DOCUMENT RESUME

ED 475 801		JC 030 243

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TITLE	Low Transfer Colleges: Methodology for Equitability in Identification.
INSTITUTION	California Community Colleges, Sacramento. Office of the Chancellor.
PUB DATE	2003-03-14
NOTE	16p.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Articulation (Education); College Transfer Students; Community Colleges; *Outcomes of Education; Transfer Policy; Transfer Programs; *Transfer Rates (College); Two Year College Students; Two Year Colleges
IDENTIFIERS	*California Community Colleges

ABSTRACT

This document describes the analytic process undertaken by staff of the Research & Planning Unit in the Technology, Research, and Information Services Division of the Chancellor's Office of the California Community Colleges to identify persistently low transfer colleges within the system, as mandated by the State Legislature in 2002. This document contains new data made available after the Report to the Legislature, March 1, 2002. First-time freshmen in the fall cohorts of 1993, 1994, and 1995 were tracked for 6 years to identify those exhibiting course-taking behavior consistent with intent to transfer. The colleges in each cohort year were ordered according to the magnitude of each college's residual. A simple and robust measure of an extreme value in a distribution of numbers was selected: the interquartile range (IQR), which is the numeric distance between the 25th and 75th percentiles. The IQR for the residuals of each cohort year were calculated and then used to calculate the distance of each observation in each cohort year from the nearest outer edge of the middle 50% of observations. This statistical effort to adjust transfer rates effectively accounted for variation in the systematic, uncontrollable factors of transfer performance among the community colleges. (NB)

Low Transfer Colleges:

Methodology for Equitability in Identification

Submitted by Peter Riley Bahr, Willard Hom, and Patrick Perry
to the
RP Group Awards for Excellence Program on March 14, 2003
for Category 1 (College/District Research & Evaluation)

Low Transfer Colleges: Methodology for Equitability in Identification

Introduction

This document describes the analytic process undertaken by staff of the Research & Planning Unit in the Technology, Research, and Information Services Division (Chancellor's Office, California Community Colleges) to identify "persistently low transfer colleges" within California's Community College System, as mandated by the State Legislature in 2002. The results of this analysis, as presented here, will not match results published previously in the report to the State Legislature in the volume entitled *Transfer Capacity and Readiness in the California Community Colleges: A Report to the Legislature, March 1, 2002.* Subsequent to the initial report to the State Legislature, new data were made available to the Chancellor's Office, and these data were incorporated into the analysis presented here.

Data and Methods

The statistical processed used to identify "persistently low transfer colleges" drew upon data on transfer outcomes for three cohorts of first-time college freshmen, including the Fall cohorts of 1993, 1994, and 1995. The students composing these three cohorts were tracked for six years to identify first-time freshmen exhibiting course-taking behavior consistent with student intent to transfer. The specific behaviors used as screening criteria for intent to transfer included successful completion of a minimum of twelve transferable units and successful completion of either one or more transferable mathematics courses or one or more transferable English courses. Students not meeting both of these criteria were dropped from the analysis.

The students remaining after the initial screening for intent to transfer were then matched, using social security number, against a transfer database assembled by the Chancellor's Office using data collected from the California State University system, the University of California system, and the National Student Loan Clearinghouse. Students from the reduced cohorts who were identified in the transfer database as having transferred to a four-year institution within six years of initial enrollment in the community college system were labeled successful transfer students. Raw transfer rates were then calculated for each college for each of the three cohort years using as the denominator the number of students identified as exhibiting behavior consistent with intent to transfer, and as the numerator the number of these students who were further identified as having transferred to a four-year institution within six years of initial enrollment in a California community college.

