TARGETED SUBSIDIZATION OF POSTSECONDARY EDUCATION ENROLLMENT IN MINNESOTA: A POLICY EVALUATION

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EXECUTIVE SUMMARY

The State of Minnesota is currently undertaking a major public policy experiment. It is moving away from its traditional policy of providing low tuition levels at public postsecondary institutions and moving toward a new policy that couples higher tuition levels with increased amounts of need-based student financial aid. In effect, it is replacing a blanket subsidy for all postsecondary students with a targeted subsidy aimed at those students with demonstrable financial need. The goals are increased fiscal efficiency and improved equity in the disbursal of tax-generated revenues. The risks of the new policy, according to its critics, are that raising tuition levels in the midst of an era of declining federal student aid will curtail educational opportunity in the state, regardless of the accompanying rises in state student aid funding.

This report addresses the need for evaluation of this policy experiment. How are current and prospective students in the state reacting to the changes in the pricing of postsecondary education? Are recent rises in tuition really leading to significant declines in postsecondary attendance among lower-income students, despite the parallel increases in student aid funding? Overall, are student access and choice being seriously diminished?

Debates over these questions have filled the state's newspapers and airwaves in the past few years, yet adequate answers are not easily obtained. A variety of economic, psychological, sociological, and cultural factors can influence student attendance patterns, and discerning their distinctive influences is difficult. The literature regarding the influences of various factors is reviewed in Chapter 2 of the report. The review suggests that socioeconomic status and other family background factors have strong influences on college attendance pat-

terns, as do factors relating to ability, achievement, aspirations, and expectations. Contextual effects, such as the social class and ability contexts of high schools, have small but significant effects. Financial factors, independent of other family characteristics, seem to have moderate to strong effects, depending on the phase of attendance considered: their effects are particularly strong in students' choice of a college to attend, but less strong in students' basic access decision (whether or not to pursue postsecondary education).

Of the above influences, only a few are easily susceptible to manipulation by policymakers in their pursuit of equality of postsecondary opportunity. Obviously, parents' social class, income, and educational and job attainments are beyond policy. High school contexts, as well as student plans, and hopes, can indeed by manipulated successfully, but the costs can be high. The tactic of policy changes in cost factors stands out as potentially one of the most efficient and effective approaches for pursuing equity in postsecondary expectations and attendance. Yet longitudinal research on the effectiveness of alternative financing approaches has rarely, if ever, been conducted. Such was the intent in the present study, the Minnesota Postsecondary Education Enrollment Project (MPEEP).

Chapter 3 presents the design for the project. The research sought answers to four questions. Three of those questions correspond to what some analysts have called the three core aspects of postsecondary attendance: access, choice (institutional destinations), and persistence (although the last could be a focus only indirectly, by way of aid package quality, due to data limitations). The other question addresses what many studies find to be the critical mediating factor in attendance decisions: educational expectations and plans. Financial and other potentially limiting factors may have their most deleterious influences on attendance indirectly, by way of their effects on early planning, rather than

directly at the time of final matriculation decisions. In keeping with the focus of this study, the four questions thus are phrased to address issues relating to changes over time in the determinants of postsecondary expectations and plans, access, destinations, and aid package quality in Minnesota. Together, the four questions comprise the core of the policy evaluation problem:

> Question 1 (Postsecondary Expectations and Plans): Have financial factors begun to play an increasing role in explaining Minnesota high school students' postsecondary expectations and plans?
>
> Question 2 (Postsecondary Access): Have financial factors begun to play an increasing role in explaining whether or not Minnesota students undertake postsecondary education?
>
> Question 3 (Postsecondary Destinations): Have financial factors begun to play an increasing role in explaining which institution Minnesota college-bound students attend?
>
> Question 4 (Postsecondary Aid Packages): Among similar needy students attending similar colleges in Minnesota, has the quality of aid packages declined in recent years?

There exist two radically different sets of expectations for answers to these questions. These contrasting expectations correspond to the two opposing postsecondary financing philosophies introduced briefly in Chapter 1: targeted subsidization versus blanket subsidization. Proponents of targeted subsidization believe Questions 1 through 4 will be answered negatively. They perceive the low tuition levels historically provided by state postsecondary systems (in Minnesota and elsewhere) to be both inefficent and inequitable. Opponents of targeted subsidization, however, believe the provision of low tuition has been the keystone of this country's success in opening higher education to the masses, and believe that backing away from that policy (even with increased financial offsets) will likely lead to affirmative answers to the four questions.

To find answers to the first three questions introduced above, the research project employed both existing and newly collected data for three cohorts of Minnesota students: the high school classes of 1980, 1982, and 1984. These years cover the period in which Minnesota moved strongly in the direction of targeted subsidization. They thus allow examination of changes in attendance and student financing patterns in relation to changes in policy. Primary data for these first three questions came from the annual Student Plans and Background Survey (PBS) of the Minnesota Post-High School Planning Program (PSPP). These annual surveys by the Minnesota Higher Education Coordinating Board (HECB) explore the backgrounds, plans, and attitudes of Minnesota high school juniors. The PBS surveys did not significantly change format or items over the four-year time period under study here. PSPP samples cover from 75 to 85 percent of Minnesota high school juniors in any given year. These data were supplemented with other HECB data on students' high school rank and tested ability. For the analyses of postsecondary attendance and choice, the data were supplemented with survey data gathered especially for the present study.

The analysis of the fourth question, on aid package quality, relied on a separate data source; the Scholarship and Grant File of HECB. This file contains information on the federal and state grants received by students at Minnesota institutions.

The four chapters following Chapter 3 report the results of our analyses of the four focal questions. Chapter 4 examines postsecondary expectations and plans among high school juniors in 1979, 1981, and 1983. The results strongly suggest that the level of Minnesota students' postsecondary expectations and plans has not been lowered by the increased targeting of state funds, and that expectations and plans are continuing to be affected mainly by academic factors, such as ability and achievement, rather than by parents' financial circumstances.

The effects of financial factors on expectations and plans appear, in fact, to be negligible. In other words, we conclude that Question 1 must be answered negatively: there has been no detectable deterioration in the primarily meritocratic determination of postsecondary educational expectations and plans.

Chapter 5 presents the results of our analysis of postsecondary attendance (access). The findings suggest that attendance rates remained remarkably constant across the three cohorts, and that the primary influences were students' high school achievements and previous expectations for attendance. The effects of parental income levels were relatively constant and minimal across the three cohorts, with no sign of increasing influences over time. Therefore, the influence of state policy changes appears to have been negligible. That is, Question 2 must be answered negatively: there has been no noticeable deterioration in the primarily meritocratic determination of postsecondary educational attendance.

Chapter 6 discusses the findings of our analyses of Minnesota's college-going going students' postsecondary destinations (e.g., a state college, as opposed to a private institution). The analyses presented there suggest that the factors most central to students' expectations, plans, and access are also those most central to their choices. That is, the primary determinants seem to be academic rather than financial. As expected, the role of family income level in choices was somewhat greater than its role in expectations, plans, and access, but there was no evidence that its role was increasing over time. Changes in state policy appear not to have hampered the choice process. Therefore, as with Questions 1 and 2, Question 3 was answered negatively: there has been no noticeable alteration in the primarily meritocratic determination of postsecondary destinations.

The Chapter 7 analysis used a student aid data base to assess the financial status of financial aid applicants on Minnesota campuses. Specifically, it addressed the issue of how well the calculated postsecondary costs of students at

varying family financial contribution levels were met by state and federal grants in 1980-81, 1982-83, and 1984-85, respectively. Unlike the work of the preceding three chapters, the findings here indeed suggest evidence of dramatic change over the time period studied. For dependent students, decline in the adequacy and quality of student aid packages between 1980 and 1982 was ameliorated somewhat in 1984, as new state policies worked to offset increasing educational costs. For some of these students, grant aid was meeting a higher proportion of costs in 1984 than in 1980. For most independent students, however, decline in the adequacy and quality of aid packages continued throughout the 1980-84 period. The findings of Chapter 7 thus give an equivocal answer to Question 4. Between 1980 and 1984, dependent students neither gained nor lost much overall, while independent students lost, on the whole. The causes of the deterioration in aid packages among independents seem to lie in both federal aid cutbacks and changing state grant policies.

What messages might the MPEEP study provide policy makers? First, the recent cuts in federal Pell Grant growth have clearly been felt by many students. Pell Grants are the basic need-based federal aid program, and the data on aid packages in Chapter 7 show definite drops for most independent students in nonreturnable aid as a proportion of total costs over the 1980 to 1984 period. State sources have not fully offset the federal cutbacks. Second, the influence of academic factors already largely established by the junior year in high school has remained primary in determining postsecondary expectations and plans, access, and choice, even in the face of federal cuts (see Chapters 4, 5, and 6).

Had we found the attendance influences of family income to be rising over the period assessed in our study, it would have been difficult to discern whether targeted state subsidies, federal aid cutbacks, or other factors were most to blame for the losses in equity. Without evidence of growing income effects, how-

ever, it may be concluded that, while college has unquestionably become more expensive for many students (due undoubtedly both to targeted subsidy policies and federal aid cuts), the rising costs have not so far significantly damaged attendance plans and patterns. Other studies with more extensive data sets and broader scopes may modify that conclusion. For now, though, the case for declining equity in attendance patterns remains unproven and, at heart, unconvincing.

Chapter 1

Introduction: The Policy Context of Postsecondary Student Finance in Minnesota

The State of Minnesota is currently undertaking a major public policy experiment (see Minnesota Higher Education Coordinating Board, 1982a,b). It is moving away from its traditional policy of providing low tuition levels at public postsecondary institutions and moving toward a new policy that couples higher tuition levels with increased amounts of need-based student financial aid. In effect, it is replacing a blanket subsidy for all postsecondary students with a targeted subsidy aimed at those students with demonstrable financial need. The goals are increased fiscal efficiency and improved equity in the disbursal of tax-generated revenues.[1] The risks of the new policy, according to its critics, are that raising tuition levels in the midst of an era of declining federal student aid (see College Board 1983, 1984) will curtail educational opportunity in the state, regardless of the accompanying rises in state student aid funding.

The following report addresses the need for evaluation of this policy experiment. How are current and prospective students in the state reacting to the changes in the pricing of postsecondary education? Are recent rises in tuition really leading to significant declines in postsecondary attendance among lower-income students, despite the parallel increases in student aid funding? Overall, are student access and choice being seriously diminished?

Debates over these questions have filled the state's newspapers and airwaves in the past few years (e.g., see Minnesota Star and Tribune, May 7, 1983), yet adequate answers are not easily obtained. A variety of economic, psychological,

sociological, and cultural factors can influence student enrollment decisions. Any evaluation of the effects of the new Minnesota financing policy must consider all of these factors. An ideal evaluation would be one which empirically "modeled" the attendance decision process as a whole. In other words, wide-ranging survey data would be collected over a long period of time from several cohorts of Minnesota high school graduates, their parents, their employers, and their colleges. No matter what path students took, their behaviors would be chronicled and all potential explanations for those behaviors explored. Such an approach would allow analysts to distinguish clearly among causes, effects, and spurious artifacts. Unfortunately, the resources for such an ideal analysis are unavailable. A less costly analytic approach is nevertheless both feasible and defensible as a policy evaluation, as long as it considers the factors found to be critically relevant in earlier studies of the topic. Such an analysis is presented here. The results reported here are those produced through the work of the Minnesota Postsecondary Education Enrollment Project (MPEEP).

The research report is organized in the following way. Chapter 2 presents an overview of earlier research on the effects of financing policies, and other factors, on postsecondary attendance patterns. Chapter 3 presents the design for the study. As is discussed in detail there, the study was organized around four focal questions. Those questions involved, respectively, postsecondary expectations and plans among high school students, postsecondary access among recent high school graduates, postsecondary destinations (choice) among recent high school graduates, and the financial conditions of postsecondary students. The intention of this framework is to explore four areas where the policy change in Minnesota might be having significant effects on Minnesota youth. Chapters 4 through 7 report the results we found regarding the four central questions; one

chapter is devoted to each question. Chapter 8 suggests some implications for policy and further research.

Chapter 2

Influences on Postsecondary Attendance: The Research Literature

Students' postsecondary educational decisions, from simple access to institutional choice to persistence--whether to go to college, where to attend, and whether to persist--have been the subject of intense and occasionally contradictory research across a wide range of disciplines (see McPherson, 1978; Jackson, 1982; Hossler, 1984). This research exists against a backdrop of striking inequities in attendance rates, choices, and persistence among different groups in the society. Whites have historically attended at greater rates than minorities, youth from lower socioeconomic statuses have attended at lower rates than those from the upper statuses, and, until the mid-seventies, men attended at greater rates than women (Peng, 1983; Hossler, 1984). Similarly, students from lower socioeconomic statuses, including those from lower-income backgrounds, have been found to be more likely to attend lower-cost, lower-prestige institutions (Hearn, 1984) and more likely to drop-out of college (Tinto, 1982). The causes of these patterns of group differences, however, cannot be gleaned from such simple descriptive data. Ability and achievement factors, and the relationships of these factors to such grouping factors as race, sex, and social class, must somehow also be considered.

The almost staggering variety of factors defined as driving forces behind patterns of college attendance reflects the interdisciplinary nature of this problem. For the purposes of this review chapter, we will break these driving factors into five categories: ascriptive and family background factors, ability

and achievement factors, aspirations and expectations factors, contextual factors, and financial factors. While the boundaries between some of these categories are necessarily somewhat artificial, this approach allows a clear picture of what past research offers us as we attempt to better understand the motivations underlying postsecondary attendance, choice, and persistence.

Two points should be clarified here. First, in reviewing below the causal effects of these factors, we speak of their respective effects when other relevant factors are statistically controlled, unless we state otherwise. Second, the term educational attainment is used throughout this review chapter and should be clarified. Traditionally, educational attainment has been measured by social scientists in years of schooling obtained. As the limitations of this definition became clearer, however, researchers began to specify not only the quantity of education received but the quality. To that end, measures of educational attainment are expanding to include such things as field of study and type of school attended (e.g. see Wilson, 1978). In this review, unless stated otherwise, the term educational attainment is meant in the expanded sense, but is used to denote a small continuum of education--first postsecondary access, then institutional choice, finally persistence at the postsecondary institution of one's choice.

Ascriptive and Family Background Factors

Ascriptive characteristics such as race and gender provide a very visible way to look at differences in attendance, choice, and persistence. In 1980, women had higher entry rates (i.e. access rates) into both two- and four-year colleges than did men, the result of falling rates for men and rising rates for women in both cases (Peng, 1983). Whites showed higher entry rates than either

blacks or Hispanics; the black-white entry rate gap decreased between 1972 and 1980 for both two- and four-year institutions while the white-Hispanic gap increased, largely due to a substantial drop in two-year college entry rates for Hispanics (see Peng, 1983). Overall, race and gender differences in attendance patterns have generally decreased markedly in the past twenty years.

Using both discrete and composite measures of socioeconomic status (SES), many researchers have attempted to quantify the impact of family socioeconomic background on educational attainment (e.g. see Blau and Duncan, 1967; Sewell and Shah, 1968; Alexander and Eckland, 1975). Family background has been found to explain as much as two-thirds of the population's variation in years of schooling attained (e.g. see Hauser and Featherman, 1975; and Jencks et al., 1972). Fathers' education and occupation, mothers' education, and family income have been found to have significant positive direct effects on attendance, choice, and persistence, as well as indirect effects through such mediating variables as aspirations, expectations, and parental encouragement (Davies and Kandel, 1981). In a causal model for a national sample, Thomas, Alexander, and Eckland (1979) found that although the combined effects of ability, high school rank, and curriculum placement outweighed the effects of SES on postsecondary attendance, SES effects were still quite significant; interestingly, those effects were of varying importance for blacks, whites, men, and women. These kinds of SES effects on attainment diminish but do not disappear after college enrollment begins (Rosenfeld, 1980). Thus, in sum, family socioeconomic background is a critical factor in postsecondary attendance patterns.

Ability and School Achievement Factors

The strong positive relationship between students' academic characteristics

and their educational attainment will come as no surprise to anyone. Even in the context of statistical controls for family background, student ability strongly influences college attendance. However, this straightforward relationship is distorted somewhat by ascriptive and socioeconomic factors. For example, Thomas et al. (1979) found significant race and gender differences in both the acquisition of academic "credentials" (such as tested ability, high school rank, and curriculum placement) and the payoff that those credentials had for college attendance decisions, among a sample of 1972 high school seniors; similarly, those authors found that approximately one-third of the effect of SES on post-secondary attendance was channeled through its effects on scholastic aptitude. The same kinds of differences persisted in a similar analysis of 1980 high school seniors (Urahn and Hearn, 1985). Simply put, it appears the effects of SES and ascriptive factors on postsecondary attendance are in part indirect and due to their respective effects on academic characteristics, which in turn affect attendance.

Aspirations, Expectations, and Plans

Educational aspirations, expectations, and plans have been found by many researchers to be critical mediators in the educational attainment process (e.g. see Sewell and Hauser, 1975; Thomas, 1977). Until recently, males reported higher levels of educational aspirations than females, and researchers often suggested that this pattern represented greater "realism" on the male's part, since their aspirations reflected their greater chances of realizing their occupational goals (e.g., see Marini and Greenberger, 1978; Rosenfeld, 1980; Hearn and Urahn, 1985). For many years, however, blacks have reported equal or higher levels of aspirations, compared to whites (Thomas et al., 1979); where blacks

lag behind whites is in their level of expectations, presumably because of the greater "realistic" component of expectations indicators, compared to aspirations indicators. Accordingly, some researchers have argued, convincingly, that aspirations are a poor focus for research on attendance; expectations and plans may be better, less ambiguous variables more closely tied to eventual behavioral outcomes (see Alexander and Cook, 1979). Unfortunately, little research exists as yet on the role of these variables in student attainments.

Regardless of where one stands on that controversy, there is little question that parents' aspirations, expectations, and plans for their children significatly influence students' college plans. Presumably, these aspirations, expectations, and plans have their effects by way of parental communication to children (various forms of encouragement and support). Regardless of education, occupation, or income, most parents aspire for their children to go to college (97 percent of them in 1967); and take steps to aid their children's college attendance (Rosenfeld, 1980). As one would expect, however, parents' expectations for their children's education show large differences by income (Rosenfeld, 1980). One way that SES may affect attainment is indirect, therefore, via parental expectations (Davies and Kandel, 1980). Parental aspirations, expectations and plans may exert a particularly important effect on students' college choice (Litten et al., 1980). Unfortunately, as with research on students alone, most of the research on parental influences is focused upon parental aspirations, rather than the arguably more influential parental expectations and plans.

Contextual Factors

High school context variables abound in the literature on college attendance patterns; they usually include peers' plans and aspirations, school personnel

contact, high school curriculum, extracurricular activities, and proportion of seniors that are college-bound (e.g. see Griffin and Alexander, 1978). The effects of these variables on educational attainment, after controlling for family background and ability, are in the expected directions (e.g., being surrounded by ambitous peers tends to promote college attendance), but tend to be small. In fact, the most significant variations in college attendance are those found within school, rather than between schools: students seem to vary much more than their school contexts do.

When contextual effects of aggregate, school-level measures of SES and ability are considered, two patterns emerge. When a student body's average ability level is high students' grades, academic self-concept, and educational aspirations are somewhat depressed (the "frogpond effect"); when a student body's average SES level is high, though, rates of enrollment are increased, possibly through increased placement in college preparatory curricula and increased contact with college-bound peers (Alwin and Otto, 1977).

Like high school contexts, college attributes (i.e. contexts) can affect student attendance, choice, and persistence. In addition to a number of college-level financial factors (discussed in the next section), the accessibility, selectivity, organizational environment, and social climate of a college may affect attendance. For example, accessibility and selectivity play positive roles in encouraging access and choice (see Anderson, Bowman, and Tinto, 1972; Radner and Miller, 1975; Tierney, 1980). Environmental and climate variables, such as type of institution and social prestige, show small overall effects, but their contribution may be muddied through their high correlation with measures of selectivity and price (Terkla and Jackson, 1984).

Financial Factors

The final category of influences on student attendance is composed of financial factors. This category is probably the most arbitrary of those considered in this chapter, since most financial variables could be placed within one or more of the categories described above. Grouping them together highlights both their importance to this study and the relatively undeveloped state of research in this area.

Intuitively, one assumes that family income has great importance as a factor or in college access, yet evidence suggests otherwise. After controlling for the other aspects of socioeconomic status, and for student and school characteristics, Jackson (1977) found no direct effect of parental income on college attendance rates. Jackson's study, and others, find the effects of family income on postsecondary access to be largely indirect. That is, income streams are influential mainly in that they are one part of the broad, complex domain of socioeconomic status, which has effects on students' ability, academic achievement, and aspirations.

The effects of family income on college destinations (choice) are greater than its effects on access, no doubt due to the greater overall importance of financial factors in students' choices among competing institutions, e.g., Carlton and the University of Minnesota (see Corrizini et al., 1972; Jackson, 1982; Hearn, 1984; Tierney, 1980). As with access, however, income effects on destinations are undoubtedly partly a function of income's correlation with other aspects of parental socioeconomic status, such as parents' educational and occupational attainment levels. Untangling "social class effects" from "income effects" is largely beyond the capability of contemporary research methods.

The effect of family income on persistence, the third of the traditional

core concerns of student aid research, is unclear. Although many students dropping out of college cite financial problems, others with comparable financial difficulties continue to attend; financial problems may not be the only, or even the major, reason for such attrition (Rosenfeld, 1980, Tinto, 1982). Some authors suggest that financial stress is often used by students as a convenient response to avoid more complex or more personal explanations (Tinto, 1982). Nevertheless recent research by Voorhees (1985) casts this conclusion in some doubt. As Voorhees (1985) concludes, attrition is a serious and complex problem, the restitution of which awaits further improvements in our research methodologies.

Income is not the only financial factor potentially affecting access, choice, and persistence. The cost of higher education can have a significant negative effect on attendance decisions (a few of the many studies in this area include Kohn, Manski, and Mundel, 1974; Radner and Miller, 1975; and Hoenack and Weiler, 1977). This negative effect is not overwhelming, however. Summary estimates of price change effects across a number of studies show a drop in enrollments of between 1.25 and 1.5 percent for a $100 (in 1984 dollars) price rise (Hearn and Longanecker, 1985). Students from higher-income families are less sensitive to costs in their decision to attend college than students from lower-income families. Such students show some price sensitivity with respect to where they attend, however (McPherson, 1978).

Some research on costs has explored its joint effects with family resources and financial aid. Since financial aid represents, in effect, a discount applied to overall college costs, this research has focussed on "net price," i.e. total attendance costs minus family contribution and financial aid offsets (see American Council on Education, 1978; Hyde, 1979; Berne, 1980). The findings for

net price suggest that it does indeed affect attendance decisions (Berne, 1980; Radner and Miller, 1975), and therefore can defensibly be used alone as one descriptive indicator of policy effectiveness (i.e. it can provide information on how well aid offsets are equalizing the cost of education among families at various income levels (Hyde, 1979).

Nevertheless, there are conceptual problems with net price research (Hearn and Longanecker, 1985). One problem arises from the fact that all aid is not equal: the dollars from one form of aid (e.g. loans) cannot easily be combined with the dollars from another (e.g. grants), since their overall value is often unequal. For example, $1000 in a loan is less desirable than $1000 in a grant. One student's net price of $1700 may therefore actually be quite distinct in its effects from another student's net price of $1700, depending on the aid package offered. Some research has suggested strongly that students do indeed react differently to loans and grants of equal amount, and that in some segments of society, loans are strongly avoided regardless of need (see Rosenfeld, 1980; Astin, 1978; American Council and Education, 1978). These kinds of findings must be addressed further, since the research currently suffers from insignificant attention to the specific nature of aid packages and their effects. The notion of the "quality" of aid packages (e.g. the extent to which dollars are provided without requirements for repayment or work activities) particularly merits further consideration.

The effectiveness of financial aid in improving equity in the postsecondary attendance process has been the subject of occasionally heated academic and policy debates. Evidence on whether financial aid facilitates college access, choice, and persistence is often contradictory (American Council on Education, 1978; Hansen, 1982; Heyns and O'Meara, 1982; Breneman, 1982), yet much weight

falls on the side of financial aid as a significant factor in increasing access and choice. Jackson (1978) found that the effect of receiving an aid award--of any amount--outweighed the size of the award as a factor in enrollment. Both factors were significant, however.

Policy debates frequently concentrate on how to make the most efficient use of limited financial aid and tuition subsidy funds (Jackson, 1982; Fenske, Huff, and Associates, 1983). The debate over the effectiveness and efficiency of states pursuing a high tuition-targeted subsidy approach versus a low tuition-low aid policy is one example (e.g. see Hearn and Longanecker, 1985), and this study addresses that issue. Other currently developing debates and lines of research on financial aid include those involving the role of students' and parents' knowledge of postsecondary costs (Olson and Rosenfeld, 1984), the effects of loan burdens on students (The College Entrance Examination Board, 1984; Gladieux 1983), and considerations of the effects of Reagan era federal policies.

Students' expected economic returns to a college education, and their perceptions of labor market considerations (both before and after college) also may influence educational attainments, but the evidence is limited. While some studies find anticipated lifetime earnings a significant determinant of college attendance (e.g. see Dresch and Waldenberg, 1978), many others find that assumed student views of college as an investment have only slight measureable influence on attendance, choice, and persistence behavior (see Hossler, 1984). Possible explanations for this include the limited variation among students and among colleges, and an inadequate specification of projected lifetime earnings (Terkla and Jackson, 1984).

Unemployment rates and wage rates can act and interact to create labor market effects on access. These factors are closely tied to "investment" consid-

erations. When wages are high and unemployment low, individuals are less likely to attend college (e.g., see Manski and Wise, 1983). Hoenack and Weiler (1977) found that college graduates' salaries have a significant positive effect on attendance by high school freshmen. Bishop (1977) found a slight negative effect of foregone earnings on attendance. In other words, in making their attendance decisions students apparently take into account the money they could be making outside of college. The attendance effect of foregone earnings was, however, significantly less negative than the effect of tuition rate in Bishop's study. In the end the effects of "investment" reasoning, unemployment, and wages must all be considered minor.

Summary and Discussion

This review suggests that socioeconomic status and other family background factors have strong influences on college attendance patterns, as do factors relating to ability, achievement, aspirations, expectations, and plans (aspirations may be problematic as an indicator, however, so focusing on expectations and plans seems more advisable). Contextual effects, such as the social class and ability contexts of high schools, have small but significant effects. Financial factors, independent of other family characteristics, can have moderate effects, depending on the phase of attendance considered: their effects are particularly strong in students' choice of a college to attend. Of the above influences, only a few are easily susceptible to manipulation by policymakers in their pursuit of equality of postsecondary opportunity. Obviously, parents' social class, income, and educational and job attainments are beyond policy. High school contexts, as well as student plans, and hopes, can indeed be manipulated successfully, but the costs can be high (Jackson, 1982). The tactic of

policy changes in cost factors stands out as potentially one of the most efficient and effective approaches toward increasing equity in postsecondary expectations and attendance. Yet longitudinal research on the effectiveness of various alternative financing approaches has rarely, if ever, been conducted (Stampen, 1980; Hearn and Longanecker, 1985). Such is the intent in the present study, as outlined in the following chapter.

