Evaluation of UC Merced's Undergraduate Pioneer Grant Strategy

Purpose of study

This study seeks to determine whether awarding Undergraduate Pioneer Grants (UGPG) in the amounts awarded to 2007-08 UC Merced freshman admission applicants influenced decisions to file a Statement of Intent to Register (SIR). UC Merced offered two types of UGPG awards. UGPG1 awards were offered to students whose parents earned less than $80,000 per year and who had financial need, which in the context of the UGPG1 initiative was defined to exist if the cost of attendance exceeded estimated family contribution and gift aid was less than the $7,148 in fees required to attend UC Merced. UGPG1 aid covered any difference between the $7,148 in fees required to attend UC Merced and non-UGPG gift aid that was offered. UGPG2 awards were offered to students who had financial need and were estimated to be eligible for either a Cal Grant A or Cal Grant B award, and whose parents earned at least $40,000 but less than $80,000 per year. In the context of the UGPG2 initiative, financial need was defined to exist if the cost of attendance exceeded estimated family contribution. (Note that different definitions of need and different income qualifications apply to the UGPG1 and UGPG2 initiatives.) UGPG2 awards were a fixed amount of $2,000 for students who had at least $2,000 in unmet financial need.

Methods

To determine the effect of UGPG award offers on SIR rates, logistic regression models were constructed with pooled data from 2007 applicants (the intervention group) and 2006 applicants (the comparison group). UC Merced's 2006 applicants make a natural comparison group since they share many commonalities with the 2007 applicants and the only major difference in financial aid offered to these two cohorts of applicants is the UGPG aid, which was first offered in 2007. Covariates in the logistic regression models include: whether UC Merced applicants were admitted to any of the other UC campuses; the geographic location of the homes of UC Merced applicants and the API ranking of their high schools; the ethnicity, gender, and intended major of UC Merced applicants and their high school GPA and SAT scores; and participation in pre-college programs by UC Merced applicants and the educational attainment level of their parents. (Family income also was included in one set of models, but due to multicollinearity concerns arising from the fact that family income is highly correlated with the amount of aid offered, family income was excluded from the final run. Excluding family income had no pronounced effect on analysis findings.) The financial aid variables included in these logistic regression models included the amount of non-gift aid offered, the amount of gift aid less UGPG aid offered, the amount of UGPG1 aid offered, and the amount of UGPG2 aid offered. The latter two variables were entered into the model in a separate block to test whether the effect of adding these variables increased the accuracy of SIR prediction.

Definition of the study population

Of the 15,105 undergraduate applicants who were admitted for the fall of 2007, 7,267 were excluded from this evaluation because they were referral admits (i.e, they did not apply directly to UC Merced). An additional 687 applicants were excluded because they either were transfer applicants (not freshman) or because they were shared experience applicants, and hence were ineligible for a UGPG award. Additionally, 4,017 applicants were excluded because they either did not file a FAFSA on time or filed a FAFSA but were not offered aid. Finally, 1,106 other applicants were excluded because their parents earned more than $80,000 and hence were

ineligible for a UGPG award. The total intervention population, therefore, consists of 2,028 regular freshman applicants who submitted an on-time FAFSA, were offered financial aid, and whose parents earned less than $80,000 in 2006. Among these applicants, 263 were offered a UGPG1 award and 361 were offered a UGPG2 award. The comparison group included 1,709 regular freshman applicants who submitted an on-time FAFSA, were offered financial aid, and whose parents earned less than $80,000 in 2005. The study population therefore included 3,737 applicants who submitted an on-time FAFSA, were offered financial aid, and whose parents earned less than $80,000. Of these 3,737 applicants in the study population, 214 (or 5.7%) were excluded from the analysis due to missing values, bringing the final number of applicants included in the analysis to 3,523.