These raw transfer rates were used in an exploratory process to develop statistical adjustment models, one for each cohort year, in an attempt to account for the many factors over which colleges have no control but which may influence overall college performance, as measured by aggregate student performance. The use of general theoretical models for student achievement guided the enumeration of an initial set of potential adjustment factors that were tested for significance in each year's adjustment model. In addition, the Contingent Funding Task Force provided guidance concerning certain variables (e.g., aggregate ethnic characteristics) that were excluded from testing in order to maintain consistency with the mission of the community colleges. Ultimately, a lengthy list of potential adjustment factors was assembled for testing for statistical significance in each year's adjustment model, including aggregate student characteristics at each college (e.g., percent of student population age thirty or greater), college-level variables (e.g., driving distance from the community college to the nearest public four-year college), county-level variables (e.g., county per capita income), and derived measures, such as the Student Average Academic Preparedness index (discussed in the Chancellor's Office report "Student Average Academic Preparation: The Development of College-Level Summary Measure of Student Preparedness for Academic Coursework").

To identify significant adjustment factors, raw transfer rate was regressed, using ordinary least-squares regression, on the normalized potential adjustment variables. The variables were tested separately and collectively in an iterative process to identify those variables having statistically significant associations ($p < 0.10$) with college raw transfer rate. Ultimately, a parsimonious set of adjustment variables was identified for each year, and this set of variables proved remarkably consistent across the three models.

This model development process implemented an adjustment model that accounts for only one segment of a generic model of institutional performance. The data employed represent only the segment labeled as "systematic environmental factors" in Figure 1, below. The adjustment process excludes any adjustment for "nonsystematic environmental factors," which would include such important qualitative factors as natural disasters (e.g., flood, earthquake, industrial accidents, power shortages). Because such data could help explain institutional performance on transfer, yet they are uncontrollable by the college administrations, users of the results of the adjustment modeling process must recognize that the effort undertaken to develop these models accounts only for one major type of uncontrollable factor in transfer performance. In short, the models detailed here provide a substantial, albeit incomplete, remedy to the use of raw transfer rates in measuring relative college performance in transfer.

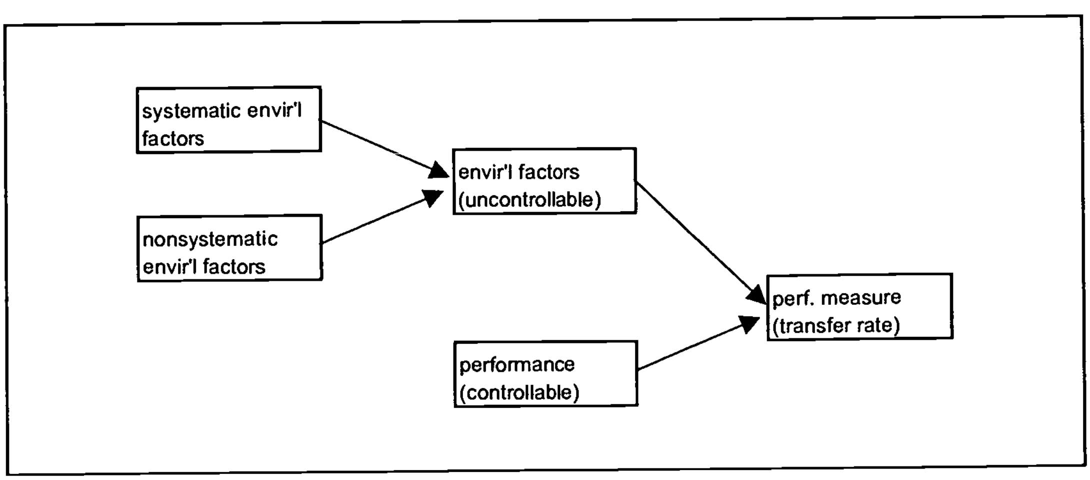

Figure 1: Basic Model of Transfer Rate Adjustment

After all potential adjustment factors were assembled into a single data set for statistical analysis, the following protocol was executed to develop the adjustment model for a particular cohort year:

1. As needed, transformation of potential adjustment variables to approximate normal distributions (in order to improve the fit of the ordinary least-squares adjustment equation).

2. Use of scatter plots to identify unusual relationships between each potential adjustment factor and raw transfer rate, and to identify substantial outliers in these relationships.

3. Calculation and inspection of the bivariate Pearson correlation coefficients of each potential adjustment variable with raw transfer rate, with and without outliers, to identify those adjustment factors most pertinent in the development of the adjustment models.

