

The Cost of the Support of College Students as Affected by Their Choice of Public or Private School and Residence

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This study provides information on total cost of the support of unmarried students under 25 years of age attending public or private colleges under different residence options during the fall of 1986. The research is a secondary analysis of data from the National Postsecondary Student Aid Study (NPSAS).

Since parents and students are "joint consumers" of college education, such information can facilitate communication relating to their financial management. Average expenditures for various budget categories and parental estimates of non-cash support can also provide guidelines for financial counselors, planners, and educators.

KEYWORDS: *college student expenditures, college cost, family finance.*

Students and parents have been viewed as "joint consumers" of higher education and their knowledge of cost may occur simultaneously with the decision-making process (Olson, 1982). There are many combinations of sources of funding and wide differences in cost based on enrollment at public or private schools and on students' residence while in school (Korb et al., 1988). Information about the average costs of supporting college students could aid families in their decision-making relating to the financing of college and could also provide guidelines for financial counselors, planners, and educators.

College costs include both direct education expenses and living expenses. The College Board (1990) publishes guidelines concerning expected college expenses. These guidelines show specific amounts for the costs paid to the college: however \$800 to \$1,000 is usually estimated for "other personal costs"

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per academic year (College Board, 1990). Such estimates focus on costs directly related to attendance at college such as tuition, housing, fees and living expenses beyond those which the student would regularly incur. In addition, the published estimates consider only resident and commuter housing options rather than making a distinction between living with parents and living in off-campus housing.

Purpose

The purpose of this research was to compare the total cost of supporting students living in college housing, living off-campus, and living with parents at both public and private colleges. Another purpose was to interpret the findings so as to facilitate budget planning by students and their families.

Questions to be answered were:

1. Do the characteristics of students differ according to school and residence choice?
2. How important are financial considerations in the choice of school and residence?
3. What is the financial status of students and from what sources do they finance their education?
4. Do average (mean) expenditures of students differ according to residence option?
5. What kinds of support other than direct cash payments do parents provide under different residence options? What is the estimated value of this support?
6. To what extent do gender, the differences in choice of school and residence, and financial aid influence student costs?

It was assumed that tuition accounts for most of the difference in cost between public and private schools. Tuition becomes a major fixed expense for the student, but living costs such as food, clothing, and personal expenses are variable and thus more under the control of the student.

Background

Financing a college education is a major family undertaking. At various stages of decision-making there are opportunity costs to be considered in whether or not the youth should attend college and, if so, whether a public or private school should be selected and where the student should live during the school year. These decisions are inherently related to parents' desire and feeling of responsibility for supporting the youth during a period when he or she might otherwise be "launched." Since the research focuses on the total costs of supporting and educating college students, this section reviews studies relating to parental costs of providing basic living expenses for their children, costs directly due to college enrollment, and factors relevant to choice of school and residence.

Studies of Costs of Raising a Child and College Costs

Lino (1990, 1991), Espenshade (1984), and Lazear & Michael (1988) have estimated parental costs of raising a child through age 17. The general methodologies differ primarily in the way they prorate certain group goods among family members. All use secondary expenditure data. None have included college costs but have referred to costs reported by the College Board (1990) for this information. Such studies are used to establish alimony and child support awards, compensation for foster care, and for parent education and financial planning. They are updated to reflect the cost of living. The College Board (1990) and individual colleges base their calculations on the actual college charges for tuition and other expenses paid directly to the school but use estimates of personal expenses directly related to education.

The U.S. Department of Education (1988, 1989a) reported on the 1987 National Postsecondary Student Aid Study (NPSAS) which surveyed both students who received financial aid and those who did not. Students were asked to supply information concerning total expenditures and then to indicate expenses which were directly related to their education. The Education Department based its published reports (Korb, et al., 1988; U.S. Dept. of Education, 1989b) on the costs directly related to education. Separate tables were presented for: public and private schools, three residence options, full-time and part-time students, major fields of study, region of institution, gender, age, race/ethnicity, current marital status, dependency status, and financial aid status.