Chapter 3

Research Design

The research reported here sought answers to four questions. Three of those questions correspond to what some analysts (see, for example, Fife, 1975) have called the three core aspects of postsecondary attendance: access, choice (institutional destinations), and persistence (although the last can be a focus only indirectly, by way of aid package quality, due to data limitations). The other one of the four questions addresses what many studies find to be the critical mediating factor in attendance causation: educational expectations and plans (see Chapter 2). Financial and other potentially limiting factors may have their most deleterious influences on attendance indirectly, by way of their effects on early planning, rather than directly at the time of final matriculation decisions. In keeping with the focus of this study, the four questions are phrased to address issues relating to changes over time in the determinants of postsecondary expectations and plans, access, destinations, and aid package quality in Minnesota. Together, the four questions comprise the core of the policy evaluation problem:

Question 1 (Postsecondary Expectations and Plans): Have financial factors begun to play an increasing role in explaining Minnesota high school students' postsecondary expectations and plans?

Question 2 (Postsecondary Access): Have financial factors begun to play an increasing role in explaining whether or not Minnesota students undertake postsecondary education?

Question 3 (Postsecondary Destinations): Have financial factors begun to play an increasing role in explaining which institution Minnesota college-bound students attend?

Question 4 (Postsecondary Aid Packages): Among similar needy students attending similar colleges in Minnesota, has the quality of aid packages declined in recent years?

In the latter case, an assumption is made that aid package quality may influence the chances of persistence among students (see Chapter 2).

There exist two radically different sets of expectations for answers to these questions. These contrasting expectations correspond to the two opposing postsecondary financing philosophies introduced briefly in Chapter 1: targeted subsidization versus blanket subsidization. Proponents of targeted subsidization believe Questions 1 through 4 will be answered negatively. They perceive the low tuition levels historically provided by state postsecondary systems (in Minnesota and elsewhere) to be both inefficent and inequitable. They see past policies as inefficient due to the provision of subsidies to the middle and upper income population, who would very likely attend college without the low tuition levels. That is, they believe blanket subsidies have been unnecessary state investments producing virtually no return to society. They also see blanket subsidies as inequitable, since they are funded through state tax systems, which tend to be rather regressive (owing to such systems' reliance on sales taxes). Thus, the groups least likely to take advantage of postsecondary education options may often end up being those paying the highest proportion of their discretionary incomes towards the maintenance of public postsecondary systems.[2]

From the perspective of those favoring targeted subsidization, such as that currently being pursued by the Minnesota state authorities, the answer to Question 1 will be negative. In other words, the changes toward targeting state sub-

sidies should be having no effects on student expectations regarding financing postsecondary education of the quality and quantity desired. Among the middle and upper income families facing higher charges for state postsecondary options, the additional family resources demanded for attendance are expected to be a virtually unnoticeable proportion of discretionary income. From this perspective, the answer to Questions 2 and 3 should also be negative. As long as other factors do not impinge, the effects of financial factors on postsecondary access and choice (i.e., institutional destinations) should not be any greater now than before the policy change was begun. In regard to Question 4, proponents of targeted subsidies argue that, all else equal, the quality of aid packages should be just as high or even higher than before, due to the increased fiscal efficiency provided by targeting state expenditures in this area. Given that, they would argue that persisting towards a desired degree should be financially no more challenging than before.

Those who favor blanket subsidies achieved via lower tuition levels take a much less sanguine view of the effects of recent state policy. They argue that low tuition levels have been the major force behind the extraordinary levels of college opportunity and attendance in the U.S.[3] The scenario they envision is one of increased worries over postsecondary attendance among high school students, with much of that increased anxiety directly due to the higher tuition levels. Attendance plans would thus be affected deleteriously. Blanket subsidy proponents also expect to see increasing effects of financial factors on postsecondary access and destinations, as well as a growing tendency for aid packages 1) to be composed of high levels of loans and 2) to be inadequate in meeting all student need. In other words, they would foresee affirmative answers to all four of our core research questions for the project. The two

opposing financing philosophies, with their corresponding sets of contrary expectations for the research findings, thus provide the project with an exceptionally clearcut focus.

Data

To find answers to the first three questions introduced above, the research project employed both existing and newly collected data for three cohorts of Minnesota students: the high school classes of 1980, 1982, and 1984. These years cover the period in which Minnesota moved strongly in the direction of targeted subsidization. They thus allow examination of changes in attendance and student financing patterns in relation to changes in policy.

Primary data for these first three questions came from the annual Student Plans and Background Survey (PBS) of the Minnesota Post-High School Planning Program (PSPP). These annual surveys explore the backgrounds, plans, and attitudes of Minnesota high school juniors. Most of those surveyed in any given year have expressed some interest in postsecondary attendance. The PBS surveys did not significantly change format or items over the four-year time period under study here. PSPP samples cover from 75 to 85 percent of Minnesota high school juniors in any given year. While the samples each year are large and reasonably representative of college aspiring juniors in the state, they are not perfectly so: the distributions of the particiating schools and participating students are a bit slanted toward non-urban, non-black respondents.

Each year, HECB merges the PBS survey data with data on the same students' abilities and vocational interests. These added data come from the Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualifying Test (PSAT/NMSQT) and the School and College Abilities Test (SCAT) instruments. Students' scores

on these instruments are normed for Minnesota. For ease of reading in the present report, the background, plans, attitudes, ability, and interests data are jointly termed the "PSPP data" here. Three waves of the PSPP data were used in the study: those for the high school juniors of 1978-79, 1980-81, and 1982-83, respectively. The PBS questionnaires for those years are reproduced in Appendices B, C, and D, respectively. From the three PSPP data sets (consisting of merged PBS, test, and interest instrument data), we created adequately representative samples of people with any postsecondary aspirations among the Minnesota high school classes of 1980, 1982, and 1984. Each class was represented by 1000 students.

The great majority of the students in these three samples had complete data for parental income, tested ability, father's occupation, mother's occupation, father's education, mother's education, high school grades, high school rank, expressed need for information regarding postsecondary education alternatives, perceived need for financial help for postsecondary attendance, and postsecondary plans and expectations. The three 1000-person samples were randomly selected from the PSPP data bases in every way except one: since test score data are not universal in the PSPP data sets, an attempt was made to weight the sample somewhat toward those with such data. Approximately 200 students not having such data were also included in each of the three samples, however, and this helped assure us that the test data emphasis did not unduly bias the data. The three 1000-person samples comprised the sole data source for answering Question 1. They also comprised the "populations" from which the subsamples for Questions 2 and 3 were drawn.[4]

For Questions 2 and 3, data from a special 1985 followup phone survey supplemented the PSPP data. Even though the survey questionnaire itself was brief, the data it provided were indispensable to answering those questions, since the

survey focused on students' actual postsecondary attendance behaviors. Behavioral data of that kind were unobtainable from any other source. The survey collected usable data for 400 people from each of the three sample cohorts used in studying Question 1. In other words, for each of the 1000-person data sets used for Question 1, we conducted a phone survey until we had followup data for 400 respondents. The target population for the interviews consisted only of those who had graduated from high school with their class and who had test data, so for each of the three cohorts the population from which the survey respondents was drawn was about 800 people, rather than the full 1000 (see the discussion in the preceding paragraph regarding test score data). Having data on test scores was important for both Questions 2 and 3, since ability appears to play a significant role in college attendance (see Hearn, 1984; Thomas et al., 1979).

The survey questions were straightforward. The following questions comprised the central concerns of the phone survey: Did the student graduate from high school with his or her class? Did he or she attend a postsecondary institution within six months of high school graduation? If not, why did the student decide not to attend? If so, where did the student attend? Did he or she attend full-time? Why did he or she select that institution? The actual wording of the questions asked on this survey is presented in Appendix E.

Two major difficulties in conducting phone surveys are obtaining an adequate sample size and eliciting useful responses from the sample. To meet the first problem, much attention was devoted to overcoming the natural resistance of parents to giving strangers information regarding their sons and their daughters. Since the addresses and phone numbers on the original PSPP data sets are for students' parents or guardians as of the junior year, those people must cooperate for the study to succeed. One tactic recommended by the University of

Minnesota's Ron Matross (a veteran of such research) is to ask the parents an initial question regarding the study topic. For the present study, such an approach served not only the purpose of securing their cooperation but also the core intentions of Questions 2 and 3: obtaining information on whether or not the student attended a postsecondary institution shortly after gradation and, if so, where. Thus, parents provided a first line of data that was corrected or augmented later by the student, once contacted.

The second potential problem of the survey, eliciting useful information, relates particularly to the non-behavioral questions on the survey. While it is fair to assume that students' retrospective reports of their attendance behaviors were generally quite trustworthy, it was necessary to pay special attention to the students' recollections of their attitudes. There is a natural tendency of students to blame non-attendance or non-performance on financial factors (e.g., see the discussion by Longanecker, 1978). To meet this potential problem, the survey pre-test was crucial. Questions eventually placed on the survey were the product of refinements undertaken to assure a meaningful spread in responses. In this way, we strived for maximum validity within the constraints posed by recollection-style data. For those seeking more information on sample representativeness and questionnaire characteristics, Appendices A through E may prove helpful.

The core data base for Question 4 was HECB's Scholarship and Grant File (SGF) data. It is this file that contains needed information on the financial aid packages of students. Also associated with this file are data on postsecondary institutions' student budgets and financial characteristics. Because the SGF data are not logically connected to, or inclusive of, the various PSPP samples, no attempt was made to assess the aid packages of the sampled students of Questions 1 through 3. Instead, the SGF analysis was targeted upon different

cohorts of students in the academic years of 1980-81, 1982-83, and 1984-85. As with the analysis of Questions 1 through 3, the time span covered allowed an investigation of developments in student financing patterns over the period of change from blanket to targeted subsidization in Minnesota. Ideally, these SGF and institutional data might be cost-effectively supplemented by data from selected aid offices in the state. Such an approach would provide fuller accounting of the total aid packages of students, including aid from federal, private, and institutional sources not represented in the SGF data base. The State of Washington has constructed an extraordinarily useful data base for policy analysis by taking that approach (see Fenske et al., 1985; Hearn et al., 1985). Because of limitations in the existing Minnesota state data bases, however, only the SGF data were used in the present study.

In summary, the data sources for the study were:

- PSPP data
- Phone survey data
- SGF data

Methods

It was important that the analysis of the four central questions be sensitive to the many possible explanations for college attendance phenomena. As discussed in Chapter 2, innumerable factors can confound inferences about the causation of attitudinal and behavioral changes in this arena. Of special concern for the present study are the potential influences of 1) the inherent unmeasurability of students' true costs of attendance, 2) changes in federal postsecondary financing policies,[5] 3) changes in the postsecondary education markets of neighboring states, 4) the close correlations among student socio-

economic status, ability, achievement, aspirations, and college-going behavior, 5) changes in local, state, and national economic conditions (including unemployment levels), 6) changes in the financial aid tactics of individual institutions,[6] and 7) changes in public perceptions regarding the costs and benefits of post-secondary attendance.

The many interconnections among these potentially influential factors make simple analysis of "trends" in students' attitudes and behaviors questionable as an evaluative tool in policy analysis. For example, if student expectations declined over a period of years, one could not directly make the inference that the cause lies somehow in changing financial aid policies. One must "correct for" the influences of other factors prior to making such an inference. Of course, the extraordinary range of factors potentially involved makes comprehensive modeling (i.e., correcting for every possible contaminant) virtually impossible. The only useful injunction for researchers in such a situation is that they should statistically correct for the critical contaminants, while at least considering all other potentially significant confounding influences, even if the precise impacts of those latter factors cannot be fully assessed.

This injunction formed the basis for the analytic approach used in the present study. Statistical controls for all major influences were indeed employed when data were available. On the basis of the literature reviews in the preceding chapter, it was hypothesized that the major influences on attendance patterns are individual and family factors. Accordingly, controls were employed for parental socioeconomic characteristics, and for the aspirations, ability, and achievement of students, whenever such data were available. Other factors were expected to be less significant, and were also difficult to integrate into the quantitative analyses. These factors are considered instead in the text. Below,

that approach to analyzing the four focal questions is outlined. Subsequent chapters provide more detail on the specific analytic techniques used.

The existing PSPP data were sufficient for the study of postsecondary plans in Minnesota (Question 1). The analyses of the issues of Question 1 were both descriptive and multivariate. The full 1000-person samples for each cohort were employed. In multivariate analyses, parental education and parental income were independent variables in multiple regressions for students' ability and achievements, then all of those indicators were used in multiple regressions for postsecondary expectations. This path-analytic approach (see Pedhazur, 1982) has proven especially productive in previous research on influences on college-going attitudes and behaviors (see Thomas et al., 1979; Hearn and Urahn, 1984). Recent studies for postsecondary attendance show high levels of expectations among Minnesota high school students but remarkable levels of failure by students in actually achieving their postsecondary expectations (Minnesota Research and Development Center for Vocational Education, 1982a, 1982b, 1983). In the analyses of variables relating to expectations, the first stage of this pattern was explored.

The examinations of postsecondary access (Question 2) and postsecondary destinations (Question 3) relied upon matching existing PSPP data with data obtained in the phone survey of past PSPP respondents. As discussed above, there were were 400 people in the samples for each cohort in the analysis of both Questions 2 and 3. Independent variables in the various access and destinations analyses included parental education, parental income, student ability, student achievements, student concerns, and student expectations. For the access evaluation (Question 2), the major dependent variables was simply whether or not the student attended a postsecondary institution within one year of high school graduation. The central analysis for Question 2 consisted of path modeling. The various independent vari-

ables were arranged in the causal model described above for Question 1. In other words, postsecondary attendance was simply added as a final stage dependent variable to the earlier model for postsecondary expectations.[7]

In the study of Question 3, analysis of variance (ANOVA), multivariate analysis of variance (MANOVA), and discriminant analysis (see Amick and Walberg, 1975) were employed for examinations of college-going students in the followup sample. These approaches allowed a teasing out of differences in students across the various kinds of institutions attended. The intent was to discern any trend toward a greater discriminating role for financial factors in college destinations. The dependent variable for the destinations analysis (Question 3) was institutional type. Only students in the sample who attended a college full-time in the first year after graduation were analyzed for Question 3. Therefore, since about one-fifth of the students in the 1985 survey were non-attenders, the sample sizes for each of the three cohorts were each under 400.

The analysis of student aid packages (Question 4), as discussed earlier, employed data for three cohorts of college students who applied for aid. As mentioned earlier, the samples for Question 4 were distinct from those for Questions 1 through 3. The analysis was framed by the following reasoning. Academic and living expenses for a given college student can be offset through five possible channels, or some combination of those channels:

- Parental contribution
- Student self-help (a requirement that all needy students contribute by way of their assets, summer work, etc.)
- Grant/gift aid
- Work-study aid
- Loans

Given these components, the aid packages of needy students (i.e., students whose parental and personal resources do not meet total costs), as obtained from the Scholarship and Grant File (SGF), were investigated descriptively as to the relative role of the first three various components, which exact no extra work or payback from the student. Although we were unable, because of data set limitations, to single out dollar amounts from the latter two sources of aid, or the remaining "unmet need" of students, we were able to get a sense of parental, student, and grant sources as a proportion of total cost for students in different contribution categories in each of the cohorts. This approach allowed us to focus on the portion of students' costs met by non-returnable, non-work sources. Since knowledge of the family income and contributions and educational budgets of the students being examined is critical to defensible investigation of changes over time and between groups, we looked at grants as a percentage of postsecondary costs under different contribution levels for the six different postsecondary sectors in the state (i.e., the state university system, the community college system, etc.). Through such an approach, the situations of students having similar and different levels of costs were more closely investigated. Most critically, the relative roles of state and federal grants in determining the adequacy and quality of aid packages were effectively assessed. Hyde (1979) and Rosenfeld and Hearn (1982) contain prototypic earlier analyses of this kind.

Variable Indicators

A number of variable indicators were used in Chapters 4, 5, and 6 of the study. All critical variable indicators for those chapters are described below.

Father's and Mother's Education: These indicators are based in level of education attained by the student's father and mother, respectively. Indirectly, these indicators index parents' intellectual achievement as well as the family's socioeconomic status.

The PSPP questionnaire items offered eight alternative responses ranging from "didn't complete high school" to "graduate/professional school" (see Appendices B, C, and D).

Family Income: This indicator addresses the annual income level of the student's family, as estimated by the student. Family income relates to the amount of family financial support available for the students' higher education. An income-neutral financial aid policy change would not alter income effects on college expectations and attendance. Family income was ranked on a six-step scale in 1979, but on a 12-step scale in 1981 and 1983 (see Appendices B, C, and D). This difference makes direct comparison of income data over the period somewhat difficult, but should not severely compromise interpretation.

Test Scores: This indicator taps students' ability level. Student scores on either the Preliminary Scholastic Aptitude Test (PSAT) or the School and College Abilities Test (SCAT) were normed for Minnesota, then the verbal scores and mathematics scores were averaged to form a single index of ability. These data are merged annually into the PSPP questionnaire data.

High School Rank: This indicator taps the student's rank (by grade point average) among his or her high school classmates. It is based on annual high school reports to HECB, which are merged into the PSPP questionnaire data.

Educational Expectations: This indicator assesses the level of the students' educational expectations. Students were asked about their expected levels of education on a six-point scale ranging from "high school completion" to graduate/professional school (see Appendices B, C, and D). Students' expectations for further education are considered important in explaining education attendance, since they reflect the students' motivation to continue schooling and are in part influenced by earlier academic experiences and talents (see Chapter 2).

First-Year Plans after High School Graduation: This question involves students' plans for the first year after graduation from their high schools. Students were asked to select one option from a list given which best described their plans. Nine options were provided. Examples were "Go to College," and "Get a Job."

Reasons for No Educational Choices: This question sought the reasons why some students were not planning for further education (see above item). Students were to respond to the most important reason among the six options given, such as "Can't afford" and "Not interested."

Need for Financial Help for Higher Education: This question was used to find whether students needed help in getting money to continue their education. Students were to respond to one of four options such as "No need" and "Some need."

Areas Where Information or Assistance is Needed: There were thirteen items in this question regarding assistance or information on continuing education, such as "obtaining financial aid" and "finding part-time employment." Students were to respond to the ones on which they might want assistance or information.

Postsecondary Attendance: This variable indicator was obtained by asking high school graduates whether they attended at any educational institution in the first six months after graduation. High school graduates answered this question by responding "Yes" or "No."

Postsecondary Choice: This indicator relates to the schools attended by those in the PSPP followup samples who answered "yes" to the above question. Students were given five specific alternative responses: (the University of Minnesota, a state university, a junior or community college, a private college, or a vocational or technical institution), plus an open alternative response for schools not on the above list.

One indicator described above merits special attention. In this study, family income is used as an indicator of the overall financial well-being of the student's family. Obviously, one year's income alone is not an ideal indicator of financial well-being. The assets and net worth of a family, and that family's income stream over a number of years, are also important. The limitations of using income alone as an indicator of well-being are particularly severe in a farm state, where income can vary markedly from year to year. Nevertheless, income is quite closely correlated with other indexes of parent and offspring financial well-being (Weisbrod and Hansen, 1968; Henretta and Campbell, 1978) and therefore may be defensibly used as a proxy for overall well-being when appropriate caveats are attached. The two critical caveats here involve the extent of family liquid assets and the dependency status of the student.

Because of the complexity of Chapter 7, its variable indicators and approach are described in detail in that chapter rather than in the above list. It is sufficient to say here that the student cases and questionnaires items employed in that chapter are largely distinct from those described above.

Chapter 4

Influences on Minnesota Students' Postsecondary Expectations and Plans: 1979-1983

Educational expectations and plans have repeatedly been shown to occupy a critical position in models of postsecondary attendance behaviors. They not only have a great direct influence on postsecondary attendance, but they also serve as important mediators of such background influences as race, and socio-economic status (see Chapter 2). Consequently, an examination of the effects of financial and other factors on high school students' expectations and plans for higher education is an important preliminary to observing the effects of such determinants on actual postsecondary attendance.

Three complementary kinds of analyses of expectations and plans were pursued in this chapter. First, baseline descriptive analyses of several factors related to plans and expectations were conducted. Second, path analyses were conducted in each of the three cohorts, to explore the causation of educational expectations. A particular concern in those latter analyses was the relative importance of financial factors (as indicated by family income) in college expectations. The differences between the three path analyses were examined, in order to explore the changes, if any, in the influences of financial factors over time. Third, discriminant analyses were conducted to assess the extent to which various factors relate to plans to attend a postsecondary institution, as opposed to plans to enter the work force or pursue another non-educational option.

Descriptive Analyses

The general pattern of juniors' plans and concerns regarding higher education is shown in Table 1. It should be noted that the levels of both educational expectations and plans were somewhat higher in the MPEEP samples than in the overall PSPP populations, due to the sample selection criteria (see Appendix A). Although remarkable stability was the norm in both the PSPP populations and the MPEEP samples, some marginal trends are apparent in both Table 1 and Appendix A: increasing reports of expectations to go to four-year colleges, slightly decreasing plans to enter school immediately after graduation, slightly increasing needs for total financing of college (as would be expected in a period of tuition rationalization), increasing statements of financial worries among non-attenders, and generally decreasing need for information.

To view the meaning of these trends in more detail, it was advisable to break them out in bivariate rather than univariate fashion. The critical policy-relevant vant factor in the study, family income, provided the basis for this analysis. In each cohort of juniors, income was broken into four ranks, each composed roughly one-fourth of the sample, then the trend data examined. This analysis could not be precise, since inflation corrupts the attempt to arrange the interval categories into rough quartiles each year. Therefore, only the overall pattern of this analysis is discussed here. That overall pattern was basically one of stability. Lower-income students consistently reported a lower level of educational expectations, were less likely to plan further schooling immediately after high school graduation, and were more likely to be seeking more information on financial aid. These are traditional patterns closely related to ability, achievement and family patterns among the disadvantaged, and are unlikely to be changed substantially by tuition rationalization. What did seem to change marginally

Table 1

Juniors' Responses Regarding Postsecondary Education:

Percentage Breakdowns of Student Responses

(1979, 1981, 1983)

a) First-Year Plans After High-School Graduation

	78-79	80-81	82-83
College or University	61.1	60.7	64.0
Vocational or Technical School	26.2	21.4	19.2
Other School	1.0	1.6	1.6
Further Schooling (Total of Above Three Options)	88.3	83.7	84.8
Non-Schooling Options	8.6	11.2	11.2
Don't Know	3.1	5.1	4.0

b) Reasons for Not Choosing an Educational Option on Item a (above)

	78-79	80-81	82-83
Can't Afford	20.4	22.4	30.4
Not Interested	7.0	6.7	8.7
Start Earning	12.1	10.9	8.7
Not Enough Ability	3.2	2.4	2.5
Work or Travel	42.0	36.4	31.7
Other	15.3	21.2	18.0

c) Need for Financing for Higher Education

	78-79	80-81	82-83
No Need	19.6	15.6	19.4
Some	47.6	50.5	45.7
All	10.4	13.4	16.8
Not Sure	22.4	20.5	18.1

Table 1 continued

d) Areas Where Information or Assistance Is Needed

	78-79	80-81	82-83
Financial Aid	63.8	62.9	60.2
Part-Time Employment	55.1	49.4	55.0
Housing	46.4	34.2	30.7
Education or Vocational Planning	38.5	30.4	26.7
Improve Math Skills	24.9	13.5	15.0
Improve Reading Skills	14.0	8.1	7.2
Improve Study Skills	27.8	21.0	19.3

e) Expected Education Level

	78-79	80-81	82-83
High School Only	2.0	2.7	3.2
Vocational or Technical School	29.3	27.3	21.2
Two-Year College	9.6	11.2	9.6
Four-Year College	39.8	40.9	46.0
M.A.	10.6	10.8	12.0
Professional	8.7	7.1	8.0

over the four year period changed about equally in every income group. For example, the rate of planned postsecondary attendance after high school declined marginally in all four income groups, while expected education levels climbed marginally in all four groups. In summary, the trends noted in Table 1 were largely trends of the population as a whole, not trends arising mainly in only one part of the income range. If the new financing policy was strongly affecting postsecondary expectations and plans, there was no evidence of these effects in the descriptive analyses.

These general trends do not in themselves provide conclusive evidence regarding the effects of financing policy, however, because the full range of the interrelationships among the various relevant factors is not considered. For example, we cannot discern from these aggregated descriptive data which kinds of students (in terms of not only income and cohort but also ability, achievement, and so forth) tended to express heightened financial concerns. To allow us to better describe the dynamics of the influences of family background and finances on educational expectations and plans, we next conducted causally focused multivariate analyses.

Path Analyses

Path analysis, a multiple regression approach, was employed to examine the causal relationships between high school juniors' postsecondary expectations and the variables which were expected to influence expectations. This analysis allowed us to look at the relative importance of various factors influencing students' expectations and the dynamics of those influences. Any case with missing data was deleted from the regressions (i.e., list-wise deletion was employed). As a result, out of the initial 1000 cases in each cohort, there remained for path

analysis 775 subjects from the 1979 cohort, 739 from 1981, and 796 from 1983. We assumed for the path model that father's education, mother's education, and family income influenced high school rank and test scores, which in turn affected students' expectations. The first three variables were also expected to directly influence students' expectations. Thus, a three-stage causal model was employed (see Figures 1, 2, and 3). This three-stage model has been tested and found appropriate in numerous earlier aspirations and expectations studies (see Kerckhoff, 1980).

The strength of path analysis lies in its ability to show not only the direct effects that these determinants have on expectations, but the indirect effects as well. In other words, we can begin to assess not only which of the determinants included in the model influence educational expectations, but how that influence arises, e.g. does mothers' education directly affect the level of students' post-secondary expectations or does this factor have its influence through another determinant or determinants?

For 1979 juniors, Table 2 reports indicator correlations. As with the other cohorts, the indicator correlations were as one would expect: ability, rank, and expectations were closely correlated positively, and each showed somewhat less strong correlations with parental education levels and income. Figure 1 reports the path analysis for 1979 juniors, and Table 3 shows a summary of the effects in the path analysis. Father's education and mother's education had significant positive paths to the mediating variables (high school rank and test score), whereas family income did not. To educational expectations, all five indicators had significant direct positive paths; test scores, high school rank, and father's education, however, had stronger effects than other variables. Indirect effects on educational expectations were negligible.

