

THE IMPACT OF FEDERAL REDUCTIONS  
IN FINANCIAL AID ON THE ENROLLMENT PLANS  
OF PAST AID RECIPIENTS

by

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(Abstract)

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Actual and projected changes in the federal appropriations for direct student assistance programs in the early days of the Reagan presidency as well as rising educational costs were expected to adversely affect the enrollment of continuing financial aid recipients. Previous literature in financial aid has documented the relationship between financial aid and decisions about college, particularly for minority and low income students applying for the first time to less selective colleges. The purpose of this study was to describe the relationship between changes in amount of financial aid and the reported enrollment plans of a sample of past need-based aid recipients.

A survey was mailed to a random sample of 1,347 students who received financial assistance under Virginia's College Scholarship Assistance Program (CSAP) during 1981-82. Responses were received from 767 students. No significant differences between respondents and nonrespondents were determined.

Analysis of the data collected through the survey instrument revealed that the vast majority of the

respondents planned to continue at the same college (88.3%) and only a very small proportion planned to withdraw (4.1%) or transfer to another college (7.5%). Approximately 40 percent of the respondents lost more than \$500 in aid between 1982-83 and the previous year. When the decision to continue or transfer was examined by selected individual and institutional characteristics and by change in amount of aid, the variables of race, grades, grade level, and institutional cost and selectivity explained a significant portion of enrollment behavior. Respondents attending low cost and nonselective institutions, minorities, freshmen, and those with lower grades were found to be more likely than average to change their enrollment plans by transferring. The addition of change in amount of financial aid received across two years had no statistical effect when added to the variables of race or grades and only a very slight effect in increasing the likelihood of changing plans for freshman and for respondents enrolled in nonselective, low cost institutions. Parental income was not found to be significantly associated with change in enrollment plan for dependent students. Little of the variation in enrollment plans was explained by change in the amount of financial aid received. Financial concerns appeared to weigh most significantly for those planning to continue at the same college.

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It is unlikely that the casual reviewer of this unpretentious volume could have any real sense of the magnitude of the effort involved to complete it. In part, I have learned that its completion is as much an act of tenacious commitment to a single goal as a token of good fortune to have travelled through such an extended period of time without extraordinary catastrophes on the home and job fronts.

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## CHAPTER I

### INTRODUCTION AND STATEMENT OF THE PROBLEM

#### Introduction

The 1981 fiscal year (FY) marked a sudden halt to a decade of dramatic expansion in federal appropriations to direct student assistance programs created to ensure all students equal opportunity to attend some form of postsecondary education, and, to a lesser extent, to attend the institution of their preference. Although not as massive as those originally proposed by President Reagan, FY 81 and FY 82 cutbacks nevertheless seemed to warn of the possibility of a significant change in national policy of the role of the federal government in postsecondary education. As the College Board noted, "... the era of dramatic increases in student aid is clearly over; level federal funding - the best that can be hoped for - will mean a declining federal role in postsecondary finance as cost increases" (1982, p. 3).

The reductions in federal appropriations for student assistance programs was expected to have major implications for the college student population, the institutions that serve them, and state governments. The State Council of Higher Education in Virginia, for instance, was commissioned by the 1982 General Assembly to conduct a major study of Virginia's student assistance programs in order to "recommend how Virginia's student financial aid programs

should be structured in order to maintain student access to higher education in Virginia" (Senate Joint Resolution Number 81, February 5, 1982). Other states also explored new student aid programs in order to fill the void left by the federal retreat from the responsibility of assuring access and choice to a generation of college students whose decision to attend college and choice of college was made during an era of ample student aid dollars.

When coupled with other significant economic and social forces such as the recession, rising unemployment, increasing educational costs, and a declining college-age population, changes in the federal policy of direct aid to college students suggested some uncertainty about the future of the national commitment to equal opportunity or access to some form of postsecondary education. Debate about the combined effects of such forces raised questions about their impact on enrollment in higher education as well as about the distribution of such enrollments across public and private institutions. Of primary importance were questions about how such slashes in the federal budget for student assistance programs affected choice and access to higher education and to determine what type of students and institutions were most affected.

The purpose of this study was to investigate the impact of reductions in federal appropriations for financial aid on the reported enrollment plans of a sample of past need-based

aid recipients who were enrolled as freshmen, sophomores, or juniors in Virginia colleges and universities during the 1981-82 academic year.

### Recent History of Federal Student Aid

Student financial aid, like other large social benefit programs, became the target of heated political controversy in the face of the Reagan Administration's avowed goal of trimming budget deficits. In regard to this issue, the President and his representatives vowed:

The adjustments in student aid are not large.

The neediest students are protected under the Administration's proposals.

Students are free to choose among differently priced institutions depending upon the willingness of the student and his family to borrow and/or work. Our proposals will not force students to either drop out or transfer to less expensive schools. (Council for the Advancement and Support of Education, 1982, p. 12)

Despite such assurances, the Reagan Administration moved rapidly to bring the future of direct student assistance in question. Within ten days of his inauguration, President Reagan challenged the role of the federal government in postsecondary education by commissioning the Secretary of the Department of Education, T. H. Bell, "to look at the appropriate role of the federal government in education, if there is one, and to report back" (Finn, 1981, p. 7). Shortly after that time, the administration successfully moved to restrict FY 81 and FY

82 appropriations and proposed to reduce spending on federal student assistance programs from \$3.5 billion when it took office to \$1.4 billion by FY 84 (Council for the Advancement and Support of Education, 1982). Despite public statement to the contrary, proposals were aimed at reducing aid to all students, including aid that had been historically targeted to ensure access to postsecondary education for the nation's neediest students (Council for the Advancement and Support of Education, 1982).

Critics and proponents alike recognized the Reagan Administration's position on direct student assistance to be a radical departure from federal policies adopted over the previous decade. According to Saunders of the American Council on Education, "The administration is moving toward outright rejection of a federal responsibility for access to higher education, a tenent that has united Republicans and Democrats since the Eisenhower administration (1982, p. 7). Finn, a noted economist and writer in the field of financial aid and federal policy, labelled this commitment as the "liberal consensus" and agreed that over the last decade both Republicans and Democratic presidents supported an active role for the federal government in education with the purpose of fostering equity and limiting individual differences (Finn, 1981). Finn contended that during the Reagan presidency this concern was replaced with an emphasis on quality, rather than equality.

The decade of commitment to federal responsibility for access and choice to postsecondary education began with the Higher Education Act of 1965 which "marked the beginning of broad-ranging programs of federal aid to higher education" (The Carnegie Council, 1979, p. 71). This landmark legislation established a federal commitment to provide equal access to higher education, regardless of a student's ability to finance it. The Education Amendments of 1972 served to further expand the federal commitment to student aid by changing the emphasis of federal financing from direct institutional aid to indirect aid to institutions through grants and loans to students (Leslie & Fife, 1974). For the first time, financial assistance to attend college became an entitlement and students were guaranteed access to postsecondary education through a minimum floor of financial aid resources (Gladieux & Wolanin, 1978).

Federal support of student assistance programs designed to provide equal access to postsecondary education continued through very recent times through the Middle Income Student Assistance Act (MISAA) of 1978 and the Education Amendments of 1980. The MISAA increased federal commitment to student aid by 70 percent (Chronicle of Higher Education, November 5, 1979) by expanding eligibility to most federal aid programs to include students from families with incomes in the \$15,000 to \$25,000 range. The Education Amendments of 1980 provided aid eligibility to part-time and independent

students and proposed a five-year schedule of increases in Pell Grants, the foundation program of federal student assistance.

#### FY 81 and FY 82 Cutbacks

Students who made their college plans based on the spirit of legislation enacted through October of 1980 were in for a sudden turn of events when three short months later, a series of three budget reductions marked a sudden curtailment in spending for direct student assistance programs. The first reductions were implemented in June 1981 when President Reagan signed a rescissions bill (Public Law 97-12) which reduced the appropriation levels for campus-based programs in FY 81 by \$600 million from those established by the previous administration. Shortly after that, a second round of reductions culminated in the Omnibus Budget Reconciliation Act which was signed into law by the President on August 16, 1981. This act "contained significant changes not only in the funds made available for the student aid programs, but in the programs themselves. All of these changes are intended to limit student participation, thereby reducing the total cost of the programs" (The State Council of Higher Education, 1981, p. 29). The Omnibus Reconciliation Act authorized spending levels for FY 82 and was projected to cut federal expenditures by \$35 million between October 1, 1981 and September 30, 1982 (NASFAA Newsletter, August 13, 1981).



Among other significant changes, this act re-imposed income guidelines to the Guaranteed Student Loan program and created a schedule to phase out social security education benefits.

Appropriations for FY 82 were further reduced in a third round of budget cuts which were finalized in a continuing resolution in December 1981. This marked an additional \$600 million in reductions in funding for student aid programs established just six months earlier by the Reconciliation Act and provided an overall reduction of 12 percent from the spending levels in effect during the last days of the Carter administration (Saunders, 1982).

#### The Influence of Federal Reductions in Virginia

Because state appropriations for student aid in Virginia are small in comparison to many other states and relative to federal expenditures, the changes in federal appropriations for student assistance may have particularly significant implications for students living in the Commonwealth. In 1980-81, Virginia students received approximately \$230 million from federal programs compared to less than \$213 million in 1981-82. As illustrated in Table 1, in FY 81 Virginia students lost \$5 million in Pell Grants, \$2-3 million in National Direct Student Loans, and \$5-10 million in Guaranteed Student Loans (State Council of Higher Education, 1981). These reductions came at a time when both the enrollment in higher education in Virginia and

Table 1  
Federal Financial Aid Expenditures  
in Virginia 1980-83

	1980-81		1981-82		1982-83	
	Funding	Number Students	Funding	Number Students	Funding	Number Students
Pell Grants (Basic Educational Opportunity Grants)	\$ 44,000,000	44,000	\$ 39,000,000	40,000	\$ 29,000,000	33,000
Supplemental Educational Opportunity Grants	\$ 6,500,000	9,000	\$ 6,800,000	9,000	\$ 5,100,000	7,000
College Work Study	\$ 11,200,000	16,000	\$ 10,900,000	5,000	\$ 6,500,000	9,000
National Direct Student Loans	\$ 5,100,000	12,000	\$ 3,300,000	7,500	0	0
Guaranteed Student Loans	\$110,000,000	40,000	\$100,000,000	39,000	\$ 70,000,000	28,000
State Student Incentive Grants	\$ 1,680,000	15,000**	\$ 1,630,000	17,000**	0	0
Other Federal Programs (law enforcement, health care professions, etc.)	\$ 2,000,000	500	\$ 1,000,000	250	\$ 900,000	200
Social Security Educational Benefits	est. \$ 50,000,000	40,000	est. \$ 50,000,000	40,000	est. \$ 38,000,000	30,000
Total	\$230,480,000		\$212,630,000		\$149,500,000	

\*Actual administration proposals will not be known until President Reagan submits his revised fiscal year 82 and proposed fiscal year 83 budget to Congress.

\*\*SSIG funds are used to match the College Scholarship Assistance Program (CSAP) funds

SOURCE: State Council of Higher Education

its costs were increasing.

Reductions in federal appropriations for student assistance coincide uniquely in Virginia with several other factors which influenced both the cost of higher education and the resources available to finance it. The previously mandated 70/30 tuition funding policy (80/20 for community college students) was replaced so that during the 1982-83 academic year in-state students at public institutions were expected to assume an average of 35 percent of the cost of their instruction (an average of 25 percent for community college students). Over the next biennium, planned changes in this funding formula were expected to result in a net additional charge to students of \$39 million in 1982-84 (The State Council of Higher Education, 1981). In The Virginia Plan for Higher Education, the State Council of Higher Education noted that with increased tuition costs and other increases in room and board and other educational expenses, "there can be little doubt that the total cost of higher education will increase significantly for Virginia students in 1982-84" (1981, p. 30). Additions to the State budget for student assistance are expected to offset only one dollar of every six of the tuition increases and "will not compensate at all for the reductions in federal student aid" (Senate Joint Resolution No. 81, February 1982, p. 1).

Additional changes in Virginia in the cost of education and the assistance available to finance it included changes

in two of the State's grant programs, the Commonwealth Incentive Grant Program and the College Scholarship Assistance Program (CSAP). According to the State Council of Higher Education, the Commonwealth Incentive Grant Program, a one million dollar program in 1980-81 addressed at equalizing "other race" enrollments in both predominantly black institutions and predominantly white institutions, will be eliminated in 1983.

The future of CSAP, the only statewide financial aid program awarded on the basis of financial need, was also in question in the spring of 1982. Despite increases in the number of applications and the amount of demonstrated need, funding for the program was not increased over the last three years. No appropriations for the federal matching portion of the program were included in the federal FY 83 budget proposals. The State Council of Higher Education was confronted with such issues as whether to continue the program with or without matching funds and, in addition, whether a major change in the administration of the program was likely to increase its impact.

#### The Role of Uncertainty

In addition to the ultimate effects of actual reductions in appropriations for student assistance programs, uncertainty resulting from the widespread news coverage surrounding the budget debates may, in itself, have had a powerful role in influencing the college plans of both

entering freshmen and continuing students. Since federal spending levels for FY 82 were not finalized until well after traditional deadlines for application to college, many college students made their plans with the assumption of austere times. As the College Board noted early in the year, "... many families may be assuming that the decisions have already been made and that money for college--or the college of their choice--won't be available. Such negativism could be more harmful than the ultimate cuts themselves " (1982, p. 2).

Critics of the Administration contended that unusual delays, particularly in the legislative process governing the campus-based administration of the programs, were part of the Administration's strategy and served to achieve the goal of trimming federal spending while the usual budget process was stalled in political controversy (Jordan, 1982). Final regulations and procedural details for the Guaranteed Student Loan program, for instance, were not released by the Department of Education until mid-May, significantly past the customary deadline for students to notify colleges of their enrollment decisions. Similarly, the schedule for Pell Grant awards was delayed until mid-June. As the result of such delays, the specifics of financial aid awards were probably not available to entering freshmen at the point when they were making the final decisions about which college to attend. Official notification of most federal

and state awards for upperclassmen was also delayed until late summer 1982.

Several early indications suggested support for the argument that uncertainty about financial aid would in itself influence college plans. Magarrell (1982b) reported that early data from admission offices across the country, for instance, reflected a shift in applications from private to lower cost public institutions in the spring of 1982. In addition, applications for need-based aid declined during the winter and spring 1982 as parents and students apparently self-selected themselves from consideration for need-based financial aid (Magarrell, 1982b). This proved true in Virginia as well where the number of applicants for the state need-based award, CSAP, for the 1982-83 academic year lagged behind expected numbers until late in the spring. Some private institutions that responded to publicity about reductions in federal programs by launching fund-raising campaigns found themselves unable to recruit sufficient candidates for new scholarships and other non-need-based awards (Magarrell, 1982a).

#### Statement of the Problem

Reductions in federal expenditures for direct student assistance programs were expected to have important consequences for college students and the institutions they attend. Students who routinely would continue their education during the 1982-83 academic year were among the

first cohort of college students whose enrollment plans reflected a measure of the impact of the series of budget reductions negotiated over the first year and a half of the Reagan presidency. Need-based aid recipients during this time represented a generation of students whose original decision to attend college and choice of college were likely to have been influenced by an assumption of the continuing availability of some minimum level of financial aid.

Regarding reductions in federal appropriations for student assistance programs, Saunders noted,

The full extent of their impact will not be felt on campuses until next fall, when state and institutional aid will also be scarcer due to the widespread cutbacks in federal funding for other domestic programs. The combination will inevitably force millions of students to change their college plans by transferring to less expensive institutions or dropping out entirely. This will be the nation's first retreat from the goal of expanding postsecondary education opportunities. (1982, p. 7)

### The Problem

The combined effects of actual reductions in federal appropriations for direct student assistance programs and the concomitant uncertainty that was generated by widespread news coverage and legislative delays in program implementation on the enrollment plans of past need-based aid recipients enrolled in postsecondary education is unclear. Previous research has substantiated a relationship between financial aid and enrollment rates and patterns, but

has focused almost exclusively on the effects of financial aid on the enrollment rates and patterns of first-time students during the relatively recent period of expansion of federal subsidies for student aid. The opportunity to examine the effects on enrollment of a unilateral reduction of federal assistance to students previously receiving aid had not been available.

### The Purpose

The purpose of this study was to describe the relationship between changes in federal appropriations for direct student financial aid and the reported enrollment plans of a selected group of past need-based aid recipients who were enrolled as undergraduates in colleges and universities in Virginia during 1981-82.

### Research Questions

The following are the major research questions of the study:

1. To what extent do changes in the reported enrollment plans of a sample of past aid recipients vary by the difference in the total amount of aid and the predominant type of aid received in 1981-82 and 1982-83?
2. To what extent do changes in the reported enrollment plans of a sample of past aid recipients vary by difference in the total amount of financial aid received in 1981-82 and 1982-83 and by the institutional characteristics



of type (two-year, four-year, comprehensive), control (public, private), selectivity (nonselective to most selective), cost (low to high), and size (less than 2,500; 2,501-3,999; 4,000-8,000; over 8,000) of the college or university attended in 1981-82?

3. To what extent do changes in the reported enrollment plans of a sample of past aid recipients vary by difference in the total amount of financial aid received between 1981-82 and 1982-83 and by the student characteristics of race, sex, family income, and academic performance?

#### Definition of Terms

For purposes of this study, the following are the definitions for key terms:

academic performance - self-reported cumulative grade point average after the last quarter or semester of enrollment.

CSAP - the College Scholarship Assistance Program, a statewide, need-based financial aid award administered by the State Council of Higher Education of Virginia with matching funds from the federal government under the State Student Incentive Grant (SSIG) Program. Eligibility for CSAP is determined by a similar method used for campus-based Title IV programs.

enrollment plan - the major dependent variable of the study by which respondents were separated into discrete

categories according to whether they reported on the survey instrument that during the 1982-83 academic year they planned to (a) continue to attend the college or university they attended the previous year, (b) transfer to another college or university, or (c) stay out of college for a term or more.

Financial Aid Form - a document originally completed by the student aid applicant and his/her parents and submitted to the College Scholarship Service in Princeton, New Jersey for analysis of income and assets and calculation of need according to the cost of the college listed as first choice. The results of the analysis were transmitted to the institutions listed by the student aid applicant and, where indicated by Virginia residents, to the State Council of Higher Education for analysis of eligibility for the state grant programs, CSAP and the Tuition Assistance Grant (TAG).

financial aid characteristics - independent variables which primarily include (a) predominant type of financial assistance received in 1981-82 and 1982-83; (b) total amount of financial assistance received in 1981-82 and 1982-83; (c) total amount of grant and scholarship aid received in 1981-82 and 1982-83; (d) total amount of aid received through loans in 1981-82 and 1982-83; and (e) total amount of aid received through work in 1981-82 and 1982-83.

individual characteristics - selected characteristics which have been determined to influence the relationship

between financial aid and enrollment plans. For purposes of this research, these were: race, sex, family income, grade level, and a measure of academic performance.

institutional characteristics - selected characteristics which have been determined to influence the relationship between financial aid and enrollment plans. For purposes of this research, these were: institutional type (two-year, four-year, comprehensive), control (public or private), cost (low, medium, or high), size (enrollment under 4,000; 4,000-8,000; over 8,000) and selectivity (nonselective to most selective).

past aid recipients - a sample of students who were enrolled as freshmen, sophomores, or juniors in Virginia colleges or universities in 1981-82 and received disbursement(s) under the CSAP program during that same year.

predominant type of aid - the type of aid (grants, scholarships, work-study, or loans) which served as the largest source (in amount) of aid in 1981-82 and 1982-83.

total amount of aid - the total amount of financial assistance received from grants, scholarships, work-study, or loans as reported for 1981-82 by financial aid officers and for 1982-83 by respondents on the survey instrument.

#### Limitations of the Study

Several limitations to the study are noted:

1. The study was not designed for the purposes of

directly testing a theory. Instead, it was an exploratory study of conditions in a single state which was intended to be of immediate utility to state and institutional policy makers to consider in designing future financial aid programs and policies.

2. The study examined the aggregate or combined effects of several complex phenomena operating during the study years. The study examined the relationship of several variables without presuming to demonstrate a casual relationship.

3. Because individual states vary greatly in the amount and direction of their support of student aid and other factors which influence enrollments, the study was limited to a sample of aid recipients in a single state. The findings are generalizable to that population and may or may not be applicable to other aid recipients in other states.

4. It is recognized that many factors influence the decision to continue in college and/or transfer to another institution. With the exception of community college students, once students have completed at least one year of college, it would be expected that the "pull" to remain in that college would be powerful. This "pull" would be expected to be increasingly powerful for students the longer they attend an institution. Because of the tendency for most students to remain in the institution of first

enrollment, findings of the study may underestimate the influence of reductions in financial aid.

5. Data for types and amounts of financial aid received in 1982-83 and enrollment plans were collected from self-reports of students from the survey instrument. Past research has primarily used student self-reports to determine aid offers (Jackson, 1978; Tierney, 1980). In this study, the routine accuracy of such self-reports was bolstered by the fact that the data instrument was mailed at a time shortly after most aid applications received notification of campus-based financial aid awards and coincided with the time when most students were making the final decisions of whether and where to continue college.

#### Significance of the Study

The study was viewed to have potential value to policy makers at the state and institutional level by providing some assessment of what types of students and institutions in Virginia were most affected by the reduced appropriations for student assistance at the beginning of the 1982 academic year. At a pragmatic level, the study provided insight about whether a measurable impact on enrollment rates and patterns on upperclass students could be determined or if, as the President maintained, enrollment rates and patterns would not be affected because most students and their families have the financial resources to assume a greater responsibility for financing their education. At a more

abstract level, the study provided some confirmation of whether the relationship between financial aid and enrollment patterns substantiated by the research literature continued under the economic and social conditions operating in a single state in the fall of 1982.