Churaman, (1992) used the NPSAS data to examine parent contribution of male and female single-parents and two-parent families to their children's college education. Children in two-parent families were more likely to be in school housing than were the children of single parents. The proportion of children of female single parents living at home was higher than that found for male single parent households. The groups were not significantly different in their choice of public versus private colleges. One reason was the fact that higher private school tuition was partially offset by more financial aid. When a multivariate analysis was done, residence was not a significant predictor of parents' contribution and was thus dropped from the final analysis. Financial aid, public or private school, parents' saving behavior, student contribution, race, and family type were all significant, accounting for 22.7% of variance in the amount of parental contribution to the college education of their children.

The "Cost of Food at Home" information published regularly in *Family Economics Review* indicates higher food costs for males than for females, but flat rates are generally charged for boarding at school. Another area which is known to be higher for males is auto insurance. Also, traditionally males may have assumed higher responsibility than females for costs associated with dating.

Choice of School

Rational choice of school would require that parents and students are aware of varying cost factors and of the criteria for financial aid, but this is often not the reality (Olson, 1982). Since it has been considered important from a national viewpoint to work for arrangements that do not restrict student choice (McPherson and Skinner, 1986) and which contribute toward quality and diversity (Winston, 1988) some private institutions openly discriminate in price to insure that able students can have access to an excellent education regardless of families' income. This has resulted in as many as a third of their students being charged less because they're "in financial aid."

Choice of Residence While in School

The middle class norm has been for parents to consider the launching of their offspring to be successful only if they adequately socialize them for adulthood (including work and marriage) (Schnaiberg and Goldberg, 1989). Attending college may delay the launching period, particularly if the child resides at home. In addition to those students who continue to live with their families during college, there is evidence that more young adults who have been "launched" but

have lost jobs or decided to return to school, have moved back to the parental home (Glick and Lin, 1986; Schnaiberg and Goldberg, 1989). This co-residence may be more striking for males than for females.

The option to live off campus reflects the trend of single-sex or mixed-sex sharing of houses or apartments. Since colleges have classified both the off-campus group and students living with parents as commuters, separate expenditure data is not available. Studies relating to residence on campus have been primarily focused on administration and utilization of residence halls.

Method

This research is a secondary analysis of data from the National Postsecondary Student Aid Study (NPSAS) conducted by the U.S. Department of Education during the 1986-87 school year (1988, 1989a). The NPSAS obtained data from students and college record offices. It also included information provided by a smaller sample of parents. Because school financial aid records did not include information on the family finances of unaided students, a major objective of the parent survey was to collect information concerning family composition and financial status of unaided, dependent students. The sampling design for NPSAS involved three stages: (1) clustering of units at two of the sampling stages, (2) stratification of the sampling units at each stage, and (3) assignment of differential probabilities of selection. Trained data collectors visited each participating institution during the months of Dec. 1986 through March 1987 to obtain information about the institution and to determine whether students in the sample had financial aid records. Each student was mailed a questionnaire in March 1987. Nonrespondents were sent two mailgram reminders, and all individuals not responding to the second mailgram were targeted for telephone interviews. For the 43,176 respondents, which included both graduate and undergraduate students from all types of postsecondary schools, there was a 67.2% response rate. Questionnaires were mailed to a smaller sample of parents in the summer of 1987 with a total of 13,423 respondents, a 58.2% response rate.

An SPSSX sub-file was created to include unmarried students (never married, divorced, and widowed) under 25 years old for whom both student and parent data were present. The sample was further limited to students enrolled during the fall of 1986 at public and private colleges offering at least 4 year degrees

and who were taking 6 or more credit hours. These adjustments resulted in a sample of 5097. The computed variables are explained in the Appendix.

The independent variables for the analysis were: gender of student, choice of school and residence, and financial aid. The cost of supporting the student was the independent variable. This was examined separately for semester costs paid to the school, average monthly living expenses, and estimated parental non-cash support because these distinctions may be made when parents and students consider who will be responsible for meeting specific costs and who will manage the payments.

