DIFFERENCES IN TYPES AND AMOUNTS OF FINANCIAL AID BY INSTITUTIONAL CATEGORY AND SEX

by *Linda Gallucci Caplan*

Rationale

Financial aid as it relates to college attendance is becoming an important issue as colleges and universities face dwindling enrollments and subsequent decreases in supportive funding. If need based financial aid were withdrawn from the campuses, those students dependent on aid to meet their educational costs would be forced to withdraw. This could result in dramatic enrollment decreases for the institutions of higher education.

The administration of these student aid programs becomes important in reference to Public Law 92-318, the Higher Education Amendments of 1972. Title IX of this law states that, "No person in the United States shall be denied the benefits of, or be subjected to discrimination under any education programs or activity receiving federal financial assistance." Regulations regarding Title IX specify financial aid as one area of academe which is particularly vulnerable. Given this federal mandate of nondiscrimination and the need for colleges and universities to continue providing assistance to their students, it is important to look at any differences in financial aid awards for men and women attending the same or similar types of institutions and differences among the various institutional types.

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Previous finanical aid studies which tabulate data separately for male and female merely chart differences in amounts of aid from the following sources: family, employment, scholarship/grants and loans. In *Preventing Students From Dropping Out,* Dr. Alexander Astin studies differences in persistence for males and females who receive various types of aid. In general, these studies indicate that females are getting their fair share of aid and that major assistance in the form of loan aid is a positive predictor for women's persistence in college.

While the ultimate picture indicates that women are aided in proportions greater than their proportion of overall enrollment in institutions of higher education, there may be subtle and discriminatory differences in the types and amounts of aid they receive. It is also possible that female aid recipients will possess different characteristics than the male aid recipients.

This study will explore the following questions: 1) Are there differences in the types and amounts of aid received by men and women attending various institutions? and, 2) Are there differences in the characteristics of aided men and women?

Methodology

A follow-up sample of 40,525 has been selected from those students surveyed by the 1975 Cooperative Institutional Research Program (CIRP) and a 50% random sample of students enrolled in 44 proprietary institutions. In September, 1977 the Higher Education Research Institute (HERI) Survey was sent to this sample. Those who did not respond within four weeks were mailed another survey with a cover letter briefly explaining the purposes of the study and the importance of the students' responses. As a final attempt to retrieve questionnaires, a third letter and questionnaire was sent. After the 4,052 undeliverable questionnaires were subtracted from the total of 40,525, there was a 45.7% response rate consisting of 16,657 usable questionnaires.

Data for this study will be drawn from those of the 16,657 respondents who received aid from any one of the following sources: grants, loans or work study. This study will observe the impact of student input characteristics and various college environments on the types and amounts of financial aid received by men and women. Each independent variable will be analyzed in terms of its relationship to each of the dependent variables. Controls will be placed on those variables which could bias the particular relationship being tested. The interaction of two or more input and environmental variables with a particular outcome will also be evaluated. Stepwise linear multiple regressions will be used to analyze the data.

College types will be defined in terms of control—private or public—and type—university, four year, two year and predominantly Black. Student characteristics will include parent's income, student's high school grade point average, ethnic background, college major and age. The independent or input variables will include all the student characteristics and the various environments which will be defined as college types. The types and amounts of financial aid will be the dependent or output variables.

Of the 16,657 respondents to the follow-up survey, 7,618 had reported on the 1975 survey that they expected to receive student financial aid funds from grants, loans or work study for their freshman year. The frequencies, cross tabulations

and regressions included in this study used this subpopulation of 7,618 as its base.

Characteristics of these 1975 freshmen financial aid recipients can be summarized as follows. The male/female distribution is about equal and over 93% are between 17 and 19 years of age. Sixty percent reported their high school grades to be a B average, and the field of business had the highest degree of major interest with technical education and engineering majors following far behind. Eighty-four percent of the students were Caucasian and over 40% attended two year colleges. While close to 70% of the students reported receiving financial support from their families, 42% of these students received less than $500 in parental assistance. Over 30% of the aided students came from families with incomes below $8,000 and only 16% reported family incomes above $20,000. A little over half received grant support only; forty-six percent reported receiving up to $1,000 in federal financial aid and an additional 30% reported receiving between $1,000 and $2,000 in student aid funds.

The first set of cross tabulations separated students by institutional category, sex, parental income and various types of aid. The findings indicate that the highest percentage of students receiving any type of assistance are from middle income families where the income ranges from $8,000 to $20,000. The only exception to this phenomena is at the predominantly Black colleges where the highest percentage of aid recipients are in the low income category. Despite the variety of available governmental aid, the low income target populations are being replaced by students from middle income families. Further studies could look at the percentage of United States' families with college age children from various income categories, and their representation in college. If the lower income groups were not proportionately represented, the question would then become "Why?"