Table 2

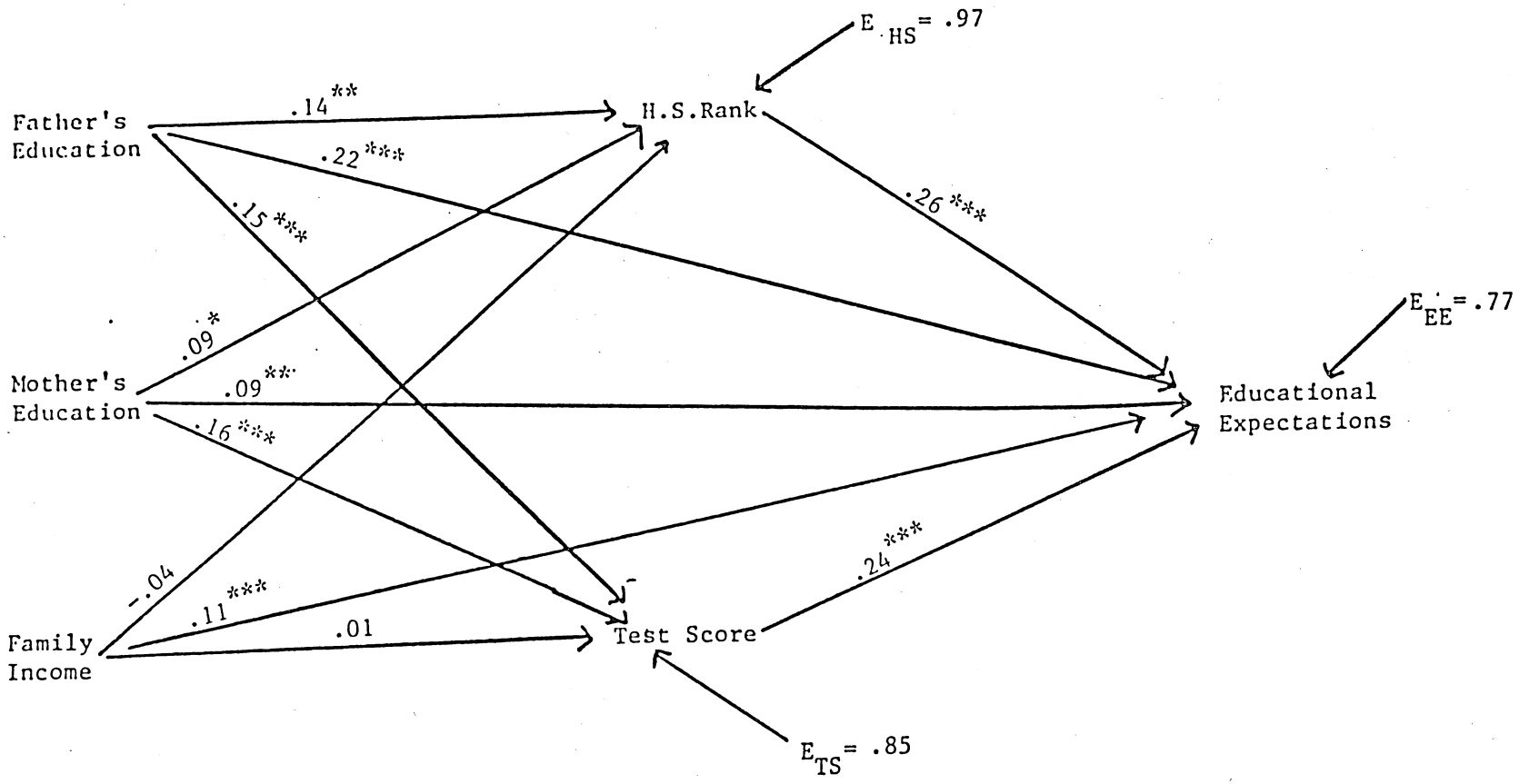
1979 Juniors: Intercorrelations Among the Focal Indicators (n = 775)[a]

	FED	MED	INC	RANK	TEST	EDEXP
Father's Education (FED)	-					
Mother's Education (MED)	.53	-				
Family Income (INC)	.45	.30	-			
High School Rank (RANK)	.17	.16	.05	-		
Test Scores (TEST)	.24	.24	.13	.68	-	
Educational Expectations (EDEXP)	.42	.34	.28	.48	.50	-

Note a: In subsequent tables in this chapter, the abbreviations FED, MED, INC, RANK, TEST, and EDEXP will be employed for the indicators. This code is explained on the left side of this table.

FIGURE 1

1979 Juniors: Path Analysis for Educational Expectations (N=775)[a]



Note a: Standardized regression coefficients are reported. Significant levels are coded as follows: * = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$.

Table 3

1979 Juniors: Summary of Path Analysis for Educational Expectations (n = 775)[a]

Dependent Variable	Predetermined Variable	Total Effect	Indirect Effect via: RANK	Indirect Effect via: TEST	Direct Effect
RANK	FED	.14 (1.96)	-	-	.14 (1.96)**
R^2 = .04	MED	.09 (1.65)	-	-	.09 (1.65)*
	INC	-.04 (-.84)	-	-	-.04 (-.84)
TEST	FED	.15 (2.01)	-	-	.15 (2.01)***
R^2 = .28	MED	.16 (2.55)	-	-	.16 (2.55)***
	INC	.01 (.16)	-	-	.01 (.16)
EDEXP	FED	.29 (.20)	.04	.04	.22 (.15)***
R^2 = .40	MED	.15 (.13)	.02	.04	.09 (.08)**
	INC	.10 (.10)	-.01	.00	.11 (.11)***
	RANK	.26 (.01)	-	-	.26 (.01)***
	TEST	.24 (.01)	-	-	.24 (.01)***

Note a: Unstandardized coefficients are reported in parentheses after standardized coefficients for direct and total effects.

Note a: Standardized regression coefficients are reported.
* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$.

For 1981 juniors, Table 4 reports indicator correlations, which are similar to those for 1979. Figure 2 reports the path analysis, and Table 5 shows an effects summary. The direct and indirect effects were very similar to those in the 1979 sample. Parental education variables tended to have significant paths to the intermediate variables. All five independent variables, particularly test scores, father's education, and high school rank, had significant direct effects on educational expectations. Father's education also made a meaningful indirect contribution to educational expectations, whereas family income did not.

For the 1983 cohort of juniors, Table 6 shows indicator correlations. These essentially repeat the patterns of the 1979 and 1981 cohorts. Figure 3 reports the path analysis, and Table 7 summarizes the effects for the model. Again, the pattern of the path coefficients, both direct and indirect, resembles the two earlier patterns especially in income effects. In this cohort, the direct effects of test scores on educational expectations were somewhat more pronounced than in the two previous cohorts, however, while the effects of high school rank were somewhat less. The meaning of these trends is unclear.

In summary, our examination of each variable's relative influence in the three cohorts showed that parental education, high school rank, and test scores consistently had more substantial effects on student's educational expectations than family income. This finding, and the finding of little change in the influences of the family income across the cohorts, suggests that Minnesota's financical aid and tuition policy change had no major effects on the way high school students' educational expectations were formed.

To check this conclusion further, we compared unstandardized regression coefficients for family income in the three path analyses (see Figures 1, 2, and 3 and Tables 3, 5, and 7). Unlike a standardized coefficient, an unstandardized

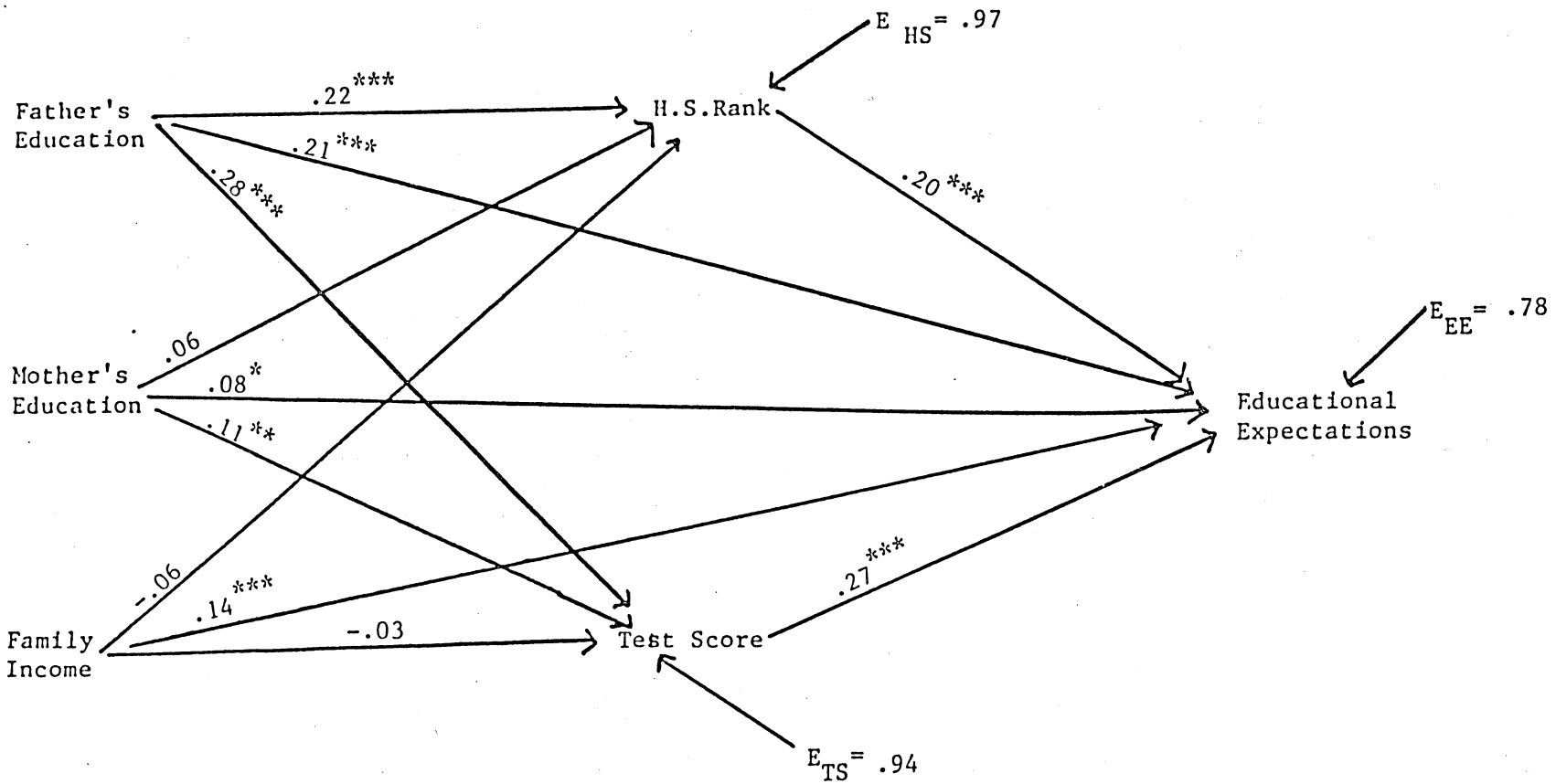
Table 4

1981 Juniors: Intercorrelations Among the Focal Indicators (n = 739)

	FED	MED	INC	RANK	TEST	EDEXP
FED	-					
MED	.53	-				
INC	.42	.30	-			
RANK	.23	.16	.05	-		
TEST	.33	.25	.12	.67	-	
EDEXP	.44	.33	.29	.45	.51	-

FIGURE 2

1981 Juniors: Path Analysis for Educational Expectations (N=739)[a]



Note a: Standardized regression coefficients are reported. Significance levels are coded as follows: * = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$.

Table 5

1981 Juniors: Summary of Path Analysis for Educational Expectations (n = 739)[a]

Dependent Variable	Predetermined Variable	Total Effect	Indirect Effect via: RANK	Indirect Effect via: TEST	Direct Effect
RANK	FED	.22 (3.17)	-	-	.22 (3.17)***
R^2 = .06	MED	.06 (1.14)	-	-	.06 (1.14)
	INC	-.06 (-.56)	-	-	-.06 (-.56)
TEST	FED	.28 (3.84)	-	-	.28 (3.84)***
R^2 = .12	MED	.11 (1.83)	-	-	.11 (1.83)**
	INC	-.03 (-.29)	-	-	-.03 (-.29)
EDEXP	FED	.33 (.21)	.04	.08	.21 (.13)***
R^2 = .39	MED	.13 (.10)	.01	.03	.08 (.07)*
	INC	.11 (.05)	-.01	-.01	.14 (.06)***
	RANK	.20 (.01)	-	-	.20 (.01)***
	TEST	.27 (.01)	-	-	.27 (.01)***

Note a: Unstandardized coefficients are reported in parentheses after standardized coefficients for direct and total effects.

Note a: Standardized regression coefficients are reported. Significance levels:
* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$.

Table 6

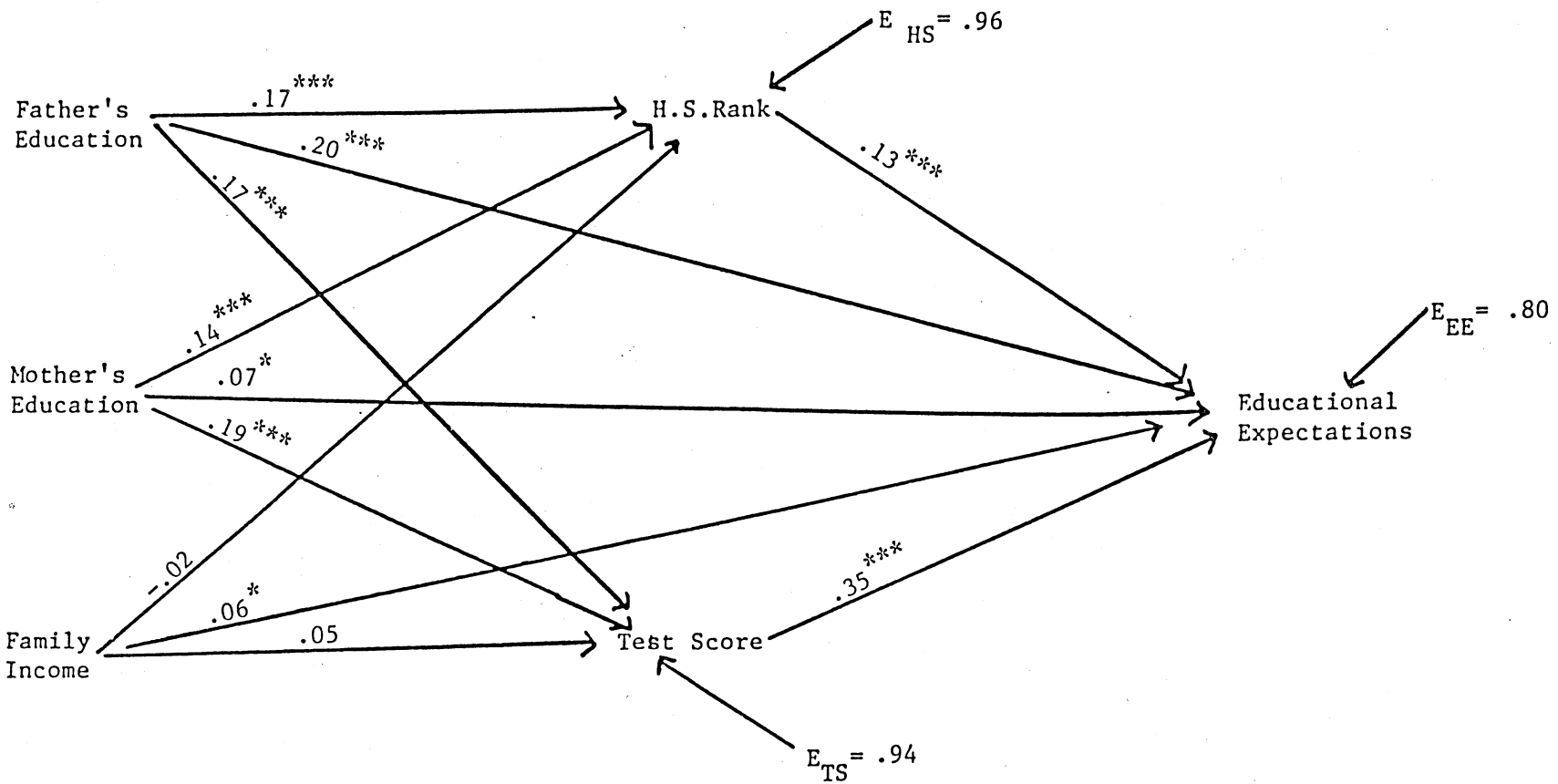
1983 Juniors: Intercorrelations Among the Focal Indicators (n = 796)

	FED	MED	INC	RANK	TEST	EDEXP
FED	-					
MED	.58	-				
INC	.44	.33	-			
RANK	.24	.23	.10	-		
TEST	.31	.31	.19	.62	-	
EDEXP	.41	.35	.26	.42	.53	-

FIGURE 3

FIGURE 3

1983 Juniors: Path Analysis for Educational Expectations (N=796)[a]



Note a: Standardized regression coefficients are reported. Significant levels are coded as follows: * = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$.

Table 7

1983 Juniors: Summary of Path Analysis for Educational Expectations (n = 796)[a]

Dependent Variable	Predetermined Variable	Total Effect	Indirect Effect via: RANK	Indirect Effect via: TEST	Direct Effect
RANK	FED	.17 (2.32)	-	-	.17 (2.32)***
R^2 = .07	MED	.14 (2.36)	-	-	.14 (2.36)***
	INC	-.02 (-.19)	-	-	-.02 (-.19)
TEST	FED	.17 (2.34)	-	-	.17 (2.34)***
R^2 = .12	MED	.19 (3.09)	-	-	.19 (3.09)***
	INC	.05 (.44)	-	-	.05 (.44)
EDEXP	FED	.29 (.18)	.02	.06	.20 (.13)***
R^2 = .36	MED	.16 (.12)	.02	.07	.07 (.05)*
	INC	.08 (.03)	-.00	.02	.06 (.02)*
	RANK	.13 (.01)	-	-	.13 (.01)***
	TEST	.35 (.02)	-	-	.35 (.02)***

Note a: Unstandardized coefficients are reported in parentheses after standardized coefficients for direct and total effects.

coefficient is not dependent on a variable indicator's variance, which can differ across samples. Therefore, an unstandardized coefficient may provide more appropriate information for comparing the three cohorts. Unfortunately, the income indicator on the PSPP changed between 1979 and 1981, making conclusions regarding changes in unstandardized coefficients over those two years somewhat difficult. Nevertheless, the comparison of unstandardized direct effect coefficients, particularly between 1981 and 1983 (see Tables 5 and 7), gives no evidence that the role of financial factors in expectations has increased over time. If anything, family income has come to play a slightly less important role in shaping students' educational expectations in recent years (the direct income coefficient was .06 in 1981, but .03 in 1983).

Overall, the path analysis results presented here suggest that Minnesota's move to a new financing policy did not alter the critical influences on students' postsecondary expectations. Notably, the influences of family income seem to have remained small, and seem to have fallen slightly.

Discriminant Analyses for Postsecondary Plans

While the above path analyses were informative regarding influences on the level of students' expectations, they did not focus upon the further schooling versus no further schooling distinction, and they did not focus upon actual first-year plans, as opposed to the more vague, and longer-term, domain of expectations. We therefore performed discriminant analyses for those with schooling plans versus those with nonschooling plans versus those with uncertain plans in each cohort. To discriminate between those planning schooling for the first year after graduation, those not doing so, and those uncertain, we used all the variables in the path models, plus three further items: Students' perceived needs for financial aid

information, help in making education and vocational plans, and help in improving their reading skills. Instead of presenting the quantitative results for those analyses here, we summarize the findings below.

Educational expectations and high school rank loaded highly on the first significant discriminating function, which was similar in all three cohorts. This function largely discriminated between those planning more schooling and those planning for no further schooling. The second significant discriminant function also was similar across all three cohorts. This function was mainly based in ability and perceived need for help in educational and vocational planning. The schooling group and the uncertain group were effectively separated by this second function, which was less significant statistically than the first.

Our discriminant analysis approach suggested overall that students' postsecondary plans were largely determined by their educational expectations, achievement, ability, and educational/vocational needs. There was little change in this pattern across the cohorts. Family income played a small role in discriminating among the groups. It was never a driving force in group differences. It loaded slightly positively on the first function, meaning it was directly aligned with educational expectations and high school rank in separating those planning postsecondary attendance from those planning other activities. It loaded moderately negatively on the second function, suggesting the combination of planning needs, higher ability, and lower income distinguished those uncertain about schooling from those definitely planning schooling. Thus, the major instance in which lower income played a significant direct role in plans seemed to be when it was associated with higher ability and a felt need for career counseling. This pattern will receive attention in the forthcoming chapters. It clearly could affect actual attendance behaviors among a critical minority group: talented youth from disadvantaged backgrounds.

Summary and Discussion

The examination here of postsecondary plans and expectations of high school juniors of 1979, 1981, and 1983 suggests strongly that the level of Minnesota students' postsecondary expectations and plans has not been lowered by the increased targeting of state funds, and that expectations and plans are continuing to be affected mainly by academic factors, such as ability and achievement, rather than by parents' financial circumstances. The effects of financial factors on expectations and plans appear, in fact, to be negligible. We must therefore conclude that Question 1 should be answered negatively: there has been no detectable deterioration in the primarily meritocratic determination of postsecondary educational expectations and plans. The more behavioral aspects of postsecondary attendance and choice (i.e. the topics of our core Questions 2 and 3) must be tackled, however, prior to concluding that the financing policy change has indeed been neutral in its effects on the various income groups.

It should also be mentioned that there are hints in the discriminant analysis results of the chapter that lower income, higher ability, and a felt need for career counseling seemed to separate those uncertain about attendance from those certain they would attend. In other words, lower income limited the certainty of educational expectations somewhat when it was associated with higher ability and career uncertainty. This pattern suggests the state's recent attention to higher ability students (HECB, 1985) and to early attendance options (see Minnesota Department of Education, 1985) may be especially effective among the uncertain, low-income/high-ability students.

Chapter 5

Influences on Minnesota Students' Postsecondary Attendance: 1980-1984

In this chapter, we examine the influences of financial factors and other factors on actual postsecondary attendance. Financial factors are definitely among the significant potential influences on attendance patterns (see Chapter 2). They comprise a central focus of this chapter because they are an attendance influence especially susceptible to policy manipulation, unlike such factors as parental education and student achievement. In the end, the most important criterion for a successful postsecondary aid policy is likely to be its effects on attendance, and those effects are the focus here.

Research Design

Sample: For the attendance analysis, 400 subjects from each cohort (1980 graduates, 1982 graduates, and 1984 graduates) were chosen randomly for telephone interviews focusing upon their decisions regarding higher education.[8] The interviews were conducted in the early months of 1985. This date was eight months (for the 1984 cohort) to forty months (for the 1980 cohort) after the participants' graduation from high school. Seventy-nine percent of the attempted interviews were completed. When interview requests were denied, additional people to be interviewed were randomly selected until 400 interviewed respondents were obtained for each cohort (see Chapter 3).

Methods: The central variable indicators in Chapter 4 were used in this chapter to assess their relationships to a new dependent variable: postsecondary

attendance. Descriptive and multivariate analyses were conducted. In the latter, relationships among variables were examined in each cohort to explore general causal influences on actual attendance. Particular attention was paid again to the relative importance of family income within each cohort and across the three cohorts.

Descriptive Analysis

First-Year Plans and Actual Attendance: The relationship between high school juniors' plans for the first year after graduation and their postsecondary attendance was examined in the first descriptive analysis. Table 8 shows actual attendance rates for each category of first year plans in the three cohorts. The findings may be outlined as follows. First, overall attendance rates were consistently above 80 percent across the cohorts. This is in keeping with the nature of the original PSPP sample, which included only high school juniors expressing interest in postsecondary attendance. Second, students who planned to go to college did attend at a rate above 90 percent in all three cohorts. Third, the postsecondary attendance rates of students who planned to go to vocational/technical schools decreased somewhat from 73 percent in 1980 to 63 percent in 1984. Fourth, the attendance rates of those originally in the "Don't Know" and non-schooling categories rose somewhat over the four years (small cell sizes preclude confident inferences, however, regarding this fourth point). Over the three cohorts, there were no other clearly identifiable, meaningful changes in attendance rates or in the relationships between the first-year plans and actual attendance rates.

Family Income, Ability and Attendance: One of the simplest and clearest ways to examine the role of financial factors in attendance is to look at the relationships among family income, students' ability, and their attendance rates.

Table 8

The Relationship Between Juniors' Plans for the First-Year After Graduation and Their Eventual Postsecondary Attendance Behavior: 1980, 1982, and 1984 Graduates[a]

First-Year Plans	Cohort of High School Graduates		
	1980	1982	1984
Go to College	.92 (288)	.95 (290)	.91 (296)
Go to Voc/Tech	.73 (73)	.69 (67)	.63 (57)
Go to Other Schools	.80 (5)	.67 (3)	1.00 (6)
Non-School Options	.32 (28)	.43 (23)	.41 (29)
Don't Know	.33 (6)	.59 (17)	.82 (11)
Total Sample	.83 (400)	.86 (400)	.83 (399)

Note a: Each cell contains the proportion of people in that category attending a postsecondary institution. The total number of people in that category is in parentheses. Respondents were asked in their junior year what their plans were for the first-year after high school graduation. This table relates those responses to survey data on their subsequent actual college atttendance patterns.

In the second descriptive analysis of this chapter, we did so by disaggregating the sample. For each cohort, we examined attendance rates at four levels of family income and ability. Such an approach allowed us to make some early inferences about the factors influencing attendance. For example, a low attendance rate at a certain combined level of the two variables (e.g. high ability, low income) might suggest that this type of student was disproportionately disadvantaged. Financial factors might have limited postsecondary attendance.

Table 9 shows the attendance rate (the upper number in the cell) at each level of four ranks of student ability and income. As indicated below the tables, the classification of family income was slightly changed in 1981, so the cutoffs for the family income ranks for the 1980 cohort were slightly different from those for the other cohorts. The number of observations in the lower-ability and lower-income groups was very small in each cohort, a pattern which suggests caution in interpreting results for these cells. Indeed, caution is appropriate in examining any cell size under thirty.