The study was expected to have several useful implications for state educational policy makers. As the term "new federalism" implies, the state role in financial aid--in somewhat of an abeyance since the dramatic increases in federal expenditures for student aid since 1978--was expected to expand. The State Council of Higher Education in Virginia noted, "As the federal funds decrease, all of the families--low and middle income--are likely to look to the states to provide educational access and choice" (1981, p. 29). The study provided data from a statewide sample of students with past aid histories which could have been used to assess the impact of current reductions on enrollments and project the potential impact on enrollments in Virginia of further reductions in financial assistance provided by the federal government. This information was expected to be of particular interest to the State since financial aid has historically been used at the state level to redistribute enrollments by narrowing the tuition gap (Breneman & Finn, 1978). Decreases in enrollments in private institutions and increases in enrollments in public institutions mean an added financial burden to the state because of the added

expense of increased indirect tuition subsidies to students in public institutions (Paley, 1982). Finally, such a study was designed to aid policy makers in the State to determine where to target future aid to equalize or compensate for losses in federal student aid appropriations in order to most effectively provide educational access and choice to Virginia's college student population.

At the institutional level, it was assumed that such a study would help local leaders and planners to assess how their institution might be affected by reductions in federal appropriations in relation to other institutions in the state. Such information would provide a basis for institutions to anticipate future trends and to plan how to effectively allocate resources in order to continue to attract the numbers and types of students that best fit their established mission.

The remainder of this document will consider the issue of the role of financial assistance in the enrollment plans of college students within the context of a broader body of research and policy issues which is not so inextricably tied to the political and economic situation in existence at a single time. Previous research exploring the relationship between direct student assistance and student's enrollment in and choice of college will be reviewed in Chapter 2. Details of the research design and the data collection and analysis procedures will be explained in Chapter 3. The

findings of the analyses of the major research questions will be summarized in Chapter 4 and Chapter 5 will be used to summarize the analysis of the findings and the conclusions and recommendations from the study.



## CHAPTER II

### A REVIEW OF RELATED LITERATURE

#### Introduction

Although financial assistance to college students has a history which dates back to the very beginnings of American higher education, empirical research on its effects on students and the colleges they attend has only recently begun to emerge (Davis, 1977). The focus of such literature has shifted as the primary purposes of financial aid have evolved from rewarding the academically gifted to providing equal opportunity or access and, most recently, to influencing college enrollments. In the face of a decline in the traditional college-aged population, financial aid researchers and policy makers at the institutional level have used research as a means to help develop effective recruiting and marketing strategies. State officials, on the other hand, are often concerned with aid as a means to support the viability of the private sector and as a way to reduce the outmigration of their most talented high school graduates. The primary thrust of the literature, however, has continued to examine whether programs of direct financial assistance to college students have actually achieved the purposes of providing access and choice to postsecondary options and whether such programs are the most effective means to promote these goals (Fife, 1975).

The relationship between financial assistance and

college enrollment rates and patterns has been investigated in a wide body of research which has considered the impact of state and federal appropriation for student assistance both on the decision to enroll in college and the selection of college or university (Davis & Van Dusen, 1978). Nevertheless, empirical research in the area is neither extensive nor conclusive in reaching a judgment about the role of financial aid in helping to provide access and choice (Davis & Van Dusen, 1978). Recent authors have cited the paucity of adequate research in the area (Bragg, 1980; Davis & Van Dusen, 1978; Jackson & Weathersby, 1975; Tierney, 1980). Although touched by several tangential bodies of significant research, such as that relating aid and retention (Astin, 1975), only a few dozen immediately relevant, major research studies have appeared in the widely recognized research journals. Much of the research in the area appears as specialized studies commissioned by individual states or private agencies, such as the National Institute of Independent Colleges and Universities, or by private corporations such as the College Scholarship Service (CSS) and American College Testing Service (ACT) (Bragg, 1980). The topic is a frequently cited topic on the agendas of professional conferences (Davis & Van Dusen, 1978). Further research is still needed to address the fundamental questions about the relationship between financial aid and college enrollment rates and patterns.

This chapter will be used to review relevant research and the major variables associated with both the decision to attend college and the selection of which college to attend. The chapter closes with a summary of the major findings from such research which were used to shape the research questions and the anticipated findings of the study.

### Major Conceptual Framework of the Research

Research measuring the impacts of direct student assistance on the enrollment decision generally considers this phenomena within two major conceptual frameworks: the sociological and the economic perspective (Bragg, 1980; Jackson, 1978; Leslie & Fife, 1974). The sociological perspective is based on the assumption that most factors that significantly influence the decision to attend college are related to socioeconomic variables and individual characteristics such as ability, educational background, and measures of the family's social status such as family income and education. The decision to attend college is primarily seen in the sociological perspective as motivated by the desire to achieve social status or prestige (Jackson, 1978; Leslie, Johnson, & Carlson, 1977).

The economic perspective, on the other hand, views the decision to attend college as an investment decision based on an objective assessment of its economic benefits against the magnitude of its cost through lost income and out-of-pocket expenditures (Jackson & Weathersby, 1975). Such

studies lead to the conclusions that demand, or proportion of high school graduates that enroll in postsecondary education, is strongly associated with the major variables of (a) total cost or tuition, (b) family income, and (c) ability (Jackson & Weathersby, 1975). Studies which consider financial aid as a major research variable are most frequently grounded in the economic perspective.

Both the sociological and economic conceptualization of the college decision process recognize that students' decisions interact with selected institutional characteristics, such as cost and control, and individual characteristics, such as ability and family income (Jackson, 1978). The sociological perspective is widely researched and has consistently demonstrated a strong correlation between certain socioeconomic variables and the decision to attend college (Bragg, 1980; Jackson, 1978; Kehoe, 1981). Certain elements of the economic perspective, such as the relationship between cost and enrollments, have also been relatively well researched (Jackson & Weathersby, 1975). However, only a narrow body of research within either conceptual framework actually considered financial aid variables as a major unit of analysis. This review will concentrate on the specialized segment of literature within these constellations of research which have considered financial aid variables as major independent variables in investigations of the factors involved in the decision to

enroll in college and the selection of college to attend.

In order to review the role of financial aid in the college decision process, this chapter will be organized in two major parts which will examine (a) the relationship between financial aid and the decision to enroll in college and (b) the relationship between financial aid and college choice. The first part of the chapter will consider primarily the decision to attend college within the framework of demand theory and related research. Price or cost, income, and financial aid are reviewed as the major variables. The second section focuses primarily on the role of the major institutional variables of cost and selectivity or quality in the selection of which college to attend. The chapter closes with a summary of the major variables in both phases of the college decision process and a brief discussion of their implications for research and policy.

#### The Relationship Between Financial Aid and the Decision to Enroll

The theoretical framework summarized in the previous section has been used by many researchers to conceptualize decisions about college as a series of separate decisions or choices (Bragg, 1980; Chapman, 1979; Jackson, 1977; Tierney, 1980). Although there is some variation in the number of stages itemized, the college decision process is generally modelled as a sequence of at least three distinct stages or decisions. The first stage is the decision whether to

attend college; the second stage is the decision of which colleges to consider; and the final stage is the decision of which college to attend. Preselection that probably occurs early in the high school years is generally not recognized in this model in part because it is difficult to capture empirically. The first stage of the process, the decision whether or not to attend college, has been extensively researched within the two theoretical frameworks previously discussed (Bragg, 1980; Jackson, 1977). The middle phase is not well researched and is often blurred with the preselection process (Jackson, 1977). Choice of which college to attend, the last stage of this decision making model, is relatively well researched (Bragg, 1980; Jackson, 1977). The first stage of the decision process addresses the primary goal of access and the issues of whether aid effectively serves to change the behavior of a population of students who would not have otherwise enrolled. The first stage of the college decision model is the focus of this section of related literature.

Demand theory provides some insight into the relationship of economic factors, such as financial aid, and the first step of the model--the decision to enroll in postsecondary education. Jackson and Weathersby (1975) reviewed seven major studies on the relationship between price or cost and enrollment rates. They determined that all of the studies found a statistically significant,

negative relationship between cost and the probability of enrollment. They concluded that on the average the studies determined that a change of \$100 in price would induce an average change of 2.5 percent in enrollment (1975, p. 625). The major findings of this overview of the major research in demand theory were:

- Regardless of income, demand increases as cost decreases. More specifically, increases in tuition are negatively related to enrollment rates in postsecondary education.
- Students from low income families are more sensitive to cost or price than students from higher income families. Consequently, students from low income families are more sensitive to mechanisms, such as financial aid, which serve to lower cost.

Research within this framework has served to provide support for a strong relationship between family income, cost, and college attendance rates (Fife, 1975). Although few studies quantify the impact of financial aid variables, the generalizability of the results to financial aid is assumed logical since aid is viewed as either a direct mechanism to lower price or as a method of increasing the income available to finance college costs.

Leslie et al. (1977) and Anderson, Kreuger, and Mathieu (1973) tested the role of economic factors in the decision to attend college through student self-reports. Leslie et

al. (1977) used a semi-structured interview to ask a sample of 1,047 graduating high school seniors from Pennsylvania and New York to explain why they were going to college. The authors concluded that most responses were motivated by economic concerns and that most students were weighing the advantages of such outcomes as better paying jobs against such costs as those of unearned income from employment. Over 68 percent of the reasons volunteered by the high school seniors were considered to fall in the category of being related to gaining better employment and/or a higher income (Leslie et al., 1977). Similarly, the Anderson et al. (1973) study of "no-shows" who were accepted for admission but who did not enroll at a single college in the midwest revealed that economic reasons were most frequently cited as the reason for not enrolling. Over 19 percent of the students did not enroll in any postsecondary option (Anderson et al., 1973). The authors of both of these studies concluded that such findings support the use of the economic perspective as a conceptual base for viewing the college attendance decision.

Several researchers have tested the relationship of financial aid and actual matriculation rates within the economic framework. Jackson (1977, 1978) used data from the National Longitudinal Study (NLS) of the high school class of 1972 to assess the dependence of high school graduates' decisions whether to attend college on financial aid awards.



He concluded that 68.1 percent of a student's decision to attend college could be predicted from individual variables, such as measures of socioeconomic background without consideration of financial aid. A significant difference, however, was found among financial aid applicants between the matriculation rate of recipients and nonrecipients. When other variables were controlled, Jackson determined that, "the effect of receiving some aid from each choice is to raise the likelihood of attendance by 8.5 percentage points" (1978, p. 564). The amount of the aid awarded, however, was not found to be significantly related to the decision to attend.

Several other authors have also conducted research on the matriculation rates of aid applicants. Fields and LeMay (1973) sampled 2,801 prospective freshmen who applied for financial aid at Oregon State University across two study years to determine the influence of financial aid awards on students' enrollment decisions. When compiling the matriculation rates of recipients and nonrecipients, the authors found that in 1969-70, 45 percent of the nonrecipients matriculated compared to 90 percent of the recipients and 68 percent of the nonapplicants. Similar percentages were found in 1970-71. The author's analysis revealed that the matriculation rate of the nonrecipient group was significantly lower than for either the nonapplicant or recipient group. Neither the sex of the

recipient nor the type or amount of aid served to discriminate between the recipients who matriculated and those who did not (Fields & LeMay, 1973).

Two studies have examined the relationship of aid to access using a sample of students who were already enrolled in college. Leslie and Fife (1974) examined the relationship between aid and enrollment in a study of first-time recipients of state grants in New York, New Jersey, and California. Rather than analyzing actual enrollment rates, Leslie and Fife (1974) operationalized demand for higher education or access to equal the percentage of enrollees who stated they would not have been able to attend college without the state grant. Between 46 and 49 percent of those receiving aid from these programs indicated that they would not have been able to enroll without the aid they received. Substantially lower percentage responses to this statement were found among states with small awards or in states where eligibility was determined on merit rather than need. Contrary to Jackson (1977, 1978) or Fields and LeMay (1973), these researchers concluded that among recipients there was a significant correlation between amount of aid and demand for higher education. The correlation was recognized to be weak, however.

Fenske and Boyd (1971) conducted a similar study of state aid recipients in Illinois using a longitudinal research design. These researchers found that between 1967

and 1973 there was a dramatic increase in the number of aid recipients who indicated that they would have been unable to attend college without financial assistance. Among need-based grant recipients the percentage rose from 24 percent in 1967 to 38.1 percent in 1971. This is presumed to be related to increases in the number of low income students enrolled in higher education. These authors cited these findings as evidence that the goal of access was being achieved through financial assistance programs. This study and the one cited by Leslie and Fife (1974) are among the few studies that have examined samples of aid recipients who have actually matriculated.

#### Income, Aid, and Enrollment

In addition to research that will be reviewed later in the discussion of the relationship between financial aid and college choice, several studies have examined the relationship between aid, the individual variable of family income, and the enrollment decision.

Using data from NLS, Jackson (1977, 1978) conducted separate multiple regressions to predict college attendance among subgroups from low, medium, and high socioeconomic backgrounds. Statistical analysis revealed that although low SES students were less likely to attend college than their middle and high SES counterparts, they responded far more favorably or strongly to offers of aid (Jackson, 1977, 1978). Low SES students who were offered aid were 15.3

percentage points more likely to attend college, while their middle SES equivalent was 6.8 percentage points and the high SES students were 2.9 percentage points more likely to attend. With respect to these findings in relation to the goal of achieving access, Jackson maintained: "This suggests that broadly based aid policies will in fact help equalize college attendance rates, if not to an extraordinary extent" (1978, p. 567). Jackson (1978) appears to have used these findings to conclude that financial aid successfully serves to change the inclinations of certain student populations to attend college.

Several authors have examined the relationship between family income, financial aid, and college enrollment through student self-reports of the weight of financial aid in their college decisions. Fife and Leslie (1976) operationalized demand or access to equal the proportion of students who reported that state aid resulted in their being able to attend college. They found variation among the recipients of need-based, state awards who responded in this manner by family income. Students from the lowest family income category (less than \$6,000) were significantly more likely to say that they could not attend college without aid. Among states with need-based awards, more than 62 percent of the students from the lowest income category, compared to an average 35.9 percent of students from the highest income category, indicated that they would be unable to attend

college without the state aid they received. Similarly, Leslie et al. (1977) found that the percentage of all students in their sample who reported they would be attending only because of student aid varied by income. This response was indicated by over 43 percent of the students from low income families, 27.7 percent of the students from middle income families, and 15 percent of the students from upper income families (Leslie et al., 1977).

Jackson (1977, 1978), Fife and Leslie (1976), and Leslie et al., (1977) all discovered a significant relationship between financial aid and enrollment. As family income increased, financial aid appeared less influential in increasing demand or the likelihood of enrolling in a postsecondary option. The percentage of the respondents found to indicate that they could not attend college without aid varied across the studies reviewed, but different types of aid and different income categories were used. It is also noteworthy that the percentages were greater in the studies that used self-reported indications of the relationship between aid and enrollments than in studies, such as that conducted by Jackson (1977, 1978), that investigated the relationship empirically. Some researchers have suggested that students tend to overstate the importance of financial resources in the decision not to attend college, as well the decision to withdraw from college (Berdee & Hood, 1966).

Summary of the Literature on Financial  
Aid and the Decision to Enroll

Many factors must be considered in order to thoroughly investigate the demand for higher education. Demand theorists generally weigh a complex range of variables including measures of geographic accessibility, cost, average rate of unemployment, local wages, and the number of high school districts to empirically predict the proportion of high school graduates that continue to some form of postsecondary education (Radner & Miller, 1970). Fluctuations in enrollment have been associated with variations in military enlistment rates, disposable family income and tuition, as well as with federal appropriations for direct student assistance programs (Hearn, 1980; The Carnegie Council, 1979). Financial aid can be considered as only one element of an intricate relationship of variables that have served to gradually increase the overall proportion of high school graduates attending colleges as well as the college participation rate of minorities and students from lower socioeconomic backgrounds (The Carnegie Council, 1979).

The literature in demand theory suggests that college enrollment rates are significantly influenced by cost and financial resources, especially for students from lower income families (Jackson & Weathersby, 1975). This relationship is supported through research using student self-reports--such as that conducted by Leslie et al.

(1977)--as well as through designs that empirically weighed different variables to predict actual enrollment rates such as that conducted by Jackson (1977, 1978). Financial assistance is assumed to be a critical variable in the process because it serves to decrease cost and/or increase resources or the income available to finance it. Fluctuations in financial aid, therefore, serve to affect price and, ultimately, would be expected within this theoretical perspective to affect the demand for higher education, particularly for low income students.

As has been previously stated, one of the primary goals of financial aid has been to remove the economic barriers that prohibit students from families with limited resources from attending some form of postsecondary education. At best, the literature reviewed in this portion of the chapter supports the contention that financial aid influences the decision of a certain portion of the population that apply for it. Fife (1975) noted:

For the student that already is motivated to pursue some form of postsecondary education, the research clearly shows that financial assistance is an important factor in the ability to achieve their goals. (p. 31)

This conclusion, however, cannot be generalized to the population of high school graduates who may preselect not to apply for admission to any college or university. The role of economic barriers and financial aid has not been investigated for this population in the research on

financial aid and access and choice (Fife, 1975; Jackson, 1977, 1978). Fife (1975) stated that the studies "... do not measure the dimension of impact of financial aid on students who had not committed themselves or who originally did not aspire to further education" (p. 30). Jackson (1977, 1978) argued that this area is relatively unresearched in the financial aid literature because it involves primarily factors of taste and preference which are difficult to model empirically. Other authors contend that the decision whether to attend some form of postsecondary education is made early in the high school years and that financial aid may play a greater role in the choice process than in the actual decision to attend college. Hearn (1980) stated:

In the past, research has uncovered minimal student sensitivity to aid factors in deciding whether to enroll in college, but some marginally significant sensitivity to both tuition and aid factors in deciding which of two or more institutions to attend. (p. 10)

The relationship between direct financial assistance and the selection of which college to attend is reviewed in the second section of this chapter.

#### The Relationship Between Financial Aid and College Choice

The decisions of which colleges to consider and, ultimately, to enroll are stages of the college choice process which are generally separated from the decision to



attend college. The second stage of how students develop a choice set is relatively unresearched, while the decision of which college to attend has a more substantial research base (Bragg, 1980; Chapman, 1979; Jackson, 1978; Kehoe, 1981; Munday, 1976; Spies, 1978; Tierney, 1980).

While studies framed within the context of demand theory focus on enrollment of eligible high school graduates without examining the effects of actual colleges the student may consider, choice theory conceptualizes the choice process as a probabilistic function of the attributes of both the student and the colleges considered (Jackson & Weathersby, 1975). The generic model of the college choice process can be summarized as follows:

$$P_{ji} = (X_i, Y_i, d_i)$$

Where  $P_{ij}$  is the probability that student  $i$  will select college  $j$ ,  $X_i$  is a measure of some of the characteristics of the colleges in the student's choice set, and  $Y_i$  is other attributes, such as financial aid awarded, by each college in the choice set, and  $d_i$  is socioeconomic and demographic information related to the student (Bragg, 1980; Chapman, 1979; Jackson, 1978). Such studies are generally designed to predict the probability that a given student will select a college, given a variety of institutional and individual characteristics (Jackson & Weathersby, 1975). Such an equation, of course, is a means to predict aggregate behavior rather than the action of a single individual.

The literature on college choice considers several major institutional and individual variables. The major institutional variables generally investigated in the choice literature are: (a) cost, (b) selectivity or quality, and to a lesser extent, (c) size, and (d) control (Chapman, 1979; Jackson, 1977, 1978; Radner & Miller, 1970). Financial aid is considered an element of cost in this listing. The major individual characteristics considered in the choice literature are: (a) family income and/or other socioeconomic factors and (b) academic achievement or ability (Bragg, 1980; Jackson, 1977, 1978; Radner & Miller, 1970). Although many of the variables are in reality interdependent, the research in college choice and financial aid will be organized along these two major lines. As with the review of the literature related to the decision to attend college, only research which has incorporated financial aid as a major variable in the college choice decision will be reviewed.

#### Cost or Price

The estimated cost of each college choice is probably one of the most frequently used independent variables in studies of the college choice process. Some researchers consider this as a gross measure of total expected educational expenses (Kehoe, 1981), while others only consider tuition (Tierney, 1980), or net cost resulting when aid awarded is subtracted from total cost (Chapman, 1979).

As with demand studies cited earlier which examine cost and enrollment rates, studies of the college choice process generally find a significant and strong relationship between cost and college choice, particularly for students from low and middle income families.

Cost is treated as a major variable in several studies considering financial aid including those conducted by Bragg (1980), Kehoe (1981), and Tierney, (1980). Both Bragg (1980) and Kehoe (1981) examined college choice in terms of a dichotomous choice between an in-state or an out-of-state institution. Kehoe (1981) surveyed a geographically stratified sample of 26,903 high school seniors in Pennsylvania in order to collect data on such economic variables as parental income, financial resources, and cost. The students planning to attend college were divided into four choice sets, including breakdowns by first and second choice and whether the student expected to attend an in-state or out-of-state institution. A discriminant analysis was used to determine what institutional variables, including both cost and financial aid, were significantly associated with the in-state versus out-of-state choice pattern. Cost was found to have a greater discriminant weight than financial aid in the prediction of enrollment pattern and was found to be negatively associated with enrollment in both in-state and out-of-state institutions. Cost appeared most influential among members of groups whose

first choice and expected choice differed. Financial aid variables, including self-reports of grants and loans at both the first and expected choice college, appeared to play a greater role in in-state than out-of-state choice. Findings cited later in this chapter about the influence of ability and socioeconomic variables and the tendency to migrate out-of-state may help to illuminate this last finding.

