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

by

CURA
RESOURCE COLLECTION

James C. Hearn, Hideki Sano, and Susan Urahn

A project of the Interactive Research Grants Program, Center for Urban and Regional Affairs and the Office of the Vice President for Academic Affairs, University of Minnesota.
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THE AUTHORS

James C. Hearn is an associate professor in the higher education program of the Department of Educational Policy and Administration, College of Education, University of Minnesota. His address is Department of Educational Policy and Administration, 275 Peik Hall, University of Minnesota, Minneapolis, MN 55455.

Hideki Sano is a doctoral student in the measurement and evaluation program of the Department of Educational Psychology at the University of Minnesota. His address is Department of Educational Psychology, 204 Burton Hall, University of Minnesota, Minneapolis, MN 55455.

Susan Urahn is a doctoral student in the higher education program of the Department of Educational Policy and Administration at the University of Minnesota. Her address is Educational Development Program, 422 Walter Library, University of Minnesota, Minneapolis, MN 55455.
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-
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 inefficient 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.
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 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
ever, it may be concluded that, while college has unquestionably become more ex-
pensive for many students (due undoubtedly both to targeted subsidy policies and
federal aid cuts), the rising costs have not so far significantly damaged attend-
dance 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.
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
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
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 postsecondary 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, 1983). 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, 1973; 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, 1983). For many years, however, blacks have reported equal or higher levels of aspirations, compared to whites (Thomas et al., 1979); where blacks
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 ambitious 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 muddled through their high correlation with measures of selectivity and price (Terkla and Jackson, 1984).
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, 1983). 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 focused 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
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-
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.
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 inefficient 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-
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 participating 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
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
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, 3) changes in the postsecondary education markets of neighboring states, 4) the close correlations among student socio-
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 Urah, 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 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-
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.
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.
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 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
### d) Areas Where Information or Assistance Is Needed

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<td>60.2</td>
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<tr>
<td>Part-Time Employment</td>
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<td>Housing</td>
<td>46.4</td>
<td>34.2</td>
<td>30.7</td>
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<tr>
<td>Education or Vocational Planning</td>
<td>38.5</td>
<td>30.4</td>
<td>26.7</td>
</tr>
<tr>
<td>Improve Math Skills</td>
<td>24.9</td>
<td>13.5</td>
<td>15.0</td>
</tr>
<tr>
<td>Improve Reading Skills</td>
<td>14.0</td>
<td>8.1</td>
<td>7.2</td>
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<tr>
<td>Improve Study Skills</td>
<td>27.8</td>
<td>21.0</td>
<td>19.3</td>
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</table>

### e) Expected Education Level

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<th>82-83</th>
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<td>10.8</td>
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<tr>
<td>Professional</td>
<td>8.7</td>
<td>7.1</td>
<td>8.0</td>
</tr>
</tbody>
</table>
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 stu-
dents' 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 posi-
tive paths to the mediating variables (high school rank and test score), whereas
family income did not. To educational expectations, all five indicators had sig-
nificant direct positive paths; test scores, high school rank, and father's educa-
tion, however, had stronger effects than other variables. Indirect effects on
educational expectations were negligible.
FIGURE 1

1979 Juniors: Path Analysis for Educational Expectations (N=775)\textsuperscript{a}

Note a: Standardized regression coefficients are reported. Significant levels are coded as follows:
* = p ≤ .05, ** = p ≤ .01, *** = p ≤ .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 financial 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
FIGURE 2
1981 Juniors: Path Analysis for Educational Expectations (N=739)\textsuperscript{a}

\begin{align*}
\text{Father's Education} & \rightarrow H.S.\text{Rank} \quad .22^{**} \\
\text{Mother's Education} & \rightarrow H.S.\text{Rank} \quad .28^{***} \\
\text{Family Income} & \rightarrow H.S.\text{Rank} \quad .14^{***} \\
\text{Test Score} & \rightarrow \text{Educational Expectations} \quad .27^{***} \\
\text{Family Income} & \rightarrow \text{Educational Expectations} \quad .06 \\
\text{Mother's Education} & \rightarrow \text{Educational Expectations} \quad .08^{*} \\
\text{Family Income} & \rightarrow \text{Educational Expectations} \quad -.06 \\
\text{Test Score} & \rightarrow \text{Educational Expectations} \quad .20^{***} \\
E_{HS} & = .97 \\
E_{EE} & = .78 \\
E_{TS} & = .94
\end{align*}