Examination of the row totals suggests that ability influenced the attendance rate substantially: the more able the student was, the more likely it was that he or she attended. This tendency was very consistent across the three cohorts. The effect of family income was less substantial; still, the students with higher income were more likely to attend. This tendency appeared somewhat more pronounced in the 1984 cohort. This may be explained, in part, by inflation between 1979 and 1983. In other words, since we did not enter an inflation factor into our comparison of the cohorts, people in the lowest income quartile in 1978 were no doubt somewhat better off financially than the people in the same bracket in 1980 or 1982. Within income groups, ability played a strong role in attendance rates; but within ability groups, income played only a moderate role in atten-

Table 9

Postsecondary Attendance Broken Down by Ability and Income Groups: 1980, 1982, and 1984 Graduates

Ability Group	1980 Graduates Family Income Group 1.	2.	3.	4.		1982 Graduates Family Income Group 1.	2.	3.	4.		1984 Graduates Family Income Group 1.	2.	3.	4.	
1.	.63 (8)	.50 (12)	.33 (3)	.60 (5)	.54 (28)	.62 (13)	.14 (7)	.29 (7)	.78 (9)	.50 (36)	.46 (13)	.50 (6)	.58 (12)	.38 (8)	.49 (39)
2.	.61 (18)	.81 (31)	.79 (14)	.78 (27)	.76 (90)	.79 (14)	.67 (15)	.91 (22)	.80 (25)	.80 (76)	.44 (16)	.69 (19)	.89 (18)	.82 (33)	.73 (86)
3.	.74 (27)	.88 (41)	.82 (28)	.90 (29)	.84 (125)	.75 (12)	.95 (37)	.92 (36)	.90 (48)	.90 (133)	.87 (15)	.83 (12)	.91 (35)	.90 (50)	.89 (112)
4.	.89 (27)	.93 (42)	.95 (40)	.92 (48)	.92 (157)	.91 (22)	.77 (26)	.98 (50)	.97 (57)	.93 (155)	1.00 (12)	.82 (22)	.90 (47)	.98 (81)	.93 (162)
	.75 (80)	.84 (126)	.86 (85)	.86 (109)	.83 (400)	.79 (61)	.78 (85)	.90 (115)	.90 (139)	.86 (400)	.68 (56)	.75 (59)	.87 (112)	.90 (172)	.83 (399)

Note a: Ability data are broken into four groups (1 = lowest, 4 = highest), based on percentile test score rankings. Family income groups are slightly different for the three years. In the 1980 cohort, Group 1 consists of those with reported incomes of up to $13,999, Group 2 consists of those in the range from $14,000 to $20,999, Group 3 consists of those in the range from $21,000 to $27,999, and Group 4 consists of those with incomes of $28,000 or more. In the 1982 and 1984 cohorts, however, Group 1 consists of those with incomes of up to $14,999, Group 2 consists of those with incomes of $15,000 to $20,999, Group 3, consists of those with incomes of $21,000 to $29,999, and Group 4 consists of those with incomes of $30,000 or more. Because of the nature of the PSPP data sets, the samples in each cohort are tilted to the upper ends of these ranges (the n's for each grouping are in parentheses in each cell). Actual attendance rates are reported in each cell.

dance. Thus, a student's ability seemed to play a consistently more important role in his or her college attendance than family income. Of course, much more meaningful causal conclusions must await analyses in which factors correlated with financial and attendance factors are considered. Simple two and three variable relationships, such as those suggested by Tables 8 and 9, do not assess relative causal influences.

Path Analyses

Attendance at a postsecondary institution was examined next in the context of a path model. We employed a four-stage attendance model, with attendance as the last-stage dependent variable; our rationale for this approach was based in the hypothesis that all variables used in the Chapter 4 path analysis influenced attendance. This model is in keeping with the major causally focused research on postsecondary attendance (see Thomas et al., 1979; Kerckhoff, 1980).

Table 10 shows intercorrelations for the 1980 graduates (the 1979 juniors cohort). These correlations are in keeping with our expectations in that there are small to moderate positive correlations among virtually all indicators in the model. Figure 4 and Table 11 present the results of the path analysis for this cohort. In this group, only father's education had a significant effect on test score. No significant influences on high school rank were found. All the preceding variables in the model, except mother's education, had significant direct paths to educational expectations, with test scores, high school rank, and father's education especially significant.

Educational expectations and high school rank each had significant influences on attendance. There was no direct income effect on attendance. The unexplained variances of each endogenous variable were .99 for high school rank, .97 for test

Table 10

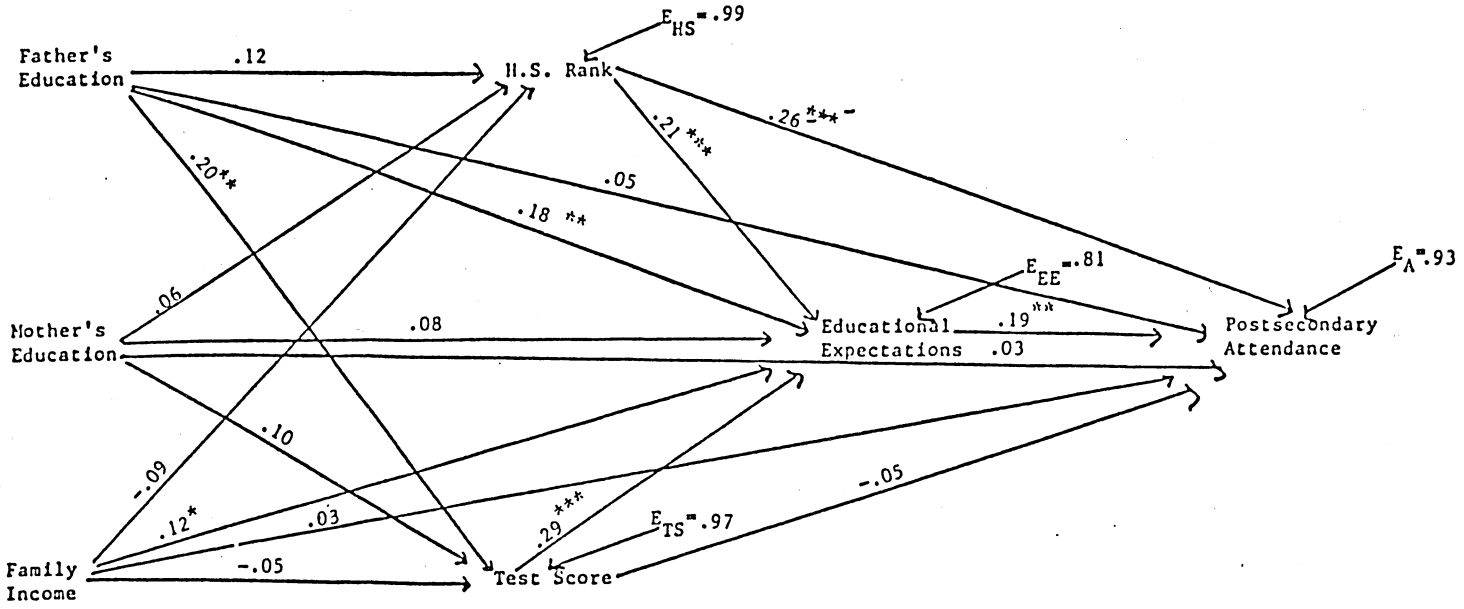
1980 Graduates: Intercorrelations Among the Focal Indicators (n = 376)[a]

	FED	MED	INC	RANK	TEST	EDEXP	ATTEND
Father's Education (FED)	-						
Mother's Education (MED)	.49	-					
Family Income (INC)	.45	.26	-				
High School Rank (RANK)	.11	.10	-.02	-			
Test Scores (TEST)	.22	.18	.06	.66	-		
Educational Expectations (EDEXP)	.36	.28	.23	.43	.49	-	
Postsecondary Attendance (ATTEND)	.16	.12	.10	.31	.23	.30	-

Note a: In subsequent tables in this chapter, the abbreviations FED, MED, INC, RANK, TEST, EDEXP, and ATTEND will be employed for the indicators. The code is outlined on the left of this table.

FIGURE 4

1980 Graduates: Path Analysis for College Attendance (N=376)[a]



Note a: Standardized regression coefficients are reported. Significant levels are coded as follows: * = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$.

Table 11

1980 Graduates: Summary of Path Analysis for College Attendance (n = 376)[a]

Dependent Variable	Predetermined Variable	Total Effect	Indirect Effect via:					Direct Effect
			RANK	TEST	EDEXP	RANK x EDEXP	TEST x EDEXP	
RANK	FED	.12 (1.67)	-	-	-	-	-	.12 (1.67)
R^2 = .02	MED	.06 (1.04)	-	-	-	-	-	.06 (1.04)
	INC	-.09 (-1.66)	-	-	-	-	-	-.09 (-1.66)
TEST	FED	.20 (2.51)	-	-	-	-	-	.20 (2.51)**
R^2 = .06	MED	.10 (1.62)	-	-	-	-	-	.10 (1.62)
	INC	-.05 (-.91)	-	-	-	-	-	-.05 (-.91)
EDEXP	FED	.26 (.17)	.03	.06	-	-	-	.18 (.11)***
R^2 = .35	MED	.12 (.10)	.01	.03	-	-	-	.08 (.07)
	INC	.08 (.07)	-.02	-.01	-	-	-	.12 (.10)*
	RANK	.21 (.01)	-	-	-	-	-	.21 (.01)***
	TEST	.29 (.01)	-	-	-	-	-	.29 (.01)***
ATTEND	FED	.12 (.02)	.03	.01	.03	.00	.00	.05 (.01)
R^2 = .14	MED	.06 (.02)	.02	.00	.02	.00	.00	.03 (.01)
	INC	.03 (.01)	-.02	.00	.02	.00	.00	.03 (.01)
	RANK	.30 (.00)	-	-	.04	-	-	.26 (.00)***
	TEST	.00 (.00)	-	-	.06	-	-	-.05 (-.00)
	EDEXP	.19 (.06)	-	-	-	-	-	.19 (.06)**

Note a: Unstandardized coefficients are reported in parentheses after standardized coefficients for direct and total effects.

scores, .81 for educational expectations, and .93 for attendance. These high proportions of unexplained variance could be due in part to the samples having been selected on the basis of postsecondary aspirations and also to the high initial values of the factors in the model. In other words, the value range of the causal factors in the model, and the variance in attendance outcomes, were constrained by the sample selection procedures. The role of "chance" factors therefore seems greater than in more representative samples (see Thomas et al., 1978; Hearn and Urahn, 1984).

Table 12 shows intercorrelations for the 1982 graduates (the 1981 junior cohort). As in the 1980 cohort, there were no surprises in the bivariate correlations. In this group, father's education and mother's education had significant paths to test score; no significant path was found to high school rank (see Figure 5 and the summary in Table 13). All the preceding variables, except for mother's education, had significant direct paths to educational expectations. Test scores and father's education had the most influence on educational expectations. Only educational expectations had a significant direct path to attendance. As in the 1980 cohort, there was no direct income effect on attendance. Unexplained variances of the variables in later stages were again high: .99 for high school rank, .95 for test score, .82 for educational expectations and .89 for attendance.

Table 14 shows intercorrelations for the 1984 graduates (the 1983 junior cohort). These correlations fit with those of the earlier graduate cohorts. Figure 6 and Table 15 show path analysis results for that group. Only father's education had a significant path to high school rank, and all three variables had significant paths to test scores. To educational expectations, all preceding variables except mother's education had significant direct paths; test scores

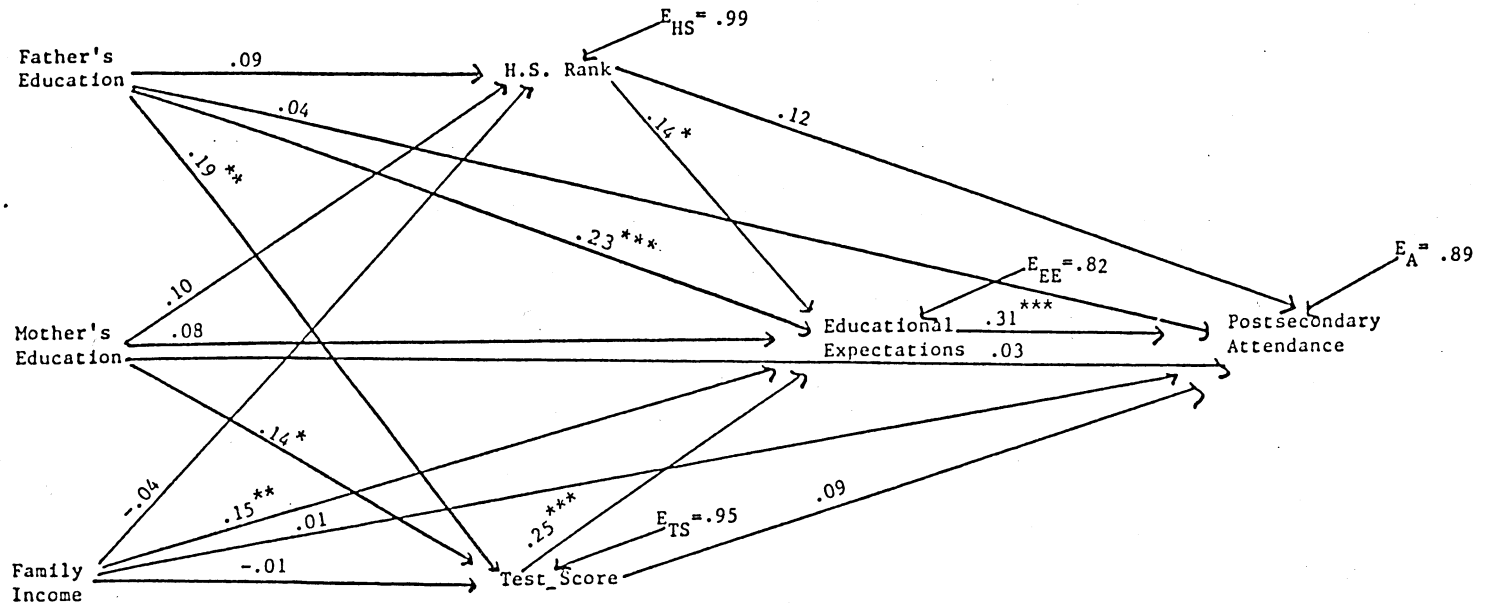
Table 12

1982 Graduates: Intercorrelations Among the Focal Indicators (n = 363)

	FED	MED	INC	RANK	TEST	EDEXP	ATTEND
FED	-						
MED	.54	-					
INC	.43	.30	-				
RANK	.12	.14	.03	-			
TEST	.27	.25	.12	.64	-		
EDEXP	.42	.33	.31	.34	.43	-	
ATTEND	.23	.19	.15	.29	.32	.42	-

FIGURE 5

1982 Graduates: Path Analysis for College Attendance (N=363)[a]



Note a: Standardized regression coefficients are reported. Significant levels are coded as follows: * = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$.

Table 13

1982 Graduates: Summary of Path Analysis for College Attendance (n = 363)[a]

Dependent Variable	Predetermined Variable	Total Effect	Indirect Effect via:					Direct Effect
			RANK	TEST	EDEXP	RANK x EDEXP	TEST x EDEXP	
RANK	FED	.09 (1.13)	-	-	-	-	-	.09 (1.13)
R^2 = .02	MED	.10 (1.39)	-	-	-	-	-	.10 (1.39)
	INC	-.04 (-.38)	-	-	-	-	-	-.04 (-.38)
TEST	FED	.19 (2.50)	-	-	-	-	-	.19 (2.50)**
R^2 = .09	MED	.14 (2.20)	-	-	-	-	-	.14 (2.20)*
	INC	-.01 (-.10)	-	-	-	-	-	-.01 (-.10)
EDEXP	FED	.29 (.18)	.01	.05	-	-	-	.23 (.14)***
R^2 = .32	MED	.13 (.10)	.01	.03	-	-	-	.08 (.06)
	INC	.14 (.06)	-.01	-.00	-	-	-	.15 (.07)**
	RANK	.14 (.01)	-	-	-	-	-	.14 (.01)*
	TEST	.25 (.01)	-	-	-	-	-	.25 (.01)***
ATTEND	FED	.15 (.03)	.01	.02	.07	.00	.01	.04 (.01)
R^2 = .21	MED	.10 (.02)	.01	.02	.02	.00	.01	.03 (.01)
	INC	.05 (.01)	-.00	-.00	.05	-.00	.00	.01 (.00)
	RANK	.16 (.00)	-	-	.04	-	-	.12 (.00)
	TEST	.17 (.00)	-	-	.07	-	-	.09 (.00)
	EDEXP	.31 (.09)	-	-	-	-	-	.31 (.09)***

Note a: Unstandardized coefficients are reported in parentheses after standardized coefficients for direct and total effects.

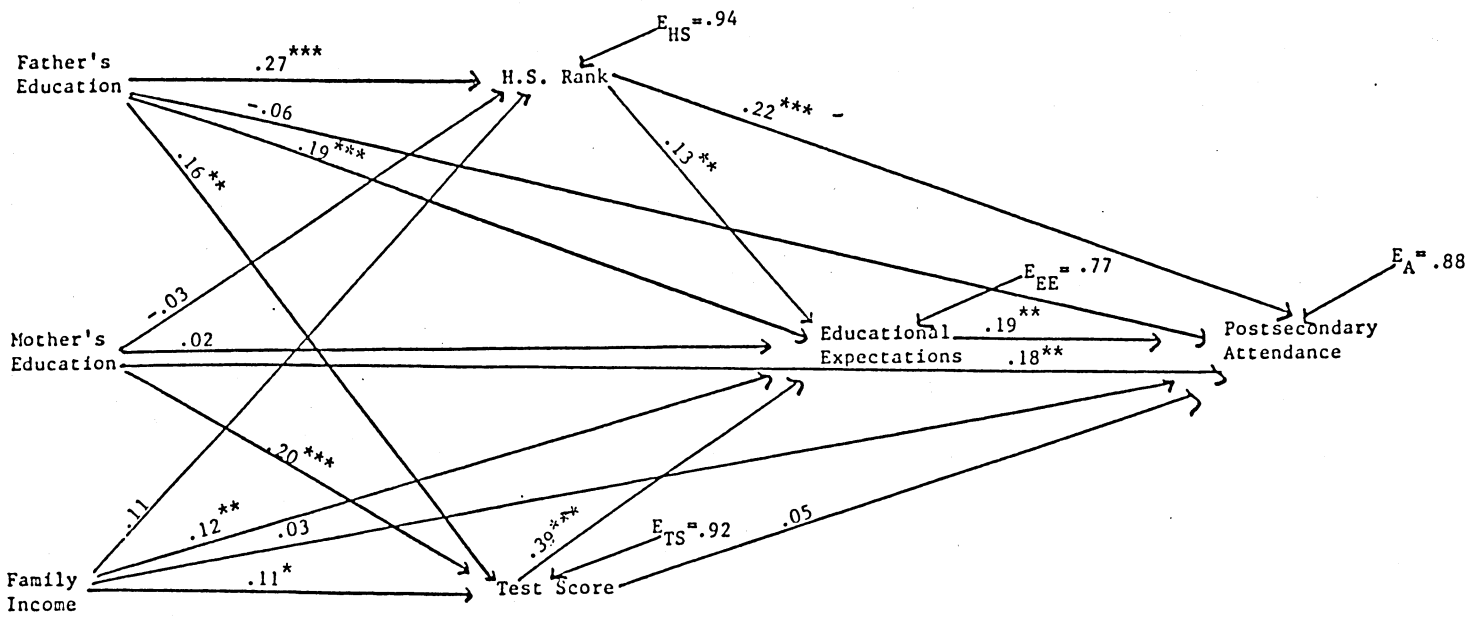
Table 14

1984 Graduates: Intercorrelations Among the Focal Indicators (n = 379)

	FED	MED	INC	RANK	TEST	EDEXP	ATTEND
FED	-						
MED	.59	-					
INC	.45	.35	-				
RANK	.32	.26	.13	-			
TEST	.33	.34	.26	.61	-		
EDEXP	.43	.34	.33	.45	.57	-	
ATTEND	.24	.31	.18	.38	.35	.37	-

FIGURE 6

1984 Graduates: Path Analysis for College Attendance (N=379)[a]



Note a: Standardized regression coefficients are reported. Significant levels are coded as follows: * = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$.

Table 15

1984 Graduates: Summary of Path Analysis for College Attendance (n = 379)[a]

Dependent Variable	Predetermined Variable	Total Effect	Indirect Effect via:					Direct Effect
			RANK	TEST	EDEXP	RANK x EDEXP	TEST x EDEXP	
RANK	FED	.27 (3.57)	-	-	-	-	-	.27 (3.57)***
R^2 = .11	MED	-.03 (-.30)	-	-	-	-	-	-.03 (-.30)
	INC	.11 (1.72)	-	-	-	-	-	.11 (1.72)
TEST	FED	.16 (2.17)	-	-	-	-	-	.16 (2.17)**
R^2 = .15	MED	.20 (3.22)	-	-	-	-	-	.20 (3.22)***
	INC	.11 (1.03)	-	-	-	-	-	.11 (1.03)*
EDEXP	FED	.29 (.18)	.03	.06	-	-	-	.19 (.12)***
R^2 = .41	MED	.12 (.07)	.01	.08	-	-	-	.02 (.02)
	INC	.16 (.09)	-.00	.04	-	-	-	.12 (.05)**
	RANK	.13 (.01)	-	-	-	-	-	.13 (.01)**
	TEST	.39 (.02)	-	-	-	-	-	.39 (.02)***
ATTEND	FED	.07 (.02)	.06	.01	.04	.01	.01	-.06 (-.01)
R^2 = .22	MED	.24 (.06)	.02	.01	.00	.00	.01	.18 (.04)**
	INC	.06 (.01)	-.01	.01	.02	-.00	.01	.03 (.00)
	RANK	.25 (.00)	-	-	.02	-	-	.22 (.00)***
	TEST	.13 (.00)	-	-	.07	-	-	.05 (.00)
	EDEXP	.19 (.06)	-	-	-	-	-	.19 (.06)***

Note a: Unstandardized coefficients are reported in parentheses after standardized coefficients for direct and total effects.

made the greatest contribution to explaining this variable. Finally, high school rank, educational expectations, and mother's education, but not family income, had significant direct paths to attendance. Unexplained variances were .94 for high school rank, .92 for test score, .77 for educational expectation, and .88 for attendance.

Summary and Discussion

In reviewing descriptive and path analysis results for the three cohorts, one must conclude that both bivariate and causal relationships among the variables remained stable across the cohorts. Student plans were converted to actual attendance at similar rates across the cohorts. In causal analyses, it was found that students' attendance at higher education institutions was most directly and consistently influenced by educational expectations. Attendance was influenced significantly and consistently by high school rank also. Attendance was influenced consistently but largely indirectly by father's education. In the 1984 cohort, more variables in the model significantly ($p \leq .05$) influenced attendance than in earlier cohorts. Mother's education, for example, increased its effect on attendance both indirectly (through test scores and educational expectations) and directly. Nevertheless, the direction and even the relative size of these new effects in 1984 were largely in keeping with the 1982 and 1984 results.

Examination of family income data showed it related positively to attendance in descriptive analyses, as expected, but showed no evidence of direct causal influences on attendance in more detailed multivariate analyses. Income did have some effect on educational expectations, but even then, it contributed far less to educational expectations than did high school rank, test scores, and father's

education. Furthermore, the size of unstandardized path coefficients for income was quite low in each of the cohorts. This pattern suggests the influences of income on access were consistently quite minimal over the entire four year period of the study. Therefore, we conclude that Minnesota's financing policy change has not substantially increased the role of financial factors in students' attendance. In other words, we answer the study's Question 2 negatively.

Chapter 6

Influences on Minnesota Students' Postsecondary Destinations: 1980-1984

We have seen in the preceding two chapters that financial factors do not appear to be increasing in importance as determinants of educational expectations, plans, or postsecondary attendance. However, much of the recent research on the importance of financial aid in postsecondary education offers support for the idea that the major role of financial aid lies in its ability to provide students with a wider choice of institutions, less constrained by financial limitations (Leslie, 1985; Tierney, 1980). The central question addressed in this chapter is whether or not the recent moves to a more targeted subsidy policy in Minnesota have changed college-going students' destination patterns, i.e. changed the institutions they attend.

Postsecondary institutions differ markedly in their costs. Generally, private colleges are more expensive to attend than public institutions. Among the public sector institutions in the state, the University of Minnesota is more expensive than the state colleges, which, in turn, are more expensive than the community colleges and vocational/technical schools. There is a danger, therefore, that tuition increases might lead less affluent students to choose less costly institutions. With tuition increases (offset by student aid increases) being the central element in targeted subsidy policies, student choices comprise a significant element in evaluating those policies. We examined the patterns of students' choice in the three cohorts to determine the effect of financial factors before and after the financing policy change. As in the preceding chapters, the relative importance of financial factors was investigated in relation to the

importance of other relevant variables, such as student ability and postsecondary expectations.

Research Design

Sample: Among the 400 subjects in each cohort (1980, 1982, and 1984 graduates) interviewed on the telephone, those who had attended a postsecondary institution within six months of high school graduation (see Chapter 5) were selected and classified into the following groups, according to their institutional destinations:

	Number of Students		
	1980	1982	1984
University of Minnesota	59	75	59
State Universities	97	92	110
Junior and Community Colleges	46	52	53
Private Colleges	68	69	66
Vocational and/or Technical Institutions	51	50	38
Other Schools	12	5	7
Total	333	343	333

Since the "other schools" category was too small for statistical analysis as a group, and also since it may refer to choices that only marginally fit into the postsecondary arena, these cases were excluded from further analyses in this chapter, as were cases with missing data. Students with full data in the five remaining school groups of college attenders formed the foundation for the analysis of college choice.

It should be borne in mind that, of the five school groups, only the University of Minnesota category was explicitly tied to schools in Minnesota. Students answering that they attended a "state university," for example, could have been referring to the University of North Carolina or another out-of-state public university.

This possibility suggests that caution is warranted in interpreting this chapter's results in the Minnesota policy context. Nevertheless, the great majority of college-attending students in the sample attended institutions in one of two general classes: institutions in Minnesota, or public institutions in states having tuition-reciprocity agreements with Minnesota. For this reason, the results of this chapter can indeed be linked meaningfully to financing developments in Minnesota state policy.

Methods: Besides the variables used in the previous chapters, four new variables from the PSPP data were included as independent variables. These four concerned students' gender and their perceived need for information on financial aid, for help in making educational and/or vocational plans, and for improved reading skills, respectively. We first conducted univariate and multivariate analyses of variance to determine the differences among the five types of institutions on each variable and on all the variables together. We compared the five school group means statistically using this method. Next, we used discriminant analysis to determine the critical variable combinations discriminating among the five groups.

Analyses of Variance

Tables 16 through 18 show for the three cohorts the means of each group on each variable as well as the multivariate and univariate F statistics. In the 1980 cohort (see Table 16), univariate analysis of variance showed seven significant group differences: high school rank, test scores, educational expectations, father's education, mother's education, family income and improving reading skills. Educational expectations showed the highest significance level (the greatest F value) among the variables. In other words, it differentiated among the five

Table 16

1980 Graduates: Analysis of Variance for College Choices and Student Background Characteristics (n = 306)[a,b,c]

	Indicator Means for Each Institutional Type						
	U of M (n=57)	State (n=91)	Jr/Com (n=45)	Private (n=66)	Voc/Tech (n=47)	Univariate F	Multivariate F
Sex (SEX)	1.40	1.52	1.44	1.65	1.51	.89	
High School Rank (RANK)	71.76	74.42	63.63	79.89	53.63	10.68***	
Test Scores (TEST)	70.97	71.77	58.00	74.04	51.53	14.32***	
Educational Expectations (EDEXP)	4.38	4.08	3.72	4.60	2.51	38.55***	
Father's Education (FED)	5.49	5.61	4.69	5.88	4.17	10.16***	4.61***
Mother's Education (MED)	5.64	5.14	4.72	5.54	5.17	3.74**	
Family Income (INC)	3.87	3.79	3.25	3.88	3.31	3.49**	
Need for Financial Information (FINANCE)	.82	.70	.72	.77	.71	1.29	
Need for Help in Making Educational and Vocational Plans (PLANS)	.44	.32	.44	.30	.34	2.00	
Need for Improved Reading Skills (READ)	.09	.19	.22	.09	.06	3.24*	

Note a: In subsequent tables in this chapter, the abbreviations SEX, RANK, TEST, EDEXP, FED, MED, INC, FINANCE, PLANS, and READ will be employed for the dependent variable indicators. The code is outlined on the left side of this table. The five schooling groups will also be abbreviated in this and subsequent tables, in the code used at the top of the table.