Bragg (1980) also examined in-state and out-of-state college choice patterns and their relationship to financial aid. Financial aid variables were operationalized in this study as a difference score reflecting the difference between the amount of aid offered at an in-state and an out-of-state institution. A large, national sample of freshmen was used who reported on an American Council of Education Survey in the fall of 1975 that they had applied and been accepted by at least one in-state and one out-of-state postsecondary institution. These scores were used for a comprehensive range of aid such as grants (Pell Grant and the State Undergraduate Scholarship), loans (National Direct Student Loan and Guaranteed Student Loan), and college work-study. Bragg (1980) found that differences in the amount of grants and loans were positively and significantly related to the decision to attend an out-of-state institution for students across all nine socioeconomic and ability groups. Students from lower socioeconomic groups were found to be

more sensitive to the effects of differences in financial aid awards than were students from higher socioeconomic backgrounds (Bragg, 1980). Bragg (1980) estimated that every \$100 in financial aid increased the probability of outmigration by 1 to 2 percent, depending on the type of aid. The relationship, however, was not determined to be very strong and may simply be explained by the fact that the out-of-state schools were more costly than the average in-state institution and, thus, more likely to offer a greater amount of financial assistance. Bragg concluded that cost was a significant factor in the selection of an in-state or out-of-state school and that, "financial aid, because it helps lower costs, plays a minor, but significant role in the process" (1980, p. 142).

Tierney (1980) is a third author to assess the relationship of financial aid and cost in the college choice process. Although researching choice patterns between private and public institutions, the design of Tierney's study is quite similar to Bragg's (1980). Like Bragg (1980), Tierney (1980) calculated difference scores for financial aid and cost variables which reflected some measure of the differences between private and public institutions. Tierney (1980) examined cost in terms of tuition, while Bragg (1980) used an index of cost that included tuition and room and board. Tierney (1980) found that most of the aid variables and tuition to be

significantly and positively associated with choice across all income groups. Aid variables were found to be more strongly associated with choice than cost in all groups, with the exception of upper income, non-white students (Tierney, 1980). No significant variation was found between the different types of aid in predicting college choice. Recognizing that private institutions offer on the average substantially more financial aid than do public institutions, Tierney (1980) concluded that financial aid and college choice are related. Tierney noted, "increases in financial aid offered by private institutions relative to public institutions will increase the probability that a student will matriculate at a private institution" (1980, p. 536). In probably one of the most positive statements uncovered in the literature about the role of financial aid in influencing enrollments, Tierney stated:

The analysis presented above indicate that financial assistance is an efficacious mechanism for increasing competition between public and private institutions. (1980, p. 541)

Jackson (1977) and Leslie and Fife (1974) also concluded that aid favored a redistribution of student to private, non-two-year colleges. Fife (1975) found that aid recipients attending private insititutions were significantly more likely to say that they would not have been able to attend college without aid than recipients enrolled in public institutions.

In addition to several other major independent, institutional variables, Chapman (1979) also considered the role of price in the college choice process. Chapman (1979) surveyed all students accepted for admission to a single, selective, private institution across the study years (1973 and 1974) to determine the number of colleges applied to and the amount and type of aid offered by the colleges where the students had been accepted. Unlike any other study uncovered in the literature, Chapman (1979) uniquely operationalized cost or price to include tuition, room and board, and other expenses less total aid offered by each institution in the choice set. Cost, therefore, is operationalized as a net, "out-of-pocket" figure. Two measures of aid were used: the sum of grant or gift aid and the total aid offered by each institution listed in the final choice set.

Chapman (1979) conducted an analysis of college choice by both income and by several academic areas. The cost factor was not significant for any of the upper income categories but was significantly related to the decision to enroll for low and middle income students across all three academic areas. Grants were significantly related with the decision to enroll for low and middle income students in Engineering Science and Liberal Arts, but not for similar students enrolled in the Fine Arts curricula. This is the only study encountered in the literature that considered

academic major as a variable that may interact with financial aid on enrollment patterns. No justification was provided, however, to explain its inclusion. Chapman (1979) concluded that "out-of-pocket" cost and financial aid are important factors in college choice decision making. The amount and type of financial aid was also found to be significantly related with college choice. Chapman noted:

This is perhaps the single most important result from the survey - for students receiving financial aid, the kind and amount of financial aid does have an important impact on their college choice behavior. (1979, p. 53)

Although this later finding is not consistent with some of the previously cited research (Tierney, 1980), it may be explained by the fact that Chapman (1979) was referring to recipients of financial aid while many of the other researchers considered applicants and nonapplicants, as well as recipients and nonrecipients. Leslie and Fife (1975) argued that these groups are inherently not comparable.

Several sources have concluded that cost does not play a significant role in the college choice process (Jackson 1977; Munday, 1976; Spies, 1978). Only 17 percent of the first-time students enrolled in higher education in the fall of 1980 ascertained that low tuition was a very important reason in their selection of a college (Digest of Education Statistics, 1981). Jackson (1977) examined the characteristics of the colleges students applied to and found that the majority of applicants (59%) in a NLS



subsample only applied to one college. Students who applied to more than one college tended to select colleges with similar characteristics in terms of curriculum, reputation, selectivity, and price. Although these colleges tended to vary more in cost than in quality, total cost was not found to have a consistent effect on whether students attend college or the choice of which college they actually attended (Jackson, 1977). Financial aid had the greatest impact on students who had been admitted to more than one college. The college offering aid was 20 percentage points more likely to be selected than those offering no aid. Jackson (1977) concluded that aid may be more influential in the preselection process than in the actual selection of college, especially since so many students only apply to one college.

Munday (1976) reached very similar conclusions to Jackson's (1977) in a study of a large sample of students who were randomly selected from ACT rosters prepared for 1,200 colleges and universities in the Midwest, South, and West. The college choice of financial aid applicants and nonapplicants were analyzed to determine if there was a significant statistical relationship in the college choice decision between family income and cost and between family income, educational development, and college choice. Munday (1976) found only a weak correlation between college choice, family income, and cost of college attended but a moderate

correlation to ability measures. College cost had the greatest impact on college choice when looking at students from the extremes of the income categories. Most students, however, were found to attend low cost institutions. Munday (1976) concluded that, unlike the overall student population, financial aid applicants tended to apply and enroll at institutions whose average family income and ability levels differed from their own. Similar findings were uncovered by Fife and Leslie (1976) who concluded that the goal of choice was being accomplished since financial aid applicants were represented in greater proportion than the overall population of similar income brackets in higher cost institutions.

#### Quality or Selectivity

Several authors have determined that for certain populations measures of quality or selectivity had a stronger relationship to college choice than did cost. Data from first-time students enrolled in institutions of higher education in the fall of 1980 reported, for instance, that more students cited academic reputation as being very important in selecting a college than any other reason (Digest of Education Statistics, 1980). Chapman (1979) found that college quality was more strongly associated than any other factor in the college choice of a sample of students who had applied for admission to a single, selective, private institution. He noted:

Across all academic areas and income groups, college quality is consistently a very important factor in the college choice process. (Chapman, 1979, p. 52)

College quality was found to be most strongly associated to the college choice of students from upper income families.

Chronister and Schwartz (1978) asked a stratified random sample of state aid recipients attending private colleges in Virginia to rank seven factors generally considered to influence the choice of college. Seventy-two percent of the sample ranked academic quality of the institution as the first or second most important criteria in their choice. Location of the college was considered the second most important criteria of college choice and availability of a specialized program was ranked as the third most important factor. Only 12 percent of the sample indicated that cost was their top ranked reason for attending college, as compared to 19 percent who indicated that financial aid offered by the college selected was their most important reason. Chronister and Schwartz's (1978) conclusions that financial issues were not the primary reasons the majority of his sample cited for selecting a college must be evaluated, however, in the light that the sample was representative of middle and upper income students attending higher cost private institutions. Although this sample consisted only of recipients of aid, eligibility for the aid was not based on need. The results cannot, therefore, be generalized to recipients of need-

based aid.

### Ability

In addition to institutional quality or selectivity, some of the literature suggests that ability interacts with the role of cost in the college choice process. As reviewed in earlier sections of the chapter, both Munday (1976) and Jackson (1977) concluded that, with the exception of financial aid applicants, students tended to apply and enroll at institutions where the average ability and family income levels were similar to their own. Astin (1965) has conducted much research in this area as well. Chapman (1979), however, found the difference between the mean SAT score for the student and the mean SAT score for entering freshmen at the institution to be negatively related only to the college choice of students enrolled in a single, technical curricula. This finding held true across all income levels. Spies (1978) analyzed the college choice patterns of highly able students with PSAT scores above 1100. For this narrow sample of high ability students, Spies (1978) found that the academic reputation was more influential in the college choice process than either cost of the college or family income. Spies argued:

For high ability students, the ability of the prospective applicant and the academic reputation of the institution are much more important in the choice of a college than the financial consideration of price and family income. (1978, p. 8)

Similarly, other literature has suggested that financial considerations, such as cost and financial aid, have served primarily to influence the college choice of students from low to middle income families who are not exceptionally able. The brightest students appear to attend the most selective institutions regardless of cost or family income, while those from upper income families also appear statistically immune from the influence of cost (Carnegie Council, 1979).

#### Summary of Findings About College Choice

The variables of cost, quality, family income, and ability are institutional and individual characteristics that appear frequently in the literature examining the relationship between direct student assistance programs and the enrollment rates and patterns of eligible high school graduates. Studies which have examined the relationship between cost and enrollment are cited most frequently in the literature supporting a connection between financial aid and enrollment. Cost is operationalized in these studies in a variety of ways from a simple measure reflecting only tuition to more complex measures of direct and indirect expenses, such as room, board, and travel for students living away from campus. Although most researchers weigh the value of financial aid as a discrete value, Chapman (1979) looked at it only as it was subtracted from cost to create a net cost estimate for attendance for each student.

Both cost and financial aid variables are consistently found to be associated with college choice, particularly for students whose families are in the low to middle income range (Bragg, 1980; Chapman, 1979; Kehoe, 1981; Tierney, 1980). Several researchers, however, have found no significant association between cost and college choice (Jackson, 1977, 1978; Munday, 1976).

The variables of income and ability appear to interact with the role of cost and college choice. Depending on the sample and measure of cost, some authors found cost to be a significant factor in the college choice of students from all income categories (Tierney, 1980), while it is generally concluded that cost is only a significant factor in the college choice of students from lower to middle income families who are not exceptionally gifted. Cost does not appear to be a significant factor in the college choice of highly gifted students either (Spies, 1978). Consequently, financial aid would not be assumed to be significantly associated with the college decisions of academically superior students, at least not the type of aid where eligibility is determined based on criteria of financial need versus merit.

#### Other Variables Associated With College Choice

Several other institutional variables are cited in the literature as being significantly related to financial aid in the choice process. These primarily include

consideration of location and control (private or public) of the institutions in the choice set. Many other measures of institutional characteristics, such as affluence and "masculinity" are reviewed extensively in other bodies of literature relating to college selection but are not considered in the literature which evaluates the role of financial aid in this process.

Location is generally assumed to be a major factor in college selection. The distance of the institution from the student's home is a factor in estimating such elements of cost as the calculation of in-state or out-of-state tuition fees as well as expenses for travel. Several demand studies reviewed earlier in this chapter used typical application sets based on location of the college from the student's home to simulate college choice rather than using the colleges individual students actually considered for application. Because of its assumed relation to cost, location is generally considered to be related to choice and, consequently, financial aid. McPherson noted:

Various studies have established that the cost saving involved in attending a local instead of a distant institution - perhaps \$800 a year or more - have a significant effect on the decision whether and where to attend college. (1978, p. 156)

The influence of location on college choice, however, is not solely a cost issue as, for example, students from selected states with few postsecondary options have little choice but to travel considerable distances to attend college.

Several authors, including Bragg (1980) and Chapman (1979), have argued that location is not statistically related to college choice, particularly for certain populations. Bragg (1980) used a difference score to reflect the actual mileage difference between the in-state and out-of-state colleges considered by students. Although obviously dealing with a sample of students whose college choices were quite some distance from each other, distance of college from the student's home was not found to weigh significantly in the prediction of choice across eight of nine income and ability groups. It was most strongly related to the choice of students at the opposite extreme of each of these dimensions. Chapman (1979) also concluded that "distance seems irrelevant to the college choice process" (p. 54). Chapman (1979) argued that distance may play a greater role in the decision of to which college to apply than in the choice of which college to attend. Ability may counteract the role of distance, as it does the more inclusive factor of cost, for highly able students who tend to travel out-of-state to college at a greater rate than their less able but equally affluent counterparts (Bragg, 1980).

Size and institutional control are two additional institutional variables which are frequently used as independent variables in studies of the effects of college cost and financial aid on enrollment patterns. Chapman



(1979), Bragg (1980), and Leslie and Fife (1974) have used size as a major institutional variable. Chapman (1979) found size significantly and positively related to the college choice of students from all income and academic disciplines, with the exception of upper income students enrolled in Fine Arts and low to middle income students enrolled in a Liberal Arts curriculum. Bragg (1980) found size significantly related to the in-state and out-of-state choice of all but low ability students from the low and middle socioeconomic groups identified in the study. Leslie and Fife (1974) found that state grant and scholarship awards appeared to influence aid recipients enrolled in smaller institutions with undergraduate enrollments of less than 2,500 students. Mid-sized institutions, however, were projected to experience the potential for the greatest aid-related gains or losses, depending on the funding levels (Leslie & Fife, 1974). The role of size of the institution, however, appears to be confounded in many studies of the relationship between financial aid and size because the most expensive institutions are generally small institutions under private control, while the largest institutions with the greatest concentration of enrollments tend to have lower costs and be under public control. High cost institutions offer, on the average, a greater amount of both public need-based aid and private assistance.

Several studies have examined the relationship between

aid and enrollment in a private or public college. As has been discussed in earlier sections of this review, private institutions award greater average amounts and greater total amounts of financial aid than do public postsecondary institutions (The Carnegie Council, 1979; Jackson, 1977; Tierney, 1980). Many states, including Virginia, appropriate a greater share of its resources to students attending private institutions than students attending public institutions. Leslie and Fife (1974) and Fife and Leslie (1976) examined the proportion of aid recipients attending private and public institutions in relation to the overall college population and found that state aid recipients attended private institutions in greater proportion than the overall population. They noted:

This finding is particularly noteworthy because one might have anticipated that the lower income aid recipients would otherwise have been considered less likely to have opted for private institutions than would the total normal group of students. (Leslie & Fife, 1974, p. 662)

These authors also found that aid recipients were much less likely to enroll in two-year colleges than the overall college population (Leslie & Fife, 1974). This is a conclusion of other authors as well (The Carnegie Council, 1979) and is related, in part, to the relative low cost of two-year institutions and the high proportion of part-time students who are generally not eligible for most types of federal assistance. Fife and Leslie (1976) maintained that

the finding that a greater proportion of need-based aid recipients than students overall were found to be choosing more expensive, private, institutions supported an affirmative answer to the fundamental questions of whether financial aid has been instrumental in providing students from all income categories the opportunity of choice in selecting a college. It is possible that direct financial assistance through need-based awards has been more successful in fostering the goal of choice than the original goal of equal access or opportunity.

Summary of the Major Findings From the  
Literature on Financial Aid,  
Enrollment, and Choice

Only a small portion of the body of literature on the determinants of college enrollments and choice have been reviewed in this chapter. The review has been restricted to frequently cited literature that has considered financial aid as a major variable in two phases of the college decision process: the decision to enroll in a postsecondary option and the selection of which college to attend from those to which applications for admissions were submitted. Individual correlates of college attendance, such as the role of certain socioeconomic variables, have been left largely unreviewed except as they interact with such economic variables as direct financial assistance and cost.

The college decision process is modelled by several authors as a multi-step process where students (a) decide

whether or not to attend college, (b) develop a choice set of colleges they will apply to, and (c) select which college to attend. The major findings of the literature reviewed in this chapter about the relationship between financial factors and the first step of the process-- the decision to enroll--and the last step of the process--the selection of which college to attend--may be summarized as follows:

### Enrollment Rates or the Demand for Higher Education

#### Price or Cost

- Regardless of family income, as cost increases demand decreases. Conversely, increases in tuition are negatively associated with enrollment rates in postsecondary education (Jackson & Weathersby, 1975; Tierney, 1980).
- Students from low income families are more sensitive to cost or price and, consequently, most likely to be affected by increases in cost or tuition or decreases in financial aid (Chapman, 1979; Jackson, 1977, 1978; Jackson & Weathersby, 1975; Leslie et al., 1977; Tierney, 1980).

#### Financial Assistance

- Of the students who apply for financial aid, those who receive it are significantly more likely to enroll than those who do not receive it (Fenske & Boyd, 1971; Fields & LeMay, 1973; Fife & Leslie, 1976; Jackson, 1977, 1978; Leslie & Fife, 1974).

- Of students receiving financial aid, type of financial aid does not have a significant impact on their rate or pattern of enrollment (Chapman, 1979; Fields & LeMay, 1973).
- Findings about the relationship between the amount of financial aid and enrollment rates are inconsistent. Jackson (1977, 1978) and Fields and LeMay (1973) concluded that the amount of aid was not significantly related with enrollment, while Leslie and Fife (1974) found a significant but weak relationship between amount of aid and enrollment rate.
- Students from low income families are most likely to cite student aid as a critical factor in both their decision to attend and their choice of college (Jackson, 1977, 1978; Leslie et al., 1977).

#### College Choice

##### Price or Cost

- Cost or price is negatively associated with college choice. In other words, when other factors are held equal, students are less likely to select a higher cost than a lower cost institution (Bragg, 1980; Chapman, 1979; Kehoe, 1981; Tierney, 1980).
- The college choice of students from lower socioeconomic categories is more strongly influenced by cost or price factors than students from middle

and upper income categories (Bragg, 1980; Chapman, 1979).

- Cost is not a significant variable in the college choice of students of high ability (Munday, 1976; Spies, 1978).
- Cost is not a significant variable in the college choice of students from high income families (Munday, 1976; Spies, 1978).

#### Financial Assistance

- In part because it serves to lower cost, financial aid is significantly and positively associated with the college choice of those who apply for it (Bragg, 1980; Kehoe, 1981; Tierney, 1980).
- The type and amount of financial aid was found to be positively associated with college choice by some authors (Bragg, 1980; Chapman, 1979), but not by others (Tierney, 1980).
- Financial aid has the greatest impact on the college choice of students who have been admitted to more than one college (Jackson, 1977, 1978; Kehoe, 1981).

#### Selectivity or Quality

- The selectivity or perceived quality of an institution is a factor in the college choice decision of students from all income categories (Chapman, 1979; Tierney, 1980).
- College quality is consistently found to be most

strongly associated with the college choice of students from upper income families (Chapman, 1979; Munday, 1976; Spies, 1978; Tierney, 1980).

- For high ability students, the academic reputation of a college is a more significant factor than cost, financial aid, or family income (Spies, 1978).

#### Institutional Control, Type, and Size

- Financial aid affects enrollment patterns by encouraging a redistribution of students to private, non-two-year, and smaller institutions (Fenske & Boyd, 1971; Leslie & Fife, 1974; Tierney, 1980).

Over the last decade, the purpose of federal and state-supported appropriations for direct financial assistance have evolved to include exerting some influence over enrollment rates and patterns, particularly between the private and public sector. The relationship between financial assistance and college enrollments is substantiated by a body of literature that has examined its role both in the decision to attend college and the choice of which college to attend. Financial aid appears to be a critical variable in the college choice process of those who apply for it because it functions to lower costs. Reductions in need-based financial assistance serve to increase price for a certain population of students who have demonstrated that they do not have the family resources to attend postsecondary education. Reduction in federal

appropriations for need-based assistance would be expected, therefore, to be associated with a decrease in demand, particularly for the most needy students.

The final two sections of this chapter will (a) consider methodological issues in the literature that has been reviewed which influence the conclusions that may be drawn from it and (b) briefly allude to the major policy issues which are considered in such literature.

#### Methodological Issues in the Research

As with research in other areas with wide policy implications, the research on the role of financial aid and the college choice decision has methodological concerns which affect both the conclusions that may be drawn and the comparability of the findings across multiple studies. Munday (1976) reported three major areas of concerns with the literature: (a) lack of valid information about financial aid, (b) sampling, and (c) definitions of such variables as family income and cost.

The lack of complete information about financial aid awards is an ironic, but persistent concern in the literature reviewed. Most of the frequently cited demand studies, such as that of Radner and Miller (1970), have considered the relationship between college enrollment and cost without statistical evaluation of the role of financial aid as a means of reducing these costs (Jackson & Weathersby, 1975). Most studies of the college choice



process lack data on the financial aid offers made by all institutions in the choice set (Chapman, 1979). When available, such data were derived almost exclusively from self-reports from students (Bragg, 1980; Jackson, 1978; Kehoe, 1981; Tierney, 1980). In several studies, such as those conducted by Bragg (1980) and Tierney (1980), students were asked to recall multiple aid offers that may have been made as much as six months before. Jackson (1977) found a low correlation between the amount and type of aid reported in different sections of the same research instrument. In addition, Leslie and Fife (1974) questioned the validity of such self-reports by arguing that students may perceive that their responses will influence later offers of aid. None of the studies reviewed verified financial aid awards reported by students.

As is common in other research literature, lack of valid and complete information on family income is another methodological problem. Munday (1976), for instance, found little correlation between student reports of family income and other indices of socioeconomic status, such as parental education. In addition, Munday (1976) found that as many as 30 percent of his sample chose to leave the item about family income unanswered. Nearly one-half of the sample of graduating seniors from the Leslie et al. (1977) study did not provide specific income data. Spies (1978) circumvented the common problem of collecting valid data about family

income by utilizing figures reported by parents when completing financial aid forms that were submitted to the American College Testing Program (ACT).