Note a: Standardized regression coefficients are reported. Significance levels are coded as follows:
* = p \leq .05, ** = p \leq .01, *** = p \leq .001.
### Table 6

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

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<th>EDEXP</th>
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<td>.10</td>
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<tr>
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Table 7

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

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Predetermined Variable</th>
<th>Total Effect</th>
<th>Indirect Effect via:</th>
<th>Direct Effect</th>
</tr>
</thead>
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<td></td>
<td></td>
<td>RANK</td>
<td>TEST</td>
</tr>
<tr>
<td>RANK</td>
<td>FED</td>
<td>.17 (2.32)</td>
<td>-</td>
<td>-</td>
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<tr>
<td>(R^2 = .07)</td>
<td>MED</td>
<td>.14 (2.36)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>INC</td>
<td>-.02 (-.19)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TEST</td>
<td>FED</td>
<td>.17 (2.34)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(R^2 = .12)</td>
<td>MED</td>
<td>.19 (3.09)</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td>INC</td>
<td>.05 (.44)</td>
<td>-</td>
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<td>EDEXP</td>
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<td>.29 (.18)</td>
<td>.02</td>
<td>.06</td>
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<tr>
<td>(R^2 = .36)</td>
<td>MED</td>
<td>.16 (.12)</td>
<td>.02</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>INC</td>
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<td>-.00</td>
<td>.02</td>
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<tr>
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<tr>
<td></td>
<td>TEST</td>
<td>.35 (.02)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: Unstandardized coefficients are reported in parentheses after standardized coefficients for direct and total effects.
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.
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.
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-
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
FIGURE 4
1980 Graduates: Path Analysis for College Attendance (N=376)*

Note: Standardized regression coefficients are reported. Significant levels are coded as follows:
* = p ≤ .05, ** = p ≤ .01, *** = p ≤ .001.
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
FIGURE 5
1982 Graduates: Path Analysis for College Attendance (N=363)*

Note a: Standardized regression coefficients are reported. Significant levels are coded as follows:
* = p ≤ .05, ** = p ≤ .01, *** = p ≤ .001.
Table 14

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

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<th>EDEXP</th>
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<td>.45</td>
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<td>.26</td>
<td>.34</td>
<td>.34</td>
<td>.31</td>
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<td>INC</td>
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<td>.45</td>
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<td>.57</td>
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<td>.37</td>
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Table 15

<table>
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<tr>
<th>Dependent Variable</th>
<th>Predetermined Variable</th>
<th>Total Effect</th>
<th>Indirect Effect via:</th>
<th>Direct Effect</th>
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<td></td>
<td></td>
<td></td>
<td>RANK</td>
<td>TEST</td>
</tr>
<tr>
<td>RANK</td>
<td>FED</td>
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<td></td>
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<td>.06</td>
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<td>.06</td>
<td>.01</td>
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<td>.02</td>
<td>.01</td>
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<td>.13 (.00)</td>
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<tr>
<td></td>
<td>EDEXP</td>
<td>.19 (.06)</td>
<td>-</td>
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</table>

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

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<thead>
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<th>Number of Students</th>
</tr>
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<tr>
<td></td>
</tr>
<tr>
<td>1980</td>
</tr>
<tr>
<td>University of Minnesota</td>
</tr>
<tr>
<td>State Universities</td>
</tr>
<tr>
<td>Junior and Community Colleges</td>
</tr>
<tr>
<td>Private Colleges</td>
</tr>
<tr>
<td>Vocational and/or Technical Institutions</td>
</tr>
<tr>
<td>Other Schools</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

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.
Table 16

1980 Graduates: Analysis of Variance for College Choices and Student Background Characteristics (n = 306)\textsuperscript{a,b,c}