Note b: Significance code for this and subsequent tables in this chapter: *** = $p \leq .001$, ** = $p \leq .01$, * = $p \leq .05$.

Note c: N's reported in the table are smaller than those reported in the text due to missing data considerations.

Table 17

1982 Graduates: Analysis of Variance for College Choices and Student Background Characteristics (n = 317)[a]

	Indicator Means for Each Institutional Type						
	U of M (n=71)	State (n=89)	Jr/Com (n=48)	Private (n=65)	Voc/Tech (n=44)	Univariate F	Multivariate F
SEX	1.50	1.50	1.43	1.45	1.51	.24	
RANK	73.10	69.89	68.90	79.75	56.27	7.25***	
TEST	69.71	69.08	65.69	76.33	53.74	8.19***	
EDEXP	4.44	3.94	3.93	4.51	2.81	28.74***	
FED	6.05	5.66	5.31	6.16	4.08	9.48***	
MED	5.83	5.59	4.95	5.74	4.76	5.63***	3.53***
INC	8.57	7.42	7.12	8.39	6.24	7.52***	
FINANCE	.71	.70	.79	.77	.70	1.10	
PLANS	.31	.35	.29	.25	.41	1.34	
READ	.03	.11	.05	.12	.05	.67	

Note a: N's reported in the table are smaller than those reported in the text due to missing data considerations.

Table 18

1984 Graduates: Analysis of Variance for College Choices and Student Background Characteristics (n = 316)[a]

	Indicator Means for Each Institutional Type						
	U of M (n=56)	State (n=106)	Jr/Com (n=52)	Private (n=64)	Voc/Tech (n=38)	Univariate F	Multivariate F
SEX	1.42	1.56	1.44	1.52	1.44	.76	
RANK	76.86	75.11	60.95	78.64	55.21	15.00***	
TEST	73.73	69.11	58.50	76.66	45.79	18.30***	
EDEXP	4.44	4.25	4.00	4.61	2.74	28.50***	
FED	6.16	5.66	5.42	6.18	3.94	10.33***	
MED	5.44	5.51	5.38	5.84	4.62	3.41**	3.70***
INC	8.74	8.10	8.40	8.13	6.12	5.73***	
FINANCE	.68	.73	.64	.77	.74	.70	
PLANS	.26	.27	.24	.35	.15	.93	
READ	.06	.09	.04	.07	.03	.37	

Note a: N's reported in the table are smaller than those reported in the text due to missing data considerations.

groups of institutions most clearly. Mother's education, family income, and improving reading skills variables provided only marginally significant levels of differentiation.

In the 1982 cohort (see Table 17), the dominant discriminating factor was once again the level of the students' educational expectations. Other factors were also similar in their significance levels, with the exception of improving reading skills, which did not significantly discriminate. Mother's education and family income slightly increased their significance levels relative to 1980 (the change in family income could be partly due to scale differences between 1979 and 1981; see Chapter 3). In the 1984 cohort (see Table 18), statistical results were very similar to those for the 1982 cohort.

In general, sex and the three information need variables did not differentiate well among the five schooling groups. Academically related variables (high school rank and test scores), family background variables (father's education, mother's education, and family income), and educational expectations consistently differentiated among the groups, however.[9] The overall multivariate analyses of variance were therefore significant in each of the cohorts.

The group means on family income were compared to examine more closely the relationship of financial factors to college destinations. In the 1980 and 1982 cohorts, students attending the University of Minnesota and the private colleges came from families with higher average incomes. This pattern fits with earlier research on college destinations at the national level (see Hearn, 1984). In the 1984 cohort, however, family incomes were very similar among the groups, with the exception of the vocational and/or technical schools group. Thus, in 1984, unlike 1980 and 1982, our evidence did not support the idea that more affluent students consistently entered more expensive schools.

Such a finding provides some tentative evidence for the income-neutralizing effects of a targeted subsidy policy. Admittedly, three factors temper that generalization. First, the average income levels at the somewhat expensive University of Minnesota rose, rather than fell, over the 1982 to 1984 period; the average incomes at the less expensive state colleges and community colleges simply rose more. Second, non-Minnesota schools were included among the students' destinations. Third, and perhaps most important, the data here do not allow us to see the true financial situations of students who were financially independent of their parents. Overall, though, it does appear the differentiation of schools by income level decreased somewhat between 1982 and 1984, as would be expected by targeted subsidization proponents.

Discriminant Analyses

We used discriminant analysis for further examination of group differences among attenders at various kinds of schools. This method allowed us to determine multivariate "functions" which statistically differentiated among the five groups. Table 19 shows all statistically significant discriminant functions in each cohort. In the 1980 cohort, we obtained two statistically significant functions. The first function (I) was named the "educational expectations" function, since the expectations variable had by far the highest loading. Father's education and high school rank also had relatively high loadings, and they were considered as contributing variables to expectations. The second function (II) was named the "uncertainty" function. It was difficult to name this function, since a confusing blend of variables had high loadings. We chose this name ("uncertainty") because students' needs for information on aid and career planning had high loadings, along with income and mother's education, suggesting those students scoring

Table 19

Standardized Canonical Discriminant Function Coefficients, for Significant ($p \leq .05$) Functions in Each Cohort[a]

	1980 Cohort (n = 306)		1982 Cohort (n = 317)	1984 Cohort (n = 316)
	Function I: Educational Expectations	Function II: Uncertainty	Function I: Educational Expectations	Function I: Educational Expectations
SEX	.01	-.13	-.03	.03
RANK	.22	-.09	.36	.29
TEST	.09	.02	.11	.28
EDEXP	.76	.03	.69	.61
FED	.39	-.47	.20	.23
MED	-.14	.61	.02	-.03
INC	.09	.45	.25	.10
FINANCE	.13	.36	-.01	-.02
PLANS	.02	.25	-.11	.23
READ	.02	-.64	.07	.11

Note c: N's reported in the table are smaller than those reported in the text due to missing data considerations.

high on these functions were less disadvantaged (in a financial sense) than confused.

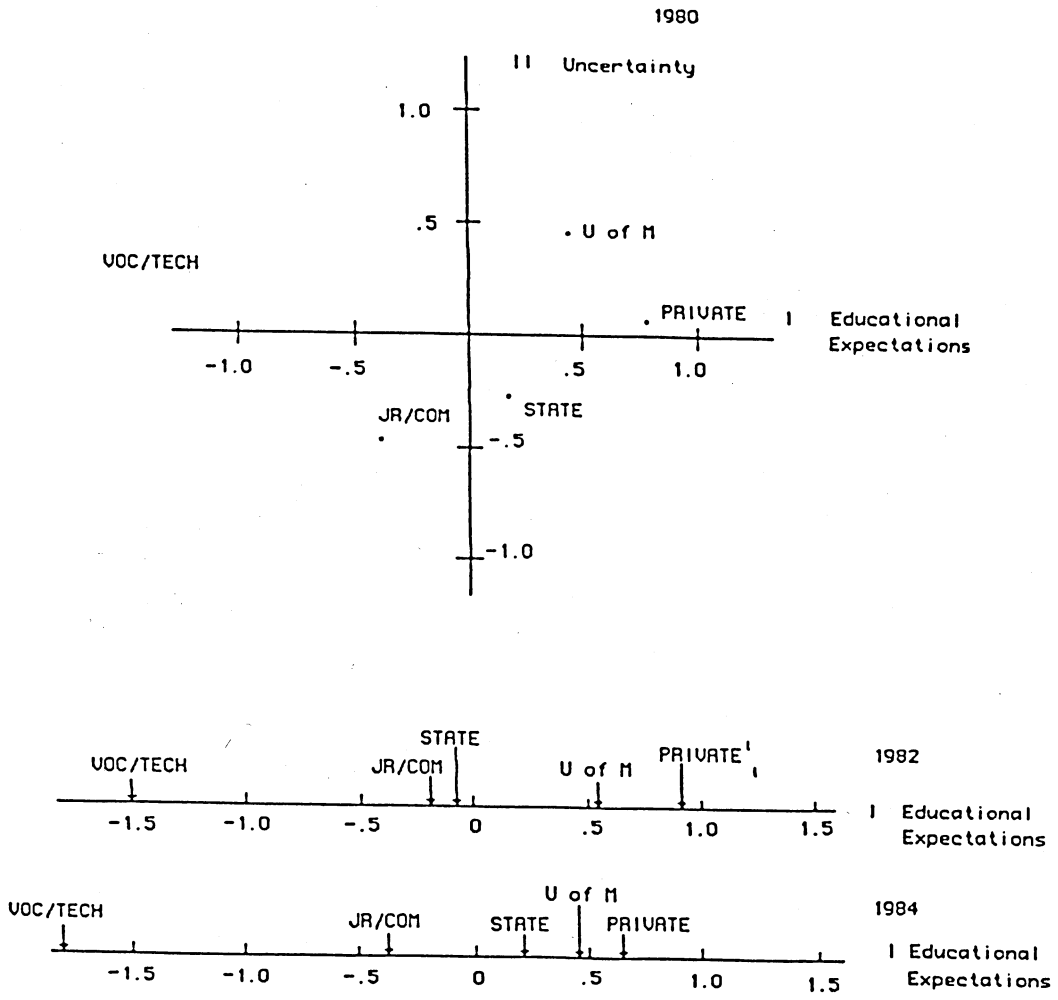
In the 1982 cohort, we had only one significant function (I). Its higher loadings were on educational expectations and high school rank. Thus, we named it the "educational expectations" function, as in the 1980 cohort. In the 1984 cohort, we again had only one significant function (I), also having higher loadings on educational expectations and, to a lesser degree, on high school rank and test score. Accordingly, we named it "educational expectations," as in the 1980 and 1982 cohorts. Our discriminant analyses thus showed expectations to be the characteristic most strongly and consistently differentiating among the groups across the three cohorts. The fact that the second function of 1980 disappeared in the more recent cohorts indicates that over time expectations and their correlates became the singularly important factor in the students' institutional choices in the recent cohorts.

Family income loaded relatively high on Function II in 1980 and somewhat high on Function I in 1982. However, in 1984, its loading decreased. Another possible financial factor, information needed for financial aid, loaded relatively high on Function II in 1980, but its loadings on the three educational expectations functions were low. Thus, financial factors seemed to play a somewhat decreasing role in college choices over time.

Figure 7 shows group locations (centroids) in the discriminant function space. In 1980, along Function I (the "educational expectations" dimension), the groups were ordered from top to bottom as follows: the private colleges, the University of Minnesota, the state colleges, junior and/or community colleges, and the vocational and/or technical institutions. This order matched our hypothesis regarding the level of educational expectations in the different institutions.

FIGURE 7

Group Centroids on Significant ($p \leq .05$) Discriminant Functions for Each Cohort



Along the second 1980 function (II) the groups showed much less dispersion; that is, this "uncertainty" did not differentiate the groups nearly so well as did the first function. It was difficult to interpret the ordering of groups on this function.

Both in 1982 and 1984, the order of the groups along Function I (the educational expectations function) was the same as in 1980. Thus, our discriminant analysis results clearly show that expectations are consistently a major factor influencing postsecondary institution choices. As such, they dwarf other academic and nonacademic factors in the choice process.

Financial factors (i.e., income) did play a significant role in destinations, particularly in the earlier cohorts (1980 and 1982). In these cohorts more affluent students tended to go to more expensive institutions. The influence of the income factor on choice decreased in the most recent cohort (1984), however. Thus, we must conclude that Minnesota's recent policy changes probably have not had a deleterious effect on students' choices among variously priced postsecondary institutions.

Summary and Discussion

The factors most central to students' institutional destinations in 1984 seemed to be those most central in earlier stages of the attendance process: academically related factors already established by the junior year of high school. Income seemed to play a more significant role in destinations than it did in postsecondary expectations, plans, and access, as expected (see Chapter 2), but this role was apparently not growing over the time period studied here (1980 to 1984), and may have even been shrinking. To the extent a policy of targeted subsidies can be considered a success by way of a flattening of income differences

across institutions in a context of stable to rising enrollment rates overall (see Chapter 5), the Minnesota policy seems to be working. Changes in state policy appear not to have hampered the largely meritocratic nature of the choice process. The one strong caveat that must be added to this conclusion involves the absence of data for student dependency status in this part of our study. Only parental income data were available. That problem precludes confident inferences regarding the actual financial situations of the many financially independent students undoubtedly included here.

Chapter 7

The Financial Status of Minnesota Postsecondary Students: 1980-1984

Those concerned with higher education have anxiously watched college costs soar over the past decade (Breneman and Finn, 1978; Chronicle of Higher Education, February 29, 1984). Many parents with children approaching college age may feel overwhelmed by what appear to be unmanageable costs. Yet, by many standards, college today is as affordable as it was twenty years ago; in fact, if increases in average family income, inflation, and financial aid are considered, a college education may be more affordable than it was twenty years ago (Hartle and Wabnick, 1982). Although the role of financial aid in the college attendance process has been hotly debated (e.g. see Hanson, 1982; Heyns and O'Meara, 1982), most research finds financial aid playing some part in assuring access and an integral role in preserving choice for postsecondary students today (Litten, 1985).

Without questioning the importance of financial aid in access and choice, some research has raised questions concerning its equitability as it involves enrolled students. Some of this research shows that inequities do exist in the distribution of aid among students with different levels of need and among students in different educational systems (e.g. the community college system, the state university system, and the private four-year colleges) (Hyde, 1979; Fenske et al., 1985). Research has also shown that all aid is not perceived to be equal. Students perceive loans and grants to be of very different quality, and these different kinds of aid affect postsecondary behavior in different ways (Jackson, 1978).

Part of the package of higher education initiatives approved by the Minnesota Legislature in 1982-1983 included financial recommendations focused on appropriately partitioning postsecondary costs between students, their families, and the government, and preserving and strengthening the diversity offered by distinctive public and private sectors. A critical component of this financial plan revolved around the concept of shared responsibility (Minnesota Higher Education Coordinating Board, 1982b). Students, their parents, and the government were each assigned specific responsibilities for postsecondary costs. All applicants are expected to contribute 50 percent of their cost of attendance from savings, earnings, loans, or other assistance from institutional or private sources. The remaining 50 percent of the cost is met by contributions from parents, as determined by a national need analysis and by a combination of federal Pell Grant and Minnesota State Scholarship and Grant awards. By targeting state aid less severely than federal aid, the state program reaches many families in the lower-middle income range who are not eligible for Pell grants (Minnesota Higher Education Coordinating Board, 1983). The policy changes effected by the adoption of these initiatives have had a very real impact on the distribution of financial aid among students enrolled in Minnesota institutions (Minnesota Higher Education Coordinating Board, 1985).

When gathered together, all of these factors--the importance of financial aid in postsecondary access and choice, difficulties in ensuring equitable distribution, and recent, substantive policy changes in the financing of higher education in Minnesota--point to the timeliness and importance of an analysis of just how well financial aid is helping enrolled students meet college costs. The question, in essence, involves the third goal of financial aid policy: assuring that students are able to persist to the point of obtaining their degree, rather than dropping out of school, or transferring to another school, because of financial factors.

The major question we will attempt to answer in this chapter is that of Question 4 of Chapter 3: Has the adequacy and quality of aid packages among similar students attending similar colleges in Minnesota declined in recent years? Relatedly, we are interested in whether or not there have been changes in the adequacy and quality of aid packages of similar students, regardless of their institutions. In this chapter, we pay particular attention to changes between 1982-83 and 1984-85, since the major changes in aid packaging in this state took place in 1982-83.

Research Design

Sample: For this analysis, we employed three samples from three different years. Each is a 25 percent random sample from data collected for the Minnesota State Scholarship and Grant Program. This data base consists of all eligible students who applied for a Minnesota State Scholarship or Grant. It contains a number of individual and institutional finance variables and is used by the HECB to calculate state awards. Students are presently eligible for a state grant for four years following their entrance into a postsecondary institution (the terms of attendance can be either consecutive or interrupted). The first sample (N= 11,030) is made up of students who applied for aid for the 1981-82 year; the second sample (N=12,552) consists of students who applied for aid for the 1982-83 academic year, and the third sample (N=17,700) consists of students who applied for aid for the 1984-85 academic year. Each sample was divided into independent and dependent student subsamples for this analysis.

Variables and their Indicators: Terms used in financial aid analysis (e.g. need and cost) can be defined in many different ways, and different definitions can yield very different results. For the purposes of this analysis we defined the variables in the study as follows:

- Family Contribution: Family contribution is based in the expected parental contribution and the expected student contribution to the cost of postsecondary education. For dependent students, the family contribution is the expected parental contribution. For independent students, the family contribution is the expected student contribution. Since the average size of the student contribution is fairly consistent across all family income groups for dependent students, that contribution was not considered. We broke expected contribution into five categories to examine aid awards among students with similar need. These five categories were:

  (1) No expected contribution,
  (2) $0.01 to $700 expected contribution,
  (3) $700.01 to $1400 expected contribution,
  (4) $1400.01 to $2700 expected contribution, and
  (5) More than $2700 expected contribution.

- Pell: The federal Pell Grant awarded to the student.

- Award: The Minnesota State Scholarship or Grant awarded to the student.

- Cost: This figure was derived from the postsecondary cost used by HECB to calculate state awards. It represents all costs associated with a postsecondary education. For students in all the samples, HECB recognized $2750 of living costs--regardless of institution--plus tuition and fees. To reflect more accurately the true impact of aid awards in offsetting postsecondary costs, costs were adjusted for inflation for purposes of this analysis. The tuition was calculated by taking the weighted average of tuition for the institution as a whole--no distinction was made for program to program tuition differences. The cost figure is capped for students in private institutions.

- System: We broke postsecondary institutions in Minnesota down into six systems: (1) University of Minnesota, (2) State Universities, (3) Community Colleges, (4) AVTI's, (5) Private Four-Year Colleges, and (6) Private Two-Year Colleges.

Methods: Before we can look for changes in adequacy and quality of aid packages, we must come to grips with some indicators of those terms. We chose to measure the adequacy of aid by looking at grants as a proportion of total cost. We can gauge quality only implicitly. Though we have no student loan or college work-study data in these samples, examining changes in grants as a proportion of cost and the concommitant changes in unmet cost (often met through student loans and work study) allows us to draw some tentative conclusions about the changing quality of aid packages. For all three samples, we examined the state award as a proportion of cost, the federal Pell grant as a proportion of cost, and the total grant award (state plus Pell) as a proportion of cost. These proportions were computed using inflated living cost figures, reflecting changes in the Twin Cities metropolitan price index. Descriptive analyses of these proportions for similarly needy students (students within each category of the expected family contribution) were conducted within each of the state's six postsecondary systems. With these data, we explored the extent of contributions made by state grant aid alone, how state grant aid functions as a supplement to federal grant aid, and how these fluctuated between the academic years 1980-81 and 1984-85.

Findings for Dependent Students

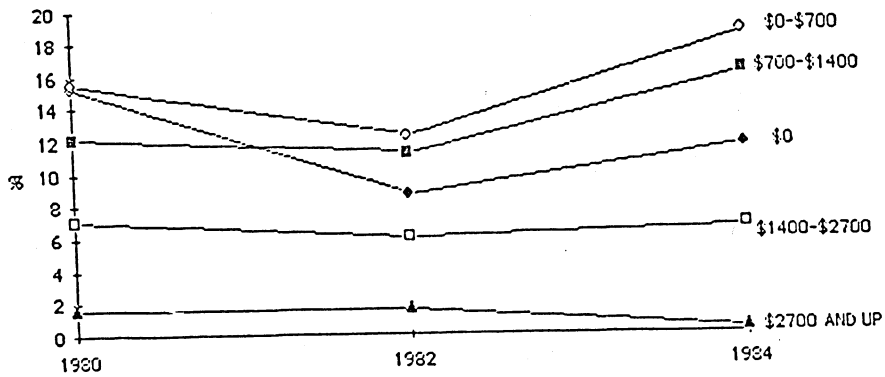
Definite changes took place in the distribution of state awards between 1980 and 1984. First of all, looking within each family contribution category and ignoring differences between systems for the time being, one is struck first by the erosion of the award's ability to meet postsecondary costs in 1982, and the recouping of that ability in 1984 (see Figure 8), particularly among those in the lower and middle contribution levels.

For students with no expected family contribution, average state award per-

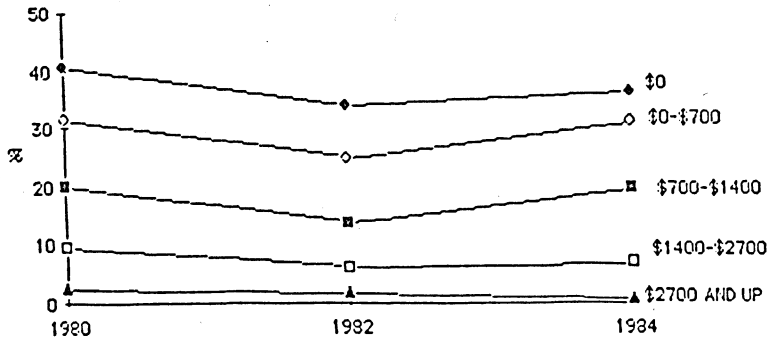
FIGURE 8

Grant Aid as a Percentage of Postsecondary Cost by Parental Contribution Group for Dependent Students

STATE AWARD AS A PERCENT OF COST BY PARENTAL CONTRIBUTION
DEPENDENT STUDENTS



COMBINED AWARD AND PELL GRANT AS A PERCENT OF COST BY PARENTAL CONTRIBUTION
DEPENDENT STUDENTS



centages decreased by nearly half between 1980 and 1982. The 1984 increase left the state award percentage at a slightly lower level than it had been in 1980. As expected family contribution rose to over $1400, the 1980-82 decline was less extreme, as was the 1984 rise. At the highest level of family contribution, average state award percentages, very small in 1980, steadily decreased to almost nothing in 1984. When the analysis is broken down further into six different postsecondary systems in Minnesota additional patterns take shape (see Table 20).

In all three year's samples, state awards to students in the private sector (two year and four year) met a higher percentage of cost than did state awards to students in the public sector (University of Minnesota, state colleges, community colleges, and AVTIs). This is partly a function of the tuition capping policy. In other words, a higher percentage of "cost" is met at the private school, but that "cost" is capped and thus unrealistically low. Without this cap, these private institution percentages would be less. This gap had widened considerably in all but the upper-most family contribution group by 1984-85. In 1980-81 and 1982-83, the percentage of costs met for private sector students remained fairly constant across contribution levels for students with family contributions between $0 and $2700, but dropped off for students with contributions over $2700. The increase in average state award between 1982-83 and 1984-85 noted previously was particularly dramatic for students with family contributions between $0 and $1400.

The percentage of costs met by state awards for public sector students is less than the percentage met for private sector students, but the patterns remain much the same. There tended to be a smaller percentage of costs met within the community college and AVTI system, but those differences are not major.

When the <u>combination</u> of state grant aid and federal Pell grant aid is con-

sidered (see Figure 8 and Table 21), it is clear that, since 1982-83, the increases in state aid have served to maintain or improve the ability of total grant aid to meet postsecondary costs. Only in the highest category of family contribution did the quality and adequacy of aid decline substantially for the dependent students between 1982-83 and 1984-85.

Findings for Independent Students

As for dependent students, one particularly striking pattern emerges among independent students (see Figure 9 and Tables 22 and 23). The decline in the average state award's ability to meet postsecondary costs between 1980 and 1982 hit the independent students as hard as it did the dependent students--the two lowest contribution groups suffered the greatest declines. However, those two groups of independent students did not recover those losses in 1984 as did similarly needy dependent students. Both state award and total grant award as a percentage of postsecondary cost decreased steadily between 1980 and 1984 for these students.