Sampling is a second major methodological concern in the research literature in financial aid. Several of the studies cited in the review, such as those conducted by Bragg (1980) and Tierney (1980), defined their samples in such a way that only a very small portion of the overall college-going population was eligible for consideration. Bragg (1980), for instance, narrowed his sample to one-fifth of all first-time students by analyzing only those who had been accepted to at least one in-state and one out-of-state college. Similarly, Tierney (1980) found that less than 20 percent of a sample 115,325 students had applied and had been admitted to at least one private and one public institution. Such narrowly defined samples obviously influence the generalizability of the conclusions, particularly to the portion of the college population that has not applied for need-based financial assistance.

A second sampling caution found in the financial aid research was that many studies, particularly those comparing aid recipients, have samples which were over-representative of students from lower income families (Fife & Leslie, 1976; Munday, 1976). This determination is not surprising when it is considered in the light that need-based aid recipients are primarily from low income categories (The Carnegie

Council, 1979). Bragg (1980) and Spies (1978), on the other hand, found that their samples were skewed to students from upper income categories. Although the over-representation of students from lower income families in samples of aid recipients is, if anything, supportive of the validity of a study of recipients of need-based aid, the results may not be useful in predicting the impact of financial aid on the enrollment rates and patterns of the entire college student population (Weathersby, 1975). Financial aid recipients are significantly different from the overall population of college students and generally differ from the average characteristics of students at the colleges they attend (Munday, 1976).

The comparison of recipients and nonrecipients is a third common sampling problem in the literature which considers the relationship between financial aid and enrollments. Leslie and Fife (1974) challenged the validity of comparing data from recipients and nonrecipients of financial aid. They contended:

Nonrecipients, by definition, have been determined to lack need; that is, they should be able to attend college even without aid and are by definition not comparable to those who qualify for aid. (Leslie & Fife, 1974, p. 658)

Jackson (1977, 1978) and Tierney (1980) compared samples of recipients and nonrecipients, while Leslie and Fife (1974) compared recipients of need- and merit-based awards across several states even though criteria for eligibility were not

at all uniform. Several studies used samples drawn consisting of both applicants and nonapplicants for financial aid (Munday, 1976)--groups which could be considered to be even less comparable than recipients and nonrecipients when considering such major criteria as cost and family income. Chapman (1979), for instance, assumed that all nonapplicants were from upper income categories. Such diverse sampling techniques, obviously, compound the difficulty of comparing results across several studies and may, in fact, lead to the underestimation of the impact of financial aid on the enrollment rates and patterns of recipients. Since eligibility for most state and federal assistance is based on demonstrated financial need, the most valid sample for research on the impact of such appropriations on enrollment rates and patterns would assume to be drawn from recipients of a single type of aid who satisfied similar eligibility requirements.

The third methodological issue cited about the research on the impact of financial aid on enrollments is in the definition of family income and educational cost. Although they are major variables in the research on the impact of financial aid, there is little consistency in their definition or how they are operationalized for analysis. As has been discussed, the validity of family income figures is a troublesome methodological issue, particularly when reported by students. Similarly, educational expenses are

also operationalized in a variety of ways in the research from a simple measure of tuition only, to gross measures which include other expenses such as room and board, and, less frequently, to a net estimate of cost less aid. As with family income figures, there is little validity in student estimates of college costs, especially since the vast majority of students do not pay them. Such variations in the definitions of cost and family income may serve, in part, to help explain variations in the strength of the findings about the impact of financial aid and enrollment rates and patterns. For research purposes, it would seem most defensible to use documented sources for parental income and, secondly, to define cost as the total, "out-of-pocket" cost at the institution attended.

### Conclusions

From its original purpose of rewarding academic performance, financial aid has evolved to become a mechanism for state and federal policy makers to use to influence college enrollments. At the federal level, direct student assistance has been targeted in recent times to achieving the goals of access or equal opportunity while at the state level, aid has been used primarily to help assure freedom of choice and to maintain the competitive viability of the private sector. Research in the area of the impact of financial aid ultimately serves to address the two-fold issues of whether it has served as an effective means to

influence college enrollments and, secondly, whether it has served as an efficient means of achieving these societal goals.

The literature reviewed in this chapter has provided documentation of the research on the relationship between financial aid and enrollment rates and patterns and has presented an outline of the major institutional and individual variables that are routinely incorporated in such research. The strength of the findings about the impact of aid vary across studies and are not always consistent, but may be explained in part by the methodological issues summarized in the last section of the chapter.

Published research to date has not focused on how reductions in federal assistance may influence college enrollment plans. Jackson noted:

There is little question that financial aid helps a needy student fulfill an aspiration for college; at the very least it reduces the amount of money he or she must raise elsewhere. There is, however, less evidence what needy students will do in the absence of aid, or how the availability of aid will effect the aspiration of a potential student, needy or not. (1978, p. 548)

Previous research has concentrated exclusively on the impact of aid on the college enrollment decisions of high school seniors or first-time college freshmen. No research with greater than the scope of a single institution was discovered which investigated changes in the total amount of aid received on the enrollment plans of a previously

enrolled population of aid recipients.

As was detailed in the first chapter, the current commitment to direct federal financial assistance to college students differs radically from the situation over the last decade, particularly since the passing of the Middle Income Student Assistance Act in 1978. The research reviewed suggests that reductions in sources and amounts of financial assistance would be expected to be associated with a decline in the demand for higher education, particularly when coupled with an overall increase in tuition and other costs. This relationship has been more clearly defined, however, for first-time students than for the continuing college population. The literature also suggests that reductions in federal sources of need-based assistance would be assumed to have the greatest impact on those who have historically benefited the most from these federal programs. This includes students from (a) low income and (b) minority backgrounds who (c) have not demonstrated extraordinary academic records and are attending (d) other than two-year, (e) private, (f) high cost, and (g) relatively small institutions.

The research design of the study, a description of the sample and respondents, and an explanation of how the major variables were operationalized will be discussed in the next chapter.

## CHAPTER III

### METHODOLOGY

#### Introduction

The last chapter was used to present a description of the major research on the relationship between direct student assistance programs and students' decisions about enrollment in college. Price, financial assistance, selectivity, and control were identified as major institutional characteristics and family income, race, and ability were identified as major individual characteristics which appear to influence the college decision process. This chapter will be used to describe the research design, sample, and data collection procedures used in the present study which examined the relationship between aid and the enrollment plans of a population of students who demonstrated that they could not continue to attend college without substantial levels of financial assistance. The study was designed within a period of time when substantial reductions in federal student assistance programs were anticipated.

#### Research Design

To investigate the issues described above, an eighteen item survey instrument was mailed to a random sample of 1,347 students who received financial assistance under a state administered program in Virginia. Recipients were asked to report details about their enrollment plans and the



amount and type of financial assistance they anticipated for the upcoming year. Additional data about the financial aid received by the sample in 1981-82 were collected from financial aid officers at Virginia colleges and universities. Critical demographic data, such as family income, were taken from financial aid forms submitted by each student as part of an application for the state aid. The sample, data collection procedures, and other methodological issues are discussed in detail in the following sections.

### The Sample

A sample of 1,700 students was drawn randomly by the State Council of Higher Education from a population of 17,198 students who received state awards under the College Scholarship Assistance (CSAP) program during 1981-82. Students enrolled as seniors during the 1981-82 year (353) were deleted from the sample. These remaining students represented a population of students with the following characteristics:

1. Demonstrated substantial levels of financial need\* (\$2,500 or more) and, consequently, are presumed under the conceptual framework of needs analysis to be unable to attend the institution they listed without financial

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\*For financial aid purposes, need is calculated by subtracting family contribution from the cost of attending a specific institution.

assistance.

2. Were distributed across all institutions of higher education in Virginia, including community colleges.

3. Were Virginia domiciliary residents.

4. In most cases, received additional financial aid from sources other than CSAP.

5. Were disbursed awards under the CSAP program.

6. Enrolled as a full-time freshman, sophomore, or junior during 1981-82.

7. Were generally from families whose adjusted gross income was less than \$24,000.

The sample also represented a population of students who made their initial college choice during an era when federal financial assistance was available in unprecedented amounts. Students classified as seniors during the 1982-83 year, for instance, probably made their initial application to colleges almost precisely at the time when the Middle Income Student Assistance Act opened financial aid eligibility to students from middle income families.

Table 2 presents the distribution of the sample of aid recipients by institution in Virginia, as compared to the enrollment of the entire college student population in Virginia colleges and universities.

#### Data Collection Procedures

Data for use in the analysis of the major research questions were collected from three separate sources and

Table 2

Distribution of the Sample  
and Total Enrollments  
in Virginia Institutions

Institution	Total Enrollments		The Sample	
	Fall 1981 Headcount	Percent of Total	Absolute Frequency	Percent
Averett College	973	.5	17	1.3
Blue Ridge Community College	2,225	.8	4	.5
Bluefield College	337	.1	5	.4
Bridgewater College	965	.5	19	1.5
Central Virginia Community College	4,047	1.4	4	.5
Christopher Newport College	3,988	1.4	7	.7
Clinch Valley College of the University of Virginia	895	.3	13	1.0
College of William and Mary	6,520	2.3	25	1.9
Dabney S. Lancaster Community College	1,136	.4	4	.5
Danville Community College	2,602	.9	8	.6
Eastern Mennonite College	1,100	.4	8	.6
Eastern Shore Community College	459	.2	3	.2
Emory and Henry College	789	.5	17	1.5
Ferrum College	1,515	.5	27	2.1
George Mason University	13,570	4.9	24	1.8
Germana Community College	1,560	.6	1	.1
Hampden-Sydney College	770	.5	12	.9
Hampton Institute	3,436	1.2	37	2.8
Hollins College	944	.5	8	.6
J. Sargeant Reynolds Community College	10,394	3.6	24	1.8
James Madison University	8,970	3.2	56	4.3
John Tyler Community College	4,270	1.5	7	.5
Liberty Baptist College	3,341	1.2	6	.5
Longwood College	2,595	.9	50	2.5
Lord Fairfax Community College	1,957	.7	2	.2
Lynchburg College	2,335	.8	13	1.0
Mary Baldwin College	315	.3	-	.5
Mary Washington College	2,725	1.0	21	1.6
Marymount College of Virginia	1,474	.5	5	.4
Mountain Empire Community College	2,349	1.0	10	.8
New River Community College	2,285	1.0	12	.9
Norfolk State University	7,154	2.5	151	10.1
Northern Virginia Community College	84,932	12.5	23	1.8
Old Dominion University	15,236	5.5	75	5.9
Patrick Henry Community College	1,485	.5	3	.2
Paul D. Camp Community College	1,071	.4	3	.2
Piedmont Virginia Community College	3,715	1.3	12	.9
Radford University	5,775	2.1	31	2.9
Randolph-Macon College	915	.5	13	1.0
Randolph-Macon Woman's College	734	.5	5	.4
Rappanannock Community College	1,322	.5	4	.5
Richard Bland College	968	.5	5	.6
Roanoke College	1,335	.5	18	1.4
St. Paul's College	619	.2	20	1.5
Shenandoah College	911	.5	12	.9
Southern Seminary Junior College	223	.1	1	.1
Southside Virginia Community College	1,571	.6	4	.5
Southwest Virginia Community College	3,747	1.3	19	1.5
Sweetbriar College	696	.2	3	.2
Thomas Nelson Community College	6,650	2.4	8	.6
Tidewater Community College	15,013	5.3	16	1.2
University of Richmond	4,066	1.5	14	1.1
University of Virginia	16,120	5.9	63	4.8
Virginia Commonwealth University	19,242	6.9	114	8.8
Virginia Highland Community College	1,402	.5	13	1.0
Virginia Intermont College	677	.2	6	.5
Virginia Military Institute	1,307	.5	3	.2
Virginia Polytechnic Institute and State University	21,584	7.7	70	5.4
Virginia State University	4,565	1.6	79	6.1
Virginia Union University	1,382	.5	33	2.8
Virginia Wesleyan College	326	.3	15	1.2
Virginia Western Community College	6,955	2.5	6	.5
Washington & Lee College	1,667	.6	1	.1
Wytheville Community College	1,325	.5	22	1.7
Totals	278,379	100.0	1,312	100.0

utilized information about the recipients across two study years. There were three major steps in the data collection procedures.

In the first phase of data collection, the Virginia State Council of Higher Education drew a random sample of past aid recipients with the characteristics previously described. On June 11, 1982, the State Council contacted aid officers at colleges and universities across Virginia requesting that the following information be supplied for each recipient on the roster: (a) amount of each major type of aid (grants, scholarships, loans, and work-study) and (b) total aid received during the 1981-82 academic year. A copy of this instrument and the cover letter sent to each institution appears in Appendix A.

As the second step of data collection, a survey questionnaire was mailed to the sample of 1,347 students. The timing of the mailing was considered crucial and an August 25 mailing date was selected in order to capture students' responses immediately after they had been notified of most of their campus-based awards but before they returned to their respective college campuses. The latter factor was an important concern since the mailing addresses used were those listed as permanent home addresses as filed on the Financial Aid Form submitted to the State Council of Higher Education.

Since the response rate from a general student

population is frequently disappointingly low (Dillman, 1978), several strategies were taken to attempt to bolster it. The survey instrument was designed using the general parameters described by Dillman (1978) in Mail and Telephone Surveys to appear simple and quick to complete. For that purpose, only eighteen items and two sheets of paper were used for the instrument. Surveys were coded with four digit identification numbers from the original mailing list supplied by State Council. Secondly, the survey instrument was mailed with a cover letter printed on the State Council of Higher Education stationary and was signed by the Director of Virginia's Financial Aid Programs. A copy of this letter appears in Appendix B. As with the survey instrument, the cover letter was written using the format suggested by Dillman (1978) and was designed to increase the response rate by explaining the purpose of the study, assuring anonymity, and underscoring the importance of each response. A return envelope with a preprinted return address of the State Council in Richmond, Virginia, was included in the original mailing.

Within a month of the original mailing (September 17, 1982), a follow-up of nonrespondents was conducted. A copy of this instrument appears in Appendix C. Using the format suggested by Dillman (1978), a 4" x 6" postcard was sent to nonrespondents reminding them that a completed survey had not yet been received from them. A phone number was

provided to call to request an additional copy of the survey instrument. Such requests were received from sixteen people who were forwarded a second copy of the survey at the address they supplied. Members of the sample were asked to return their completed questionnaires by no later than October 1, 1982. A total of 484 responses (37%) were received before the follow-up was mailed and an additional 281 surveys were returned before the final cutoff date. Further follow-ups of nonrespondents were planned but deemed inappropriate for two reasons: (a) an acceptable response rate was reached after the first follow-up, and (b) changes to the appropriations to several of the federal student assistance programs occurred in early October and, consequently, responses to further follow-ups would have occurred under different circumstances than previous responses.

As a third and final step in the data collection procedures, data collected from the survey instrument were merged with several data files by the State Council of Higher Education. Individual identification numbers were eliminated after the merger. The merged files contained financial aid information and selected data supplied by parents and students on the Financial Aid Form filed with the College Scholarship Service and transmitted by permission to the State Council.

Table 3 summarizes the major data items extracted from

Table 3

Major Data Elements from  
Sources Other Than the Survey

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Reported by Financial Aid Officers for 1981-82

Total Grants

Total Loans

Total Work

Total Aid

From the Financial Aid Form

Race

Sex

Year in School

Dependency Status

Total Parental Income (Dependent Students Only)

Total Student Income (Independent Students Only)

Institutional Code

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reports from financial aid officers, and from the Financial Aid Form.

### The Survey Instrument

The primary purpose of the survey instrument was to determine the enrollment plans of past need-based aid recipients enrolled in colleges and universities in Virginia. A copy of this survey instrument appears in Appendix D.

The survey instrument was designed using the format suggested by Dillman (1978) in the book, Mail and Telephone Surveys. The survey was printed in booklet form which was constructed by folding and stapling together two sheets of trimmed legal size paper. The questions were printed on both sides of the paper, with exception of the front and back pages. As described by Dillman (1978), the front page contained a message regarding the purpose of the questionnaire, and the name and address of the sponsoring agency, the State Council of Higher Education. The back page, as well as the inside back cover, was left open for written comments.

Dillman (1978) suggested that the content of a survey can be classified into four major categories according to the type of information being sought. Questions are designed to elicit information about (a) attributes, (b) behavior, (c) beliefs, or (d) attitudes. The contents of the survey administered are classified in this manner in



Table 4

Summary of Data Collected  
Through the Survey Instrument

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Attributes

College Attended  
Academic Eligibility to Return  
Cumulative Grade Point Average  
Changes in Family Income  
Dependency Status for 1982-83  
Aid for 1982-83  
    Total Grants and Scholarships  
    Total Loans  
    Total Work  
    Total Aid  
Largest Source of Aid  
Costs

Behavior

Enrollment Plans for 1982-83  
Attendance Pattern (full- or part-time)  
Anticipated Plans if Aid Cut 40%  
Anticipated Plans if Aid Cut 100%

Beliefs

Comments Section

Attitudes

Importance of Financial Concerns in Enrollment Plans  
Importance of Academic Concerns in Enrollment Plans  
Importance of Career Concerns in Enrollment Plans  
Importance of Personal Concerns in Enrollment Plans  
Role of Financial Aid in Enrollment Plans

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Table 4 in order to summarize the data elements collected.

### The Respondents

#### The Response Rate

The survey instrument was mailed to 1,347 students. Thirty-five surveys were returned as nondeliverable. Of the remaining 1,312 instruments, 767 were returned completed. Two of the completed instruments were not usable because one respondent removed the identification number and a second requested his or her name be removed from the study. Of the usable responses (765), eight students indicated that they were not eligible to return to college that fall for academic reasons. Two additional respondents left that item unanswered. Therefore, there remained a total of 755 eligible respondents; 533 of whom reported that they had received notification of their financial aid awards by the time they completed the survey.

Dillman (1978) described several ways to report a response rate. He argued, however, that the traditional method of calculating a response rate which examines only the number of instruments returned as a percentage of those in the sample is a reflection of the ability to reach all potential respondents. He suggested, this tends "to reflect the financial situation of the researcher (i.e., the extent to which intensive follow-up efforts to contact respondents can be afforded) as much or more than it reflects the inherent capability of the method to elicit complete

interviews" (1978, p. 50). As an alternate method, Dillman (1978) recommended a formula by which the percentage of contacts with eligible respondents can be calculated. The formula for this calculation is:

$$\text{Response Rate} = \frac{\text{Number Returned}}{\text{Number in Sample} - (\text{Noneligible} + \text{Nonreachable})} = \frac{765}{1347 - (10 + 35)}$$

Using this formula, the response rate for the survey instrument was 59 percent. This rate is approximately what Dillman (1978) cites is common for surveys of the general public (60-75%) but below the rate (85%) he maintains can be expected from the research methods described in his book.

#### The Respondents.

Characteristics of the respondents are summarized in Table 5 in comparison to data provided in the Digest of Education Statistics for all first-time students attending higher education in 1980. The data summarized by the table highlights expected differences between need-based aid recipients and a general population of students. The respondents were (a) far more likely to be attending full-time since that was a general condition of receiving aid; (b) far more likely to be of minority status, particularly black and (c) more likely to be female than a general population of college students. The distribution by institutional control appears similar, however.

Although different from the general population of college students, these characteristics are similar to those

Table 5

Characteristics of the Respondents  
 Compared to National Norms  
 of First Time Students  
 (Percentages)

Characteristic	Analysis Sample N = 755	National Norms <sup>1</sup>
Sex		
Male	36.1	48.6
Female	63.9	51.4
Racial Background		
White	61.1	81.3
Black	34.6	9.2
Other	4.3	9.5
Attendance Pattern		
Full-Time	96.8	58.7
Part-Time	3.2	41.3
Control of Institution		
Public	74.1	78.2
Private	25.9	21.8

<sup>1</sup>Source: Digest of Education Statistics, 1981 (Fall 1980 data for all students attending higher education).

of the population of students receiving the CSAP in 1981-82. For instance, 36 percent of the respondents were male and 64 percent were female, as compared to 38 percent of the CSAP population were male and 62 percent were female. Similarly, 35 percent of the respondents were black as compared to nearly 38 percent of the entire population of CSAP recipients. The distribution of the sample of respondents was also comparable on dependency status. The sample of respondents, therefore, appeared to be distributed on several key variables in a manner quite similar to the entire CSAP population, but appeared to be overrepresentative of minorities, women, and students attending full-time when compared to the national distribution of first-time students.

Respondents and nonrespondents were compared on the variables of sex, racial background, year in school, dependency status, family income, and distribution by institutional type. No significant differences between respondents and nonrespondents were found on the variables of sex, year in school, dependency status, family income, and institutional type. Respondents and nonrespondents varied significantly ( $p < .01$ ), however, by race and a much greater percentage of whites responded to the survey than either blacks or "other" minorities. A comparison of the characteristics of the respondents and nonrespondents is presented in Appendix E.

Data Analysis Procedures

Analysis of the data from the sources listed above varied by the type of data collected. Since most of the data, including the major dependent variables of enrollment plans, were collected in nominal or discrete categories, most of the analysis was limited to simple descriptive statistics such as frequency counts, percentages, arithmetic means, and chi-square analysis to determine the significance of the relationship. The t-test of significance was used to compare respondents and nonrespondents on the major continuous variables of family income, and mean amount of grant, loan, work, and total aid. Findings which had less than .10 probability of occurring by chance were reported as significant. This level of significance was selected rather than the traditional .05 level because of the descriptive nature of the study.

Several major variables were collected in the form of continuous variables and, consequently, reflected a rank order as well as a true value of zero. These included the major variables of total family income, total amount of different types of aid, and total amount of aid received in 1981-82 and 1982-83. These, however, served primarily as independent or predictor variables rather than dependent variables. When used as dependent variables, the statistical procedure of analysis of variance was used in order to determine if the simultaneous effects of several

independent factors were significant.

Where not explicitly defined in the first chapter, the operational definitions of the major variables are summarized in the next section.

