREEMENT OR DISAGREEMENT WITH EACH OF THE FOLLOWING STATEMENTS BY CIRCLING THE ONE NUMBER THAT BEST DESCRIBES YOUR FEELINGS.

1. I more often attempt difficult tasks that I am not sure I can do than easier tasks I believe I can do.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

2. I would rather do something at which I feel confident and relaxed than something which is challenging and difficult.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

3. I would prefer a job which is fairly difficult and involves a 50 per cent chance of failure to a job which is not difficult and has a low chance of failure.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

4. If I am going to play cards I would rather play a fun game than a difficult game.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

5. I prefer situations in which I have superior ability to those in which everyone involved is about equal in ability.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

6. I think more of the future than the present and past.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

7. I am more unhappy about doing something badly than I am happy about doing something well.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

8. If I am not good at something, I would rather keep struggling to master it than move on to something I may be good at.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

9. I think that I hate losing more than I love winning.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

10. I think more about getting a good grade than I worry about getting a bad grade.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

WE WOULD LIKE TO REMIND YOU THAT THERE ARE NO RIGHT OR WRONG ANSWERS. PLEASE CIRCLE A NUMBER THAT BEST FITS THE WAY YOU FEEL.

- | | STRONGLY
DISAGREE | NEUTRAL | STRONGLY
AGREE |
|---|----------------------|---------|-------------------|
| 1. Most people are better off than I am. | 1 _____ | 2 _____ | 3 _____ 4 _____ 5 |
| 2. My family can't give me the opportunity that most kids have. | 1 _____ | 2 _____ | 3 _____ 4 _____ 5 |
| 3. The world is usually good to people like me. | 1 _____ | 2 _____ | 3 _____ 4 _____ 5 |
| 4. I probably won't be able to do the kind of work that I want to do because I won't have enough education. | 1 _____ | 2 _____ | 3 _____ 4 _____ 5 |
| 5. A person like me has a pretty good chance of going to college. | 1 _____ | 2 _____ | 3 _____ 4 _____ 5 |
| 6. I'll never have enough money to go to college. | 1 _____ | 2 _____ | 3 _____ 4 _____ 5 |
| 7. If a person like me works hard, he/she can get ahead. | 1 _____ | 2 _____ | 3 _____ 4 _____ 5 |

THE FOLLOWING STATEMENTS ARE ALL ABOUT ONE GROUP, ASIAN-AMERICANS. PLEASE INDICATE THE DEGREE OF YOUR AGREEMENT OR DISAGREEMENT WITH EACH OF THE FOLLOWING STATEMENTS BY CIRCLING THE ONE NUMBER THAT BEST DESCRIBES YOUR FEELINGS.

1. It's lack of skill and abilities that keeps many Asian minorities from getting a job. It's not just because they are Asian. When an Asian is trained to do something, he is able to get a job.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

2. Many Asian minorities who don't do well in life do have good training, but the opportunities just always go to whites.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

3. Many Asians have only themselves to blame for not doing better in life. If they tried harder, they'd do better.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

4. It doesn't matter how "proper" you are, you'll still meet serious discrimination if you're Asian.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

5. Many qualified Asians can't get a good job. White people with the same skills wouldn't have any trouble.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

6. Asians may not have the same opportunities as whites, but many Asians haven't prepared themselves enough to make use of the opportunities that come their way.

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1	2	3	4	5

7. When two qualified people, one Asian and one white, are considered for the same job, the Asian won't get the job no matter how hard he tries.

STRONGLY
DISAGREE

MILDLY
DISAGREE

NEITHER AGREE
NOR DISAGREE

MILDLY
AGREE

STRONGLY
AGREE

1 _____ 2 _____ 3 _____ 4 _____ 5

8. The problem for many Asian minorities is that they aren't really acceptable by American standards. Any Asian who is considered proper will be accepted and get ahead.