Descriptive statistics of the general population of students residing with parents, in off-campus housing, and in school housing were calculated using Chi-square and Oneway Analysis of Variance. Total expenditures reported by students provided useful budgeting estimates for the purposes of this research. The number and percentage of respondents reporting and the average dollar amounts reported were calculated separately for students in each of the three residence options at public and at private schools. For this analysis, the Scheffé test revealed the groups which varied from the mean of the entire population at the $p < .05$ level. Multiple Regression Analysis was used to analyze the extent to which the choice of public or private school, amount of financial aid, choice of residence, and gender explained the variation in (1) student costs paid to the college, (2) student average monthly expenditures, (3) student total cost, and (4) costs directly related to education as calculated by the Department of Education.

To further explore the interaction between the school and residence options, dummy variables were created for each of the six possible combinations of public or private school and housing. The category of public school, living with parents was the omitted group in the regression because the cost of students choosing this arrangement are known to be lowest.

Findings

This section describes characteristics of the students, their financial status and sources of funds, non-cash support, and analysis of factors contributing to the explanation of expenditures.

Characteristics of the Sample

Table 1 identifies the characteristics of the total sample and of students in each type of residence. There was a total sample of 5097, of which 51% were males and 49% females. School housing was the most common residence option for both males (44%) and females (49%). This was followed by off-campus housing (31% of males and 28% of females). Twenty five percent of males and 23% of females lived with parents. About half of Blacks, Whites and American Indians lived in school housing, whereas about half of the Hispanic students lived with parents. The greatest proportion of dependent students (48%) lived in school housing while the greatest proportion of independent students lived off campus. Fewer of the students attending schools offering graduate work lived with parents. Students living in campus housing made up half of those who had applied for financial aid and 43% of those who had not applied for aid. The students who had chosen the three different residence options showed significantly different demographic characteristics.

Table 1 also shows the relationship between student responses to questions relating to the importance of three financial considerations in their choice of a school. Whether the student could get financial aid was not a significant factor in the decision, while lower living cost and the fact that the student could live at home were ($p < .0001$). Eighty eight percent of those who indicated that the fact that they could live at home was a very important factor were living with parents. The fact that living costs would be less was very important to 41% and somewhat important to 19% of those living with parents. The option of living at home was attractive to many who apparently were not thinking primarily of the lower cost of doing so.

Student Financial Status and Sources of Funds

Table 2 summarizes the number of students who reported information about their earnings and net worth and the dollar amounts reported. Eighty eight percent reported current earnings averaging \$3,543. Few reported non-taxable income, assets, and liabilities.

Funds for schooling came from several sources. Parental support was the most frequently mentioned source with 76% of parents supplying an average of \$4,748. Students' own earnings and savings was the second most frequent source with 75% of the students furnishing an average of \$1,673. Financial aid was reported by 38%, the average amount being \$4,047. Other sources of funds were gifts from friends and relatives (15%, averaging \$1,001) and

loans from parents, friends or relatives. Forty three divorced or widowed students reported income from former spouses, averaging \$1,892. As may be seen, the reported responses had wide standard deviations.

Table 2
Number and Percentage of Students Reporting Financial Status and Sources of Funds for School and Mean Dollar Amounts Reported (N=5097)

Variable	n	%	M	SD
<i>Financial Status</i>				
Student earnings	4495	88.2	\$3,543	\$3,735
Non-taxable income	45	0.8	2,313	3,999
Assets	260	5.1	3,573	8,195
Liabilities	170	3.3	3,563	4,129
Net worth	69	1.3	3,439	4,929
<i>Sources of funds for school</i>				
Financial aid	1876	36.8	4,047	3,829
Own earnings and savings	3813	74.8	1,673	1,755
Parents gave	3862	75.8	4,748	4,570
Parents loaned	578	11.3	2,088	2,803
Friends and relatives gave	756	14.8	1,001	2,227
Friends and relatives loaned	167	3.2	1,164	1,415
Former spouse	43	.7	1,892	2,936

Expenditures at Public and Private Schools Based on Residence

Table 3 shows the number of students who reported each item of expenditure and the means and standard deviations of the amounts reported. Student-reported amounts paid to a school were by semester, while other costs were monthly averages. The F-ratio and the probability of F reveal that there were significant differences by residence for almost all categories. Results of the Scheffé tests indicate means which are significantly different from the mean for the entire group. As may be seen, public school costs for tuition, fees, and food at school were higher for those living in school housing. It is likely that more out-of-state students lived in school housing. If so, this would account for the differences in tuition, but would not explain the higher food or books and

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supplies cost. Rent and food costs were higher for those living off campus than for those living with parents, while commuting costs, other transportation costs, and personal expenses were higher for the students living with parents. The Scheffé test revealed that this held true at both public and private schools.