### Operationalization and Coding of Variables

Enrollment Plans. College enrollment plan for 1982-83 was the major dependent variable of the study. This variable was operationalized as whether students indicated on the survey instrument that they intended to (a) continue to attend the college they attended the previous year, (b) transfer to another college, or (c) stay out college for a term or more. Analysis of respondents' enrollment plans considered only those who indicated they were academically eligible to return to college in 1982-83. Students who were in their second year at the community college in 1981-82 were also not considered in the analysis using enrollment plans.

Cost. A measure of college cost was an institutional characteristic used as an independent variable. Data for each college or university in Virginia were from the 1981-82 year as reported in The College Cost Book 1982-83, a College Entrance Examination Board publication. The cost figure used for each institution reflected a nine month budget for a full-time student and included tuition and fees, books and supplies, room and board, transportation, and other expenses for an on-campus student. A budget for the commuter student

was used when no on-campus expense budget was listed.

Family income. Family income served as a major student characteristic and independent variable. Data for family income were as reported by students and parents on the 1981-82 Financial Aid Form. Both taxable and nontaxable income are included in the family income figures. Data for family income were used only for dependent students, while only student income was used for independent students.

Selectivity. A measure of institutional selectivity was used as a second, major institutional characteristic and independent variable. A categorical index for each college and university in Virginia was taken from Barron's Profiles of American Colleges (1976). Categories were determined by median entrance examination scores for first-time freshmen, grade average or class rank required for admission, and the proportion of applicants offered admission (Barron's Profiles of American Colleges, 1976). Categories used were: nonselective, less selective, selective, very selective, and most selective.

Size. A measure of the size of each institution's enrollment was used as a third, major institutional characteristic and independent variable. Statistics on each institution's enrollment were supplied by the Virginia State Council of Higher Education in Council Notes distributed to Financial Aid Officers in November 1982. Enrollment figures used were of actual fall 1981 headcount enrollment,



including both graduate and undergraduate students.

Total grants. The sum of grant and scholarship aid received in 1981-82 and 1982-83 was used as two of the financial aid variables. For both study years grants were measured as the sum of reported federal grants from Pell Grants and Supplemental Education Opportunity Grants (SEOG); from state grants from College Scholarship Assistance Program (CSAP) grants; and the Tuition Assistance Grants (TAG); and from other scholarships and grants from institutional and private sources. Data about grants and scholarships received by each student in the sample in 1981-82 were as reported by Financial Aid Officers. Data about grants and scholarships received in 1982-83 were as reported by respondents on the survey instrument. No data were available to report aid received by nonrespondents in 1982-83.

For some analyses, grants difference scores were used which reflected the difference between the sum amount of grants and scholarships received by each survey respondent in 1981-82 and 1982-83. Grant and scholarship aid received in 1982-83 was subtracted from similar aid received in 1981-82.

Total loans. The sum of financial aid received in the form of loans in 1981-82 and 1982-83 was used as two additional financial aid variables. Loans were operationalized as the sum of the amount received in the

form of National Direct Student Loans and Guaranteed Student Loans. As with aid in the form of grants and scholarships, data on total loans in 1981-82 were available for all respondents and were as reported by Financial Aid Officers. Data on total loans in 1982-83 were from self-reports of respondents on the survey instrument. A loan difference score was utilized for purposes of some of the analyses and was calculated in the same manner previously described for grants.

Total work. Total work was the third major financial aid variable used as an independent variable in the study. Total work included earnings from the College Work-Study Program (CWSP) and other on-campus work programs. The total work figure has similar characteristics to those previously described for the grant and loan variables and a difference score was also calculated in the manner previously described.

#### Validity and Reliability

Before beginning the discussion of the research findings of the study and an assessment of their generalizability, some indication of the validity and reliability of the research instrumentation is required. Kerlinger (1973) described validity as an indication of how well a particular instrument actually measured what it has been designed to measure. Many indications of validity derive from common sense or judgment which can be made with

increasing assurance the more observable and the less abstract a variable. Observable, concrete indices of an actual behavior like enrollment can be assumed to have high validity. Reliability, on the other hand, refers to the accuracy, consistency, or stability of a measure (Kerlinger, 1973). If repeated measures of the same phenomena yield similar results, then it can be assumed to have some reliability. Some indication of the validity and reliability of a research instrumentation is necessary before conclusions can be reached about its generalizability to a wider population of similar subjects. In the case of this specific research study, support for validity and reliability of the data collected from the three different sources previously described may help support its utility with other populations of need-based aid recipients.

One method of assessing how valid the data may be is by comparing it to external variables that are believed to be accurate measures of the attribute, behavior, or attitude under study (Kerlinger, 1973). The criteria-related validity of data from one sample of student aid recipients can be tested by comparing it to other data collected from other samples of need-based aid recipients in approximately the same time frame. To examine this issue of validity in the current study, the average amounts of aid received in 1981-82 by dependent students attending private colleges was compared to the average amount of aid reported by Hodgkinson

(1982) in a study of a national sample of aid recipients attending independent colleges and universities. Table 6 presents the average amount of grant, loan, and total aid received by dependent students attending private colleges and universities by selected family income categories.

Average amounts of aid received by students in the national sample and the sample from Virginia are quite similar and differences in the amounts of average aid reported for each category are small enough to be explained by increases in cost between 1980-81 and 1981-82. These similarities to a large national sample supports the validity and are consistent with statistics from national data bases as well (The Carnegie Council, 1979).

Other support for the validity of the data from this sample can be seen in comparison to data collected in the Stampen (1983) study of need-based aid recipients attending public postsecondary institutions during the 1981-82 academic year. Stampen (1983) reported that among dependent, need-based aid recipients the average family income was \$16,500. In comparison, the average family income for need-based recipients in this present sample was \$16,350. Similarly, Stampen (1983) reported that 55 percent of all need-based aid recipients were women and approximately one-third were members of minority groups. Of the population of CSAP recipients, 62 percent were female and 38 percent black. Differences in the percentages may be

Table 6

Average Amount of Aid Received  
by Two Samples of Dependent  
Students Attending Private  
Institutions by Family Income

	Family Income		
	Average All Income	Average Lowest Family Income <sup>1</sup>	Average Middle Family Income <sup>2</sup>
<b>Grants</b>			
Hodgkinson (1980-81)	\$1,942	\$2,554	\$2,008
CSAP Sample (1981-82)	\$2,630	\$3,087	\$2,317
<b>Loans</b>			
Hodgkinson (1980-81)	\$1,127	\$ 907	\$1,101
CSAP Sample (1981-82)	\$1,129	\$ .630	\$1,297
<b>Total</b>			
Hodgkinson (1980-81)	\$4,078	\$4,399	\$4,179
CSAP Sample (1981-82)	\$4,690	\$4,346	\$4,177

<sup>1</sup> Less than \$6,000

<sup>2</sup> \$18,000-\$24,000

attributable to the fact that the Stampen (1983) study considered only aid recipients enrolled in public institutions, while the present study examined aid recipients enrolled in both private and public postsecondary institutions. These findings support the validity of the data as well as suggest that the sample is representative of other need-based aid populations.

The reliability of the data collected is a second major consideration in the generalizability of the results of a study to a wider population. Reliability is frequently examined by the correlation between two reports of the same item or variable. Bragg (1980) examined the reliability of the financial aid data supplied by his sample by analyzing the correlation between the amounts of each type of aid reported and the dollar ranges indicated in a later part of the questionnaire. Bragg (1980) found the values of the Pearson product moment correlation to vary by ability, socioeconomic levels, and type of aid. Coefficients ranged from a low of .379 for certain groups reporting their work-study awards to a high of .887 for similar groups reporting the amount of aid received in the form of loans.

Since the current study was investigating the impact of changes in the amount of financial assistance and the enrollment plans of a continuing sample of students, the reliability of reports of changes in amounts of financial assistance is of major significance. Data on this variable

were available from two different sources. Recipients were asked to indicate on the questionnaire whether they had received (a) quite a bit less this year than last year, (b) about the same amount they received last year, or (c) quite a bit more than they received last year. In a later portion of the same instrument, recipients were asked to report the amount of each type of aid (grants and scholarships, loans, and work) they expected to receive for the 1982-83 academic year. When 1981-82 aid was subtracted from this amount and recoded into categories, the Pearson product moment correlation between these two measures of change in amount of aid was statistically significant ( $r = .31$ ;  $p < .001$ ). The only major differences appeared to occur among students receiving more aid than they did the previous year. Only 15 percent estimated they would be receiving more aid while nearly 27 percent were actually receiving more aid when the dollar amounts of aid were compared. Significant correlations were also found among the total amount of aid for the two study years for respondents' whose dependency status did not change ( $r = .60$ ,  $p < .001$ ). This finding provides some assurance of the validity of respondents self-reports of aid amounts, since data on amounts of aid for the first year were confirmed by aid officers. The strength and significance of the correlation coefficients provides some assurance of the reliability of the data by suggesting these repeated measures of the same variables yield approximately

similar results.

### Summary

The study described in this chapter was designed to describe the relationship between changes in appropriations for direct student assistance and the reported enrollment plans of a sample of past need-based aid recipients who were enrolled in colleges and universities in Virginia during 1981-82. Data on amounts of financial aid received in 1981-82 and 1982-83, basic demographic characteristics, and enrollment plans were collected from Financial Aid Officers, from the Financial Aid Form filed with the State Council of Higher Education, and from responses to a questionnaire administered during late August 1982. Basic descriptive statistics were used to analyze the relationship between the major independent variables--certain individual and institutional characteristics--and the major dependent variable--enrollment plans--by the changes in the amount of financial aid received. The research was designed to provide insight into the questions of whether changes in amounts of financial assistance were statistically associated with changes in college students' enrollment plans and whether such changes were significantly pronounced for certain types of students, such as minorities, or for certain types of institutions, such as high cost, independent colleges.

As was discussed in the earlier section of this chapter



on validity and reliability, there are some preliminary indications of the generalizability of some of the characteristics of the sample to the general population of need-based aid recipients attending Virginia colleges and universities. Significant limitations to the generalizability of the sample must be repeatedly highlighted, however. Certain characteristics of financial aid applicants and recipients are frequently found to differ significantly from the overall college population (Munday, 1976; Tierney, 1980), particularly in terms of family income. Such samples universally are unable to reflect the impact of financial aid on the population of needy students who do not apply for it (Jackson, 1978). Similarly, the present study did not consider the enrollment plans of needy students who did not receive financial assistance or who never enrolled in college for lack of financial assistance. Unlike most research which focuses on first-time college students, the current research examined continuing students who had, for the most part, survived the significant first year. Changes in sources and amount of financial assistance would be expected to have less effect on the enrollment plans of this group than on the enrollment decisions of a group of first-time students with financial need.

An analysis of a relationship such as that investigated in this study has an additional noteworthy limitation which influences the conclusions that may be drawn from the

findings. As was mentioned in the limitations section of the first chapter, the research was designed to investigate one element of a very complex relationship. Although independent variables were selected because the research literature suggested they play a significant role in the relationship, the analyses do not assume a casual relationship. That is, financial aid is assumed to be only one factor among myriad personal, academic, and career concerns that may influence an individual's enrollment plans without assuming that it caused the decision to continue or change enrollment patterns. Similarly, the role of financial aid has been examined in conjunction with aggregate behavior and aggregate characteristics. Conclusions, therefore, may be drawn about the enrollment decisions of the average student with certain characteristics without assuming that the behavior of a particular student is explainable or predictable from the results of the analysis (Spies, 1978).

Chapter 4 will be used to present a summary of the major findings with regard to the following areas: (a) the relationship between enrollment plans and changes in financial aid; (b) the relationship between enrollment plans, changes in financial aid, and selected institutional characteristics; and (c) the relationship between enrollment plans, changes in financial aid, and selected individual characteristics.

## CHAPTER IV

### FINDINGS

#### Introduction

As was described in greater detail in the previous chapters, the study was designed to investigate the relationship between financial assistance and the enrollment plans of a continuing group of undergraduate college students with demonstrated levels of financial need. Research questions were formulated from the findings of other studies of aid recipients and were designed to identify the characteristics of students and institutions which appeared most likely to be affected by changes in federal aid programs. Anticipated findings were based on the key variables and relationships summarized in the final sections of the literature review. The major findings from each of the three research questions will be presented in the following sections. Findings from certain subsidiary questions not directly related to the major research questions will be discussed in the final chapter.

#### Research Question #1

To what extent do changes in the reported enrollment plans for 1982-83 of a selected group of past aid recipients vary by the changes in the total amount of aid and changes in the predominant type of aid received in 1981-82 and 1982-83?

Of the eligible respondents, the vast majority (88.3%) reported that they would continue to attend the college they attended the previous academic year. Slightly more than 7

percent (N = 53) indicated that they would be transferring to another college and 4.1 percent (N = 29) reported that they would not be returning to college in the fall of 1982. Neither second year community college students nor students ineligible to return to college are included in these percentages. Although these percentages may represent a significant number of students when generalized to the whole population of aid recipients, the small numbers, particularly in the category showing enrollment changes, limit the analysis that can be conducted.

Student reports of the amount of aid awarded for 1982-83 varied significantly from that which was received the previous year. When the total amount of aid reported by respondents for 1982-83 was subtracted from the previous year, 40.8 percent of the students lost more than \$500 in financial aid, while 32.3 percent were receiving within \$500, plus or minus, of the same amount, and 26.9 percent were receiving in excess of \$500 more in aid than the previous year. For students whose dependency status remained unchanged, the total amount of aid received in 1981-82 and reported for 1982-83 was positively and significantly correlated ( $r = .60$ ;  $p < .001$ ). The average amount of aid awarded in 1982-83 (\$2,810) dropped from the average amount received by respondents in 1981-82 (\$2,987).

Analyses were conducted to determine the relationship between difference in total amount of aid received in

1981-82 and 1982-83 and enrollment plans. Significant differences were not found between respondents' enrollment plans and their estimates of whether they would be receiving less, the same, or more aid in 1982-83 than in 1981-82. However, differences in amount of aid actually received was found to vary significantly by enrollment plan ( $F = 3.43$ ;  $p < .05$ ;  $df = 2$ ). The correlation was negative ( $r = -.09$ ), indicating that larger changes in amounts of aid were generally associated with a change in enrollment plans by either transferring to another college or withdrawing. Of those awarded, students who planned to withdraw from college for a term or more reported the largest average difference in total amount of aid ( $-\$1,977$ ), while those who planned to transfer reported an average loss of  $-\$343$ . Those planning to continue to attend the same college reported the smallest average change of  $-\$226$ . Analysis using a Pearson product moment correlation similarly showed a far stronger correlation between total amount of aid received in each of the study years for students who planned to continue at the same college than for students who planned to drop out or transfer to another college.

As a final part of the analysis for the first research question, the relationship between enrollment plans and type of aid was examined. The largest source of aid in 1982-83 reported by the majority of respondents was in the form of grants or scholarships (53.1%) with an additional 35.7

percent reporting that loans were their largest source of aid. The relationship between enrollment plans and change in predominant type of aid was not significant and the majority of respondents (61.9%) reported no change between 1981-82 and 1982-83 in their largest single source of aid. Although slightly over 20 percent of respondents reported a change from grant to repayable loan aid as their primary source of aid, these were not necessarily the recipients planning to drop out or transfer. The assumption that increased reliance on repayable loan aid would be significantly associated with attrition was not, therefore, supported.

The relationship between enrollment plans and the difference in amount of aid appeared weak, but statistically significant. Larger changes in aid were associated with the tendency to change enrollment plans by transferring to another college or dropping out. Significant relationships between enrollment plans and change in predominant type of aid were not found.

The second research question examined the relationship between enrollment plans and selected institutional characteristics in order to determine if certain types of institutions, such as those under private control, were likely to experience a disproportionate share of students with changing enrollment plans.

Research Question #2

To what extent do changes in the reported enrollment plans of a sample of past aid recipients vary by selected institutional characteristics and difference between the amount of aid received in 1981-82 and 1982-83?

The institutional characteristics under study were: control (private, public), type (comprehensive, four-year, two-year), selectivity (nonselective to most selective), size (less than 2,500; 2,501-3,999; 4,000-8,000; over 8,000) and cost (less than \$2,500; \$2,501-\$4,999; \$5,000-\$7,500; more than \$7,500). Data were analyzed as follows: (a) enrollment plans were examined by institutional variables to determine where respondents who were most likely to change their enrollment plans were enrolled; (b) the average amount of aid received was examined by enrollment plans and institutional variables; and (c) the difference in amount of aid received in 1981-82 and 1982-83 was examined by enrollment plans and institutional characteristics to identify the characteristics of those who lost aid. A discussion of the findings from the analysis of enrollment plans by institutional characteristics and change in amount of aid follows the discussion of the third research question in the final portion of this chapter.

During 1981-82, the majority of respondents were enrolled in public (72.4%), comprehensive (61.8%) institutions. The majority of respondents were distributed among institutions considered to be competitive, with 14.6

percent enrolled in institutions considered to be very or highly selective. The majority of respondents (52.2%) were enrolled in low cost institutions with total estimated educational expenses falling in the range of \$2,501 through \$5,000. Finally, over 57 percent of the respondents were enrolled at institutions with undergraduate enrollments in excess of 4,000. Previous data demonstrated that the distribution of respondents did not differ significantly from nonrespondents on these dimensions and were similar in several relevant dimensions to the population of aid recipients attending Virginia's colleges and universities.

Table 7 is used to summarize the distribution of eligible respondents by enrollment plan and major institutional characteristics.\* With the single exception of the index of institutional cost, the distribution of respondents varied significantly from the frequencies expected by chance. The larger values of chi-square--representing the greatest deviation from expected frequencies--were found for the institutional variables of size, selectivity, and type. Enrollment plans varied by these institutional characteristics, but greater variation appeared to occur within the characteristics of those who

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\*The reader is reminded that when the expected frequency in any of the cells in a contingency table are small, the chi-square statistic may be exaggerated and the reported probability may not be an exact measure (Hinkle, Wiersma, & Jurs, 1979).



Table 7

Respondent's Enrollment Plan  
by Institutional Characteristics  
(Percentages)

N = 702

	Continue	Transfer	Drop Out	$\chi^2$	Significance <sup>1</sup>
Control					
Private	85.3	11.0	3.7	4.69	*
Public	89.4	6.2	4.4		
Type					
Comprehensive	91.1	5.4	3.5	13.75	***
Four-Year	85.3	11.0	3.7		
Two-Year	79.5	11.0	9.6		
Selectivity					
Nonselective	78.3	13.0	8.7	14.31	*
Most Selective	94.8	2.6	2.6		
Cost					
Lowest Cost Category	82.1	14.9	3.0	9.01	N.S.
Highest Cost Category	87.8	7.3	4.9		
Size					
Smallest Category	88.7	8.9	2.4	21.33	***
Largest Category	89.3	6.4	4.3		
Combined	N = 620 88.3%	N = 53 7.5%	N = 29 4.1%		

1

\*p &lt; .10

\*\*p &lt; .05

\*\*\*p &lt; .01

N.S. = Not Significant

transferred or left college entirely. In most cases, there were little institutional differences in the percentages of respondents who continued at the same college.

The greatest variation between and within enrollment plans occurred on the institutional variable of size of 1982 headcount enrollments. Aid has been found to serve to bolster enrollments in the small, generally private and costly institutions (Fenske & Boyd, 1971). Similarly, with more than 40 percent of the respondents reporting a loss in aid from 1981-82 to 1982-83, small institutions showed a greater loss of students through transferring than did the large institutions. Relatively small institutions with enrollments between 1,001 and 2,500 seemed most vulnerable to changes in enrollment since respondents from these colleges were the least likely to continue, the most likely to transfer, and the second most likely to drop out. On the other hand, respondents enrolled in colleges with 4,000 to 8,000 students were the most likely to continue and least likely to transfer. Given the circumstances under study, aid recipients enrolled in relatively small institutions appeared most likely to change their enrollment plans by transferring. This category includes such private institutions as Eastern Mennonite and Roanoke Colleges which are considered to be moderately selective, as well as many small community colleges.

A measure of the selectivity of the admission practices

of each institution was also found to be related to the enrollment plans of the sample of aid recipients. As was anticipated since college students are far more likely to rank institutional quality than financial aid as important to their selection of a college (Digest of Educational Statistics, 1981), respondents enrolled in institutions considered to be the most selective in Virginia were far more likely than any other category of institutional characteristics to continue their enrollment at the same institution. For example, while 88.3 percent of the entire sample reported plans to continue at the same institution, 78.3 percent of those enrolled in the least selective and 94.7 percent of those enrolled in the most selective institution reported they would be continuing. Similarly, 13 percent of the respondents enrolled in the nonselective institutions planned to transfer, as compared to only 2.6 percent in the most selective institutions. Respondents who discontinued their enrollment were also concentrated in the less selective institutions.

In addition to change in enrollment plans at the extreme of institutional selectivity, as illustrated in Table 7, institutions considered to be moderately selective also seemed to experience significant changes in enrollment rates of aid recipients. Respondents from such private institutions as Bridgewater College and Roanoke College were the second least likely group to continue at the same

college. Similarly, respondents from these colleges were more likely to transfer than respondents from colleges or than those considered to be the nonselective. Since 43.6 percent of the respondents were enrolled in institutions considered to be selective or competitive, these findings suggest that changes in financial aid appropriations in Virginia may particularly impact on needy students enrolled in selective, private institutions, which are moderately small in size (1,000-2,500). As was anticipated, however, respondents enrolled in the most selective institutions appeared the least likely to change their enrollment plans.

A measure of institutional cost proved to be the single institutional variable that was not significantly associated with enrollment plans. Contrary to expected findings, respondents enrolled in institutions considered to be least costly were more likely to change their enrollment plans by transferring than respondents from the most costly institutions. Respondents from the most costly institutions were, however, more likely to drop out than respondents from other cost categories. The majority of respondents were enrolled in institutions with moderately low expenses--such as most community colleges and large public institutions--and were less likely to transfer than those from more costly institutions. The use of an institutional measure of cost, however, conceals individual fluctuations in cost and largely may mirror the wide disparity in tuition

and fees for private and public control.