<table>
<thead>
<tr>
<th>Indicator Means for Each Institutional Type</th>
<th>U of M (n=57)</th>
<th>State (n=91)</th>
<th>Jr/Com (n=45)</th>
<th>Private (n=66)</th>
<th>Voc/Tech (n=47)</th>
<th>Univariate F</th>
<th>Multivariate F</th>
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<tbody>
<tr>
<td>Sex (SEX)</td>
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<td>1.51</td>
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<td>High School Rank (RANK)</td>
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<td>55.63</td>
<td>10.68***</td>
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<td>Test Scores (TEST)</td>
<td>70.97</td>
<td>71.77</td>
<td>98.00</td>
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<td>51.93</td>
<td>14.32***</td>
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<td>4.08</td>
<td>3.72</td>
<td>4.60</td>
<td>2.51</td>
<td>38.55***</td>
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</tr>
<tr>
<td>Father's Education (FED)</td>
<td>5.49</td>
<td>5.61</td>
<td>4.69</td>
<td>5.88</td>
<td>4.17</td>
<td>10.16***</td>
<td></td>
</tr>
<tr>
<td>Mother's Education (MED)</td>
<td>5.64</td>
<td>5.14</td>
<td>4.72</td>
<td>5.54</td>
<td>5.17</td>
<td>3.74**</td>
<td></td>
</tr>
<tr>
<td>Family Income (INC)</td>
<td>3.87</td>
<td>3.79</td>
<td>3.25</td>
<td>3.86</td>
<td>3.31</td>
<td>3.49**</td>
<td></td>
</tr>
<tr>
<td>Need for Financial Information (FINANCE)</td>
<td>.82</td>
<td>.70</td>
<td>.72</td>
<td>.77</td>
<td>.71</td>
<td>1.29</td>
<td></td>
</tr>
<tr>
<td>Need for Help in Making Educational and Vocational Plans (PLANS)</td>
<td>.44</td>
<td>.32</td>
<td>.44</td>
<td>.30</td>
<td>.34</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Need for Improved Reading Skills (READ)</td>
<td>.09</td>
<td>.19</td>
<td>.22</td>
<td>.09</td>
<td>.06</td>
<td>3.24*</td>
<td></td>
</tr>
</tbody>
</table>

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 18
1984 Graduates: Analysis of Variance for College Choices and Student Background Characteristics (n = 316)\(^a\)

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

Note a: N's reported in the table are smaller than those reported in the text due to missing data considerations.
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
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.
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
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.
Family Contribution: Family contribution is based in the expected parental contribution and the expected student contribution to the cost of post-secondary 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,
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.
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

1980 1982 1984
$0-$700
$700-$1400
$1400-$2700
$2700 AND UP

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

1980 1982 1984
$0
$0-$700
$700-$1400
$1400-$2700
$2700 AND UP

88
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 21
Combined State Award and Pell Grant as a Percentage of Postsecondary Cost: Dependent Students