At public schools average annual student costs directly related to education were \$3,012 for students living with their parents, \$4,102 for students living off campus and \$5,042 for students living in campus housing. At private schools these figures were \$6,291, \$9,101, and \$11,066 respectively.

Non-cash Support

Table 4 shows the kinds of non-cash support given by parents. Over 70% furnished transportation, but this was more often provided for students living at school. As might be expected food and housing were more often provided for students living at home, and were somewhat more likely to be provided if the student lived in school housing than if he or she lived off campus. Clothing was more likely to be provided for students living in school housing. The proportion of parents who provided credit cards was much smaller than for other forms of support, and was more frequent for students living in school housing (42%) than for those living off campus (37%) or living at home (32%). All of the forms of non-cash support differed significantly on the basis of the students' residence ($p < .0001$).

Regression Analysis of Factors Influencing Expenditures

Because analysis of variance revealed significant interaction between type of school and residence option, Multivariate Regression Analysis was used to examine the extent to which selected factors (public or private school, residence, financial aid, and gender of student) influenced different aspects of cost. See Table 5.

The first regression using costs paid to the college as the dependent variable was statistically significant. Financial aid and each of the options except public school, living off campus made significant contributions. The R^2 was .44, indicating that the model accounted for 44% of the variance in costs paid to the college. Gender of student was not significant, nor was the public school, living off campus option.

A similar analysis of the monthly costs had a significant F statistic ($p < .0001$) but the independent variables accounted for only 7% of the variance in the

monthly cost. The betas for off campus housing and living at school options at both public and private schools differed significantly from the living with parents option, while the latter did not differ with the type of school. Financial aid and gender of student did not contribute to the explanation of monthly costs.

Table 4
Non-cash Support Reported by Parents

<i>Source of Support</i>	<i>Student Residence</i>						<i>Chisq</i>
	<i>With Parents</i> n = 1221		<i>Off-Campus</i> n = 1514		<i>School Housing</i> n = 2362		
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
<i>Help pay car costs</i>							
Yes	908	75.9	1035	70.1	1808	77.8	28.7****
No	289	24.1	441	29.9	517	22.2	2 df
<i>Provide for food</i>							
Yes	1169	96.9	1132	76.8	2006	86.4	223.7****
No	37	3.1	341	23.2	317	13.6	2 df
<i>Provide housing</i>							
Yes	1165	96.9	943	64.6	1740	75.9	404.9****
No	37	3.1	517	35.4	554	24.1	2 df
<i>Provide credit card</i>							
Yes	384	32.4	536	37.0	957	41.8	30.3****
No	800	66.7	914	63.0	1332	58.2	2 df
<i>Provide clothing</i>							
Yes	1009	83.9	1132	76.8	2109	90.0	122.4****
No	194	16.1	342	23.2	234	10.0	2 df

****p < .0001

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Table 5
Regression on Different Components of Student Costs