The findings summarized in Table 7 suggest that the enrollment plans of past aid recipients varied significantly by most of the institutional characteristics considered, but particularly by the variables of institutional size and selectivity. These variables appeared, however, to have a different influence on the decision to transfer to another college as compared to the decision to drop out of college entirely. This suggests that the forces that influence the decision to transfer may not necessarily be equated with those that motivate the decision to drop out of college, even among relatively low income aid recipients.

Table 8 is presented to consider the average amount of aid received by the enrollment plans and selected institutional characteristics. Statistically significant differences were found between the total amount of aid received by respondents who planned to continue at the same college, transfer, or drop out ( $F = 2.61$ ;  $p < .10$ ;  $df = 2$ ). Overall, the largest mean amount of aid was received by respondents who planned to transfer (\$2,877) and the smallest mean amount of aid was received among those planning to withdraw from college (\$1,014). Respondents attending high cost, small, and private institutions reported the greatest average total amount of aid, while those attending nonselective and two-year colleges reported the lowest average amount of aid. These differences

Table 8

Mean Amount of Aid by Enrollment  
Plans and Institutional Characteristics  
(Dollar Amounts)

N = 533<sup>1</sup>

	Continue			Transfer			Drop Out			Combined <sup>2</sup>		
	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N
Control												
Private	4,036	1,995	(136)	2,539	2,370	(10)	2,000	0	(1)	3,921	2,047	(147)
Public	2,311	1,391	(310)	3,118	1,419	(14)	768	427	(4)	2,340	1,412	(358)
Type												
Comprehensive	2,431	1,393	(274)	3,227	1,659	(9)	768	427	(4)	2,433	1,411	(287)
Four-Year	4,036	1,995	(136)	2,539	2,370	(10)	2,000	0	(1)	3,921	2,048	(147)
Two-Year	1,392	983	(36)	2,921	984	(5)				1,962	1,365	(71)
Selectivity												
Least Selective	1,875	1,388	(48)	2,396	1,382	(8)				2,136	1,453	(96)
Most Selective	2,705	1,357	(33)	3,137	901	(2)	700	707	(2)	2,705	1,357	(33)
Size												
Smallest	3,922	2,148	(93)	4,427	2,431	(4)				3,887	2,158	(101)
Largest	2,540	1,493	(154)	3,641	1,528	(7)	786	522	(3)	2,535	1,510	(172)
Cost												
Lowest	2,243	1,639	(35)	2,179	1,352	(7)				2,202	1,518	(59)
Highest	4,755	2,030	(67)	4,333	1,697	(3)				4,699	2,020	(71)
Overall	2,846	1,788	(450)	2,877	1,849	(24)	1,014	644	(5)	2,828	1,791	(479)

<sup>1</sup>1982-83 aid data. Includes only eligible respondents who had been awarded. Columns and rows may not add because of deletion of missing values and omission of some categories.

<sup>2</sup>Data for this column reflect average amount of aid by each institutional characteristic. Frequencies vary from column and row totals because of deletion of missing values.

correspond, of course, to institutional cost. In most cases, the total amount of aid for students planning to transfer varied more from the combined averages than for students planning to continue at the same college. Although cell sizes are too small to be conclusive, students who planned to drop out clearly received less aid than the average recipient attending institutions with similar characteristics. In summary, students who planned to transfer received the most average aid and demonstrated the widest variation in aid. Although it is not known at what college the students were planning to enroll during 1982-83, it appears that more students may have transferred from low cost and public institutions than from higher cost and private ones. This finding is somewhat unanticipated since all the students considered to be routinely likely to transfer (e.g. second year community college students) were eliminated from the analysis.

The average difference in amount of aid between 1981-82 and 1982-83 was also analyzed by enrollment plan and selected institutional characteristics. Table 9 is used to present a summary of these findings using an equal sign (=) to represent categories of recipients who received approximately the same amount of aid (within \$500), a minus sign (-) to represent those who lost aid in excess of \$500, and a plus sign (+) for those who received in excess of \$500 in aid in 1982-83 compared to 1981-82. Differences were

Table 9

Difference<sup>1</sup> in the Total Amount of  
Aid by Enrollment Plan and  
Institutional Characteristics  
(In Dollars)

N = 468<sup>2</sup>

	Continue	Transfer	Drop Out
Control			
Private	=	- 1,667	- 1,400
Public	=	+ 716	- 2,121
Type			
Comprehensive	=	=	- 2,121
Two-Year	=	+ 1,300	No Data
Four-Year	=	- 1,667	- 1,400
Selectivity			
Nonselective	=	=	No Data
Less Competitive	=	+ 836	- 1,568
Selective	=	- 934	994
Very Selective	=	=	- 3,164
Most Selective	=	No Data	No Data
Cost			
Lowest	- 589	=	No Data
Medium Low	=	=	- 2,121
Medium High	=	-- 1,456	No Data
Highest	=	- 922	- 1,400
Size			
Smallest	=	- 848	No Data
1,001-2,500	=	- 1,676	No Data
2,501-3,999	=	=	- 1,400
4,000-8,000	=	+ 1,992	- 1,568
Largest	=	+ 1,197	- 2,305
Combined	- 226	- 343	- 1,977

<sup>1</sup> = Equal or within \$500 (plus or minus) received in 1982-83 than in 1981-82.

+ Total amount of aid received in 1982-83 increased by more than \$500.

- Total amount of aid received in 1982-83 decreased by more than \$500.

<sup>2</sup> Includes only respondents with complete aid data for 1981-82 and 1982-83.



calculated by subtracting aid reported by survey respondents for 1982-83 from the aid received in 1981-82, as verified by financial aid officers. Only respondents with complete information on amount of aid for both study years were utilized in this analysis. Statistically significant differences were found between the change in total amount of aid received between 1981-82 and 1982-83 and enrollment plans using a one-way analysis of variance ( $F = 3.43$ ;  $p < .05$ ;  $df = 2$ ). Larger changes in amount of aid were associated with the tendency to change enrollment plan by withdrawing or transferring to another college. With the single exception of respondents attending the lowest cost institutions, students planning to continue at the same college received within \$500 of the amount they received the previous year. Although only a very small number of respondents who planned to drop out of college reported aid for the second year, those who did reported an average loss of  $-\$1,976$ . All categories of drop outs showed less aid received than in the previous year.

The greatest variation in difference in total amount of aid received between 1981-82 and 1982-83 occurred among students planning to transfer to another college. These students lost an average of  $-\$343$  in aid, while students who planned to continue lost an average of  $-\$226$  in aid. The range of values of the difference in total amount of aid is wide, however, with respondents leaving four-year, private

institutions showing the larger losses in aid (-\$1,667) and those leaving two-year colleges (+\$1,300) and those with enrollments between 4,000 and 8,000 showing the largest average gains in aid (+\$1,992).

The institutional characteristics of transfer students who lost aid on the average between 1981-82 and 1982-83 are particularly noteworthy when compared to the institutional characteristics of those most likely to transfer. Respondents from relatively small, private institutions and those considered to be selective were found to be among the most likely to change their enrollment plans by transferring. This appears to include respondents from such Virginia institutions as Roanoke College, Eastern Mennonite, Washington and Lee College, and the Virginia Military Institute which are colleges with overall costs in the moderate high to high range of \$5,000 and above. Respondents transferring from these relatively small institutions (1,001 to 2,500) reported an average loss of aid (\$1,676) while those transferring from all institutions considered to be selective lost an average of \$934 in aid. Similarly, students who transferred from the moderately high to high cost institutions lost aid on the average in excess of \$500. Since it may be assumed that among transfer students such overall losses in aid probably reflects a change to a less expensive institution, these findings support the anticipated conclusion that a small portion of

the need-based aid population would change to lower cost institutions during this period of federal reductions in aid appropriations and increasing educational expenses. This change in enrollment pattern appeared to be occurring among the moderately expensive and selective private colleges rather than among the most selective, smallest, and most costly private institutions.

The findings from the second research question support the expectation that the enrollment plans of aid recipients would vary by institutional characteristics and by difference in amount of aid received across two study years. Respondents from comprehensive and most selective institutions were among the most likely to continue at the same college, while those from nonselective and low cost institutions were among the most likely to change enrollment plans by transferring to another college. However, the expectation or prediction that changes in financial aid would be associated with aid recipient's dropping out of college entirely could not be supported by the findings from the institutional variables studied. Too few students remained who had received information about their financial aid and planned to drop out to provide data from which to draw valid conclusions. In addition, the characteristics of the withdrawers differed from those who planned to transfer. This issue is discussed in greater detail in the final chapter.

Additional discussion about the relationship between enrollment plans, institutional characteristics, and change in amount of aid is discussed in the final section of this chapter.

### Research Question #3

To what extent do changes in the reported enrollment plans of a sample of past aid recipients vary by selected individual characteristics and difference between the amount of aid received in 1981-82 and 1982-83?

The individual characteristics under study were race, sex, family income, and grades as a measure of academic performance. Dependency status and grade level were also considered as individual characteristics. Data were analyzed in a similar manner as discussed for the second research question.

Table 10 is used to present a summary of the distribution of eligible respondents by enrollment plan and selected individual characteristics. The data in Table 10 illustrate that with the exception of sex and parental income, enrollment plans varied significantly by individual characteristics. The greatest variance was found in the enrollment plans of the respondents when considered by race. White and black students were equally likely to continue at the same college (89.3% for each category), but those classified in the "other" minority category were less likely than any other category analyzed to continue (71.4%). The respondents in the "other" minority category were also more

Table 10  
 Respondents by Enrollment Plans  
 by Individual Characteristics  
 (Percentages)

N = 702

	Continue	Transfer	Drop Out	$\chi^2$	Significance <sup>1</sup>
<b>Race</b>					
White	89.2	8.4	2.4	23.38	***
Black	89.3	4.1	6.6		
Other	71.3	25.0	3.7		
<b>Sex</b>					
Male	89.5	7.7	2.8	1.95	N.S.
Female	87.2	7.8	5.0		
<b>Dependency</b>					
Dependent	89.5	6.9	3.7	5.36	*
Independent	81.6	11.7	6.8		
<b>Grade Level</b>					
Freshman	85.0	11.0	4.1	9.71	*
Sophomore	88.3	7.1	4.6		
Junior	94.0	2.2	3.8		
<b>Grades</b>					
Less than "C"	75.0	16.7	8.3	13.13	**
"C" to "B"	89.7	6.3	4.0		
Better than "B"	88.7	7.9	3.4		
<b>Parental Income</b>					
Less than \$6,000	90.9	2.6	6.5	7.46	N.S.
\$ 6,000-12,000	87.9	6.8	5.3		
\$12,001-18,000	91.8	5.5	2.7		
More than \$18,000	88.2	8.9	2.8		
<b>Combined</b>	N = 620 88.3%	N = 53 7.5%	N = 29 4.1%		

<sup>1</sup> \*p < .10  
 \*\*p < .05  
 \*\*\*p < .01  
 N.S. = Not Significant

likely than the other groups to report plans to transfer to another college (25.0%). A greater percentage of black than either white or "other" minority students reported plans to stay out of college for a term or more. Wide variation in enrollment plans by racial characteristics was an anticipated finding of the study.

Several other findings were less significant, but followed a fairly predictable pattern. Respondents who were determined to be dependent on their parents were more likely to continue and less likely to drop out than those who were considered independent. Similarly, the higher the grade level the more likely respondents were to continue, with students enrolled as juniors during 1981-82 being the most likely among all categories analyzed to report plans to continue at the same college. Similar predictable findings appeared in an examination of the relationship between grades and enrollment plans. Students who reported the lowest grades were less likely than students with higher grades to continue and more likely to transfer or drop out. Students with the lowest grades indicated plans to drop out at a greater rate than any other category analyzed.

Analysis of the enrollment plans of dependent students by parental income yielded unanticipated findings. The relationship was not found to be significant and a greater percentage of students from the lowest income category than from the highest income category reported plans to continue

at the same college. More predictably, however, greater percentages of students from lower income categories planned to withdraw from college than those from the higher income categories. The opposite, however, held true for transfer students and students from the upper income categories were more likely to transfer than those from lower income families. Although not statistically significant, these findings appear to be consistent with the anticipated finding that aid reductions during the Reagan Administration may have had more influence on the enrollment plans of the middle income, than lower income, aid recipients. The lack of statistical significance of the findings may be partially explained by the fact that CSAP aid recipients fell within a relatively narrow range of family incomes.

Table 11 is used to present a summary of the mean amount of aid reported by respondents in 1982-83 by enrollment plans. Among the categories considered the following differences were found: (a) whites received on the average more aid than blacks and "other" minorities, (b) the higher the grade point average the larger the average amount of aid, (c) sophomores received a larger average amount of aid than either freshmen or seniors, and (d) students from the highest income category received on the average a larger amount of aid than students from the lowest income category. Variations in institutional cost contribute to a portion of these differences, however.

Table 11

Mean Amount of Aid by Enrollment  
Plan and Individual Characteristics  
(Dollar Amounts)

N = 533<sup>1</sup>

	Continue			Transfer			Drop Out			Combined		
	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N
Races												
Black	2,254	1,449	(123)	2,469	1,899	( 3)	957	344	(2)	2,246	1,147	(134)
White	3,083	1,854	(311)	3,200	1,986	(17)	1,053	904	(3)	3,024	1,841	(352)
Other	2,386	2,012	( 12)	2,210	1,162	( 3)				2,716	2,006	( 17)
Grades												
Less than "C"	1,832	1,389	( 21)	1,028	909	( 3)				1,732	1,348	( 24)
"C" to "B"	2,822	1,759	(284)	2,511	1,392	(11)	1,028	765	(4)	2,761	1,738	(312)
Better than "B"	3,057	1,847	(144)	3,904	2,131	( 9)	958	0	(1)	3,052	1,851	(170)
Grade Level												
Freshmen	2,602	1,873	(185)	2,512	1,582	(15)				2,595	1,849	(200)
Sophomores	3,072	1,671	(132)	3,375	1,858	( 7)	1,357	909	(2)	2,962	1,663	(171)
Juniors	2,974	1,751	(132)	3,865	4,150	( 2)	786	522	(3)	2,939	1,789	(137)
Parental Income												
Lowest Category	2,527	1,590	( 42)	3,803	41	( 2)	1,200	0	(1)	2,570	1,541	( 47)
Highest Category	3,029	1,768	(170)	1,898	1,225	( 8)	2,000	0	(1)	2,961	1,754	(185)
Overall	2,846	1,788	(450)	2,877	1,849	(24)	1,014	644	(5)	2,828	1,791	(479)

<sup>1</sup>1982-83 aid data includes only eligible respondents who had been awarded. Columns and rows may not add because of deletion of missing values and omission of some categories.

<sup>2</sup>Data for this column reflect average amount of aid by each individual characteristic. Frequencies vary from column and row totals because of deletion of missing values.



Several additional observations may be drawn from Table 11: (a) there are significant differences in average amount of aid received, both by individual characteristics and by enrollment plan, (b) there are large standard deviations in amount of aid within single categories, (c) greater variation in amount of aid occurred among students planning to transfer to another college than those planning to continue at the same one, and (d) many categories have very small cell sizes. Several of these observations foreshadow limitations to more sophisticated analysis and interpretation and limit the possibility of examining enrollment plans by categories of change in amount of aid.

Average change in amount of aid between 1981-82 and 1982-83 were considered by enrollment plans and selected individual characteristics. Table 12 is used to present a summary of the characteristics and plans of those who received more (+), within \$500 (=), or less (-) aid in 1982-83 than in 1981-82. As with findings from the previous research question, with few exceptions, students who planned to continue received on the average approximately the same amount of aid in 1982-83 as they did in 1981-82, regardless of individual characteristics. However, minorities and students with lower grades appeared as exceptions in receiving less aid on the average even though they planned to continue at the same college.

As with the examination of the change in average amount

Table 12

Difference<sup>1</sup> in Total Amount  
of Aid by Enrollment Plan  
and Individual Characteristics  
(In Dollars)

N = 468<sup>2</sup>

	Continue	Transfer	Drop Out
Race			
White	=	=	- 1,978
Black	- 511	- 1,669	- 1,975
Other	- 765	- 1,070	No Data
Sex			
Male	=	=	- 2,576
Female	=	- 713	- 1,078
Grades			
Less than "C"	- 793	- 1,934	No Data
"C" to "B"	=	- 669	- 2,324
Better than "B"	=	=	- 588
Grade Level			
Freshman	=	=	No Data
Sophomore	=	=	- 1,484
Junior	=	- 1,335	- 2,305
Parental Income			
Less than \$6,000	=	+ 942	- 2,382
\$ 6,000-12,000	=	=	- 1,568
\$12,001-18,000	=	- 931	- 2,267
More than \$18,000	=	- 1,035	- 1,400
Combined	- 226	- 343	- 1,977

<sup>1</sup> = Equal or within \$500 (plus or minus) received in 1982-83 than in 1981-82.

+ Total amount of aid received in 1982-83 increased by more than \$500.

- Total amount of aid received in 1982-83 decreased by more than \$500.

<sup>2</sup> Includes only respondents with complete aid data for 1981-82 and 1982-83.

of aid by institutional characteristics and enrollment plan, the greatest variation in aid occurred among respondents planning to transfer. Among students planning to transfer, the greatest average loss in aid (-\$1,934) was among respondents reporting less than "C" grades. Transfer students from the lowest income category (less than \$6,000) were in the single category to report an average gain in aid in excess of \$500. Both categories of minority students showed greater than average losses when they planned to transfer. Blacks, for instance, reported an average loss of \$1,669 while "other" minorities lost an average of \$1,070. These latter findings are somewhat ironic given the mandate to redistribute minority enrollments in Virginia (Casteen, 1983). A comparison of the individual characteristics of those most likely to change their enrollment plans (Table 10) and those who lost aid from 1981-82 to 1982-83 (Table 12) reveals several areas of overlap. For instance, respondents with less than a "C" average and "other" minorities were among the most likely to change their enrollment plans. Similarly, it can be observed from Table 12 that on the average these two categories of students also lost more than \$500 in aid, regardless of their enrollment plan.

The findings from the third research question suggest that there are significant differences among the individual characteristics of those who plan to continue, withdraw, at

the same college, or transfer to another college. Needy, dependent students enrolled as juniors seemed among the most likely to continue at the same college, while students with less than a "C" average and those from the lowest income category were among those most likely to drop out. A greater percentage of students planning to transfer, on the other hand, were independent, "other" race minorities, and those from the higher income categories (more than \$18,000). The mean amount of aid and difference between amount received across the two study years were also found to vary significantly by enrollment plan. Students with the lowest grades were found to have the smallest average amount of aid and to have lost the greatest amount of aid.

The final issue in the second and third research question was to examine the role of institutional and individual variation in enrollment plans by change in amount of financial aid. For this purpose and to overcome the continued problem of small cell sizes in the drop out categories, the dependent variable--enrollment plans--was recoded to a dichotomous, dummy variable. The original three values of continue, transfer, and drop out were recoded to a single variable with two values: continue and transfer. Students who planned to drop out and those who indicated they would only be enrolled part-time were omitted from the final analysis. This strategy reduced the pool of students by only fourteen respondents leaving 464 (94.9%) in

the continue category and 25 (5.1%) in the transfer category. Second-year community college students, those who indicated they were not eligible to return to college for academic reasons, and those who had not been awarded aid for the 1982-83 academic year were also omitted from this analysis. These restrictions severely reduced the number of respondents considered in the final analysis. For instance, less than half of those who planned to transfer were considered. The small number in the final transfer category, as well as the unequal distribution of the frequencies in the dependent variable suggest that the findings discussed in the last section should be interpreted as observations rather than statistically grounded conclusions.

Table 13 is used to summarize the institutional and individual characteristics significantly associated with enrollment plans when analyzed by change in amount of financial aid received between 1981-82 and 1982-83. The Statistical Package for Social Sciences (SPSS) procedure, multiple classification analysis (MCA), was used to produce a grand mean for the dependent variable, the multiple R squared, and adjusted and unadjusted deviations for each value of the independent variables. In this case, the grand mean of the dependent variable (1.05) reflected essentially no change in enrollment plans since the nominal value of one represented the plan to continue at the same college and the

Table 13

Summary of the Significant  
Characteristics of Respondents  
Whose Enrollment Plans Changed

N = 489<sup>1</sup>  
Grand Mean = 1.05<sup>2</sup>

Characteristic	Unadjusted Deviation	Adjusted Deviation	R <sup>2</sup>	Significance <sup>3</sup>
Selectivity			.04	**
Nonselective	.10	.11		
Less Selective	-.03	-.03		
Selective	.00	.00		
Very Selective	-.01	.00		
Most Selective	-.05	-.06		
Cost			.04	***
Less than \$2,500	.13	.14		
\$2,501-\$4,999	-.02	-.02		
\$5,000-\$7,500	.00	.00		
Greater than \$7,500	.00	-.01		
Race			.03	**
White	.01	.00		
Black	-.03	-.03		
Other	.15	.15		
Grades			.02	*
Less than "C"	.11	.11		
"C" to "B"	-.01	-.01		
Better than "B"	.01	.01		
Grade Level			.02	*
Freshmen	.02	.02		
Sophomore	.00	.00		
Junior	-.04	-.04		

<sup>1</sup> Includes only respondents who planned to continue or transfer and for whom complete aid data were available.

<sup>2</sup> 1.00 = continue; 2.00 = transfer

<sup>3</sup> \*p < .10

\*\*p < .05

\*\*\*p < .01

N.S. = Not Significant

value of two represented the decision to transfer. The multiple R squared is the proportion of the variation in enrollment plans explained by the effects of the institutional and individual characteristics and change in amount of aid received. The MCA evaluates the difference between each category mean and the grand mean of the dependent variables and produces as output the deviation values or category effects in adjusted and unadjusted form (Andrews, Morgan, Sonquist, & Klem, 1973). The adjusted deviations reflect the effects of a given factor after the variation due to other factors have been controlled (Nie et al., 1975). In this case, a positive deviation illustrates categories of respondents who were more likely than average to change their enrollment plans by transferring while negative deviations illustrate a less than average tendency to change. Variation between the unadjusted and adjusted deviations reflect the effects of financial aid.

