

Financial Aid Effects on Enrollment at Linfield College

Allen J. Tyler

Economics Department

ABSTRACT

“The empirical results indicate that for students who applied for financial aid and were accepted to Linfield, increases in gift aid and increases in loans positively influenced students’ decisions to enroll at Linfield. This leads to the conclusion that Linfield can increase or its expected enrollment yield by altering the financial aid package offered to accepted students.”

OVERVIEW

This paper analyzes the effects of financial aid on the enrollment decision of students accepted to Linfield College for the academic year starting fall 2007. It uses data obtained from Linfield about those accepted students, as well as data from the International Postsecondary Education Data System. A model previously used by Moore, Studenmund, and Slobko for students accepted to Occidental in 1989 and Ehrenberg and Sherman for students accepted to Cornell in 1981 is used as the basis for this research. Logit probabilities of enrollment likelihood are used, based on student demographics, financial aid offers, and costs of attendance at Linfield and an alternative school. We find results similar to Moore, Studenmund, and Slobko, and Ehrenberg and Sherman in that net costs affect

the probability of enrollment for accepted students. Interpretation of these results indicates that accepted students are sensitive to the costs they face when making their college decision, and that lower net costs of attending Linfield increases the likelihood of enrollment at Linfield.

VARIABLES & HYPOTHESIZED EFFECTS ON ENROLLMENT PROBABILITY (+/-)

PTI (+) – parental total income (measured in thousands of dollars) as reported by the family on the FAFSA (Free Application for Federal Student Aid).

TLINFIELDCOST (-) – net cost of attending Linfield College (measured in thousands of dollars). The total cost of attending Linfield (tuition plus room and fees), less the amount of gift aid offered to the accepted individual.

TNETALT (+) – net cost of attending an “alternative” school (measured in thousands of dollars). Total cost of attending a second choice college less the average amount of gift aid offered at that school.

TLINFIELDLOAN (+) – amount of loans (measured in thousands of dollars) offered to the accepted individual by Linfield College.

TAVGLOANALT (-) – average amount of loans (measured in thousands of dollars) offered to students by the “alternative” school.

ACADRATING (-) – academic rating system calculated by Linfield College Office of Admissions. Student combined quantitative and reading SAT scores divided by 400, added to student GPA, divided by 2.

GENDERDUMMY (-) – dummy variable equal to 1 if the accepted student is male, 0 if otherwise.

LEGACYDUMMY (+) – dummy variable equal to 1 if the accepted student has any relatives that are Linfield Alumni, 0 if otherwise.

ECODE (-) – dummy variables corresponding to the accepted student’s reported ethnicity. There are a total of 7 different ethnicities in the sample, with ECODE4 (white non-Hispanic) as the base group.

STATE DUMMIES (-) – dummy variables corresponding to the accepted student’s home state.

RESULTS

The table below shows the full output values of the regression for all of the variables in the model. The column labeled “Prob.” is how we can determine if a variable had a statistically significant effect on the dependent variable, in this sample. “Prob.” values less than .05 are said to be statistically significant at the 5% level. The variables that are statistically significant at the 5% level are listed below in bold, and are the same variables whose effects are described above. The column labeled “Impact” represents the percentage change in the probability of a student enrolling at Linfield for a 1-unit change in that variable, holding all else constant. Positive values reflect a positive impact on the probability of enrollment, and negative values reflect a negative impact on the probability of enrollment.

TABLE 1

Variable	Coefficient	z-Statistic	Prob.	Impact
C	5.412	4.144	0.000	135.29%
PTI	0.002	2.013	0.044	0.04%
TLINFIELDCOST	-0.114	-6.936	0.000	-2.84%
TNETALT	0.020	2.103	0.036	0.51%
TLINFIELDLOAN	0.178	9.497	0.000	4.44%
TAVGLOANALT	0.009	0.093	0.926	0.23%
ACADRATING	-1.593	-4.940	0.000	-39.81%
GENDERDUMMY	-0.054	-0.362	0.718	-1.36%
LEGACYDUMMY	0.774	3.702	0.000	19.35%
ECODE1	-0.134	-0.216	0.829	-3.36%
ECODE2	-0.270	-0.523	0.601	-6.74%
ECODE3	0.536	1.529	0.126	13.39%
ECODE5	-0.201	-0.665	0.506	-5.01%
ECODE7	-0.297	-1.441	0.150	-7.41%
ECODE8	-1.900	-1.626	0.104	-47.50%
AK	-0.011	-0.022	0.982	-0.28%
AZ	-1.876	-1.693	0.090	-46.90%
CA	-1.192	-3.885	0.000	-29.79%
CO	-1.024	-1.603	0.109	-25.61%
HI	-0.809	-1.985	0.047	-20.22%
IA	0.934	0.623	0.533	23.34%
ID	-0.075	-0.172	0.863	-1.88%

IL	0.884	0.943	0.346	22.11%
MT	0.034	0.057	0.955	0.84%
NV	-0.446	-0.655	0.513	-11.15%
TX	-0.372	-0.195	0.845	-9.31%
UT	0.555	0.701	0.483	13.88%
WA	-0.224	-1.221	0.222	-5.59%
WY	-0.316	-0.237	0.813	-7.90%

- A \$1,000 increase in an applicant's parent's total income will yield a **.04% increase** in the probability of a student choosing to enroll at Linfield, *holding all constant*.
- A \$1,000 increase in the net cost of attending Linfield will yield a **2.8% decrease** in the probability of a student choosing to enroll at Linfield, *holding all else constant*.
- A \$1,000 increase in the net price of attending an alternative school will yield a **.5% increase** in the probability of a student choosing to enroll at Linfield, *holding all else constant*.

- A \$1,000 increase in the amount of loans offered by Linfield to a student will yield a **4.4% increase** in the probability of that student choosing to enroll at Linfield, *holding all else constant*.
- A 1-unit increase in the Academic Rating for a student results in a **39.8% decrease** in the probability of that student choosing to enroll at Linfield, *holding all else constant*.
- A student with Linfield Alumni Relatives is **19.3% more likely** to enroll at Linfield, *holding all else constant*.
- A student from California is **29.7% less likely** to enroll at Linfield, *holding all else constant*.
- A student from Hawaii is **20.2% less likely** to enroll at Linfield, *holding all else constant*.

CONCLUSION

Linfield College can expect to marginally increase its enrollment yield by offering increased scholarships and loans to students, realizing that this means increasing costs for the school. Thus the results of this study suggest that the Office of Enrollment can sway the enrollment decision of accepted students by varying the magnitude of the financial aid package that is individually offered.

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