STRONGLY
DISAGREE

MILDLY
DISAGREE

NEITHER AGREE
NOR DISAGREE

MILDLY
AGREE

STRONGLY
AGREE

1 _____ 2 _____ 3 _____ 4 _____ 5

NEXT, WE HAVE SOME QUESTIONS ABOUT YOUR OPINIONS AND PLANS FOR YOUR FUTURE ACADEMIC CAREER. PLEASE ANSWER EVERY QUESTION.

1. If you had the necessary abilities, grades, money, etc., how far would you like to go in school?

- (1) SOME HIGH SCHOOL
- (2) HIGH SCHOOL DIPLOMA
- (3) ASSOCIATE, TWO-YEAR, JUNIOR COLLEGE DEGREE
- (4) BACHELOR'S DEGREE
- (5) MASTER'S DEGREE
- (6) DOCTORAL OR PROFESSIONAL DEGREE (PH.D, MEDICAL OR DENTAL DEGREE, LAW DEGREE, etc.)
- (7) OTHER (SPECIFY) _____

2. Do you think you will make it?

- (1) YES
- (2) NO
- (3) NOT SURE

Why do you think so?

3. Considering your abilities, grades, financial resources, etc., how far do you actually expect to go in school?

- (1) SOME HIGH SCHOOL
- (2) HIGH SCHOOL DIPLOMA
- (3) ASSOCIATE, TWO-YEAR, JUNIOR COLLEGE DEGREE
- (4) BACHELOR'S DEGREE
- (5) MASTER'S DEGREE
- (6) DOCTORAL OR PROFESSIONAL DEGREE (PH.D, MEDICAL OR DENTAL DEGREE, LAW DEGREE, etc.)
- (7) OTHER (SPECIFY) _____

4. How important is getting a college education to you?

NOT AT ALL IMPORTANT	OF LITTLE IMPORTANCE	SOMEWHAT IMPORTANT	EXTREMELY IMPORTANT
-------------------------	-------------------------	-----------------------	------------------------

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____

Why do you think so?

5. If you go to college, what would you like to major in?

6. Several things help students to make good grades, of course. Some students seem to make good grades, but others don't. What do you think determine(s) grade? (Write down all you can think of.)

7. During the past year, how often did your father and mother encourage you to continue your education beyond high school? (Circle one number that best describes your opinion.)

FATHER:

- (1) NOT AT ALL
- (2) A FEW TIMES
- (3) ABOUT ONCE A MONTH
- (4) ABOUT TWO TO THREE TIMES A MONTH
- (5) ABOUT ONCE A WEEK
- (6) MORE THAN ONCE A WEEK

MOTHER:

- (1) NOT AT ALL
- (2) A FEW TIMES
- (3) ABOUT ONCE A MONTH
- (4) ABOUT TWO TO THREE TIMES A MONTH
- (5) ABOUT ONCE A WEEK
- (6) MORE THAN ONCE A WEEK

8. How upset do you think your parents would be if you got a low grade on an important test such as midterm or final exam?

NOT VERY
UPSET

SOMEWHAT
UPSET

VERY
UPSET

1 _____ 2 _____ 3 _____ 4 _____ 5

9. Are you doing as well in school as your parents want you to do?

NOT AS WELL

AS WELL

DOING BETTER

1 _____ 2 _____ 3 _____ 4 _____ 5 _____

10. Some students do well in school and some do poorly. What do you think are important factors a person needs in order to do well in school?

11. Among those factors, which do you think is the most crucial factor?

12. When you have questions with your school work, is there someone in your family who can help you?

- (1) YES WHO? _____
 (2) NO (IF "NO", SKIP THE NEXT QUESTION AND GO TO 14.)

13. How often is this person able to give you the help you need? (Circle one number that best describes your opinion.)

NEVER

SELDOM

SOMETIMES

OFTEN

ALWAYS

1 _____ 2 _____ 3 _____ 4 _____ 5 _____

14. Suppose you got an A on a math test, which of the following statements would most likely explain your getting an A on it? (Circle one number.)