Another future study could compare current trends in income levels served by college financial aid programs with the percentages served from various income groups after a few years of operation under the regulations of the 1978 Middle Income Student Assistance Act. Since the intent of this recently passed legislation is to provide federal grant aid to students from families earning up to $25,000 and to open the Federal Loan to all students regardless of family income, speculation is that even smaller percentages of low income students will be aided. First come—first served will keep the last minute decision-makers from some sources of aid and complex application forms and involved procedures will deter others. Both of these aspects of student aid administration work to the detriment of low income students more than those from higher income families. Lower income families oftentimes have fewer skills to understand and cope with bureaucratic procedure.

The second set of cross tabulations compared categories by parental income level by student sex by amount of financial aid package. Differences in total amounts reported by males and females varied more than types of aid received. While 10% more women than men receive over $3,000 at the following institutions—two year colleges and private universities—the opposite is true at the private and public four year colleges, the public universities and the Black institutions.

In spite of parental income level, the largest percentage of students fall into the $1,000-1,999 total aid category. This includes the following categories: all students aided at Black institutions; all but high income females at public universities and public four year colleges; middle income students as well as low and high income females at private four year colleges; low income students, medium income females and high income males at two year colleges; and, high income students and medium income males at private universities.

The private universities show a tremendous increase in aid for the majority of students from low income families; these students receive $3,000-3,999. The highest percentage of women from middle income families also are in this category; however, the greatest percentage of men from middle income families and students from high income families fall back into the $1,000-1,999 aid category.

Stepwise linear multiple regressions were utilized to identify the significant predictors of types and amounts of aid. Two dependent variables were tested—recipients of financial aid packages and total amount of aid received. The following independent variables entered the regression until the F test and the .05 level of significance yielded a value of at least 4.0: parental income, type of institution attended, high school grades, sex, age, ethnic background and college major. These regressions were run on a random sample of 10% of the population receiving grant, loan or work study assistance. Students who received aid packages attend the private universities and colleges where costs are the highest. Since package aid contains a combination of grants, loans and/or college work study, there is a greater opportunity to receive more aid with a package rather than either a grant or a loan as the sole source of aid. Few of these students attend two year colleges—one major reason is the low cost of education at the two year colleges. Another significant characteristic of package aid recipients is their low income family background. This fact, coupled with attendance at high cost institutions, leads to the need for large amounts of aid which in turn requires a combination of various sources to meet the entire financial need.

The students most likely to receive aid packages, in this particular study, are education majors. Parents of education majors have lower incomes than parents from any other major area. In contrast, humanities majors are least likely to receive aid packages. With the exception of engineering and math majors, humanities majors come from families with the highest incomes.

The predictor variables for package aid for male and female recipients was then calculated separately. In both cases, the two strongest correlations are attendance at white private universities and then at white private four year colleges. This finding along with low parental income, which is a significant factor for both males and females, are also significant predictors in the regressions for all package aid recipients. In other words, one's sex plays no part in being awarded package aid when students are from low income families and attending either white private universities or four year colleges. The regression for women also shows attendance at white public universities to be a predictor in being awarded package aid.

The other significant variables for both men and women receiving package aid are their college majors. Here the results varied by sex. While female fine arts majors are least likely to receive package aid, for males the humanities majors are

least likely to receive package aid. The females and males in these respective majors come from relatively low income families and are most likely to receive grant only assistance.

Other nontechnical male majors are significantly less likely to receive package aid. These students are generally from higher income families and attend white private universities. In most cases they receive grant only assistance. This is due to not having an extremely large financial need but demonstrating some need due to the cost of education at the private universities.

Being a male education major is also a predictor for receiving package aid. While these students most often attend low cost white public four year colleges, their parent's incomes are low enough to qualify them for large amounts of federal student aid.

The most important variable examined was total amount of financial aid received. Here again, attendance at white private universities and private colleges proved most significant for the amount of aid. Since the cost of education is highest at the private institutions, it is natural to see students attending these schools receiving the highest amounts of aid.

Next to institutional category, the most important variable is race. Black students have the lowest family incomes of all ethnic groups in the study. They attend Black institutions and are most likely to receive grant only assistance. Usually, large amounts of aid are linked to receiving an aid package; however, Black students attending Black intitutions receive large amounts of aid in the form of grant only. This is possible by combining the Basic Grant and the Supplemental Grant in lieu of work study or loans.

Parental income is another predictor variable in the total aid regression. Low income has a strong correlation to receiving package aid while high income correlates positively to receiving loan only assistance. Students from low income families generally attend public two year and four year colleges, but low income students who do attend schools in the private sector receive large amounts of financial assistance.