<table>
<thead>
<tr>
<th>FAMILY CONTRIBUTION ($)</th>
<th>1980-81</th>
<th>1982-83</th>
<th>1984-85</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University of Minnesota</td>
<td>State University</td>
<td>Community College</td>
</tr>
<tr>
<td>0</td>
<td>42.0</td>
<td>42.5</td>
<td>40.3</td>
</tr>
<tr>
<td>0-700</td>
<td>33.4</td>
<td>32.9</td>
<td>30.6</td>
</tr>
<tr>
<td>700.01-1400</td>
<td>20.8</td>
<td>18.8</td>
<td>17.4</td>
</tr>
<tr>
<td>1400.01-2700</td>
<td>6.9</td>
<td>5.5</td>
<td>4.1</td>
</tr>
<tr>
<td>2700 and up</td>
<td>1.4</td>
<td>0.7</td>
<td>1.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1982-83</th>
<th>1984-85</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University of Minnesota</td>
<td>State University</td>
<td>Community College</td>
</tr>
<tr>
<td>0</td>
<td>37.2</td>
<td>35.4</td>
<td>33.5</td>
</tr>
<tr>
<td>0-700</td>
<td>27.2</td>
<td>27.3</td>
<td>25.4</td>
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<tr>
<td>700.01-1400</td>
<td>16.2</td>
<td>13.9</td>
<td>12.5</td>
</tr>
<tr>
<td>1400.01-2700</td>
<td>5.5</td>
<td>2.4</td>
<td>1.8</td>
</tr>
<tr>
<td>2700 and up</td>
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<table>
<thead>
<tr>
<th></th>
<th>1984-85</th>
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</thead>
<tbody>
<tr>
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<td>State University</td>
<td>Community College</td>
</tr>
<tr>
<td>0</td>
<td>38.8</td>
<td>39.4</td>
<td>35.1</td>
</tr>
<tr>
<td>0-700</td>
<td>33.2</td>
<td>32.2</td>
<td>29.5</td>
</tr>
<tr>
<td>700.01-1400</td>
<td>20.2</td>
<td>20.0</td>
<td>16.9</td>
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<tr>
<td>1400.01-2700</td>
<td>6.0</td>
<td>4.7</td>
<td>2.8</td>
</tr>
<tr>
<td>2700 and up</td>
<td>0.3</td>
<td>0.2</td>
<td>0</td>
</tr>
<tr>
<td>FAMILY CONTRIBUTION ($)</td>
<td>University of Minnesota</td>
<td>State University</td>
<td>Community College</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------</td>
<td>------------------</td>
<td>------------------</td>
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<tr>
<td></td>
<td>1980-81</td>
<td>1982-83</td>
<td>1984-85</td>
</tr>
<tr>
<td>0</td>
<td>15.4</td>
<td>10.6</td>
<td>7.1</td>
</tr>
<tr>
<td>0-700</td>
<td>12.1</td>
<td>6.9</td>
<td>2.2</td>
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<tr>
<td>700.01-1400</td>
<td>3.6</td>
<td>6.9</td>
<td>2.2</td>
</tr>
<tr>
<td>1400.01-2700</td>
<td>1.4</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>2700 and up</td>
<td>0.4</td>
<td>0.8</td>
<td>0.8</td>
</tr>
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</table>
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 1983-86, 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.
\textit{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.}

\textit{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).}

\textit{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.}
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.


Chronicle of Higher Education. Tuition increases slow but are likely to outpace inflation. February 29, 1984.


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
**Table A-1**

Student Background Characteristics in the Three Cohorts: A Comparison of PSPP and MEEP Data Sets

### Estimated Family Income

<table>
<thead>
<tr>
<th></th>
<th>All PSPP Data (%)</th>
<th>All MEEP Data (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>78-79 80-81b 82-83b</td>
<td>78-79 80-81b 82-83b</td>
</tr>
<tr>
<td>Less than $13,999 per year</td>
<td>15.3 12.3 11.7</td>
<td>21.9 18.0 14.9</td>
</tr>
<tr>
<td>$14,000 - $27,999 per year</td>
<td>33.9 25.4 22.1</td>
<td>52.4 45.2 38.2</td>
</tr>
<tr>
<td>$28,000 or More per year</td>
<td>15.7 19.8 24.8</td>
<td>25.7 36.8 46.9</td>
</tr>
<tr>
<td>No Response</td>
<td>35.0 42.6 41.8</td>
<td>0 0 0</td>
</tr>
</tbody>
</table>

### Occupation of Father

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

### Occupation of Mother

<table>
<thead>
<tr>
<th></th>
<th>All PSPP Data (%)</th>
<th>All MEEP Data (%)</th>
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<tbody>
<tr>
<td></td>
<td>78-79 80-81 82-83</td>
<td>78-79 80-81 82-83</td>
</tr>
<tr>
<td>Owns or Manages Business</td>
<td>6.9 4.5 5.0</td>
<td>7.6 4.3 6.0</td>
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<tr>
<td>Clerical or Sales Work</td>
<td>15.6 20.1 20.5</td>
<td>18.9 23.8 22.9</td>
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<tr>
<td>Factory Worker or Laborer</td>
<td>5.5 4.9 4.6</td>
<td>4.8 3.8 3.9</td>
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<tr>
<td>Farmer</td>
<td>2.6 1.2 1.3</td>
<td>2.7 0.8 1.1</td>
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<tr>
<td>Professional or Technical</td>
<td>12.4 11.9 13.2</td>
<td>17.1 16.0 16.1</td>
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<tr>
<td>Skilled Worker</td>
<td>12.5 4.8 5.5</td>
<td>11.8 4.4 5.2</td>
</tr>
<tr>
<td>&quot;Other&quot; or &quot;Homemaker&quot;</td>
<td>33.5 36.3 35.3</td>
<td>31.0 39.2 36.3</td>
</tr>
<tr>
<td>No Response</td>
<td>11.1 16.3 14.5</td>
<td>6.1 7.7 8.5</td>
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### Education of Father