Impact of UGPG award offers on SIR prediction

A logistic regression model that only included the covariates, the amount of non-gift aid offered, and the amount of gift aid less UGPG aid offered correctly predicted 153 (29.8%) of the 514 applicants who SIRed and incorrectly predicted that 99 (3.3%) of the 3,009 applicants who did not SIR would SIR. When UGPG1 and UGPG2 aid offered were included, the model decreased incorrect predictions of SIRing from 99 (3.3%) to 95 (3.2%) and increased correct predictions of SIRing from 137 (26.7%) to 156 (30.4%). In addition, when UGPG1 and UGPG2 aid offered were included in the logistic regression model, the Cox & Snell pseudo-R Square increased from .216 to .220 and the Nagelkerke pseudo-R Square increased from .383 to .390, indicating that the model containing the UGPG aid offer amounts accounted for a slightly greater amount of the variance in the dichotomous dependent variable than the model that excluded the UGPG aid offer amounts. See attached table for detail regression statistics.

Conclusion

Whether UGPG aid is included in the model or not, being admitted to any of the other UC campuses except UCLA or being from any part of the state but the San Joaquin Valley have a statistically significant negative association with SIRing at UC Merced, as does participating in at least one pre-college program. The only positive statistically significant associations with SIRing at UC Merced are being Hispanic or African-American (rather than white), having a specific intended major (rather than undeclared), and the amount of aid offered. When the amount of UGPG1 aid offered and the amount of UGPG2 aid offered are included in the model, both are statistically significant and of sufficient magnitude to be important determinants of SIR rates at UC Merced. In other words, after attributing as much of the likelihood to SIR at UC Merced to factors other than UGPG1 and UGPG2 offers (including demographic, academic performance, and non-UGPG financial aid offers), offers of UGPG1 and UGPG2 financial aid still had a statistically positive effect on decisions to SIR. Clearly, offering UGPG1 and UGPG2 aid improved the SIR rate at UC Merced this year, especially for applicants from the San Joaquin Valley and applicants who have a specific major in mind when submitting their application for admission.

Prediction of SIR by Logistic Regression: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	ucb_admitted	-1.089	.445	5.982	1	.014	.337
	ucd_admitted	-1.825	.160	130.454	1	.000	.161
	ucla_admitted	-.896	.537	2.788	1	.095	.408
	ucr_admitted	-.718	.136	27.830	1	.000	.488
	ucsd_admitted	-1.286	.323	15.851	1	.000	.276
	ucsc_admitted	-1.126	.140	64.957	1	.000	.324
	ucsb_admitted	-.714	.182	15.414	1	.000	.490
	uci_admitted	-.824	.215	14.702	1	.000	.439
	sf_bay_area	-.812	.166	24.038	1	.000	.444
	south_cal	-1.297	.155	69.636	1	.000	.273
	other_cal	-1.010	.206	23.987	1	.000	.364
	outside_cal	-1.667	.884	3.556	1	.059	.189
	american_indian	-.091	1.202	.006	1	.939	.913
	african_american	.763	.287	7.083	1	.008	2.145
	hispanic	.724	.211	11.777	1	.001	2.064
	asian_pac_island	.004	.201	.000	1	.983	1.004
	other_ethnicity	.433	.395	1.201	1	.273	1.541
	decline_to_state	.768	.403	3.643	1	.056	2.156
	male	.197	.126	2.450	1	.118	1.218
	no_college	.022	.159	.020	1	.889	1.023
	some_college	-.017	.163	.011	1	.916	.983
	gpa	.166	.199	.695	1	.404	1.180
	satr	.000	.000	.240	1	.624	1.000
	pre_coll_pgm	-.251	.127	3.922	1	.048	.778
	api_st_rank_12	.056	.263	.045	1	.831	1.058
	api_st_rank_34	.411	.240	2.932	1	.087	1.508
	api_st_rank_56	.093	.237	.155	1	.694	1.098
	api_st_rank_78	-.019	.237	.006	1	.937	.981
	api_st_rank_unknown	.308	.224	1.894	1	.169	1.361
	engr_compsci	.339	.182	3.469	1	.063	1.403
	nat_sci	.438	.156	7.842	1	.005	1.549
	ssha	.375	.167	5.056	1	.025	1.456
	nongift_aid	.006	.001	30.327	1	.000	1.006
	gift_aid_less_ugpg	.006	.001	46.226	1	.000	1.006
	ugpg1_aid	.013	.005	6.665	1	.010	1.013
	ugpg2_aid	.036	.010	13.497	1	.000	1.037
	Constant	-1.896	.908	4.362	1	.037	.150

a Variable(s) entered on step 1: ugpg1_aid, ugpg2_aid.