Variables	B	Beta	t-ratio
<i>Regression on costs paid to college</i>			
Financial aid	.13	.14	7.23****
Private school, with parents	2005.76	.17	7.21****
Gender of student	-209.87	-.03	-1.75
Private school, off-campus	2447.13	.21	8.71****
Public school, school housing	1603.73	.18	6.92****
Public school, off-campus	-224.24	-.03	-.98
Private school, school housing	4995.42	.67	21.72****
(Constant)	1177.37		4.44****
R ² = .44, Adjusted R ² = .44, F = 207.99****			
<i>Regression on monthly expenses</i>			
Financial aid	.004	.02	1.01
Private school, with parents	-19.51	-.01	-.35
Gender of student	24.00	.02	.99
Private school, off-campus	253.46	.14	4.45****
Public school, school housing	-119.29	-.09	-2.53**
Public school, off-campus	173.72	.13	3.74****
Private school, school housing	-134.13	-.11	-2.87**
(Constant)	455.90		8.47****
R ² = .07, Adjusted R ² = .07, F = 19.94****			
<i>Regression on total expenses</i>			
Financial aid	.60	.14	7.26****
Private school, with parents	9006.42	.17	7.18****
Gender of student	-920.42	-.03	-1.70
Private school, off-campus	11265.53	.21	8.90****
Public school, school housing	7097.51	.18	6.79****
Public school, off-campus	-835.37	-.02	-.81
Private school, school housing	22345.24	.66	21.54****
(Constant)	5754.08		4.81****
R ² = .43, Adjusted R ² = .43, F = 204.05****			
<i>Regression on student costs directly related to education</i>			
Financial aid	.23	.19	10.32****
Private school, with parents	3431.03	.23	10.16****
Gender of student	-276.47	-.03	-1.09*
Private school, off-campus	4681.23	.31	13.72****
Public school, school housing	1571.07	.14	5.58****
Public school, off-campus	630.84	.06	2.27*
Private school, school housing	6444.96	.69	23.07****
(Constant)	3361.52		10.43****
R ² = .47, Adjusted R ² = .47, F = 240.03****			

*n < .05. **n < .01. ***n < .001. ****n < .0001

Table 6
Summary of Average Monthly Expenditures and Non-Cash Parental Support

	<i>Public Schools</i>		
	With Parents n = 853	Off-Campus n = 1103	School Housing n = 1077
Costs paid to school	\$236	281	763
Monthly living expenses	577	702	301
Value of non-cash support	390	228	259
Total average monthly expenditures and non-cash support	1203	1211	1323
Costs directly related to schooling	335	456	560
	<i>Private Schools</i>		
	With Parents n = 364	Off-Campus n = 411	School Housing n = 1285
Costs paid to school	581	1098	1865
Monthly living expenses	593	834	448
Value of non-cash support	453	320	284
Total average monthly expenditures and non-cash support	1897	2252	2597
Costs directly related to schooling	769	1011	1230

The next two regression analyses dealt with total student-reported expenditures and with the Department of Education's calculated student costs directly related to education. The dependent variables accounted for 43% of the variance in the student total expenditures and was statistically significant. Significant betas were found for financial aid, all of the private school residence options and the public school, living at school option. The final regression analysis examined student cost directly related to school. All of the variables had t-ratios which exceeded the .05 level of significance. This equation accounted for 47% of the variation in student costs.

It is obvious from the comparison of the regression equations that total monthly costs are not predictable on the basis of the factors considered. These monthly costs are variable expenditures reflecting students' life styles. This is also the place where budgeting could make a difference.

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Table 6 summarizes the different components of cost on an average monthly basis. The totals include parental estimates of non-cash support. Specific costs which were incurred by fewer than 20% of the students were not included. These costs were rent paid by students living with parents, child care, and payments for past student loans. At public schools the cost of supporting and educating a student was very similar for students living with parents and students living off campus when estimates of parental non-cash contributions were considered. Total monthly averages were \$1203 and \$1211 respectively. The cost for students living on campus was \$1323. At private schools the average monthly costs were \$1897, \$2252, and \$2597.

Conclusions

The characteristics of students differed on the basis of their choice of residence. Higher proportions of American Indian, Black, and White students lived in school housing, and a higher proportion of Hispanic students lived with parents. Between 20 and 30% of each racial group resided off campus; 64% of independent students did so. Sixty percent of the total group attended public schools. Larger proportions of those in public schools lived with parents or off campus rather than in school housing, while over half of those attending private schools lived in school housing. Roughly half of the students had applied for financial aid, the proportion being somewhat higher for those living in school housing.

Parental contributions were the most frequent source of support, followed by students' own earnings, but while 80% of the students reported earnings, only three quarters of them indicated that their own earnings were used specifically for school. Financial aid was received by 38%.

This research provides information on major categories of expenditures made by a national sample of college students. One limitation of all expenditure studies not using a diary is that since the majority of families do not keep detailed records (Beutler and Mason, 1987) they must rely on best estimates for some items.