<table>
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<tr>
<td></td>
<td>78-79 80-81 82-83</td>
<td>78-79 80-81 82-83</td>
</tr>
<tr>
<td>Some Grade School or Less</td>
<td>1.2 1.0 1.1</td>
<td>.9 .9 .4</td>
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<tr>
<td>Completed Eighth Grade</td>
<td>10.7 8.9 6.8</td>
<td>9.6 7.7 5.9</td>
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<tr>
<td>High School Graduate</td>
<td>9.1 8.6 8.6</td>
<td>8.7 6.6 6.2</td>
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<tr>
<td>Business or Trade School</td>
<td>30.2 30.2 30.7</td>
<td>29.6 28.0 31.6</td>
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<tr>
<td>Some College</td>
<td>9.1 8.2 8.9</td>
<td>9.1 9.6 10.0</td>
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<tr>
<td>College Graduate</td>
<td>8.0 7.7 8.1</td>
<td>9.5 10.4 8.7</td>
</tr>
<tr>
<td>Graduate or Professional School</td>
<td>16.3 15.3 16.1</td>
<td>18.3 19.5 19.7</td>
</tr>
<tr>
<td>No Response</td>
<td>6.5 7.5 7.7</td>
<td>10.7 12.6 13.7</td>
</tr>
<tr>
<td></td>
<td>8.9 12.7 12.0</td>
<td>3.6 4.7 3.8</td>
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Table continues
### First Year Plans

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</thead>
<tbody>
<tr>
<td></td>
<td>78-79</td>
<td>80-81</td>
</tr>
<tr>
<td>College or University</td>
<td>43.8</td>
<td>46.7</td>
</tr>
<tr>
<td>Vocational or Technical</td>
<td>25.5</td>
<td>24.6</td>
</tr>
<tr>
<td>Other School</td>
<td>1.9</td>
<td>1.6</td>
</tr>
<tr>
<td>Military</td>
<td>2.6</td>
<td>3.2</td>
</tr>
<tr>
<td>Get a Job</td>
<td>11.2</td>
<td>9.9</td>
</tr>
<tr>
<td>Farm or Business</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>Home Maker or Other</td>
<td>3.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Don't Know</td>
<td>7.4</td>
<td>6.9</td>
</tr>
<tr>
<td>No Response</td>
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### Why Not More Education

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>78-79</td>
<td>80-81</td>
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<tr>
<td>Can't Afford</td>
<td>13.5</td>
<td>16.6</td>
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<tr>
<td>Not Interested</td>
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<td>15.4</td>
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<tr>
<td>Start Earning</td>
<td>15.7</td>
<td>14.0</td>
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<tr>
<td>Not Enough Ability</td>
<td>3.7</td>
<td>3.3</td>
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<tr>
<td>Work or Travel</td>
<td>32.6</td>
<td>30.4</td>
</tr>
<tr>
<td>Other</td>
<td>19.7</td>
<td>20.3</td>
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### Source of Finance

<table>
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<tr>
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<tr>
<td></td>
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<td>80-81</td>
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<tr>
<td>No Need</td>
<td>18.9</td>
<td>16.0</td>
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<tr>
<td>Some</td>
<td>44.6</td>
<td>43.7</td>
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<tr>
<td>All</td>
<td>10.6</td>
<td>13.9</td>
</tr>
<tr>
<td>Not Sure</td>
<td>25.9</td>
<td>24.4</td>
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### Areas Where Information or Assistance Is Needed