Increases in state awards as a percentage of postsecondary costs for students with moderate family contributions did not offset declines in Pell grants enough to stop the erosion in adequacy of the total grant package. These students showed a steady decline in the ability of grant packages to meet postsecondary costs. Only independent students in the highest contribution category showed increasing ability of both state awards and total grant packages to meet postsecondary costs. This group probably gained ground largely because of the increased aid to families with dependents. Students are placed in a family contribution category without consideration of the number of dependents. Then an offset is calculated for each dependent. This process typically leaves some students in the highest family con-

Table 20

State Award as a Percentage of Postsecondary Cost: Dependent Students

FAMILY CONTRIBUTION ($)	SYSTEM: University of Minnesota	State University	Community College	AVTI	Private 4-year	Private 2-year	Average (n)
			1980-81				
0	14.3	14.5	14.5	14.5	17.7	17.6	15.2 (1988)
0-700	17.2	13.7	12.9	13.0	17.9	19.4	15.5 (1916)
700.01-1400	13.5	9.1	7.5	5.7	17.2	16.8	12.1 (1682)
1400.01-2700	5.1	2.4	1.6	0.9	15.8	10.5	7.1 (1701)
2700 and up	0	0	0	0	3.9	1.0	1.5 (1665)
			1982-83				
0	8.1	6.7	8.4	8.0	12.0	11.4	8.6 (2194)
0-700	15.0	12.1	11.4	9.3	12.6	13.2	12.3 (1761)
700.01-1400	13.7	10.7	9.0	7.6	12.6	13.0	11.2 (1622)
1400.01-2700	5.5	2.3	1.8	0.9	12.2	10.3	6.0 (1823)
2700 and up	0	0	0	0	3.6	1.4	1.5 (2176)
			1984-85				
0	11.1	10.9	9.9	9.9	17.9	15.6	11.7 (3106)
0-700	19.1	18.3	16.7	14.9	23.1	22.1	18.6 (1760)
700.01-1400	16.5	15.7	13.2	11.6	21.6	18.9	16.2 (1566)
1400.01-2700	5.4	4.3	2.5	2.0	13.6	11.0	6.7 (1949)
2700 and up	0	0	0	0	0.7	0.3	0.3 (3139)

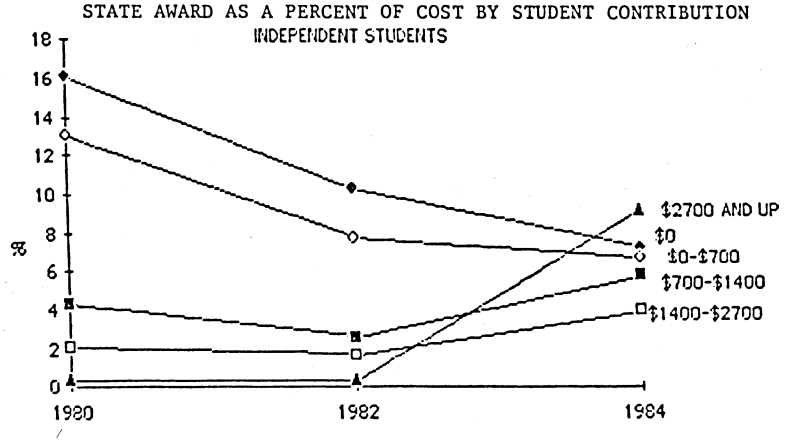
Table 21

Combined State Award and Pell Grant as a Percentage of Postsecondary Cost: Dependent Students

FAMILY CONTRIBUTION ($)	SYSTEM: University of Minnesota	State University	Community College	AVTI	Private 4-year	Private 2-year	Average (n)
			1980-81				
0	42.0	42.5	40.3	39.7	37.9	39.3	40.6 (1988)
0-700	33.4	32.9	30.6	30.5	28.8	31.3	31.4 (1916)
700.01-1400	20.8	18.8	17.4	16.0	21.7	23.1	19.8 (1682)
1400.01-2700	6.9	5.5	4.1	4.4	17.0	13.5	9.3 (1701)
2700 and up	1.4	0.7	1.5	1.5	4.2	2.0	2.3 (1665)
			1982-83				
0	37.2	35.4	33.5	33.1	30.9	33.7	34.1 (2194)
0-700	27.2	27.3	25.4	24.7	20.8	23.7	25.1 (1761)
700.01-1400	16.2	13.9	12.5	11.2	13.9	14.5	13.9 (1622)
1400.01-2700	5.5	2.4	1.8	1.3	12.2	10.5	6.1 (1823)
2700 and up	0	0	0.1	0.2	3.7	1.4	1.5 (2176)
			1984-85				
0	38.8	39.4	35.1	35.3	34.3	36.6	36.7 (3106)
0-700	33.2	32.2	29.5	30.5	31.3	31.9	31.5 (1760)
700.01-1400	20.2	20.0	16.9	16.2	24.0	22.2	19.9 (1566)
1400.01-2700	6.0	4.7	2.8	2.7	13.7	11.2	7.1 (1949)
2700 and up	0.3	0.2	0	0.2	0.7	0.3	0.4 (3139)

FIGURE 9

Grant Aid as a Percentage of Postsecondary Cost by Student Contribution Group for Independent Students



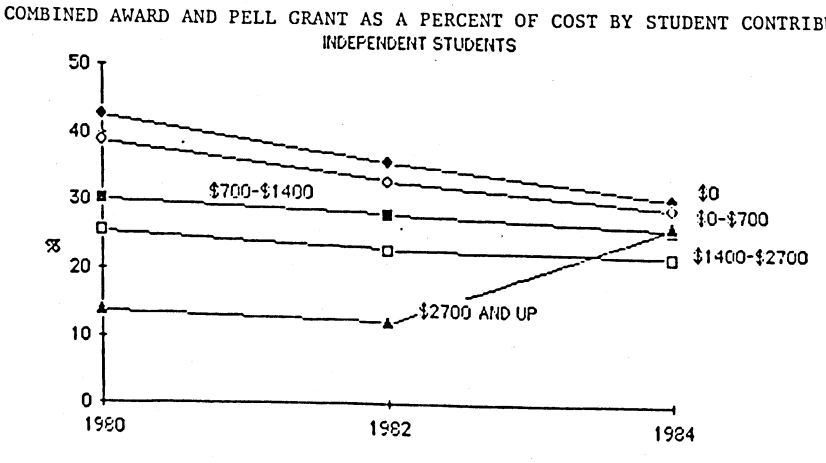


Table 22

State Award as a Percentage of Postsecondary Cost:
Independent Students

FAMILY CONTRIBUTION ($)	University of Minnesota	State University	Community College	AVTI	Private 4-year	Private 2-year	Average (n)
	SYSTEM						
	1980-81						
0	15.4	15.8	16.5	16.7	17.4	16.1	16.0 (475)
0-700	12.1	12.8	9.9	13.7	17.5	12.2	13.0 (480)
700.01-1400	3.6	3.5	1.2	1.3	14.5	7.9	4.3 (222)
1400.01-2700	1.4	0.3	0.5	0.1	8.4	4.5	2.1 (385)
2700 and up	0.4	0.6	0	0	1.7	0.2	0.3 (516)
	1982-83						
0	10.6	9.7	9.0	10.2	12.5	11.5	10.3 (862)
0-700	6.9	6.4	7.1	7.1	12.5	13.0	7.8 (643)
700.01-1400	2.2	0.5	0.4	1.0	11.7	5.7	2.6 (366)
1400.01-2700	0.8	0.3	0.4	0.1	8.1	5.6	1.7 (400)
2700 and up	0	0	0	0	1.4	1.3	0.3 (705)
	1984-85						
0	7.1	8.9	9.0	6.3	10.1	7.1	7.3 (977)
0-700	5.9	3.1	6.4	5.7	16.1	12.1	6.7 (934)
700.01-1400	3.9	3.4	3.3	5.2	15.0	9.0	5.8 (677)
1400.01-2700	2.1	2.1	3.3	3.3	12.9	7.2	4.0 (873)
2700 and up	7.9	11.1	8.1	9.1	8.7	10.9	9.2 (2719)

Table 23

Combined State Award and Pell Grant as a Percentage of Postsecondary Cost: Independent Students

FAMILY CONTRIBUTION ($)	SYSTEM: University of Minnesota	State University	Community College	AVTI	Private 4-year	Private 2-year	Average (n)
			1980-81				
0	43.0	43.7	41.4	41.8	43.2	40.0	42.7 (475)
0-700	39.8	39.9	36.8	33.7	38.5	38.6	38.8 (480)
700.01-1400	31.1	27.4	28.2	26.8	35.9	33.4	30.0 (222)
1400.01-2700	28.9	27.3	22.5	22.1	27.4	26.3	25.4 (385)
2700 and up	14.1	16.4	14.5	13.1	7.5	13.8	13.5 (516)
			1982-83				
0	37.7	36.6	35.5	34.3	32.8	33.0	35.6 (862)
0-700	35.1	33.2	30.6	29.1	32.9	33.5	32.8 (643)
700.01-1400	29.6	27.9	27.2	24.2	28.3	28.0	27.7 (366)
1400.01-2700	24.9	24.5	19.0	19.4	24.2	20.5	22.6 (400)
2700 and up	13.3	16.5	10.1	11.1	9.2	9.3	12.0 (705)
			1984-85				
0	33.0	35.2	31.1	28.8	22.2	24.9	30.3 (977)
0-700	30.5	29.2	28.6	26.1	33.7	28.0	28.9 (934)
700.01-1400	24.8	25.9	25.9	24.3	31.7	25.1	25.9 (677)
1400.01-2700	19.7	25.0	20.3	22.5	23.8	20.3	21.8 (873)
2700 and up	23.4	29.8	26.5	28.8	16.4	23.9	26.5 (2719)

tribution category but also increases their aid packages. The offset for dependent students increased substantially between 1982-83 and 1984-85.

The disparity between state awards and total grant packages to meet costs in the public and private sectors was as evident for independent students as it was for dependent students. Again, this gap widened in 1984-85, and again, it was largely a function of the tuition capping policy.

Summary and Discussion

What can we say in answer to the two questions we posed at the beginning of this chapter? Have the adequacy and quality of aid packages among students of similar need attending similar postsecondary institutions in Minnesota declined in recent years? The answer is mixed. Overall, between 1980-81 and 1984-85, and particularly between 1982-83 and 1984-85, grant aid tended to increase in its capability of meeting postsecondary costs for dependent students in the lower and middle groups of family contribution. Among independent students, however, the conclusion is reversed. Aid packages have declined in quality, particularly for low income independent students with no dependents. This leaves higher proportions of unmet need to be met from other sources--with student loans the most likely, primary source.

It is important to remember that the sample for this analysis consists of students eligible for the Minnesota State Scholarship and Grant Program. In the years sampled, neither part-time students nor students with more than four years of post-high school attendance were eligible for that program (in 1985-86, they are indeed eligible). Clearly this analysis does not represent entire populations of many postsecondary institutions in the study years. However, it does represent a substantial proportion of those populations.

The results roughly uphold the tuition rationalization approach in that combined grant aid proportions for dependents since 1982-83 seem to have fared worst among the middle and upper-contribution groups (see Figure 8). No group has been spared the strains associated with recent financial aid cuts at the federal level, but overall the lower-contribution dependent groups seem to have weathered the storm reasonably well, at least in terms of their overall foundation aid packages. This may bode well for their chances of persistence in college, since it is among those students that vulnerability to financial strains on attendance may be greatest. Among upper contribution dependents and lower contribution independents, however, the trends in aid packages have been less positive and the implications for persistence more foreboding.

Chapter 8

Implications

The MPEEP findings should be useful both at the state and the national level. The current policy experiment in Minnesota provides an ideal laboratory for testing the contrasting ideas regarding the effects of different forms of public support for higher education. Very few states have pursued the "rationalization" of postsecondary finance as aggressively as Minnesota, and even fewer have been able to assess the effectiveness of their actions. What is more, the significance of the MPEEP study is enhanced further by the 1984 re-election of President Reagan at the federal level. It seems reasonable to expect continuing pressures on states to pick up the postsecondary educational financing responsibilities being passed on by the federal government. Thus the MPEEP study has the potential of making a major contribution in an increasingly critical policy domain.

The MPEEP study was, of course, neither all-inclusive nor definitive. A number of significant issues remain for future analysis. First, no attempt was made to assess the cross-price elasticities in the Minnesota pricing environment. In other words, no attempt was made to assess the enrollment effects of specific pricing changes at specific institutions. Second, the project did not delve into the persistence issue in any detail. Student "drop-out" is certainly an important issue with definite connections to financial well-being, but it is largely beyond the scope of the present study. Chapter 7 touched only on one possible influence on persistence, the quality of aid packages. Third, the study did not explore in great detail the situations of those students who leave Minnesota to attend college. Fourth, the distinction between independent and dependent stu-

dents' financial situations could not be thoroughly explored. This last is an especially important limitation in Chapters 5 and 6, since parental income may not be a close correlate of the independent students' financial condition as they face college access and choice decisions. Only in Chapter 7 were we able to explore the dependency status distinction in detail.

What messages might the MPEEP study provide policy makers and others in higher education? First, the recent cuts in Pell Grant growth have clearly been felt by many students. The data on aid packages in Chapter 7 show definite drops for most independent students in nonreturnable aid as a proportion of total costs over the 1980 to 1984 period. State sources have clearly not fully offset the extensive federal cutbacks, and the worries of many students over finances are not all unwarranted, particularly in the independent student sector. Second, the influence of academic factors already largely established by the junior year in high school has remained primary in determining postsecondary expectations, plans, access, and choice, even in the face of the federal cuts (see Chapters 4, 5, and 6).

Had we found the attendance influences of family income to be rising over the period assessed in our study, it would have been difficult to discern whether targeted state subsidies, federal aid cutbacks, or other factors were most to blame for the losses in equity. Without evidence of growing income effects, however, it may be concluded that, while college has unquestionably become more expensive for many students (due undoubtedly both to targeted subsidy policies and federal aid cuts), the rising costs have not so far significantly influenced attendance plans and patterns. The null hypothesis of no attendance effects cannot be confidently rejected, in other words. Other studies with more extensive data sets and broader scopes may modify that conclusion. For now, though, the case for declining equity in attendance plans remains unproven and, at heart, unconvincing.

FOOTNOTES

1. Some research has shown that, in states with low tuition policies, lower income groups indirectly subsidize the college attendance of the middle classes through non-progressive state tax structures. See, for example, Hansen and Weisbrod (1969).

2. For summaries of this perspective, see Hansen and Weisbrod (1969), Hoenack (1971), Jackson (1982), and Windham (1976).

3. See, for example, Young (1974) and Stampen (1980). In addition, Halstead (1974) presents an excellent discussion of both the blanket and target subsidy perspectives.

4. In order to assess the validity and representativeness of these three samples, descriptive comparisons were made on the key variable indicators among a) non-PSPP data on Minnesota high school graduates for a given year, such as that provided in various other policy studies (e.g., see Minnesota Research and Development Center for Vocational Education, 1982a,b, 1983), b) the entire PSPP data base for the same year, and c) the 1000 person sample for that year. Some of the results of those comparisons are presented in Appendix A. Overall, the comparisons suggest that the data sources were not perfectly representative, but were not especially biased either. In other words, the findings of this report may be interpreted with some confidence as being representative of Minnesota youth with college aspirations in their junior years in high school.

5. See College Entrance Examination Board (1983, 1984) for an accounting of the precipitous drops in federal student aid funding between 1980 and 1983.

6. See Ihlanfeldt (1980) and Hossler (1984).

7. Some would argue logistic regression, not ordinary least squares (OLS) techniques, should be used in regressions for dichotomous dependent variable indicators (Hanushek and Jackson, 1977). Path analysis is an OLS approach which allows one to separate direct and indirect effects in causal models. Logistic regression cannot do this very easily, but does avoid potential problems with the use of dichotomous dependent variables in OLS regressions. Logistic regression produces a probabilistic estimate of attendance for any sample population of interest, and also produces coefficients for independent variables similar to those produced by multivariate techniques. The results for the two approaches rarely differ significantly, and path analysis is generally considered defensible when the mean of the dependent variable lies between .10 and .90. Such is the case for postsecondary attendance in each of the three cohorts of this analysis.

8. The reader should note that the three cohorts studied in Chapters 4 through 6 are the students who answered the PSPP questionnaire in their junior year in high school. These were students who were juniors in 1979, 1981, and 1983. These students graduated in 1980, 1982, and 1984, respectively (we eliminated students who did not graduate on schedule). Thus in Chapter 4, which addressed juniors' expectations, the cohorts were labeled 1979, 1981, and 1983, while in Chapter 5 and 6 which address the same cohorts' activities after high school graduation, the three cohorts are labeled 1980, 1982, and 1984 graduates. The cohorts themselves are drawn from the same data bases.

9. An intriguing finding from comparing the group means is that on ability-related variables (high school rank and test scores), the University of Minnesota group improved its relative standing among others. They were behind the state college group in 1980 but they were ahead in 1982 and 1984. This change might be attributed to the recent tightening of the University's admission standards.

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APPENDIX A

Characteristics of the PSPP Sample

Samples for Chapters 4, 5, and 6 of this research were drawn from data files provided by Minnesota Post-High School Planning Program (PSPP) of the Minnesota Higher Education Coordinating Board. The PSPP annually surveys all high school juniors with postsecondary aspirations in Minnesota. The percentage of all Minnesota juniors participating in the survey ranged from 77 percent in 1979 and 81 percent in 1983. As discussed several places in the report, data for 1000 juniors were selected from the 1979, 1981, and 1983 PSPP survey data. These 1000 cases were examined in Chapter 4. From those samples, 400 from each cohort were selected for longitudinal follow-up (by a phone survey). These new data were added to earlier data for the same students, and the subsequent analyses are reported in Chapters 5 and 6. The 1000 and 400 person samples were randomly selected from those in the PSPP files with no missing data on critical variables.

Since descriptive data for the entire PSPP file are available, our three 1000-person samples were compared with the three relevant populations on several important variables (Table A-1). The comparisons were made on students' family income, parental education and occupation, ethnic background, test scores, and gender. Below, the results of these comparisons are discussed.

Some of the income data in Table A-1 are estimated, since HECB's official income categories for PSPP respondents changed between 1979 and 1981. In the PSPP data, there were large percentages of non-responses on income items (35 percent to 42 percent). We constructed our samples using only participants who had family income estimates, since financial characteristics were a critical focus for the study. The comparison shows a close match except for slight overrepresentation of the higher-income groups in our samples. Inflation no doubt accounts for the upward trends in income ranks over the time period in both the PSPP and MPEEP samples.

The distributions of parental occupations are very similar across the PSPP and MPEEP data. There are some minor discrepancies, however. In the MPEEP samples, professional and technical workers tended to have slightly greater representation than in the PSPP populations.

The comparison between the PSPP populations and the MPEEP samples on father's and mother's education shows that people with higher levels of parental education tended to be overrepresented in the MPEEP samples. Also, people who did not respond to these items tended to be underrepresented in the MPEEP samples. Overall, though, the distributions of parental education seem similar to each other.

An overwhelming percentage was white in both populations and samples. Students having no response to race/ethnicity were not included in the samples, however. The normed averages of Mathematics and Verbal scores on the Preliminary Scholastic Aptitude Test (PSAT) or National Merit Scholarship Qualification Test (NMSQT) were slightly higher in the samples than the populations. The percentage breakdown of the two sexes were almost identical in PSPP data. In the MPEEP sample data, male students were slightly overrepresented, however.

Comparisons were also made between MPEEP and PSPP data regarding first-year plans after high school graduation (only those who responded were included in the MPEEP file), reasons for not seeking further education, possible sources of financing postsecondary education, areas where more information is needed, and educational expectations. As with the other items, there was a tendency for the MPEEP sample to be a bit more ambitious and confident in these five areas than the PSPP group as a whole.

In summary, the samples satisfactorily represented the PSPP populations. Compared to the PSPP populations, the samples had slightly more educated

parents with MPEEP sample to be a bit more ambitious and confident in these five areas than the PSPP group as a whole.

In summary, the samples satisfactorily represented the PSPP populations. Compared to the PSPP populations, the samples had slightly more educated parents with somewhat more income and somewhat more prestigious jobs. The samples also had slightly more able students and a somewhat greater proportion of male students. These tendencies may be due to the necessity of collecting sample data from students who answered all critical questions and took the standardized ability tests. In general, past studies have shown students with the above characteristics (with exception of male gender) respond more accurately and fully to questionnaires.

Differences across the cohorts were clear only in family income, in both PSPP and MPEEP groups. Other indices were fairly consistent across the years. Cohorts' differences in family income were likely caused by inflation. If it were easily possible to adjust the interval data for family incomes for inflation, such an adjustment would probably reveal reasonable consistency of income levels across the cohorts. Overall, the cohorts had rather consistent descriptive characteristics. The comparisons across cohorts in the study may therefore be considered reasonably valid.

It should be mentioned that the PSPP data itself is a sample of the college-aspiring Minnesota high school juniors in the years in question. Over three-fourths of the total in the state in any given year usually respond. One must consider the strong possibility that the PSPP data are not fully representative on some of the central variables, but discussions with HECB officials and reading of their reports on similar topics (see Minnesota Higher Education Coordinating Board, 1985) suggest this is not a major problem for the present analysis.

Table A-1
Student Background Characteristics in the Three Cohorts:
A Comparison of PSPP and MPEEP Data Sets

Estimated Family Income

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81[a]	82-83[a]	78-79	80-81[a]	82-83[a]
Less than $ 13,999 per year	15.3	12.3	11.7	21.9	18.0	14.9
$ 14,000 - $ 27,999 per year	33.9	25.4	22.1	52.4	45.2	38.2
$ 28,000 or More per year	15.7	19.8	24.8	25.7	36.8	46.9
No Response	35.0	42.6	41.8	0	0	0

Occupation of Father

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
Owns or Manages Business	13.7	19.1	19.3	15.5	19.3	21.1
Clerical or Sales Work	9.7	4.5	4.3	10.0	4.9	5.5
Factory Worker or Laborer	5.6	6.3	6.0	5.5	4.7	6.0
Farmer	9.3	10.6	10.2	9.6	10.2	6.3
Professional or Technical	16.1	15.4	16.1	20.6	23.0	23.7
Skilled Worker	24.5	22.1	23.3	22.3	24.1	23.6
"Other" or "Homemaker"	9.2	6.3	6.4	10.4	5.7	6.4
No Response	11.8	15.7	14.2	6.1	8.1	7.4

Occupation of Mother

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
Owns or Manages Business	6.9	4.5	5.0	7.6	4.3	6.0
Clerical or Sales Work	15.6	20.1	20.5	18.9	23.8	22.9
Factory Worker or Laborer	5.5	4.9	4.6	4.8	3.8	3.9
Farmer	2.6	1.2	1.3	2.7	.8	1.1
Professional or Technical	12.4	11.9	13.2	17.1	16.0	16.1
Skilled Worker	12.5	4.8	5.5	11.8	4.4	5.2
"Other" or "Homemaker"	33.5	36.3	35.3	31.0	39.2	36.3
No Response	11.1	16.3	14.5	6.1	7.7	8.5

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
Education of Father						
Some Grade School or Less	1.2	1.0	1.1	.9	.9	.4
Completed Eighth Grade	10.7	8.9	6.8	9.6	7.7	5.9
Some High School	9.1	8.6	8.6	8.7	6.6	6.2
High School Graduate	30.2	30.2	30.7	29.6	28.0	31.6
Business or Trade School	9.1	8.2	8.9	9.1	9.6	10.0
Some College	8.0	7.7	8.1	9.5	10.4	8.7
College Graduate	16.3	15.3	16.1	18.3	19.5	19.7
Graduate or Professional School	6.5	7.5	7.7	10.7	12.6	13.7
No Response	8.9	12.7	12.0	3.6	4.7	3.8

Table continues

Education of Mother

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
Some Grade School or Less	.4	.5	.6	.4	.5	.5
Completed Eighth Grade	4.2	3.3	2.5	3.0	3.2	1.7
Some High School	7.6	6.7	6.2	6.5	5.4	5.0
High School Graduate	45.4	44.0	43.4	42.9	41.6	43.8
Business or Trade School	6.9	6.5	7.6	8.4	7.7	7.4
Some College	10.5	10.0	10.6	14.0	13.5	12.1
College Graduate	14.2	14.9	15.6	18.7	19.9	22.0
Graduate or Professional School	2.5	2.6	2.8	3.1	3.5	4.6
No Response	8.3	11.4	10.8	3.0	4.7	2.9

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
Ethnic Background of Student						
American Indian (or Alaskan Native[b])	.6	.7	.9	.5	.8	1.1
Asian (or Pacific Islander[b])	.4	.7	.9	.4	.4	1.0
Black	.7	.5	.7	.4	.5	.5
Hispanic (Chicano & Other Spanish Surname American[c])	.4	.3	.4	.2	.6	.4
White (or Caucasian)	91.8	88.8	89.6	97.0	93.3	93.2
Other[d]	1.8	_d	_d	.9	_d	_d
No Response	4.3	8.9	7.4	.6	4.4	3.8

Gender

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
Male	50.2	50.9	50.3	51.5	57.0	56.3
Female	49.8	49.1	49.7	48.4	43.0	43.7

Minnesota Verbal Score

	All PSPP Data			All MPEEP Data		
	78-79	80-81	82-83	78-79	80-81	82-83
Mean	37.2	38.4	39.5	39.4	39.8	40.6

Minnesota Math Score

	All PSPP Data			All MPEEP Data		
	78-79	80-81	82-83	78-79	80-81	82-83
Mean	42.8	44.2	44.4	46.1	46.3	45.9

Table continues

First Year Plans

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-80	82-83	78-79	80-81	82-83
College or University	43.8	46.7	49.3	61.1	60.7	64.0
Vocational or Technical	25.5	24.6	23.5	26.2	21.4	19.2
Other School	1.9	1.6	1.8	1.0	1.6	1.6
Military	2.6	3.2	4.6	1.8	3.3	3.6
Get a Job	11.2	9.9	9.2	4.4	4.7	5.0
Farm or Business	1.8	1.7	1.5	.6	.8	.7
Home Maker or Other	3.3	3.0	2.6	1.8	2.4	1.9
Don't Know	7.4	6.9	6.1	3.1	5.1	4.0
No Response	2.5	2.5	1.3	-e	-e	-e

Why Not More Education

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
Can't Afford	13.5	16.6	24.0	20.4	22.4	30.4
Not Interested	14.8	15.4	12.6	7.0	6.7	8.7
Start Earning	15.7	14.0	13.1	12.1	10.9	8.7
Not Enough Ability	3.7	3.3	3.5	3.2	2.4	2.5
Work or Travel	32.6	30.4	27.2	42.0	36.4	31.7
Other	19.7	20.3	19.6	15.3	21.2	18.0

Source of Finance

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
No Need	18.9	16.0	15.3	19.6	15.6	19.4
Some	44.6	45.7	46.3	47.6	50.5	45.7
All	10.6	13.9	15.5	10.4	13.4	16.8
Not Sure	25.9	24.4	22.8	22.4	20.5	18.1

Areas Where Information or Assistance Is Needed

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
Financial Aid	48.3	51.9	53.8	63.8	62.9	60.2
Part-Time Employment	43.8	45.2	52.4	55.1	49.4	55.0
Housing	34.5	29.6	27.6	46.4	34.2	30.7
Advanced Placement	12.8	11.2	11.7	19.9	15.5	14.2
Education or Voc Plan	32.9	27.3	26.8	38.5	30.4	26.7
Solve Personal Problem	5.1	3.0	2.9	4.2	2.9	2.1
Improve Math Skills	19.8	13.4	13.7	24.9	13.5	15.0
Improve Reading Skills	12.3	7.8	7.3	14.0	8.1	7.2
Improve Study Skills	23.5	17.9	18.6	27.8	21.0	19.3
Improve Writing Skills	14.7	7.9	7.8	17.9	9.0	7.7
Honors Programs	11.2	8.3	8.3	18.2	12.6	12.7
Independent Study	9.9	6.7	6.7	13.1	8.4	9.1
Services For The Handicapped	2.1	1.2	1.1	2.1	.8	.6

Table continues

Expected Education Level

	All PSPP Data (%)			All MPEEP Data (%)		
	78-79	80-81	82-83	78-79	80-81	82-83
High School	11.8	10.1	8.5	2.0	2.7	3.2
Vocational & Technical	31.9	31.1	29.7	29.3	27.3	21.2
Two Year College	10.3	10.3	10.8	9.6	11.2	9.6
Four Year College	29.9	33.6	35.2	39.8	40.9	46.0
M.A.	6.7	6.6	7.7	10.6	10.8	12.0
Professional	5.1	5.0	6.0	8.7	7.1	8.0
No Response	4.4	3.3	2.1	_e	_e	_e

Note a: The percentages have been partially interpolated.

Note b: Descriptions in parentheses appear only in 80-81 and 82-83 data.

Note c: Description in parentheses was used in 78-79 data.

Note d: "Other" option appeared only in 78-79 data.

Note e: There are no students with "no response" on this item in the MPEEP Sample.

APPENDIX B

1979 PSPP Questionnaire

MARCH 1979

STUDENT PLANS AND BACKGROUND SURVEY OF THE MINNESOTA POST-HIGH SCHOOL PLANNING PROGRAM

A Program of the Minnesota Higher Education Coordinating Board

Technical Services Provided by the Student Counseling Bureau, University of Minnesota

What is the purpose of this survey?

This survey asks you a few questions about (1) what you plan to do after high school; (2) your interests and needs related to those plans, (3) your abilities and accomplishments in and out of high school; and (4) your family background. Your answers will be combined with your scores on the Minnesota Post-High School Planning Program tests you took last fall and with your high school rank in class. High school rank is computed from high school grade averages supplied by your school at the end of the junior year.

Who sees the answers?

Your answers to these questions, your test scores and your high school rank are sent to your high school and, with your permission, are sent to Minnesota post-secondary institutions, public and private.

How are the results used?

Your individual answers, your test scores, and your high school rank are used by counselors, both in high school and in post-secondary institutions, to help you make decisions about such things as whether or not to continue your education, what school or college to apply to, what program or course to enter, and what actions to take to accomplish your plans. The results may also be used by post-secondary institutions and the Higher Education Coordinating Board (HECB) to contact and provide information to you about programs that may be related to your interests or special needs. This information includes instructions and application forms for financial aid. Results are summarized for groups of students and analyzed to help determine the kinds of educational programs and facilities that are needed for students. The results are also used by researchers in state educational agencies when approved by HECB.