- (1) You worked hard to prepare for the exam.
 (2) The exam was relatively easy.
 (3) The exam was on a subject in which you were good.
 (4) You were lucky and happened to do well.
 (5) Your teacher was in a good mood and gave you an A.

15. Suppose you got an A on a English test, which of the following statements would most likely explain your getting an A on it? (Circle one number.)

- (1) You worked hard to prepare for the exam.
- (2) The exam was relatively easy.
- (3) The exam was on a subject in which you were good.
- (4) You were lucky and happened to do well.
- (5) Your teacher was in a good mood and gave you an A.

16. How do you feel about the following statements?

"I owe it to my parents to do well in school."

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

"My doing well in school is important to my family."

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

"If I don't do well in school, I feel I would let my parents down."

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

"If I decide to go to college, my parents will back me up in any way they can."

STRONGLY DISAGREE	MILDLY DISAGREE	NEITHER AGREE NOR DISAGREE	MILDLY AGREE	STRONGLY AGREE
1 _____	2 _____	3 _____	4 _____	5 _____

17. If you really did your best, what would your grade point average be? (Circle one.)

A A- B+ B B- C+ C C- D+ D D- F

18. Actually, what grade point average do you get? (Circle one.)

A A- B+ B B- C+ C C- D+ D D- F

19. Many factors can influence students' performance in school. Here are some of them. All of these may be important but we want to know your opinion about the relative importance of each factor. So, please rank these factors using numbers from 1 (THE MOST IMPORTANT FACTOR) to 7 (THE LEAST IMPORTANT FACTOR), giving each factor a different number to reflect its relative importance.

THE TEACHER _____

THE LEVEL OF INTELLIGENCE _____

DEVELOPING GOOD STUDY HABIT _____

HOME ENVIRONMENT _____

STUDYING HARD _____

CONTENT AND LEVEL OF CURRICULUM _____

LUCK _____

20. If any, what kind of extracurricular activities are you in now in your school? (Write down all clubs and activities you are in.)

21. What occupation do you think you will make your life work--you may not be sure about your future occupation at this point but try to think what you expect to be doing 10-20 years from now?

22. Which of the following best describes your racial or ethnic identification? (Circle one)

- (1) AMERICAN INDIAN/NATIVE AMERICAN
- (2) ASIAN-AMERICAN/ORIENTAL (SPECIFY) _____
- (3) BLACK/AFRO-AMERICAN/NEGRO
- (4) HISPANIC-BLACK/SPANISH-SPEAKING BLACK
- (5) HISPANIC-WHITE/SPANISH-SPEAKING WHITE
- (6) WHITE/CAUCASIAN
- (7) OTHER (SPECIFY) _____

23. What is your birth order? _____ OF _____ CHILDREN

24. How far did your mother and father go in school?
(Check separately for your mother and father.)

	MOTHER:	FATHER:
(1) SOME HIGH SCHOOL	_____	_____
(2) HIGH SCHOOL DIPLOMA	_____	_____
(3) ASSOCIATE, TWO-YEAR, JUNIOR COLLEGE DEGREE	_____	_____
(4) BACHELOR'S DEGREE	_____	_____
(5) MASTER'S DEGREE	_____	_____
(6) DOCTORAL OR PROFESSIONAL DEGREE (PH.D, MEDICAL OR DENTAL DEGREE, LAW DEGREE, etc.)	_____	_____
(7) OTHER (SPECIFY)	_____	_____

25. What are your mother's and father's occupations?

MOTHER'S OCCUPATION _____

FATHER'S OCCUPATION _____

THIS IS THE END. THANK YOU VERY MUCH FOR YOUR HELP.

APPROVAL SHEET

The dissertation submitted by Yanghui Kim Han has been read and approved by the following committee:

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

June 9, 1986

Date

John D. Edwards

Director's Signature