<table>
<thead>
<tr>
<th></th>
<th>All PSPP Data (%)</th>
<th>All MPEEP Data (%)</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>80-81</td>
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<tr>
<td>Financial Aid</td>
<td>48.3</td>
<td>51.9</td>
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<td>Part-Time Employment</td>
<td>43.8</td>
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<td>Housing</td>
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<td>Advanced Placement</td>
<td>12.8</td>
<td>11.2</td>
</tr>
<tr>
<td>Education or Voc Plan</td>
<td>32.9</td>
<td>27.3</td>
</tr>
<tr>
<td>Solve Personal Problems</td>
<td>5.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Improve Math Skills</td>
<td>19.8</td>
<td>13.4</td>
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<tr>
<td>Improve Reading Skills</td>
<td>12.3</td>
<td>7.8</td>
</tr>
<tr>
<td>Improve Study Skills</td>
<td>23.3</td>
<td>17.9</td>
</tr>
<tr>
<td>Improve Writing Skills</td>
<td>14.7</td>
<td>7.9</td>
</tr>
<tr>
<td>Honor Programs</td>
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<td>8.3</td>
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<tr>
<td>Independent Study</td>
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<td>6.7</td>
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<tr>
<td>Services For The Handicapped</td>
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<td>1.2</td>
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</tbody>
</table>

Table continues
**ABILITIES & ACHIEVEMENTS**

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

<table>
<thead>
<tr>
<th>V = Very Active</th>
<th>A = Average</th>
<th>L = Little or None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>Athletes</td>
<td>Church or religious groups</td>
</tr>
<tr>
<td>Cultural or ethnic groups</td>
<td>Drama or debate</td>
<td>Music, vocal</td>
</tr>
<tr>
<td>Music, instrumental</td>
<td>Science fair or projects</td>
<td>Service clubs (scouts, etc.)</td>
</tr>
<tr>
<td>Social clubs, fraternities, sororities</td>
<td>Special interest groups</td>
<td>Student government</td>
</tr>
</tbody>
</table>

Mark how much you participated here.

**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

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

<table>
<thead>
<tr>
<th>Did Not Take</th>
<th>Did Take</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
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<tr>
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<td>O</td>
<td>O</td>
</tr>
<tr>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

**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.

- Variety 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 to continue your education?

- No, with parents' help and my own savings or 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
**High School & City in Which Located**  

<table>
<thead>
<tr>
<th>COUNTY IN WHICH YOU LIVE</th>
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<th>ZIP CODE</th>
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**Home Address**  

<table>
<thead>
<tr>
<th>STREET ADDRESS</th>
<th>CITY</th>
<th>ZIP CODE</th>
</tr>
</thead>
</table>

**Do Not Mark Here Unless Told To Do So**  

**Social Security Number**  

<table>
<thead>
<tr>
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<th>DATE OF BIRTH</th>
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</thead>
</table>

**Telephone Number**  

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<th>YOUR AREA CODE</th>
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<th>MARK (TIME)</th>
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**Sex**  

<table>
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<th>M</th>
<th>F</th>
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**Special Codes**  

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**Start Name**  

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**File-Name**  

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**Date**  

<table>
<thead>
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<th>YR</th>
<th>MO</th>
<th>DAY</th>
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</table>

**Home Address**  

<table>
<thead>
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<th>CITY</th>
<th>ZIP CODE</th>
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</table>

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**Telephone Number**  

<table>
<thead>
<tr>
<th>YOUR AREA CODE</th>
<th>MARK (DAY)</th>
<th>MARK (TIME)</th>
</tr>
</thead>
</table>
ACTIVITIES PARTICIPATED IN & ACTIVITIES PLANNED

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

MARK HERE

V M S N
Artistic, instrumental or club
V M S N
Athletics, varsity
V M S N
Curriculum or science groups
V M S N
Debate speech
V M S N
Drama
V M S N
Church or religious activities
V M S N
Student council or government
V M S N
Scouts or Pathfinder
V M S N
Fighting organizations
V M S N
Rifle or gun
V M S N
ROTC, Junior ROTC
V M S N
Boys League
V M S N
Service in community
V M S N
Special club or organization
V M S N
High school, Junior college
V M S N
Future Teachers of America
Future Farmers of America, etc.
V M S N
Student achievement

PERSONAL BACKGROUND

Items K thru P — The explanation on the front indicated how 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 one circle for Mother.

Father (or male guardian):  
Mother (or female guardian):  

Business Owner or Manager = 1
Doctor = 3
Engineer = 4
Lawyer = 5
Teacher = 6

circled, 1 = blank

circled, 2 = blank

circled, 3 = blank

circled, 4 = blank

circled, 5 = blank

circled, 6 = blank

Teacher: 1 = early childhood education
2 = elementary
3 = middle school
4 = high school

Professional or Technical Worker = 7
Other = 8

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 ninth grade
Completed high school
Graduated from high school
Completed business or trade school
Completed college
Graduated from college
Completed post-graduate degree
J.D., Ph.D., Law, etc.