Do you have to answer the questions?

You are not legally required to provide the information requested. If you do not want to answer a question, just leave it blank. There is no penalty for not answering.

I have read the instructions and understand how the data I furnish will be used and agree to its use as I have authorized.

YOUR SIGNATURE

IMPORTANT! WE ARE REQUIRED BY LAW TO EXPLAIN TO YOU WHY WE COLLECT THE DATA, INDICATE WHO HAS ACCESS TO IT, AND GET YOUR PERMISSION TO COLLECT THE DATA. BE SURE YOU HAVE READ THE STATEMENTS ABOVE. MARK ONE OF THE STATEMENTS BELOW TO SHOW HOW YOUR ANSWERS, SCORES, AND HIGH SCHOOL RANK MAY BE USED. YOUR INSTRUCTIONS WILL BE FOLLOWED. THEN SIGN AS INDICATED.

SIGN ↑ HERE

MARK ONE OF THESE STATEMENTS

OR

○ **YES,** My questionnaire answers, test scores, and high school rank may be forwarded to Minnesota post-secondary institutions and HECB for their use in counseling and advising me about their programs of education, training, and financial aid.

○ **NO,** My questionnaire answers, test scores, and high school rank may not be forwarded to Minnesota post-secondary institutions or HECB.

How to mark:

It is very important that you mark your questionnaire very carefully, especially the name and address sections. Your time and effort in providing this information will be wasted if your answers cannot be interpreted.

1. Please use a pencil with Number 2 lead.
2. Completely blacken the space within the little circle that you intend to mark.
3. If you erase a mark, erase it thoroughly.
4. See the good and poor marking samples at right.

① ● ③ ④ ⑤ good – is well marked.

① ② ③ ◕ ⑤ poor – it has an "eye" in the middle which may cause difficulty in its being seen.

① ② ③ ④ ⑥ poor – is too small a mark.

Directions for Proceeding:

1. Wait until you have been instructed to go ahead.
2. Remember to mark your instructions for the release of this information, to sign in the space provided above, and to complete the questionnaire carefully.
3. Turn to the other side of this page and record and mark your name, address, social security number, date of birth, sex, and telephone number. Pay special attention to the directions for the name and address spaces.
4. If your school is using the special codes section, your examiner will instruct you further.
5. Next proceed to Section A: "What Do You Plan to Do After High School?" and continue completing the survey.
6. If you aren't sure of how to proceed, ask your administrator for help before you go ahead.

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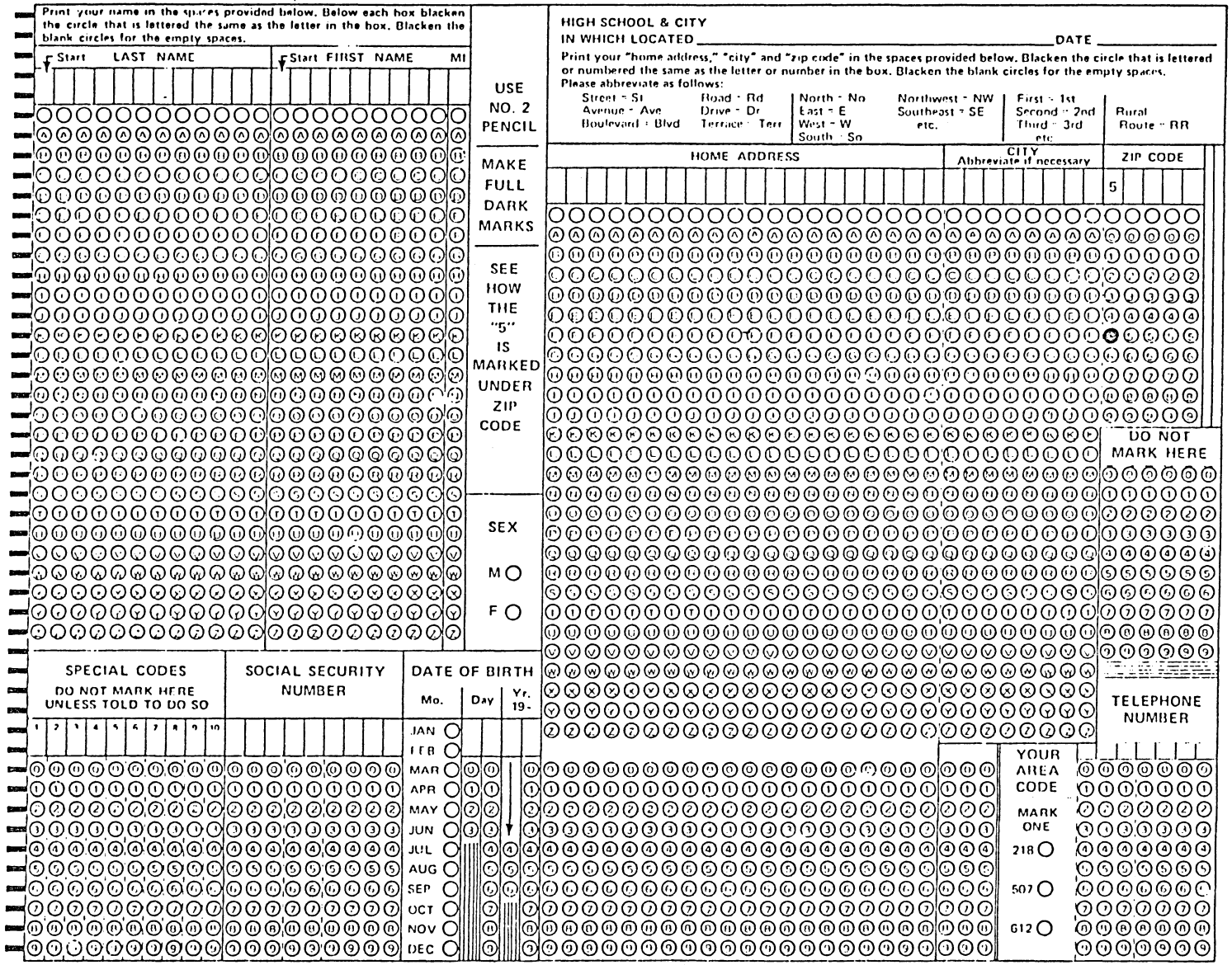

Print your name in the spaces provided below. Below each box blacken the circle that is lettered the same as the letter in the box. Blacken the blank circles for the empty spaces.
Start LAST NAME
Start FIRST NAME MI
USE NO. 2 PENCIL
MAKE FULL DARK MARKS
SEE HOW THE "5" IS MARKED UNDER ZIP CODE
SEX
M
F
HIGH SCHOOL & CITY IN WHICH LOCATED
DATE
Print your "home address," "city" and "zip code" in the spaces provided below. Blacken the circle that is lettered or numbered the same as the letter or number in the box. Blacken the blank circles for the empty spaces.
Please abbreviate as follows:
Street = St
Avenue = Ave
Boulevard = Blvd
Road = Rd
Drive = Dr
Terrace = Terr
North = No
East = E
West = W
South = So
Northwest = NW
Southeast = SE
etc.
First = 1st
Second = 2nd
Third = 3rd
etc.
Rural Route = RR
HOME ADDRESS
CITY Abbreviate if necessary
ZIP CODE
5
DO NOT MARK HERE
SPECIAL CODES DO NOT MARK HERE UNLESS TOLD TO DO SO
SOCIAL SECURITY NUMBER
DATE OF BIRTH
Mo.
Day
Yr. 19-
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
TELEPHONE NUMBER
YOUR AREA CODE
MARK ONE
218
507
612

BE SURE AND MAKE HEAVY DARK MARKS COMPLETELY FILLING THE CIRCLE

PLANS AFTER HIGH SCHOOL

[Items A, B, C, D, & E]

A What do you plan to do the first year after you leave high school? *Choose the one answer that best describes your plans.*

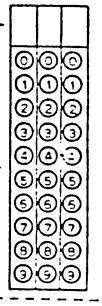
- ○ Go to college (liberal arts college, state college, community college, university)
- ○ Go to vocational, technical, trade, or business institute
- ○ Go to some other school (hospital school, music school, etc.)
- ○ Enter military service
- ○ Get a job
- ○ Start farming or own business
- ○ Homemaking, full-time
- ○ Other plans
- ○ Don't know

B Your Field of Work or Study

[See the separate codesheet]

Write the number of your choice in the boxes on the right. →

Then mark the circles here. →



C How much education do you expect to achieve? *Mark one.*

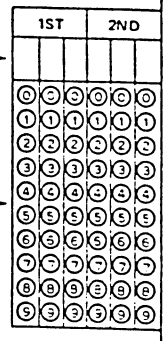
- ○ High school graduation
- ○ Vocational or technical certificate
- ○ Two-year college degree (A.A.)
- ○ Four-year college degree (B.A., B.S.)
- ○ Masters degree (M.A., M.S.)
- ○ Professional degree (M.D., Ph.D.)

D Your Institutional Choice: Make a first and second choice.

[See the separate code sheet]

Write the number of your choices in the boxes on the right. →

Then mark the circles here. →



E If you are not planning further education next year, what is the most important reason why not?

- ○ Can't afford it
- ○ Not interested
- ○ Want to start earning a living immediately
- ○ Don't have enough ability
- ○ Want to work or travel before more formal education
- ○ Other reason

FAMILY BACKGROUND

[Items F, G, H, I, J, & K]

Your individual responses to these questions may be used by Minnesota Educational Institutions to contact you regarding special programs that are available to persons of your financial, ethnic, or religious background.

You may omit any item you do not wish to answer

F What is the highest level of education achieved by your parents?

Father (or male guardian)		Mother (or female guardian)
○	Some grade school or less	○
○	Completed eighth grade	○
○	Some high school	○
○	High school graduate	○
○	Business or trade school	○
○	Some college	○
○	College graduate	○
○	Postgraduate (MA, PhD, law or medical)	○

G Are you a twin?

- ○ Yes
- ○ No

H Estimated Yearly Family Income

- ○ Less than $7,000
- ○ $7,000 to $13,999
- ○ $14,000 to $20,999
- ○ $21,000 to $27,999
- ○ $28,000 to $34,999
- ○ $35,000 or more

I Ethnic Background

- ○ Black (Afro-American)
- ○ American Indian
- ○ Asian-American
- ○ Chicano (Mexican-American)
- ○ Other Spanish Surname American
- ○ White or Caucasian
- ○ Other

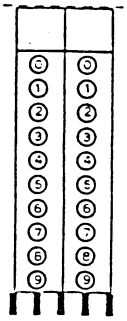
J Parent's Occupation: Occupation of father (or male guardian) and of mother (or female guardian). If deceased or retired, what was his or her occupation? Mark only one F circle for father and only one M circle for mother.

- (F) (M) Homemaking
- (F) (M) Factory worker or laborer (includes household worker, filling station attendant, car washer, janitor, etc.)
- (F) (M) Skilled worker (chef, carpenter, factory supervisor, baker, machine operator, electrician, enlistee in armed forces, mechanic, bus and truck drivers, meat cutter, plumber, repair person, beautician, barber, bartender, waiter, police, fire prevention, etc.)
- (F) (M) Farmer – owns or manages farm
- (F) (M) Clerical and Sales work (bank teller, bookkeeper, sales clerk, real estate sales person, secretary, stenographer, typist, receptionist, key punch operator, switchboard operator, mail person)
- (F) (M) Own business or manage business (owns store, gas station, hotel or motel, cafe or restaurant, newspaper, etc., or sales manager, contractor, executive in large company, government offici
- (F) (M) Professional or Technical (minister, priest, accountant, dentist, engineer, medical doctor, lawyer, teacher or professor, medical technician, librarian, nurse, pharmacist, social worker, computer programmer or operator, photographer, officer in armed forces, etc.)

K Religious Preference

[See the separate code sheet]

"Religious Preference" will be reported. See the note on Religious Preference list. You may omit answering if you wish.



ABILITIES & ACHIEVEMENTS

[Items L, M, & N]

L How much have you participated in each of the following kinds of activities while in high school?

V = Very Active
A = Average
L = Little or None

Mark how much you participated here

Have you won any honors, awards, prizes, letters, or trophies?

If you have, mark here

- (V) (A) (L) Art ... ○
- (V) (A) (L) Athletics ... ○
- (V) (A) (L) Church or religious groups ... ○
- (V) (A) (L) Cultural or ethnic groups ... ○
- (V) (A) (L) Drama or debate ... ○
- (V) (A) (L) Journalism, writing ... ○
- (V) (A) (L) Music, vocal ... ○
- (V) (A) (L) Music, instrumental ... ○
- (V) (A) (L) Science fairs or projects ... ○
- (V) (A) (L) Service clubs (scouts, etc.) ... ○
- (V) (A) (L) Social clubs, fraternities, sororities ... ○
- (V) (A) (L) Special interest groups ... ○
- (V) (A) (L) Student government ... ○

M How would you describe how you compare with others your age in each of the following kinds of ability?

1. In the highest 1 per cent
2. In the highest 10 per cent
3. Above average
4. About average
5. Below average

- (1) (2) (3) (4) (5) Acting, dramatics
- (1) (2) (3) (4) (5) Art
- (1) (2) (3) (4) (5) Athletics
- (1) (2) (3) (4) (5) Creative writing
- (1) (2) (3) (4) (5) Leadership
- (1) (2) (3) (4) (5) Mathematics
- (1) (2) (3) (4) (5) Mechanical
- (1) (2) (3) (4) (5) Music
- (1) (2) (3) (4) (5) Selling
- (1) (2) (3) (4) (5) Science
- (1) (2) (3) (4) (5) Speaking
- (1) (2) (3) (4) (5) Writing

N What have your average or typical grades been in each of the following subjects?

Did Not Take		
○	(A) (B) (C) (D) (F)	Agriculture or industrial arts
○	(A) (B) (C) (D) (F)	Art
○	(A) (B) (C) (D) (F)	Business or commercial
○	(A) (B) (C) (D) (F)	English
○	(A) (B) (C) (D) (F)	Foreign language
○	(A) (B) (C) (D) (F)	Home economics
○	(A) (B) (C) (D) (F)	Mathematics
○	(A) (B) (C) (D) (F)	Music
○	(A) (B) (C) (D) (F)	Natural science
○	(A) (B) (C) (D) (F)	Social studies

BE SURE

1. That you marked either "YES" or "NO" on the first page.
2. That you signed on page 1, if you marked "YES."
3. That you made heavy, dark marks.

COMPLETE THE NEXT SECTION ONLY IF YOU PLAN TO CONTINUE YOUR EDUCATION AFTER HIGH SCHOOL

POST-HIGH SCHOOL CONSIDERATIONS

Answer the following questions – O, P, Q, & R – ONLY IF you plan to continue your education after high school.

O Mark below the activities you plan to participate in as you continue your education after high school.

Mark as many as apply.

- ○ Varsity athletics
- ○ Intramural or club athletics
- ○ Cultural or ethnic organizations
- ○ Dramatics, theater
- ○ Fraternity or sorority
- ○ Instrumental music
- ○ Vocal music
- ○ Political organizations
- ○ Publications(newspaper, yearbook, etc.)
- ○ Radio or TV
- ○ Religious organizations
- ○ ROTC, AFROTC, NROTC
- ○ Service organizations
- ○ Special interest or social groups (e.g., ski club, Future Teachers of America, etc.)
- ○ Student government

P Mark below any areas in which you might want assistance or information as you continue your education.

- ○ Obtaining financial aid
- ○ Finding part-time employment
- ○ Finding housing on or near campus
- ○ Advanced placement or credit by examination
- ○ Making educational or vocational plans
- ○ Solving personal problems
- ○ Improving my mathematical skills
- ○ Improving my reading skills
- ○ Improving my study skills
- ○ Improving my writing skills
- ○ Honors program
- ○ Independent study
- ○ Special services for handicapped or disabled

Q Will you need help in getting money t continue your education?

- ○ No, with parents' help and my own savings an earnings I expect to have enough.
- ○ Yes, though I can pay some costs, I will need help getting more money.
- ○ Yes, I will need help getting money for all my expenses.
- ○ I am not sure.

R If you attend the first institution you marked in item D, where do you expect to live?

- ○ With parents or relatives
- ○ Campus dormitory
- ○ Fraternity, sorority
- ○ Off-campus room or apartment

APPENDIX C

1981 PSPP Questionnaire

MARCH 1981
STUDENT PLANS AND BACKGROUND SURVEY
OF THE MINNESOTA POST-HIGH SCHOOL PLANNING PROGRAM

A Program of the
Minnesota Higher Education
Coordinating Board

Technical Services Provided by the
Student Counseling Bureau
University of Minnesota

What is the purpose of this survey?

This survey asks you a few questions about:

1. what you plan to do after high school;
2. your interests and needs related to those plans;
3. your abilities and accomplishments in and out of high school;
4. your family background.

Your answers will be combined with your PSAT, NMSQT or SCAT scores and with your high school rank in class. High school rank is computed from high school grade averages supplied by your school at the end of the junior year.

How will the information be used?

The University of Minnesota will compile this information, including high school rank, test scores, and answers to these questions, for the Higher Education Coordinating Board (HECB). The HECB will use the data to provide information to your high school to help you make decisions about such things as whether or not to continue your education, to which school or college to apply, what program or course to enter, and what action to take to accomplish your plans. The HECB will also use the data to provide information to you about programs that may be related to your interests or special needs. This information includes instructions and application forms for financial aid. Results also are summarized for groups of students and analyzed to help determine the kinds of educational programs and facilities that are needed for students.

Do you have to answer the questions?

You are not legally required to provide the information requested. If you do not want to answer a question, just leave it blank. There is no penalty for not answering.

How to mark:

It is very important that you mark your questionnaire very carefully, especially the name and address sections. Your time and effort in providing this information will be wasted if your answers cannot be interpreted.

1. Please use a pencil with Number 2 lead.
2. Completely blacken the space within the little circle that you intend to mark.
3. If you erase a mark, erase it thoroughly.
4. See the good and poor marking samples at right.

1 ● 3 4 5 good — is well marked.

1 2 ○ 4 5 poor — it has an "eye" in the middle which may cause difficulty in its being seen.

1 2 3 4 ● poor — is too small a mark.

Directions for Proceeding:

1. Wait until you have been instructed to go ahead.
2. Remember to mark your instructions for the release of this information, to sign and mark in the spaces provided above to the right, and to complete the questionnaire carefully.
3. Turn to the other side of this page and record and mark your name, address, county, social security number, date of birth, sex, and telephone number. Pay special attention to the directions for the name and address spaces. Be sure and mark your HOME zip code.
4. If your school is using the special codes section, your examiner will instruct you further.
5. Next proceed to Section A "What do you plan to do the first year after you leave high school?" and continue completing the survey.
6. If you aren't sure of how to proceed, ask your administrator for help before you go ahead.

IMPORTANT!! NOW TURN YOUR SHEET AND READ THE INFORMATION ON THE RIGHT-HAND MARGIN →

March 1981, SCB EOS, No. 132

IMPORTANT! IMPORTANT! IMPORTANT!

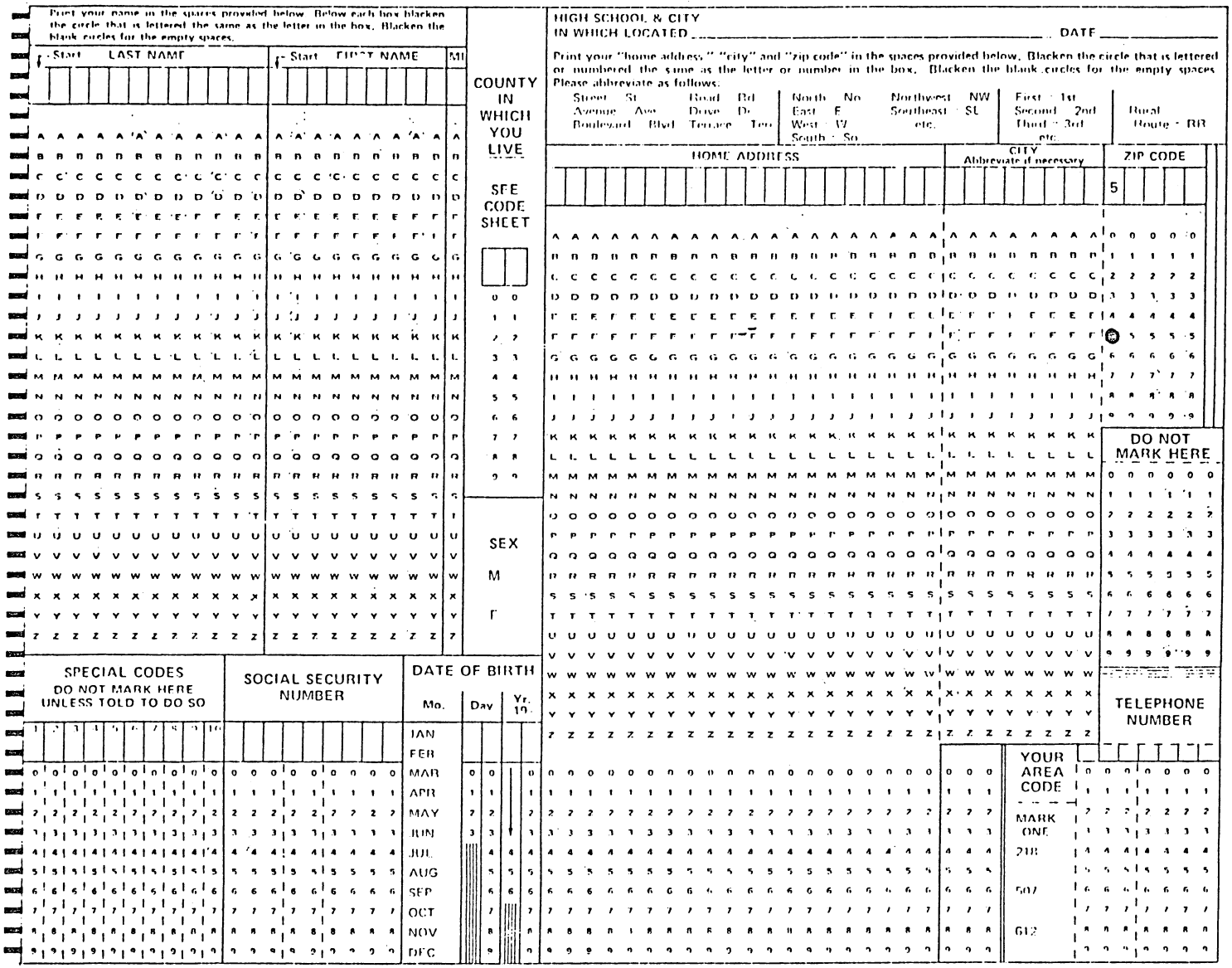
I hereby authorize the HECB to release the above referenced information to any Minnesota postsecondary institution within three years of my signing this release form.

If you agree, mark the "YES" circle and sign below. If you don't agree, mark the "NO" circle. YES NO

SIGNATURE _____ TODAY'S DATE _____

In addition to the uses specified above, the HECB, with your written consent, will perform the following service for you. It will release your responses to this survey, your test scores, and your high school rank to all postsecondary educational institutions (schools, colleges, universities, and vo-tech institutes) located in Minnesota. Those postsecondary institutions may use this information to inform you of available educational programs and other programs related to your interests or special needs, and as part of their admissions, advising, and retention programs.

If you agree to these uses of your data, mark the "YES" circle and sign and date in the spaces provided to the right.


Print your name in the spaces provided below. Below each box blacken the circle that is lettered the same as the letter in the box. Blacken the blank circles for the empty spaces.
Start LAST NAME
Start FIRST NAME
MI
COUNTY IN WHICH YOU LIVE
SEE CODE SHEET
SEX
M
F
HIGH SCHOOL & CITY IN WHICH LOCATED
DATE
Print your "home address," "city" and "zip code" in the spaces provided below. Blacken the circle that is lettered or numbered the same as the letter or number in the box. Blacken the blank circles for the empty spaces. Please abbreviate as follows:
Street St
Avenue Ave
Boulevard Blvd
Road Rd
Drive Dr
Terrace Ter
North No
East E
West W
South So
Northwest NW
Southeast SE
etc.
First 1st
Second 2nd
Third 3rd
etc.
Rural Route RR
HOME ADDRESS
CITY Abbreviate if necessary
ZIP CODE
DO NOT MARK HERE
TELEPHONE NUMBER
YOUR AREA CODE
MARK ONE
218
507
612
SPECIAL CODES DO NOT MARK HERE UNLESS TOLD TO DO SO
SOCIAL SECURITY NUMBER
DATE OF BIRTH
Mo.
Day
Yr. 19
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC

A What do you plan to do the first year after you leave high school? *Choose the one answer that best describes your plans.*

Go to college (liberal arts college, state university, community college, university)
Go to vocational, technical, trade, or business institute
Go to some other school (hospital school, music school, etc.)
Enter military service
Get a job
Start farming or own business
Homemaking, full-time
Other plans
Don't know

B How much education do you expect to achieve? *Mark one.*

High school graduation
Vocational or technical certificate
Two-year college degree (A.A.)
Four-year college degree (B.A., B.S.)
Masters degree (M.A., M.S.)
Professional degree (M.D., Ph.D.)

C If you are not planning further education next year, what is the most important reason why not?

Can't afford it
Not interested
Want to start earning a living immediately
Don't have enough ability
Want to work or travel before more formal education
Other reason

D FIELD OF STUDY OR MAJOR: If you continue your training or schooling after high school, what do you plan to study or major in? *If you are not planning to attend a post-secondary institution, mark "000."*

[See the separate codesheet]

Write the number of your choice in the boxes on the right. →

Then mark the circles here. →

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

E Your Institutional Choice: Make a first and second choice.

[See the separate codesheet]

Write the number of your choices in the boxes on the right. →

Then mark the circles here. →

1st			2nd		
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

F FUTURE OCCUPATION: If your plans would work out, in what occupation or general area occupations, would you like to be working in ten years from now?

[See the separate codesheet]

Write the number of your choice in the boxes on the right. →

Then mark the circles here. →

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

G If you attend the first institution you marked in item E, where do you expect to live?

With parents or relatives
Campus dormitory
Fraternity, sorority
Off-campus room or apartment

H Will you need help in getting money to continue your education?

No, with parents' help and my own savings and earnings I expect to have enough.
Yes, though I can pay some costs, I will need help getting more money.
Yes, I will need help getting money for all my expenses.
I am not sure.

I Mark below any areas in which you might want assistance or information as you continue your education.

Obtaining financial aid
Finding part-time employment
Finding housing on or near campus
Advanced placement or credit by examination
Making educational or vocational plans
Solving personal problems
Improving my mathematical skills
Improving my reading skills
Improving my study skills
Improving my writing skills
Honors program
Independent study
Special services for handicapped or disabled

BEFORE YOU TURN IN YOUR ANSWER SHEET, BE SURE YOU'VE READ, MARKED, AND SIGNED THE FRONT PAGE ABOUT RELEASING THIS INFORMATION.