Another significant factor in receiving large amounts of aid is an above average high school academic record. High grades correlate positively with attendance at private universities. Generally speaking, these students are more capable of understanding application forms and are more likely to take the initiative to seek out all possible sources of aid.

The next significant category of independent variables is field of study. Engineering majors and health majors positively correlate with total aid while humanities majors negatively correlate to this test variable. While both engineering and humanities majors usually attend private institutions, engineering majors accept aid packages most often while the humanities majors most often accept grant only aid. This relates to the fact that high amounts of aid go to engineering majors and low amounts go to humanities majors. On the other hand, health majors come from extremely low income family backgrounds and, despite a tendency to attend low cost two year colleges, their financial need is extremely high and they most often accept award packages over loan or grant only aid.

Since the amount of aid received is related strongly to the type of institution students can attend, regressions were tabulated separately for male and female aid

recipients to test for differences in predictor variables for these two groups. As with the male and female regressions on aid package, the most significant variables are identical for both males and females. The top three independent variables tabulated are the following: first, package aid; second, attendance at white private universities; and third, attendance at private four year colleges.

Higher than average high school grades and low parental income also proved to be significant variables for the males. This corresponds to the regression on total aid for all recipients, male and female.

Attendance at white public universities is positively significant for females. It is interesting to note the differences in attendance of male and female aid recipients at private universities; there are 9% more aided males at private universities than females, yet the grades of the aided female students are higher than those of the aided males. It is possible that needy females desiring a university education will more often be accepted at the public university instead of the private and that this phenomena contributes to the significant correlation between attendance at public universities and total aid received by female students.

The fourth most significant predictor variable for male aid recipients is race; being Caucasian has a negative value. For women, being Black has a positive value. While Black and Oriental males have the most likely chance of receiving large amounts of total aid, the negative correlation between being Caucasian and receiving large amounts of total aid is stronger. For the women, being Oriental or Puerto Rican has negative correlations to high amounts of aid. The former group comes from higher income families and attend public low cost universities, while the latter group comes from lower income families and attend the lower cost institutions. Since institutional category is a more significant variable than parental income for determining the total aid, these two ethnic categories did not appear as significant variables in the equation although low income Black students with tendencies to attend Black institutions did have a significant positive correlation to total aid received.

Various major areas with significance are engineering, agriculture and health. As with the total aid regression for all aid recipients, engineering majors—whether male or female—have a significant chance to receive higher aid packages than any other major. The female health majors also have a higher probability of receiving large total aid packages. Their characteristics are similar to those reported on the regression for all aid recipients. Female agriculture majors are least likely to receive large aid packages. It is difficult to explain this phenomena since their family incomes are only slightly higher than average and they are most likely to attend private colleges and universities.

The questions asked in this study relate to differences between male and female aid recipients. Type and amounts of aid are not significantly different for male and female recipients. Student characteristics vary slightly. Aided males come from families with higher incomes than aided females. Over 10% more Caucasian males are aided than Caucasian females, while 11% more Black females are aided than Black males. Distribution of aided males and females by institutional category is fairly similar, except in attendance at private universities where there is almost 10% more aided males.

The data base for this study is composed of only students receiving some type of

grant, loan or work study assistance. Since this population has very similar characteristics, most correlations are low and the significant variables in the multiple regressions are usually those which one would logically conclude for oneself.

Significance

This study has provided a demographic description of federal student financial aid recipients. These data can be valuable to policy makers in evaluating the degree of success in providing aid to target populations. Key items of interest are the male/female distribution, the type of institution attended, the ethnic background and parental income, and the type and amount of aid received.

Conclusions from this study indicate that there is a fairly equal distribution between males and females; that while over 40% of aid recipients attend two year colleges, only 5% attend private universities; that over 80% of aided students are Caucasian; that while 54% of the recipients come from family incomes between $8,000 and $20,000, only 30% have family incomes below this range; that over half the students receive grant only assistance; and that over 80% receive less than $2,000 in federal aid assistance, with the average amount of aid being $1750.

Many questions arise from these conclusions. First, if federal aid programs are to provide choice as well as access to higher education, why are two-fifths of all aid recipients attending two year colleges and only one-twentieth attending private universities? What are the national percentages of various ethnic minorities and how do these numbers relate to the percentage of each ethnic group receiving financial assistance? What percentage of the nation's population falls into the various income ranges and how do these statistics compare with aid recipients from the various income categories? What is the philosophy in reference to distribution of aid—packaging versus grant only or loan only assistance? Can total cost of education be met for the low income student if the average aid package is less than $2000? Are the financial aid awards keeping up with inflation?

Data gathered in this study can be used as a base to begin answering these questions and many more others raised by policy makers, voters and students themselves.