M ETHNIC BACKGROUND:

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

OTHER

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 released to supply it will not result in any adverse treatment.

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

Sign impairment: Spatial, not correctable with glasses
Sign impairment: Totally blind
Hearing impairment: Significant hearing loss
Hearing impairment: deaf
Motor impairment: use of wheelchair
Motor impairment: other
Coordination impairment: loss of manual dexterity
Learning disability
Speech impairment
Systemic impairment: e.g., arthritis, diabetes, etc.

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 $9,999
$10,000 to $14,999
$15,000 to $17,999
$18,000 to $20,999
$21,000 to $22,999
$24,000 to $25,999
$26,000 to $27,999
$28,000 to $29,999
$30,000 to $32,999
$33,000 to $34,999
$35,000 to $35,999
$36,000 or more

O RELIGIOUS PREFERENCE:
See the chart on the next page.

“Religious Preference”  

1. Catholic
2. Protestant
3. Jewish
4. Other

Q continued from the next page
ACTIVITIES PARTICIPATED IN & ACTIVITIES PLANNED

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

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 civic groups
V M S N
Debate, speech
V M S N
Dramatic groups
V M S N
Church or religious groups
V M S N
Junior high or high school publications
V M S N
Music, vocal
V M S N
Music, instrumental
V M S N
Science fair, science projects
V M S N
Video production
V M S N
Mathematics, foreign languages
V M S N
Social studies, history
V M S N
Special interest groups (e.g., Future Teachers of America; Future Farmers of America, etc.)
V M S N
Student government

PERSONAL BACKGROUND

Item K thru P — The explanation on the front indicates who sees these results and how they are used. Answers to these items will be particularly helpful to postsecondary institutions or 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)

L PARENT’S EDUCATION:
Mark the highest level of education achieved by each of your parents. Mark only one circle for each parent.

Father

MOTHER

Did not complete high school
Completed high school
Completed high school
Completed high school
Completed high school

M ETHNIC BACKGROUND:

American Indian or Alaska 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 $5,000
$5,000 to $9,999
$10,000 to $14,999
$15,000 to $17,499
$18,000 to $20,999
$21,000 to $24,999
$25,000 to $29,999
$30,000 to $34,999
$35,000 to $44,999
$45,000 or more

O RELIGIOUS PREFERENCE:
[See the separate card(s)]

P DISABILITY CONDITIONS:
This section requests information on handicapping conditions that have impaired your ability to participate in educational activities. Information given will be used to support the various education programs and goals for students with handicapping conditions. The information given will be kept confidential and released only if you authorize it.

Are you any of the following conditions which you have had or is it a degree handicapping to you?

Sight impairment partial or complete
Sight impairment, highly visual
Hearing impairment, significant hearing loss or deafness
Hearing impairment, mild
Mobility impairment lower
Mobility impairment upper
Communication impairment, loss of manual dexterity
Learning disability
Speech impairment
Stuttering
Systeimic, autonomic, tumor, diabetes etc.

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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 it? Very important, somewhat important, or not important?

<table>
<thead>
<tr>
<th>Very</th>
<th>S/W</th>
<th>Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imp</td>
<td>Imp</td>
<td>DK</td>
</tr>
<tr>
<td>a. your parents wanting you to continue?: 1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>b. wanting to get a better job?: 1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>c. wanting to gain a general education?: 1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>d. wanting to meet new people?: 1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>e. wanting to prepare for graduate or professional school?: 1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>f. there was nothing better to do?: 1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

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

- Yes: 1
- No: 2
- (If No, 90 to 111)
  - 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
MINNESOTA POST-SECONDARY ATTENDANCE PROJECT

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?
   Yes. . . . . . . . . . 1
   No. . . . . . . . . . . 2
   DK . . . . . . . . . . 8
   RA . . . . . . . . . . 9
   NA . . . . . . . . . . 0

   (INTERVIEWER: IF ASKED, "ROOM AND BOARD" IS A TYPE OF FINANCIAL SUPPORT.)

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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