The results of the research reaffirmed the great difference in cost as a result of attending public versus private school, though this difference is somewhat lessened by higher financial aid awards at many private schools. The

differentiation between students living off campus and living with parents provides information not available in earlier studies. All categories of the semester costs paid to the college were highest when students lived in school housing, and all were higher at private schools.

Multivariate regression was used to identify variables which were significant in explaining each component of expenses and of student costs directly related to education as calculated by the Department of Education. The independent variables accounted for 47% of the variance in costs directly related to school. This analysis was the only one which found each of the school and residence combinations, financial aid, and the gender of students significant. As would be expected the public school, off-campus variable did not help in explaining costs paid to the college or to total expenses, nor did the private school, with parents variable help in explaining monthly expenses. An important finding was that the independent variables explained only 7% of the variance in monthly expenses, supporting the assumption that these costs are not fixed, and therefore more controllable by students.

When parental estimates of the value of their direct support are considered along with cash expenditures there appears to be little difference in total cost for students at public schools who live at home and those who live off campus, while it costs over \$100 more per month to live on campus. Total costs at private schools are from \$700 to \$1300 more per month depending on residence. While the difference between public and private schools was primarily due to the differences in tuition costs, it was noted that many other costs were also somewhat higher at private schools.

Implications for Budget Planning

The figures reflect relative costs in 1986 dollars, but could be updated to reflect current dollars (U.S. Dept. of Labor, 1991). For budgeting purposes, it would be helpful if there were further delineation of the categories of "personal" and "other". The personal costs could be separated into clothing and recreation since these are areas which even many younger students handle directly through their own earnings or through allowances.

Other costs might be separated so as to show phone, insurance, and medical costs. This researcher has noted from student records produced in personal

finance classes that phone bills are often a major variable expense. Health insurance and possible medical costs also need to be identified and considered (The College Board, 1990). Some students may have group insurance through their schools, and if so, it may have been included in amounts reported for fees. Many students are still on their parents' health and/or automobile insurance policies.

Off-campus housing is frequently arranged by students who may or may not be close acquaintances, and who may or may not have realistic guidelines about expenses, information which would be needed in working out the sharing of costs. Students living with parents may or may not be making a contribution toward their own living expenses. Parents' estimates of the value of direct non-cash support were used in this research rather than the lower estimates supplied by students. The fact that students made lower estimates could reflect their lack of awareness of the costs involved if they are unaccustomed to dealing with basic living costs.

The importance of parental direct non-cash support is revealed both in the high percentage of parents who provided all or part of basic food, clothing, and car costs, and in the estimated value of this support. While living off campus could reflect more independence on the part of students, the fact that between 65% and 77% of parents still provided some food, clothing, car costs, and housing indicates that considerable inter-family transfer occurs. Student cost as compiled by the U.S. Department of Education did not include the value of non-cash support supplied by parents to their college age children. Some families would want to consider this along with other aspects of financing college.

The expenditures derived by adjusting expenditures to a monthly average provide a basis for typical monthly budgeting. This is especially useful for living expenses so that they can then be monitored monthly by noting how much each category varies from the average amount budgeted, and carrying forward the cumulative variances (Garman and Fogue, 1991). Also, since many schools allow students to pay their bills on an installment basis, average monthly budgeting would be especially convenient.

It should be noted that averages were calculated on the basis of the regular 9-month school year. This assumes that student summer income and living arrangements could be quite different, depending on whether a student spends

the summer earning money for school, attending summer school or in other activities.

NOTE: A student expenditure worksheet has been designed to incorporate the details suggested in the last section of this report. Copies are available from the author upon receipt of a self-addressed, stamped envelope.

Appendix

Computed Variables

Student Cost Adjusted total 9-month school year student-reported expenses (tuition, books, fees, room, food, travel, personal expenses, day care, and miscellaneous) that are directly related to their education. (Calculated by the Department of Education).

Costs Paid to College Per Semester

Amount paid to the school for tuition, books and supplies, fees, school housing and board.

Average Monthly Expenses

Student-reported average monthly amounts spent for: rent or mortgage, food, commuting, other transportation, personal, child care, education loans and other.

Total Monthly Expenses

All expenses were calculated for the same time period by combining semester expenses (divided by 4.5) with average monthly expenses.

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