As illustrated in Table 13, of the ten individual and institutional characteristics which have been the main focus of the study, five were found to have significant main effects ( $p < .10$ ). Three individual characteristics--race, grades, and grade level--were found to have significant main effects when examined in conjunction with the newly defined enrollment plans and difference in the total amount of aid received in 1981-82 and the following year. The main effects between enrollment plans, difference in amount of

aid, and two institutional characteristics--selectivity and cost--were significant ( $p < .10$ ). Enrollment plans were not found to vary significantly by institutional control or individual sex and parental income when change in amount of aid was analyzed. Significant main effects were found for the institutional variables of size and type, but significant two-way interactions invalidated straightforward conclusions.

The values of the multiple R squared presented in Table 13 represent the proportion of the variation in enrollment plans explained by the institutional and individual variables and the change in amount of aid recoded to the categories of less, same, or more. Once again, respondents receiving within \$500, plus or minus, of the aid they received the previous year were considered to be receiving the same amount of aid. In MCA, the multiple R squared is produced through a classic experimental approach to multiple analysis of variance in which each effect is assessed in the order listed. Deviations are adjusted for all prior effects (Nie et al., 1975). The institutional variables of cost and selectivity explained the most variance ( $R^2 = .04$ ), while race explained the third largest amount ( $R^2 = .03$ ). Nonsignificant main effects, such as for parental income, virtually explained none of the variation in behavior. However, even with significant main effects, only a very small proportion of variation in the behavior was explained



by any of the major institutional and individual variables considered.

The adjusted deviations presented in Table 13 illustrate the characteristics of respondents who were more or less likely than average to change their enrollment plans by transferring when change in amount of aid was added. Aid recipients enrolled in nonselective and lower cost institutions and those with the lowest grades and considered to be "other" race minorities were the most likely to change their enrollment plans, while those enrolled in the most selective institutions were the least likely to change their enrollment plans. In all institutional and individual variables, those with less aid were more likely than the average respondent to change their enrollment plans, while those with approximately the same amount of aid were likely to continue at the same college.

A comparison of the unadjusted and adjusted deviations in Table 13 reflect what the change in amount of aid added to the prediction power of the institutional and individual variables. This addition had no effect on the behavior when added to the variables of race and grades and only a very slight effect on the variables of selectivity, cost, and grade level. The addition of aid slightly increased the predictability of the behavior of respondents enrolled in nonselective, low cost institutions and freshmen. In other words, these findings suggest that the addition of changes

in the amount of financial aid as an independent variable added virtually nothing to predicting the enrollment plans of aid recipients that was not already predictable from institutional and individual variables.

The findings from these analyses appear more consistent with traditional research on retention (Astin, 1975) than the anticipated findings. Unexpected findings from the final analysis are that aid recipients who were (a) enrolled in higher cost institutions, (b) black, and (c) from the lowest family incomes were not significantly more likely than average to change their enrollment plans when examined by change in amount of aid. Anticipated findings were supported, however, that (a) some minorities and (b) those with lower levels of performance were more likely than average to change their enrollment plans while (c) those enrolled in most selective institutions appeared relatively unaffected by changes in aid.

Although not reported in Table 13, the discovery of several significant interactions in the two-way analysis of variance may add insight to the respondent's behavior. Significant interactions ( $p < .10$ ) occurred between enrollment plan and the independent variables of institutional control and type and change in amount of aid. In such cases neither predictor by itself had a significant effect on enrollment plans, but plans varied under certain combinations of the two predictors (Andrews et al., 1973).

In other words, under the circumstances of the study, the significant interaction may suggest that enrollment plans for aid recipients enrolled in private and public institutions varied by whether they received less, the same, or more aid. It is possible, for instance, that respondents enrolled in private institutions receiving less aid were more likely to transfer while those in public institutions tended to continue at the same college. It is also possible that under certain circumstances both respondents receiving more and less aid than they received the previous year were more likely than average to change their enrollment plan. Further discussion of these interactions as well as of the possibility of a curvilinear relationship would be beneficial, but was prohibited by the small cell sizes among subgroups.

Although the relationships discussed in this chapter were significant, it is important to note that only a very small proportion of the respondents changed their enrollment plans. Of these, only a small proportion of the variation in plans was explained and most of this was explained without the addition of change in amount of aid. Another variable--self-report of expected changes in educational costs--explained considerably more of the variation in enrollment plans. Since it was not part of any major research questions, analysis of its role will be considered in the next chapter.

## CHAPTER V

### CONCLUSIONS, SUMMARY, AND RECOMMENDATIONS

#### Summary of Findings

The enrollment plans of a sample of aid recipients from Virginia's need-based, state aid program were examined by certain individual and institutional characteristics and by change in amount of financial aid received. Although more than 40 percent of the respondents reported a loss in aid, the vast majority of respondents planned to continue their enrollment at the same college. Only a small percentage of the respondents reported plans to transfer or withdraw from college. Amount of financial aid and change in amount of financial aid were significantly, but weakly, associated with enrollment plans. Respondents whose amounts of aid remained relatively unchanged appeared most likely to continue at the same college, while those with larger changes in amount of aid were more likely to change their enrollment plans by withdrawing or transferring to another college. Aid recipients enrolled in nonselective, less costly, two-year institutions appeared most likely to change their enrollment plans, while those enrolled in the most selective institutions and those with a junior class standing appeared least likely to change their enrollment plans. The unequal distribution of respondents and the lack of complete financial aid data on the majority of the sample limited the statistical significance of some of the findings, however.

The review of the literature closed with a summary of the major findings of the research in the relationship between financial aid and the college decision process by the variables of financial assistance, institutional cost, selectivity, academic performance, and other institutional variables. The findings of this study are summarized in a similar manner in the following section. Added to these summaries are findings that were not addressed by the major research questions.

#### Financial Assistance

As with previous research, amount of financial aid was found to be weakly associated with enrollment plans. No significant change in amount of financial assistance was associated with the tendency to continue at the same college. A significant relationship was not discovered, however, between enrollment plans and predominant type of aid or change in predominant type of aid. Students who received the majority of their aid through loans were slightly, but not significantly, less likely to continue at the same college than those whose predominant type of aid was in the form of grant or gift aid.

Change in amount of aid received between 1981-82 and 1982-83 was found to vary significantly by enrollment plan. Students who planned to drop out of school for a term or more showed the greatest loss in aid, while students who planned to continue at the same college received on the

average within \$500 of what they had the previous year. Some categories of transfer students showed an average loss of aid, including minorities and students who were transferring from four-year and higher cost colleges.

Respondents to the survey were also asked to evaluate the importance of financial aid, as well as financial, academic, career, and personal concerns in decisions about their enrollment plans for 1982-83. It is noteworthy that this sample of students with demonstrated financial need was more likely to evaluate financial or economic than academic, career, or personal concerns as being important to their enrollment plans. Over 97 percent of the respondents viewed financial concerns as being important, compared to 89.8 percent for career concerns, 84.4 percent for academic concerns, and a low of 80.6 percent for personal concerns. The rates for financial concerns for this sample of aid recipients was considerably higher than the rate reported in the Digest of Education Statistics for the population of first-time students where only 15.4 percent voiced a "major concern" for financing college (1981, p. 97). In addition, over 79 percent of the respondents indicated that financial aid was a primary factor in their enrollment decision. Total amount of aid varied significantly among respondents answering that aid was or was not important to their enrollment plans. On the average, those rating aid as important received a greater amount of aid than those who

rated it is unimportant. Obviously, the majority of the sample appeared to perceive a strong relationship between financial aid and their college plans.

The perception of the importance of aid varied significantly by enrollment plan. Students who planned to drop out of college were the least likely to report aid as being important (59%), while the greatest percentage reporting it was important were among those who planned to continue at the same college (81%). More than three-fourths of the students who planned to transfer indicated that aid was important. The responses by students who planned to drop out include only those who were academically eligible to return and the percentages of those respondents indicating aid was important to their enrollment decision would presumably be lower if they were included. This raises the possibility that financial aid may play a less important role in an aid recipient's decision to withdraw from college than the decision to transfer or continue. Many other factors must be assumed to be involved in this decision, however, and the importance of financial aid and financial concerns may not be assumed to bear equal weight in the decision to withdraw from college or transfer to another one, even among college students with demonstrated financial need.

Although attitudes and perceptions do not necessarily translate to behavior, survey responses support the

assumption that the majority of the sample perceived a strong relationship between financial aid and their behavior. The behavior, however, is more difficult to capture empirically than the attitude, as expressed in a "forced choice" questionnaire response.

#### Institutional Cost

Previous research has lead to the conclusion that with the exception of high ability and upper income students, cost is negatively associated with both rate of enrollment and choice of college. High cost, private colleges were predicted to incur enrollment losses in the face of reductions in federal aid, while low cost, two-year and comprehensive institutions were expected to experience aid related increases.

Although a significant relationship was not found between enrollment plans and institutional cost, a significant relationship was found between the plans defined for the final analysis, institutional cost, and change in amount of aid across two study years. This apparent inconsistency is explained by the fact that the first analysis considered the distribution of the frequencies of all three enrollment plans, while the final analysis considered only two enrollment plans--continue at the same college or transfer to another one. Findings from the first analysis support the conclusion that respondents who withdrew differed from those who transferred. In this case,



transfer students were largely from the lowest cost institutions while the greatest percentage of drop outs came from the highest cost institutions. Further research should not assume these two groups are motivated by similar concerns, even when considering populations who are supposedly unable to attend college on their own resources.

The relationship between enrollment plans and institutional cost was not always in the direction anticipated. Although it was anticipated that respondents enrolled in high cost, private colleges would be among the most likely to change their enrollment plans, the final analysis revealed that they were less likely than average to change their enrollment plan by transferring when change in amount of aid was considered. On the other hand, respondents from the lowest cost institutions, such as the community college, were far more likely than average to change their enrollment plans by transferring, even when completing sophomores were excluded. Transfers from the lowest cost colleges expected, on the average, to receive almost exactly the same amount of aid in 1982-83. Since students in this group were unlikely to transfer to an institution with lower cost, reductions in their average amount of aid is likely to reflect a real loss in the resources available to meet educational expenses.

Analysis of the relationship between enrollment plans and institutional cost also yielded some anticipated

findings. Respondents enrolled in other relatively low cost institutions, such as the public, comprehensive, and predominantly black colleges, were the most likely to remain at the same college. The finding that the greatest percentage of drop outs were from the highest cost colleges also supported anticipated findings, but the frequencies were much too small to be considered truly indicative of a significant trend.

An unanticipated finding of the study was that respondents' estimates of costs appeared a far more accurate predictor of enrollment plans than any of the institutional or individual characteristics heretofore considered. Survey respondents were asked to assess whether they expected their educational costs in 1982-83 to be lower, about equal, or higher than their costs for the previous year. The relationship between enrollment plans and this estimate of cost was significant ( $x^2 = 82.47$ ;  $p < .001$ ) and negative, suggesting once again that estimates of higher costs were associated with the tendency to stay at the same college. Although the majority of respondents (84.2%) anticipated higher costs, more than 26 percent of the students who planned to transfer expected lower educational costs. Similarly, an analysis of plans by self-estimate of cost and change in amount of aid revealed that respondents who estimated their costs to be lower were far more likely than the average respondent to change their enrollment plans.

The multiple R squared from the multiple classification scheme revealed that this variable explained far more of the variance in enrollment plans than any institutional or individual characteristics considered.

Cost, therefore, appears to be a significant factor in enrollment plans, particularly when examined as self-reports. When considered in this manner, the expectation that some aid recipients transferred in order to lower costs appeared to be supported. However, when examined as an institutional variable, it cannot be concluded that aid recipients at high cost college changed their enrollment plans at a statistically significant rate given a loss in financial aid.

### Selectivity

The findings of this study supported previous research which has found the selectivity of an institution to outweigh other variables, including financial need. Aid recipients enrolled in institutions considered to be the most selective in Virginia were more likely than in any other category considered to continue their enrollment at the same college. Students who continued to enroll in these institutions lost less than the average amount of aid. On the average, students in these categories received more aid than those in the least selective institutions, regardless of their enrollment plans. Students planning to transfer from these institutions reported losing only a very small

amount of aid (-\$55).

Students enrolled in selective institutions are generally found to be among the most academically able and to be from higher income categories. These factors appear to override financial concerns, even for this relatively needy population. Although it is not known where these students transferred, it is possible that they were able to transfer to comparable institutions since their change in aid was negligible.

#### Academic Performance

The findings in regard to enrollment plans and academic performance, as measured by self-reports of overall grade averages, were largely predictable. Respondents who were eligible to return to college but had less than a "C" average were less likely to continue at the same college than those with higher grades. On the average, they received less total aid, regardless of enrollment plan. Students with less than a "C" average were in one of the few categories where continuing students lost more than \$500 in aid between 1982-83 and the previous year. Lower performing transfer students reported receiving considerably less aid than those who transferred with higher grades. These findings suggest that academic performance continues to be a major criterion in awarding aid, regardless of financial need.

### Other Institutional Characteristics

Several sources cited in the review of the literature concluded that financial aid influenced enrollment patterns by encouraging a redistribution of students to private, non-two-year and smaller institutions (Fenske & Boyd, 1971; Leslie & Fife, 1974; Tierney, 1980). These findings were basically supported in the present research project since respondents from four-year, private, and smaller colleges with enrollments between 1,001-2,500 were found to be more likely than average to change their enrollment plans given a loss in financial aid. However, these were not necessarily the areas that showed the most significant enrollment changes. Although the proportion of students who changed enrollment plans is too small to be considered statistically significant, these findings suggest that what could be seen as aid-related enrollment gains in certain institutions may be reversed later in the college years by fluctuations in aid appropriations. It is not known, however, where the respondents in the sample transferred and, therefore, it cannot be determined if aid-related losses were offset by gains from other sectors.

### Other Individual Characteristics

The research of others on the relationship between financial aid and college access and choice has consistently determined that the enrollment plans of minority students and those from lower income categories are strongly

influenced by financial aid awards. Although significant differences were found on the major research questions by racial background, an unanticipated finding of the study was that significant variations in enrollment plans were not found by parental income, even when change in amount of aid was considered.

Significant differences in enrollment plans by racial background were found. "Other" minority students appeared less likely than white or black students to continue at the same college and more likely to transfer to another college. A greater percentage of black students withdrew from college, however, than either white or "other" minority students. Black and "other" minority students who planned to continue at the same college were among the few groups who planned to continue and lost more than \$500 in aid. Students from both minority groups who planned to transfer lost substantially more aid than the overall average. White students who planned to transfer, on the other hand, reported a slight increase in amount of aid received. Contrary to popular claims, needy minority students as a group appeared to lose greater amounts of aid than nonminority students.

Significant differences were also found among minority and nonminority students when revised enrollment plans were examined by change in amount of aid. Given a loss in aid, white students were approximately equal to the average in

their enrollment plans, while black students were less likely than average to change and "other" minority students were quite a bit more likely than average to change their enrollment plans. Only a small portion of these enrollment changes can be related to change in aid, however, and other concerns, such as academic preparation obviously play a pivotal role. Nonblack minority students, such as those of Oriental descent, appear particularly susceptible to change in financial assistance.

Parental income is a final variable to be discussed which has been frequently highlighted in previous research. The results from this research reveal an unanticipated, but consistent, lack of significance for this variable. The family income of dependent students was not found to be significantly related to enrollment plans or to revised enrollment plans and change in amount of aid. It was, however, found to be significantly related to total amount of aid and change in amount of aid. Lower income respondents who planned to transfer demonstrated an average increase in aid, while those from families making more than \$12,000 showed an average loss of aid in excess of \$500.

Similar findings about parental income appeared in the attitudinal responses to the survey. No significant differences were found in the parental income of dependent students who answered that aid was of primary importance in their enrollment plans and those who said it was not of

primary importance. Similarly, students who responded that they were "very likely" or "very unlikely" to drop out of school in the complete absence of aid also did not vary significantly by family income. Although these findings may vary for independent students, the consistent lack of significance in the role of parental income may be interpreted to imply some measure of success in achieving the goal of equal opportunity.

#### Caveats

All of the above findings must be considered in the light of several methodological limitations. The sample was drawn from a population of need-based aid recipients which represented less than six percent of the headcount enrollment at Virginia's colleges and universities. Although representative of the key characteristics of the population of Virginia's state, need-based award, the sample was skewed toward full-time enrollment and minorities when compared to national samples. Generalizations from this sample, therefore, are limited and should not be extended to include students who are not recipients of need-based aid.

Several common methodological concerns were mentioned in the second chapter about research in financial aid, in addition to sampling bias already discussed. Lack of valid information on financial aid has been identified as a problem in previous research and held true in this study as well. Of the original sample of 1,312, information on both



1981-82 and 1982-83 aid amounts was available for only 468 respondents or 61 percent of the respondents. When noneligible community college students were removed, frequencies in many categories became too small for meaningful analysis. This was a particular problem for students who planned to withdraw from college. It was not possible, therefore, to conduct some of the planned analysis between enrollment plans and change in amount of aid within each institutional and individual variable. Statistically significant conclusions were occasionally based on relatively small frequencies and, consequently, may not reflect a genuinely significant phenomena. This problem, however, did not appear to be compounded by questionable data delivered from self-reports. On the contrary, relatively high correlations among aid reports for 1982-83 and confirmed reports of aid for 1981-82 suggest, along with other indices, apparently high validity for the data collected through the survey instrument.

A third methodological concern about this research was in the use of cost as an institutional, rather than individual, variable. Institutional cost figures were found to correlate significantly with other major institutional variables, including control, type, selectivity, and size. The correlation was particularly strong between institutional control and cost ( $r = .32$ ), suggesting little distinction between private control and high cost.

Therefore, institutional cost as defined for the purposes of the study lacked meaning as a discrete variable and was not representative of real variations in individual cost that may have occurred through different living arrangements or course loads.

A second major concern with the measure of institutional cost was that data were not collected on the identity of the institution to which respondents planned to transfer. Therefore, it was impossible to determine whether change in amount of aid for students who planned to transfer reflected an actual change in the percentage of educational cost being met or merely reflected a move to a less expensive institution. The latter possibility is supported by the finding that nearly a third of the transfer students expected their educational costs to be lower. Although the measure of institutional cost was modelled from previous literature in the area, a realistic measure of an individual cost might be a more useful index for future research.

A fourth and final methodological concern was in the treatment of aid recipients who planned to withdraw from college a term or more. Of the entire sample of 765 respondents, only 43 reported plans to withdraw from college. When second-year community college students and those who were not eligible to return to college were deleted, only 29 respondents remained who planned to discontinue their studies. Of these, only seven respondents

had actually received notification of financial aid awards. Obviously, only a very few respondents decided to drop out after receiving notification of their financial aid awards. The majority of students would be presumed to have made their decision to withdraw from college long before this midsummer notification. Other methods of inquiry, timed earlier in the decision cycle, may have been more fruitful in exploring the role of financial aid in the decision to withdraw from college.

#### Conclusions

The magnitude of reductions in federal appropriations for direct student assistance anticipated in the early months of the Reagan Administration did not materialize. Supplemental appropriations after the academic year began generally brought funding levels for FY 82 up to those of the previous year (NASFAA Newsletter, January 11, 1983) and some of the respondents may have received slight increases in aid after completing the survey instrument. Although this translates to a loss when compared to rising educational costs, it may help explain the relative lack of mobility among this group of aid recipients. The findings, however, may understate the sensitivity of the enrollments of aid recipients to decreases in funding levels, particularly for first-time students. It may also be assumed that these continuing aid recipients made enrollment changes prior to the fall of 1982 and sought other means to

reduce costs not captured in this study.

Uncertainty about financial aid was anticipated to impact on continuing college students' enrollment plans but was not directly addressed by any of the major research questions. The role of uncertainty may be seen in the rather dramatic differences in the enrollment plans of respondents who had received award notification and those who had not. Of those who had received award notifications, 93.6 percent planned to continue, 5 percent planned to transfer, and 1.4 percent planned to drop out for a term or more (N = 498). In comparison, of the 204 respondents who had not been awarded, only 75 percent planned to continue, while 13 percent planned to transfer, and 11 percent planned to drop out. Obviously, a much higher percent of those who had not been informed of their aid offers planned to change their enrollment plans than those who had been informed. The greatest difference occurred in the drop out category where those who had not been awarded were nearly ten times more likely to say they would drop out as those who had been awarded. This suggests powerful support for the prediction that uncertainty about future support through financial aid may in itself have influenced college students' enrollment plans. This effect would be presumed to be even stronger for entering freshmen or for younger students just beginning to formulate their college plans. Further research on the differences between those who had been awarded and those who

had not might provide additional insight in the relationship between financial aid and enrollment plans.

The decision about continuing college enrollment is obviously a complex one. The majority of aid respondents indicated that financial, as well as personal, career, and academic concerns were important to their decision about their enrollment plans. Although a more powerful statistical technique like multiple regression would probably provide additional insight, only a small proportion of the variance in enrollment plans was explained by the institutional and individual variables under study. Total amount of aid was found to vary more by institutional characteristics, such as selectivity and size, than individual characteristics. Racial background proved the exception, however, and respondents from "other" minorities differed more from the mean behavior than any other group. Respondents enrolled in two- and four-year, nonselective, small, and less expensive institutions were found to be more likely than average to change their enrollment plans by transferring to another institution given a change in aid. For this group of continuing college students who were eligible to return to college, a change in financial aid may have been a decisive factor in leaving institutions that have been identified in other literature as lacking in "holding" power. This supports the possibility that changes in enrollment patterns may be reversed for a continuing

college student by decrease in aid, just as previous research has substantiated aid-related gains for first-time college students.