PLEASE MAKE GOOD DARK MARKS. COMPLETELY FILL THE CIRCLES.

CONTINUE TO THE NEXT PAGE

ACTIVITIES PARTICIPATED IN & ACTIVITIES PLANNED

J FOR THE ACTIVITIES LISTED BELOW:

Indicate on the left your amount of participation while in high school. Mark only one circle for each activity.

V = Very Active
M = Moderately Active
S = Slightly Active
N = Not Active

To the right indicate which activities you plan to participate in while continuing your education after high school.

MARK HERE					MARK HERE
V	M	S	N	Art	
V	M	S	N	Athletics, intramural or club	
V	M	S	N	Athletics, varsity	
V	M	S	N	Cultural or ethnic groups	
V	M	S	N	Debate, speech	
V	M	S	N	Dramatics, theater	
V	M	S	N	Church or religious groups	
V	M	S	N	Journalism, writing publications	
V	M	S	N	Music, instrumental	
V	M	S	N	Music, vocal	
V	M	S	N	Political organizations	
V	M	S	N	Radio or TV	
V	M	S	N	ROTC, AFROTC, NROTC	
V	M	S	N	Science fairs, science projects	
V	M	S	N	Service organizations	
V	M	S	N	Social clubs, fraternities, sororities	
V	M	S	N	Special interest groups (e.g., Hobbies, Future Teachers of America, Future Farmers of America, etc.)	
V	M	S	N	Student government	

PERSONAL BACKGROUND

Items K thru P — The explanation on the front indicated who sees these results and how they are used. Answers to these items will be particularly helpful to postsecondary institutions in letting you know about their offerings in areas where you may need special assistance. If you do not want to answer a given question, leave it blank. There is no penalty for not answering.

K PARENT'S OCCUPATION:

If parent is deceased or retired, what was his or her occupation?

Mark only one circle for Father and only one circle for Mother.

Father (or male guardian)	Mother (or female guardian)	
		Business Owner or Manager – owner of store, gas station, hotel or motel, cafe or restaurant, newspaper, etc.; or sales manager, contractor, executive or director in large company, government official
		Clerical or Sales Worker – bank teller, bookkeeper, cashier, clerk, insurance salesperson, secretary, stenographer, typist, receptionist, keypunch operator, postal worker
		Factory Worker or Laborer – includes domestic worker, transportation attendant, guard, other similar jobs
		Farmer – owner or manager of farm
		Homemaker
		Professional or Technical Worker – minister, priest, accountant, civil engineer, medical doctor, lawyer, teacher, librarian, medical technician, biologist, nurse, pharmacist, social worker, computer programmer or operator, photographer, officer in armed forces, etc.
		Skilled Worker – chief carpenter, factory supervisor, baker, machine operator, electrician, enlisted armed forces, mechanic, bus or truck driver, meat cutter, plumber, repair person, tradesman, farmer, fisherman, welder, police officer, fire fighter, etc.
		Other

L PARENT'S EDUCATION:

Mark the highest level of education achieved by each of your parents.

Mark only one circle for each parent (or guardian.)

Father	Mother
	Did not complete grade school
	Completed eighth grade
	Some high school
	Graduated from high school
	Completed business or trade school
	Some college
	Graduated from college
	Completed post-graduate degree (M.A., Ph.D., Law, etc.)

M ETHNIC BACKGROUND:

- American Indian or Alaskan Native
- Asian or Pacific Islander
- Black
- Hispanic
- White

N ESTIMATED YEARLY FAMILY INCOME:

Estimate your family's total income during the past year.

Mark only one circle.

- Less than $6,000
- $6,000 to $8,999
- $9,000 to $11,999
- $12,000 to $14,999
- $15,000 to $17,999
- $18,000 to $20,999
- $21,000 to $23,999
- $24,000 to $29,999
- $30,000 to $35,999
- $36,000 to $41,999
- $42,000 to $47,999
- $48,000 or more

O RELIGIOUS PREFERENCE:

See the separate codesheet

"Religious Preference" See the note on the Religious Preference list. You may omit answering if you wish.

C	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

P DISABILITY CONDITIONS:

This section requests information on handicapping conditions on a voluntary basis. It will be used to support the various institutions voluntary efforts to provide access for students with handicapping conditions. This information will be kept confidential and refusal to supply it will not result in any adverse treatment.

Mark any of the following conditions which you have that is to a degree handicapping to you.

- Sight impairment: partial, not correctable with normal lenses
- Sight impairment: legally blind
- Hearing impairment: significant hearing loss in both ears
- Hearing impairment: deaf
- Mobility impairment: use of wheelchair
- Mobility impairment: other
- Coordination impairment: loss of manual dexterity
- Learning disability
- Speech impairment
- Systemic impairment: (e.g., seizures, diabetes, etc.)

APPENDIX D

1983 PSPP Questionnaire

MARCH 1983
STUDENT PLANS AND BACKGROUND SURVEY
OF THE MINNESOTA POST-HIGH SCHOOL PLANNING PROGRAM

A Program of the
Minnesota Higher Education
Coordinating Board

What is the purpose of this survey?

This survey asks you a few questions about:

1. what you plan to do after high school,
2. your interests and needs related to those plans,
3. your abilities and accomplishments in and out of high school,
4. your family background.

Your answers will be combined with your PSAT/NMSQT or SCAT scores, with your high school rank in class, and with your College Planning Profile (CPP) results. High school rank is computed from high school grade averages supplied by your school at the end of the junior year.

How will the information be used?

The Minnesota Post High School Planning Program (PSPP) will compile this information, including high school rank, test scores, and answers to these questions. PSPP will use the data to provide information to your high school to help you make decisions about such things as whether or not to continue your education, to which school or college to apply, what program or course to enter, and what action to take to accomplish your plans. PSPP will also use the data to provide information to you about programs that may be related to your interests or special needs. Results also are summarized for groups of students and analyzed to help determine the kinds of educational programs and facilities that are needed for students.

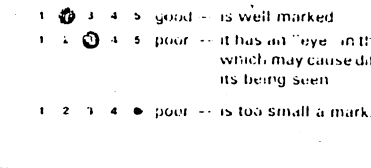
Do you have to answer the questions?

You are not legally required to provide the information requested. If you do not want to answer a question, just leave it blank. There is no penalty for not answering.

How to mark:

It is very important that you mark your questionnaire very carefully, especially the name and address sections. Your time and effort in providing this information will be wasted if your answers cannot be interpreted.

1. Please use a pencil with Number 2 lead.
2. Completely blacken the space within the little circle that you intend to mark.
3. If you erase a mark, erase it thoroughly.
4. See the good and poor marking samples at right.



Directions for Proceeding:

1. Wait until you have been instructed to go ahead.
2. Remember to mark your instructions for the release of this information, to sign and mark in the spaces provided above to the right, and to complete the questionnaire carefully.
3. Turn to the other side of this page and record and mark your name, address, county, social security number, date of birth, sex, and telephone number. Pay special attention to the directions for the name and address spaces. Be sure to mark your HOME zip code.
4. If your school is using the special codes section, your examiner will instruct you further.
5. Next proceed to Section A: "What do you plan to do the first year after you leave high school?" and continue completing the survey.
6. If you aren't sure of how to proceed, ask your administrator for help before you go ahead.

IMPORTANT!! NOW TURN YOUR SHEET AND READ

IMPORTANT! IMPORTANT! IMPORTANT!

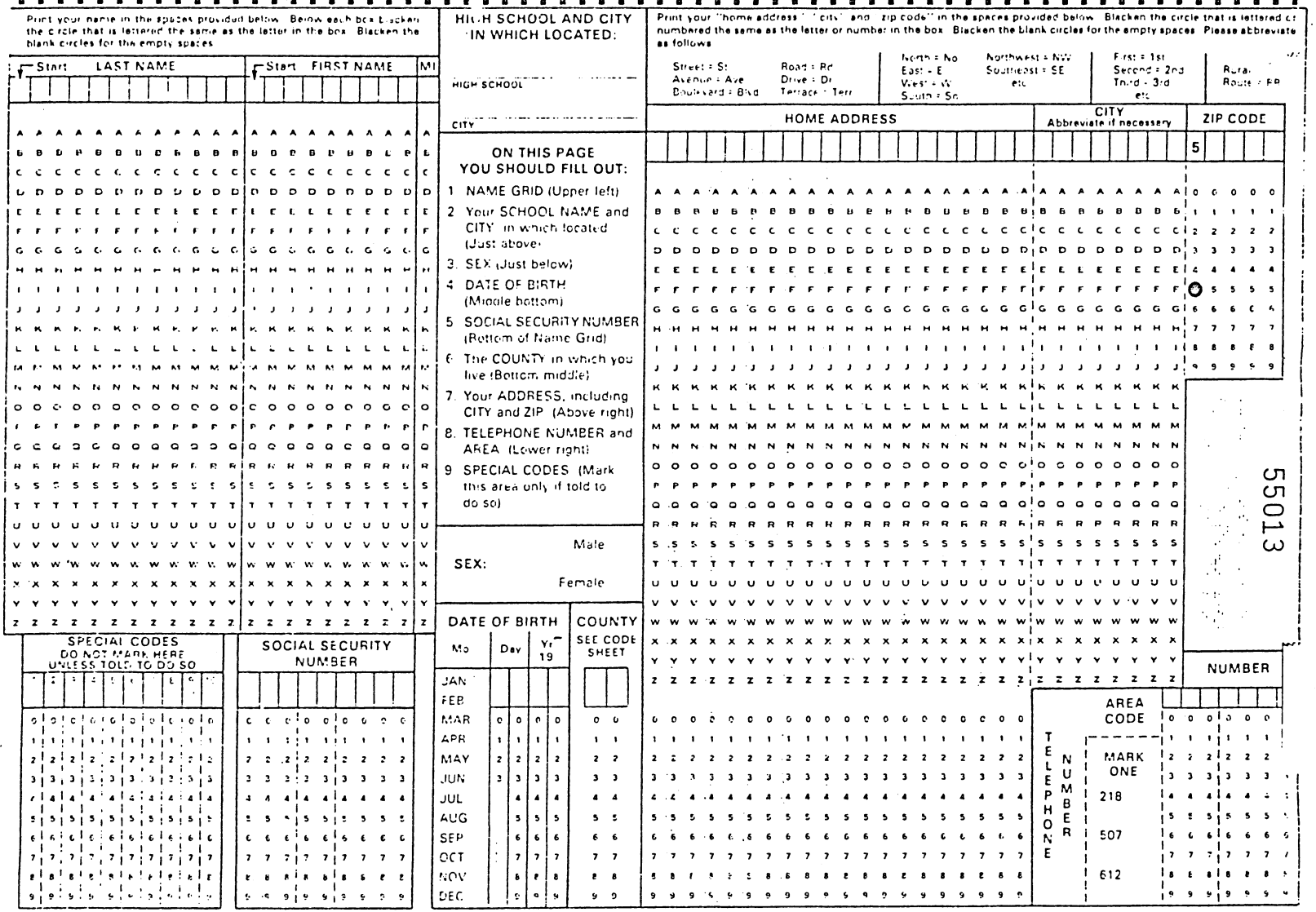
I hereby authorize the PSPP to release the above referenced information to any Minnesota postsecondary institution within three years of my signing this release form.

If you agree, mark the "YES" circle and sign below. If you don't agree, mark the "NO" circle. YES NO

SIGNATURE _____ TODAY'S DATE _____

In addition to the uses specified above, the PSPP, with your written consent, will perform the following service for you. It will release your responses to this survey, your test scores, and your high school rank to all postsecondary educational institutions (schools, colleges, universities and vo-tech institutes) located in Minnesota. These postsecondary institutions may use this information to inform you of available educational programs and other programs related to your interests or special needs, and as part of their admissions, advising, and retention programs.

If you agree to these uses of the data, mark the "YES" circle and sign and date in the spaces provided to the right.


Print your name in the spaces provided below. Below each box blacken the circle that is lettered the same as the letter in the box. Blacken the blank circles for the empty spaces.
Start LAST NAME
Start FIRST NAME
MI
HIGH SCHOOL AND CITY IN WHICH LOCATED:
HIGH SCHOOL
CITY
ON THIS PAGE YOU SHOULD FILL OUT:
1 NAME GRID (Upper left)
2 Your SCHOOL NAME and CITY in which located (Just above)
3. SEX (Just below)
4 DATE OF BIRTH (Middle bottom)
5 SOCIAL SECURITY NUMBER (Bottom of Name Grid)
6 The COUNTY in which you live (Bottom middle)
7. Your ADDRESS, including CITY and ZIP (Above right)
8. TELEPHONE NUMBER and AREA (Lower right)
9 SPECIAL CODES (Mark this area only if told to do so)
SEX:
Male
Female
DATE OF BIRTH
Mo
Day
Yr 19
COUNTY
SEE CODE SHEET
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
SPECIAL CODES
DO NOT MARK HERE UNLESS TOLD TO DO SO
SOCIAL SECURITY NUMBER
Print your "home address" "city" and "zip code" in the spaces provided below. Blacken the circle that is lettered or numbered the same as the letter or number in the box. Blacken the blank circles for the empty spaces. Please abbreviate as follows
Street = St
Avenue = Ave
Boulevard = Blvd
Road = Rd
Drive = Dr
Terrace = Terr
North = No
East = E
West = W
South = So
Northwest = NW
Southeast = SE
etc
First = 1st
Second = 2nd
Third = 3rd
etc
Rural Route = RR
HOME ADDRESS
CITY Abbreviate if necessary
ZIP CODE
55013
NUMBER
AREA CODE
TELEPHONE NUMBER
MARK ONE
218
507
612

A What do you plan to do the first year after you leave high school?
Choose the one answer that best describes your plans.

- Go to college (liberal arts college, state university, community college, university)
- Go to vocational, technical, trade, or business institute
- Go to some other school (hospital school, music school, etc.)
- Enter military service
- Get a job
- Start farming or own business
- Homemaking, full-time
- Other plans
- Don't know

B How much education do you expect to achieve? *Mark one.*

- High school graduation
- Vocational or technical certificate
- Two-year college degree (A.A.)
- Four-year college degree (B.A., B.S.)
- Masters degree (M.A., M.S.)
- Professional degree (M.D., Ph.D.)

C If you are not planning further education next year, what is the most important reason why not?

- Can't afford it
- Not interested
- Want to start earning a living immediately
- Don't have enough ability
- Want to work or travel before more formal education
- Other reason

D FIELD OF STUDY OR MAJOR:
If you continue your training or schooling after high school, what do you plan to study or major in?
If you are not planning to attend a post-secondary institution, mark "000."

[See the separate codesheet]

Write the number of your choice in the boxes on the right. →

Then mark the circles here. →

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

E Your Institutional Choice:
Make a first and second choice.

[See the separate codesheet]

Write the number of your choices in the boxes on the right. →

Then mark the circles here. →

1st			2nd		
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

F FUTURE OCCUPATION:
If your plans would work out, in what occupation or general area occupations, would you like to be working in ten years from now?

[See the separate codesheet]

Write the number of your choice in the boxes on the right. →

Then mark the circles here. →

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

G If you attend the first institution you marked in item E, where do you expect to live?

- With parents or relatives
- Campus dormitory
- Fraternity, sorority
- Off-campus room or apartment

H Will you need help in getting money to continue your education?

- No, with parents' help and my own savings and earnings I expect to have enough.
- Yes, though I can pay some costs, I will need help getting more money.
- Yes, I will need help getting money for all my expenses.
- I am not sure.

I Mark below any areas in which you might want assistance or information as you continue your education.

- Obtaining financial aid
- Finding part-time employment
- Finding housing on or near campus
- Advanced placement or credit by examination
- Making educational or vocational plans
- Solving personal problems
- Improving my mathematical skills
- Improving my reading skills
- Improving my study skills
- Improving my writing skills
- Honors program
- Independent study
- Special services for handicapped or disabled

BEFORE YOU TURN IN YOUR ANSWER SHEET, BE SURE YOU'VE READ, MARKED, AND SIGNED THE FRONT PAGE ABOUT RELEASING THIS INFORMATION.

PLEASE MAKE GOOD DARK MARKS. COMPLETELY FILL THE CIRCLES.

CONTINUE TO THE NEXT PAGE

ACTIVITIES PARTICIPATED IN & ACTIVITIES PLANNED

J FOR THE ACTIVITIES LISTED BELOW.

Indicate on the left your amount of participation while in high school. Mark only one circle for each activity

V = Very Active
M = Moderately Active
S = Slightly Active
N = Not Active

To the right indicate which activities you plan to participate in while continuing your education after high school.

MARK HERE					MARK HERE
V	M	S	N	Art	
V	M	S	N	Athletics, intramural or club	
V	M	S	N	Athletics, varsity	
V	M	S	N	Cultural or ethnic groups	
V	M	S	N	Debate, speech	
V	M	S	N	Dramatics, theater	
V	M	S	N	Church or religious groups	
V	M	S	N	Journalism, writing publications	
V	M	S	N	Music, instrumental	
V	M	S	N	Music, vocal	
V	M	S	N	Political organizations	
V	M	S	N	Radio or TV	
V	M	S	N	ROTC, AFROTC, NROTC	
V	M	S	N	Science fairs, science projects	
V	M	S	N	Service organizations	
V	M	S	N	Social clubs, fraternities, sororities	
V	M	S	N	Special interest groups (e.g., Hobbies, Future Teachers of America, Future Farmers of America, etc.)	
V	M	S	N	Student government	

PERSONAL BACKGROUND

Items K thru P — The explanation on the front indicated who sees these results and how they are used. Answers to these items will be particularly helpful to postsecondary institutions in letting you know about their offerings in areas where you may need special assistance. If you do not want to answer a given question, leave it blank. There is no penalty for not answering.

K PARENT'S OCCUPATION:

If parent is deceased or retired, what was his or her occupation?

Mark only one circle for Father and only one circle for Mother.

Father (or male guardian)	Mother (or female guardian)	
		Business Owner or Manager (owner, dist. or gas station, local or district sales or restaurant, newspaper, etc., or sales manager, contractor, executive or director in large company, government official)
		Clerical or Sales Worker (bank teller, bookkeeper, sales clerk, real estate salesperson, secretary, stenographer, typist, receptionist, keypunch operator, switchboard operator, postal worker)
		Factory Worker or Laborer (auto, clothes, domestic worker, filling station attendant, car washer, janitor, etc.)
		Farmer (owner or manager of farm)
		Homemaker
		Professional or Technical Worker (accountant, architect, artist, clergy, dentist, engineer, entertainer, lawyer, librarian, musician, nurse, pharmacist, physician, scientist, social worker, computer programmer, writer, etc.)
		Skilled Worker (airplane mechanic, baker, carpenter, cook, electrician, electronics technician, inspector, machine operator, mechanic, painter, plumber, repairperson, tailor, welder, etc.)
		Other

L PARENT'S EDUCATION:

Mark the highest level of education achieved by each of your parents.

Mark only one circle for each parent (or guardian)

Father	Mother	
		Did not complete grade school
		Completed eighth grade
		Some high school
		Graduated from high school
		Completed business or trade school
		Some college
		Graduated from college
		Completed post graduate degree (M.A., Ph.D., Law, etc.)

M ETHNIC BACKGROUND:

- American Indian or Alaskan Native
- Asian or Pacific Islander
- Black
- Hispanic
- White

N ESTIMATED YEARLY FAMILY INCOME:

Estimate your family's total income during the past year.

Mark only one circle

- Less than $6,000
- $6,000 to $8,999
- $9,000 to $11,999
- $12,000 to $14,999
- $15,000 to $17,999
- $18,000 to $20,999
- $21,000 to $23,999
- $24,000 to $29,999
- $30,000 to $35,999
- $36,000 to $41,999
- $42,000 to $47,999
- $48,000 or more

O RELIGIOUS PREFERENCE:

[See the separate codesheet]

See the note on the Religious Preference list. You may omit answering if you wish.

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

P DISABILITY CONDITIONS:

This section requests information on handicapping conditions on a voluntary basis. It will be used to support the various institutions' voluntary efforts to provide access for students with handicapping conditions. This information will be kept confidential and refusal to supply it will not result in any adverse treatment.

Mark any of the following conditions which you have that is to a degree handicapping to you.

- Sight impairment, partial, not correctable with normal lenses
- Sight impairment, legally blind
- Hearing impairment, significant hearing loss in both ears
- Hearing impairment, deaf
- Mobility impairment, use of wheelchair
- Mobility impairment, other
- Coordination impairment, loss of manual dexterity
- Learning disability
- Speech impairment
- Systematic impairment (e.g., seizures, diabetes, etc.)

APPENDIX E

1985 Follow-up Questionnaire

COLLEGE CHOICE

1. Did you graduate from high school?
   (IF RESPONDENT SAYS S/HE GOT A G.E.D., CODE "NO" AND TERMINATE)
   Yes 1
   No 2
   (IF NO, TERMINATE)
   DK . . . 8
   RA . . . 9

   1a. (IF YES) Did you graduate with the class you started with?
   Yes 1
   No 2
   DK . . . 8
   RA . . . 9
   NA . . . 0

2. Did you attend any educational institution in the first six months after your high school graduation?
   Yes 1
   No 2
   (IF NO, GO TO 15)
   DK . . . 8
   RA . . . 9
   NA . . . 0

CONTINUING EDUCATION

3. Was the institution public or private?
   Public 1
   Private. 2
   DK . . . 8
   RA . . . 9
   NA . . . 0

4. Was that the:
   (INTERVIEWER: VOCATIONAL/ TECHNICAL COLLEGES INCLUDE: BUSINESS SCHOOLS, HEALTH PROFESSIONAL TRAINING [LPN, MEDICAL/DENTAL TECHNICIAN, X-RAY], TECHNICAL [CDC INST., BROWN INST.], COSMETOLOGY)
   University of Minnesota 1
   (IF U OF M, GO TO 17)
   State University. 2
   Junior or community college 3
   Private liberal arts college. . . . 4
   Vocational, technical or business college 5
   Some other kind (SPECIFY) 6
   DK . . . 8
   RA . . . 9
   NA . . . 0

   _____
   (SPECIFY OTHER HERE)

5. What was the name of the school?

   _____

6. What state and city or town was it in?

   (CITY) _____

   (STATE) _____

7. In your first term there were you a full-time student, between half- and full-time, about half-time or less than half time. (PROBE FOR ESTIMATE IF RESPONDENT IS UNSURE.)

Full time. 1
Between half and full time . 2
About half time. 3
Less than half time. 4
DK . . . 8
RA . . . 9
NA . . . 0

8. About how many miles is this institution from your parents' or guardians' home at the time of your high school graduation? (DO NOT READ CATEGORIES)

Less than 5. . . . 1
5 - 10 2
11 - 50. 3
51 - 100 4
101 - 500. 5
More than 500. . . 6
DK . . . 8
RA . . . 9
NA . . . 0

9. In deciding whether or not to continue your education beyond high school, how important to you was (READ LIST) Was it very important, somewhat important, or not important?

	Very Imp	S/W Imp	Not Imp	DK	RA	NA
a. your parents wanting you to continue?. .	1	2	3	8	9	0
b. wanting to get a better job?	1	2	3	8	9	0
c. wanting to gain a general education? . .	1	2	3	8	9	0
d. wanting to meet new people?.	1	2	3	8	9	0
e. wanting to prepare for graduate or professional school?	1	2	3	8	9	0
f. there was nothing better to do?.	1	2	3	8	9	0

10. Did this institution offer you any financial aid like a grant, loan, scholarship, or campus job?

Yes. 1
No 2
(IF NO, GO TO 11)
DK . . . 8
RA . . . 9
NA . . . 0

10a. (IF YES) How important was this in your decision to attend there? Was it very important, somewhat important, or not important?

Very important . . 1
Somewhat imp . . . 2
Not important. . . 3
DK . . . 8
RA . . . 9
NA . . . 0

11. How important to your decision was the tuition level? Was it very important, somewhat important, or not important?

Very important . . 1
Somewhat imp . . . 2
Not important. . . 3
DK . . . 8
RA . . . 9
NA . . . 0

12. Would you describe the tuition level as high, moderate or low?

High 1
Moderate 2
Low. 3
DK . . . 8
RA . . . 9
NA . . . 0

13. In meeting your first year's educational expenses did you obtain any financial support from: (READ LIST BELOW)?

	Yes	No	DK	RA	NA
a. Your own savings?	1	2	8	9	0
b. Parents or family?	1	2	8	9	0
c. Scholarships or grants?	1	2	8	9	0
d. Loans?	1	2	8	9	0
e. The work-study program?	1	2	8	9	0
f. Full-time or part-time work other than work study?	1	2	8	9	0
g. Any other source (SPECIFY)	1	2	8	9	0

(SPECIFY OTHER HERE)

14. Was your grade point average in your first term about an A, an A-/B+, a B, a B-/C+, C or below C? (PROBE FOR AN ESTIMATE)

A. 1
A-/B+. 2
B. 3
B-/C+. 4
C. 5
Below C. 6
DK . . . 8
RA . . . 9
NA . . . 0

That was the last question. Thank you very much for your cooperation. (TERMINATE)

NON-EDUCATION
---

15. In the first six months after high school graduation did you (READ LIST BELOW)?

	Yes	No	DK	RA	NA
a. have a part-time job?	1	2	8	9	0
b. have a full-time job?	1	2	8	9	0
c. enter military service?	1	2	8	9	0

16. Many different reasons may have influenced your decision not to go on to school.

Was (READ LIST BELOW) important in your decision?

	Yes	No	DK	RA	NA
a. wanting financial security.	1	2	8	9	0
b. guidance from a counselor or teacher.	1	2	8	9	0
c. wanting to live at home	1	2	8	9	0
d. advice from a friend or relative.	1	2	8	9	0
e. wanting to pursue other interests besides education	1	2	8	9	0

17. Did you apply to any schools either before or within six months of graduation?
Yes 1
No 2
(IF NO, GO TO 19)
DK . . . 8
RA . . . 9
NA . . . 0

18. Were you accepted for admission to any of those schools?
Yes 1
No 2
DK . . . 8
RA . . . 9
NA . . . 0

18a. (IF YES) Was not getting accepted at the school you preferred important in your decision not to go on to school?
Yes 1
No 2
DK . . . 8
RA . . . 9
NA . . . 0

18b. (IF YES) Was not being able to afford the school you preferred important in your decision not to go on to school?
Yes 1
No 2
DK . . . 8
RA . . . 9
NA . . . 0

19. Did your parents offer any financial support for you to go to school after graduation from high school?

(INTERVIEWER: IF ASKED, "ROOM AND BOARD" IS A TYPE OF FINANCIAL SUPPORT.)
Yes 1
No 2
DK . . . 8
RA . . . 9
NA . . . 0

20. If you had been able to obtain enough financial aid, would you have attended an educational institution?
Yes 1
No 2
DK . . . 8
RA . . . 9
NA . . . 0

21. You said that you did not attend an educational institution within six months of high school graduation. Did you attend an educational institution after those six months?
Yes 1
No 2
DK . . . 8
RA . . . 9
NA . . . 0

That was the last question. Thank you very much for your cooperation. (TERMINATE)

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