Despite concern for the operational definition of institutional cost, several findings of this research support the prediction that aid recipients might change their enrollment pattern by transferring to another institution to lower educational costs. A greater percentage of respondents who planned to transfer expected their costs to be lower than those who either planned to continue at the same college or to withdraw. Only a small percentage of these relatively low income respondents indicated that they would rely on family resources more heavily in the face of aid reductions. When asked to respond to attitude questions, on the other hand, 16.3 percent reported that they were "very likely" to transfer to a less expensive college if all aid was cut by 40 percent, and 31.4 percent indicated that they would transfer to another college. Variation in these responses were found by selected individual and institutional characteristics, but students enrolled in high cost and private institutions were more than twice as likely to say they were "very likely" to transfer without financial aid than those enrolled in the lowest cost institutions. Over 70 percent of those enrolled in the highest cost category said they were "very likely" to transfer without any financial aid. Obviously, aid helped

to provide students the choice to attend higher cost colleges and universities in Virginia. Lack of significant differences on these variables by race and family income were unanticipated and suggest a narrowing of the historical gap between minority and nonminority perceptions of equality of opportunity, or access to postsecondary education.

Aid recipients clearly perceived--or reported that they did--that financial aid was strongly related to their enrollment plans. Almost 63 percent of the respondents reported that they were "very likely" to drop out of college without any financial aid while 31 percent reported this response if aid were cut by 40 percent. With the exception of grade level, little significant variation in institutional or individual characteristics was found on this question, while great variation was found in the characteristics of students who would consider transferring to a less expensive college. For this sample of aid recipients, both the actual decision to transfer and consideration of transferring as an enrollment option appeared to be more motivated by financial concerns than it was for respondents who actually withdrew from college or said they would if aid were withdrawn.

#### Recommendations for Further Research

Several aspects of this study might provide valuable avenues for further research. Although methodological concerns have been cited in comparing recipients and

nonrecipients of need-based financial aid, it would be of interest to know if this sample of aid recipients was more or less prone to change enrollment plans than the overall college student population. It would be intuitively assumed that this population would be more sensitive to the financial exigencies of the time and, consequently, more likely to change enrollment plans than the average college student. However, the fact that such a great portion of the sample continued at the same college seems a higher rate of continuance than one would expect of the average college student population, unless it would be suspected that students who withdraw from college would be either (a) less likely to respond to a questionnaire of this nature or (b) less likely to admit financial need as a reason for withdrawal. It is possible, however, that financial restraints--including the promise of additional reductions in financial aid--may be associated with less change in enrollment patterns than would be routinely expected. In other words, trimming of federal sources of financial aid may have been more strongly associated with the decision to continue at the same college than the option of moving to another one. Such a conclusion is supported by the findings that (a) a greater percentage of respondents planning to continue at the same college cited financial aid as a critical factor in their enrollment plans than respondents planning to transfer to another college or withdraw entirely



and (b) the majority of the sample was enrolled in institutions considered to be of low cost.

Additional areas for further research have been alluded to throughout portions of the text. If data had been collected on the identity of the institution enrolled in during 1982-83, it would have been possible to control statistically for institutional cost, as well as to isolate the institutions benefiting from aid-related enrollment gains, and to more accurately assess the effect of institutional cost. At this point, it is only possible to conjecture that a certain portion of the population may be returning to public and larger institutions in order to lower their educational expenses.

Further research would be valuable to examine more intensively the relationship between direct financial assistance and the enrollment plans of students who have been identified as self-supporting or independent of their parents. More than one-tenth of the respondents changed to this status between 1981-82 and 1982-83, bringing to a total of nearly one-fourth of the respondents claiming this status during the second study year. Results from data from the current study suggest statistically significant differences between dependent and independent students, with independent students appearing to be slightly more prone to change their enrollment plans than dependent students. Independent respondents were slightly, but not significantly, more

likely than dependent respondents to report being "very likely" to drop out without financial aid. The self-supporting student is a relatively new phenomena to financial aid and most research has focused on the recipient considered to be dependent on his or her parents for financial support. The recent rapid growth in the number of students claiming this status has brought the definition in question, especially since independent students are capturing an increasing proportion of the total aid dollars. Greater restrictions conserve increasingly limited aid resources, yet may threaten enrollments in institutions, such as the community college, which are dominated by older, nontraditional students who may have dependents of their own. Since the traditional, college-aged population is declining, provisions for eligibility for financial aid may need to be further expanded to assist to recruit and retain nontraditional, minority, and older students which may serve as the bulwark of enrollments at many institutions in the next decade (Gladieux, 1983). Further research on the financial aid and the independent student is "vital to national policy making" (Stampen, 1983, p. iv).

#### Policy Implications

Findings from the study have several implications for state and institutional policy makers. When the actual amount of aid reported for 1982-83 was subtracted from the amount of aid received in 1981-82, nearly three-quarters of

the recipients were receiving less aid or within \$500 of the amount they received the previous year. Considering the nearly universal increases in educational expenses, it actually could be said that the majority of the sample experienced a loss in the amount of aid available to meet educational expenses. This expansion in unmet need, or remaining need when aid is subtracted from cost, does not reflect the additional reductions in other social programs for college students, such as social security educational benefits and food stamps. The burden this might be expected to place on state aid programs is amplified in the light of Stampen's (1983) findings that federal need- and non-need-based aid accounted for nearly 80 percent of the direct student aid dollars in public higher education. Given this reliance on federal resources, Stampen concluded, "neither states nor institutions could substitute for federal support without revolutionary changes in their own higher education financing systems" (1983, p. 72). Further reductions in federal appropriations for direct student assistance programs would be expected to place an increased burden on states and institutions to develop sources of student support.

A second major issue affecting state and institutional policy makers is in financial aid and minority enrollment. Increased legal pressures have been brought in Virginia to equalize "other" race enrollments in predominately white and

black institutions, while the single financial aid program targeted to achieve this goal has been eliminated (Casteen, 1983). Gladieux (1983) has argued, in addition, that there has been a retreat from the commitment to recruit economically and educationally disadvantaged students because of the risk involved. In the present study, black students represented more than one-third of the aid population, but were found to be concentrated in traditionally black institutions and to be less likely than the average aid recipient to change their enrollment plan by transferring, but more likely than average to drop out. On the average, minority students received less total aid than white students and were among the few categories of recipients to report an average loss of aid between the two study years even when they continued at the same college. It is possible that this latter finding is explained by (a) the fact that, on the average, continuing students in low cost institutions lost aid, and (b) the increased pressures to enforce standards of satisfactory progress in Title IV federal aid programs. Given the legal pressures to redistribute minority enrollments in Virginia, state policy makers may choose to consider aid programs which are not linked to academic performance in order to support access, as well as to support programs that encourage minority recipients to transfer later in their college careers.

Findings of the study also have implications for

administrators who determine institutional financial aid policies. The importance of early notification of awards, for instance, is highlighted by the finding that respondents who had not been awarded were much more likely to report the intention to change their enrollment plan than those who had received notification of their financial aid awards. Secondly, the wide variation in average amount of aid by reported cumulative grade point average suggests a traditional emphasis on financial aid as a reward rather than as a tool to support retention or further access. It may also reflect institutional policies to ration limited aid resources by using grades as an eligibility criterion for campus-based aid. Aid officers might benefit by de-emphasizing such a criterion, particularly through the first critical year, if retention is an institutional goal. Thirdly, the findings of the study support earlier research reporting that type of aid is not significantly associated with a tendency to transfer or withdraw from college, even when there is a change to reliance on aid that must be repayed. These findings are particularly surprising given that the study dealt with a population that overrepresented low income and minority students--populations traditionally assumed to be unwilling to borrow. Finally, the consistent lack of significance in the findings about the relationship between enrollment plans, parental income, and financial aid provide exciting support for the achievement of equal

opportunity but underscore the importance of the use of other eligibility criteria for awarding financial aid.

Although the average loss in aid was slight and the majority of aid recipients chose to continue at the same college, the findings of the study support a weak relationship between enrollment plans and amount of financial aid and change in amount of financial aid across the two study years. Financial aid was perceived to be most important by students who planned to continue at the same college, suggesting the unanticipated possibility that reductions in the availability of financial aid may have served more to limit mobility in relatively low cost public institutions than to encourage enrollment changes. There was no evidence to support the anticipated conclusion that a significant number of aid recipients were withdrawing from postsecondary education due primarily to financial concerns or lack of financial aid.

The issue of ensuring equal access or opportunity to some form of postsecondary education continues to be a national concern. After over a decade of support, student aid programs are experiencing a critical re-evaluation (Stampen, 1983). Data from this study provide several promising and not-so-promising perspectives on the achievement of access in Virginia's colleges and universities. The lack of significance in the relationship between parental income and enrollment plans as well as the

negligible number of aid recipients that appeared to be dropping out of college largely for financial reasons both provide a positive perspective of the relationship between financial aid and access. Other perspectives are added, however, by the findings that minorities lost more aid than the average student, regardless of their enrollment plan, and that financial aid added very little to the proportion of behavior that was already predicted by certain individual and institutional characteristics. Certain populations--such as those in low cost and nonselective colleges--have been identified in other literature as marginal participants in higher education. That a loss in financial aid should further threaten their participation in a postsecondary option questions the ability of financial aid to reverse behavior patterns established by more powerful social forces and challenges the ultimate achievement of equal access.

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Appendix A  
SCHEV Instrument and Cover Letter



## COMMONWEALTH of VIRGINIA

*Council of Higher Education*

*James Monroe Building, 101 North Fourteenth Street, Richmond, Va. 23219*

GORDON K. DAVIES  
Director

MEMORANDUM

RECEIVED 1982

TO: Institutional Representatives, CSAP  
FROM: David J. Carr  
SUBJECT: Student Information Requested for the Council's Financial Aid Study (SJR81)

JUN 14 1982

FINANCIAL AID OFFICE  
VPI & SU

I write to request information about the other aid being received by selected students attending your institution. The names of the students are listed on the enclosed roster. All are 1981-82 CSAP recipients randomly selected for this survey.

As you know, the Council is currently undertaking a major study of the structure of student aid in Virginia. The outcome of the study will undoubtedly involve recommendations regarding substantive changes in existing state programs and the possible establishment of new programs which may better complement the federal aid available to Virginia students. In view of this, it is important that the Council have information which will enable it to evaluate the effect on individual students of changes in existing state and federal aid programs (e.g., reductions). The Council also needs this information so that it can project the effects of program options being considered as part of the study.

Because the time allotted for the study is so short, I would very much appreciate your providing the necessary information by Tuesday, June 22. I realize this is a very short turn-around time and apologize if it causes you any inconvenience, but it is very important to all of us.

In order to ease the work load associated with providing the information, I offer two methods. You can either complete a copy of the attached survey form for each student on the roster, or you can send me a copy of the latest award letter for each student showing all of the aid programs and amounts the student is receiving. Please make sure the student's name and social security number appear on the letter if you select this option. Also be sure that every aid program appears on the letter with the amount of aid being received under that program.

In addition to the student's name and social security number, the rosters also show, from left to right, the student's status (D = dependent and I = independent), the student's income, the parents' income, the institutional need, and other aid reported by you in the fall on the enrollment rosters. If this information has changed, I would appreciate your correcting it on the roster if time permits. The important thing however, is to get the information about other aid back to me by June 22.

Institutional Representatives, CSAP and TAGP  
Page two  
June 11, 1982

If you have any questions about the roster or what is needed, please  
contact me or Randy Craig. Again, I apologize  
for any inconvenience and very much appreciate your assistance in this important  
part of the study.

DJC/aba  
Enclosure

STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA  
FINANCIAL AID SURVEY

(6/82)

INSTITUTION:

STUDENT'S NAME: \_\_\_\_\_

SOC. SEC. NUMBER: \_\_\_\_\_

Program Name	Amount of Award
<u>Scholarships and Grants</u>	
PELL	\$
SEOG	
CSAP	
TAGP	
OTHER (SPECIFY):	
1.) _____	
2.) _____	
3.) _____	
4.) _____	
<u>Loans</u>	
NDSL	\$
GSL	
OTHER (SPECIFY):	
1.) _____	
2.) _____	
<u>Work-Study</u>	
CWSP	\$
OTHER (SPECIFY):	
1.) _____	
2.) _____	
Total Amount of Awards	\$



Appendix B

Cover Letter Mailed With the  
Survey Instrument



## COMMONWEALTH of VIRGINIA

### *Council of Higher Education*

*James Monroe Building, 101 North Fourteenth Street, Richmond, Va. 23219*

GORDON K. DAVIES  
Director

Dear Student Aid Recipient,

I write to ask your help in shaping the future of state student financial aid programs in Virginia. Recent reductions in federal support for student financial assistance programs have led many states to re-evaluate their student aid programs. The Virginia State Council of Higher Education, at the request of Governor Charles Robb and the General Assembly, has begun a major study of how Virginia's financial aid programs might be restructured to ensure Virginia students access to the college of their choice. Information has been collected from many sources, but college students like yourself are only now being contacted to determine exactly how your college plans might be influenced by changes in student financial aid awards.

Your name was selected randomly from over 17,000 students who received grants under Virginia's need-based College Scholarship Assistance Program (CSAP) during 1981-82. In order for the results to be truly representative of all students in colleges across the state, it is very important that you complete and return the enclosed questionnaire. A pre-addressed return envelope has been enclosed for this purpose.

The survey results will help determine the kinds and levels of financial aid needed in the future. By completing and returning the survey, you will help ensure that the concerns of Virginia's college students are reflected in these determinations. Therefore, your participation in the survey is very important.

Please be assured that your survey responses will be considered confidential and will not cause changes in the amounts of financial aid you are receiving for 1982-83. Your name will not appear in the study and your answers to the survey questions will be averaged with those of other students in the published results. Please feel free to contact the Survey Project Director, Elizabeth Akins, , with any questions or comments you have about the survey questionnaire.

Thank you for your cooperation in this important project.

Sincerely,

David J. Carr, Coordinator  
Planning and Management  
Financial Aid Programs

DJC/bl

Enclosure

*Planning Virginia's Progress in Higher Education*

Appendix C  
The Postcard Follow-up

August 23, 1982

A questionnaire seeking information about financial aid and your enrollment plans was recently mailed to you. Your name was selected randomly from a large sample of Virginia students who received grants under the College Scholarship Assistance Program (CSAP) last year.

If you have completed and returned the questionnaire, please accept our sincere thanks. If not, please complete and return it in the envelope provided. Even if you do not plan to return to college this year, your responses are important to assure that the results represent a true picture for college students across Virginia.

If you did not receive a questionnaire or have misplaced your copy, please let us know so another copy can be forwarded to you immediately.

E. Akins  
Research Director

Appendix D  
The Survey Instrument

FINANCIAL AID RECIPIENTS IN VIRGINIA

This survey asks questions about how financial aid from federal and state sources influence your future plans for enrollment in college. The information is being collected for use with a statewide study of financial aid being conducted by the State Council of Higher Education in Virginia.

Space is provided on the back page for any comments you would like to add to your responses.

Thank you for your assistance.

Return this questionnaire to:

Virginia Financial Aid Study  
State Council of Higher Education  
James Monroe Building  
101 N. Fourteenth Street  
Richmond, Virginia 23219

FINANCIAL AID RECIPIENTS IN VIRGINIA

INSTRUCTIONS: Please circle the number of ONE response or fill in the information requested.

1. What college did you attend during the academic year 1981-82?

---

2. Are you academically eligible to return to college this year?

- 1 NO
- 2 YES

3. What are your enrollment plans for this academic year (1982-83)?

- 1 CONTINUE TO ATTEND THE COLLEGE LISTED IN QUESTION 1
- 2 TRANSFER TO ANOTHER COLLEGE
- 3 STAY OUT OF COLLEGE FOR A TERM OR MORE

4. How important were each of the following concerns in your decision about your enrollment plans for this year (1982-83)? (Circle one number for each concern)

	<u>Important</u>	<u>Not Important</u>
FINANCIAL CONCERNS	1	2
ACADEMIC CONCERNS	1	2
CAREER CONCERNS	1	2
PERSONAL CONCERNS	1	2

5. Was financial aid a primary factor in your decision about your enrollment plans for this year?

- 1 NO
- 2 YES

↳ (If yes) Please briefly describe how financial aid influenced your enrollment plans. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. What was the overall average of your grades after the last term you attended college?

- 1 LESS THAN A "C" AVERAGE
- 2 A "C" TO A "B" AVERAGE
- 3 BETTER THAN A "B" AVERAGE

7. Without considering financial aid, how does your own and/or your family's income (whichever is relevant) this year compare to your or their income last year?

- 1 THE INCOME IS LESS
- 2 THE INCOME IS ABOUT THE SAME
- 3 THE INCOME IS GREATER

8. Did you apply for financial aid for this year (1982-83)?

- 1 NO → (If no) Skip to question 14
- 2 YES

↳ (If yes) Continue to question 9



9. For financial aid purposes, in 1982-83 are you considered to be

- 1 DEPENDENT ON YOUR PARENTS
- 2 INDEPENDENT OR SELF SUPPORTING
- 3 UNSURE

10. Have you received an award letter from the college you plan to attend in the fall informing you of the financial aid you can expect to receive this year (1982-83)?

1 NO  $\longrightarrow$  (If no) Skip to question 14

2 YES  
(If yes) Answer questions 11, 12, and 13

11. How does the amount of financial aid you were awarded compare to the amount you received last year?

- 1 IT IS QUITE A BIT LESS THAN I RECEIVED LAST YEAR
- 2 IT IS ABOUT THE SAME AS I RECEIVED LAST YEAR
- 3 IT IS QUITE A BIT MORE THAN I RECEIVED LAST YEAR

12. If you received an award letter, what will be your largest source of financial aid? (Circle one number)

- 1 GRANTS OR SCHOLARSHIPS NOT TO BE REPAID
  - 2 LOANS TO BE REPAID
  - 3 EMPLOYMENT, INCLUDING WORK-STUDY
  - 4 VETERANS OR SOCIAL SECURITY BENEFITS
  - 5 OTHER (Please specify) \_\_\_\_\_
-

13. If you received an award letter, how much of each type of aid do you expect to receive for the 1982-83 academic year?

	<u>Amount Expected</u>
GRANTS (such as Pell, CSAP, or TAG)	\$ _____
SCHOLARSHIPS	\$ _____
LOANS (such as NDSL or GSL)	\$ _____
WORK-STUDY	\$ _____
OTHER (Specify) _____	\$ _____

Questions 14 and 15 ask you to consider how future reductions of financial aid of either 40% or 100% might influence your enrollment plans.

14. If your financial aid from federal, state, and institutional sources was cut by 40% from this year's aid, how likely is it that you would make some of the following changes in your enrollment plans? (Circle one number for each response)

	<u>Very Unlikely</u>	<u>Somewhat Likely</u>	<u>Very Likely</u>
DROP OUT OF SCHOOL FOR A TERM OR MORE TO EARN MONEY	1	2	3
TRANSFER TO A COLLEGE LESS EXPENSIVE	1	2	3
WORK FULL- OR PART-TIME	1	2	3
USE MORE OF YOUR FAMILY'S RESOURCES	1	2	3
BORROW MORE MONEY	1	2	3

15. If your financial aid from federal, state, and institutional sources was cut entirely, how likely is it that you would make some of the following changes in your enrollment plans?

	<u>Very Unlikely</u>	<u>Somewhat Likely</u>	<u>Very Likely</u>
DROP OUT OF SCHOOL FOR A TERM OR MORE TO EARN MONEY	1	2	3
TRANSFER TO A COLLEGE LESS EXPENSIVE	1	2	3
WORK FULL- OR PART-TIME	1	2	3
USE MORE OF YOUR FAMILY'S RESOURCES	1	2	3
BORROW MORE MONEY	1	2	3

The last section contains questions for students who plan to continue to attend college.

16. In 1982-83, what type of course load do you plan to carry?

- 1 FULL-TIME COURSE LOAD
- 2 PART-TIME COURSE LOAD
- 3 OTHER (Please specify) \_\_\_\_\_

17. Where do you plan to live during the academic year?

- 1 RESIDENCE HALL OR OTHER ON CAMPUS HOUSING
- 2 OFF CAMPUS WITH PARENTS OR FAMILY
- 3 OTHER OFF CAMPUS HOUSING

- 6 -

18. How do you expect your educational costs for tuition, fees, room and board (or commuting costs), and books and supplies this year to compare with your educational costs last year?

- 1 MY COSTS PROBABLY WILL BE LOWER
- 2 MY COSTS PROBABLY WILL BE ABOUT THE SAME
- 3 MY COSTS PROBABLY WILL BE HIGHER

Your responses to the above questions are greatly appreciated. Are there any comments you would like to make about this questionnaire or about the importance of financial aid to your future plans for college?

Please feel free to use this space to write any comments you might have.

Thank you for your assistance.

Appendix E  
Characteristics of Respondents  
and Nonrespondents

Appendix E

Characteristics of the Respondents and Nonrespondents (Percentages)  
N = 1312

Characteristic	Respondent N = 765	Non-Respondent N = 547	$\chi^2$ Significance <sup>1</sup>
Sex			
Male	36.0	39.0	
Female	64.0	61.0	
			1.14    N.S.
Racial Background			
White	61.0	50.6	
Black	34.7	43.9	
Other	4.4	5.6	
			13.85    **
Year in School			
First	42.3	36.1	
Second	33.3	36.6	
Third	24.4	27.3	
			6.48    N.S.
Dependency Status			
Dependent	83.3	79.9	
Independent	46.7	20.1	
			2.27    N.S.
Institution Type			
Two-Year	19.1	19.7	
Four-Year	27.7	22.3	
Comprehensive	53.1	58.0	
			4.49    N.S.

1

\*p < .10  
 \*\*p < .05  
 \*\*\*p < .01  
 N.S. = Not significant

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