4. Iterative estimation of regression models to identify a parsimonious set of adjustment factors, excluding any outliers previously identified.

5. Use of partial regression plots (also known as added-variable plots) and leverage-versus-residual-squared plots to identify influential cases (colleges) in each regression model.

6. Use of regression diagnostic statistics (DFBETA and Cook's D) to identify additional influential cases (colleges) for each model and to confirm those outliers previously identified.

7. Re-estimation of the model, with and without the outliers, to measure the influence of these extraordinary cases upon the resulting statistical model.

8. Final estimation of model excluding outliers.

9. For each model, calculation of adjusted transfer rates (also known as the predicted values or "y-hat" values) by college for that cohort year.

10. By college and year, comparison of the adjusted transfer rate with the raw transfer rate to calculate a transfer residual. (This residual is important in the adjustment process because it is interpreted here as the extent of "underachievement" or "overachievement" by a college, after adjustment for factors outside the control of the individual college or district.)

Results

The actual models are not presented here, as transformation of the adjustment factors prevents a simple tabulation of significant coefficients. However, seven variables were consistently identified as the primary set of adjustment factors across the three model years, including the SAAP index (positive relationship), county average unemployment (positive relationship), county per capita income (positive relationship), percent of students identified as LEP (positive relationship), percent of students receiving need-based financial aid (negative relationship), percent of students stating a goal of transfer (positive relationship), and percent of students age thirty or older (negative relationship). The number of observations included in each model varied by cohort because differing outliers were identified across years, but no model included less than 105 observations (colleges).

The above process enabled an ordering of colleges in each cohort year according to the magnitude of each college's residual. However, the rank orderings, in and of themselves, could not fulfill the objective of identifying "low-transfer" colleges for a given cohort. The categorization of a college as "low-transfer" required staff to apply a classification rule that would identify colleges at the extreme low end of the ranking without "splitting hairs" between colleges that were relatively even in performance.

With that in mind, a simple and robust measure of an extreme value in a distribution of numbers was selected: the interquartile range (IQR), which is the numeric distance between the 25th percentile and the 75th percentile. The IQR is used as a measure of dispersion in a distribution. Small IQRs indicate that the middle 50% of a set of observations are bunched relatively closely together. Conversely, large IQRs indicate a large spread among the middle 50% of a set of observations. IQRs can also be used to measure the relative distance of an outlying observation from the middle 50% in terms of the spread of that middle 50%. This is important because an "outlying" observation in a set of observations which are already widely dispersed is very different from an "outlying" observation in a set of observations which are closely bunched together. This measurement of distance applied to an outlier is accomplished by calculating the number of IQRs a particular outlying observation is from the outer edge of the middle 50% of observations (either from the 25th percentile if the outlying observation is low, or from the 75th percentile if that outlying observation is high).

Applying this logic to the adjustment models, the IQR for the residuals for each cohort year were calculated and then used to calculate the distance of each observation in each cohort year from the nearest outer edge of the middle 50% of observations. Colleges with residuals that fell within the middle 50% of observations had no IQR distance value. Colleges with residuals that fell below the middle 50% of observations had IQR distances measured from the 25th percentile value. Likewise, colleges with residuals that fell above the middle 50% of observations had IQR distances measured from the 75th percentile value. Using these IQR distances, an administrative, but statistically substantiated, rule of three IQRs was selected as the cutoff for low performing colleges. In other words, colleges must have had residuals falling at least 3 times the distance between the 25th and

75^{th} percentiles below the 25^{th} percentile before they could be identified as low transfer colleges.

As a result of applying this IQR rule, a categorization of colleges as "low transfer" from the rank-ordered list of the college performances for each cohort was produced. Appendices A-1, A-2, and A-3 display the results for each cohort model.

Conclusion

This statistical effort to adjust transfer rates effectively accounted for variation in the systematic, uncontrollable factors of transfer performance among the community colleges. While increasing equitability in measuring performance, it also provides future researchers with a virtual "springboard" for causal models of transfer performance, helping to focus efforts upon nonsystematic environmental factors and controllable factors. Finally, future efforts regarding the transfer outcome will hopefully link student-level data to the institution-level data that formed the basis of this analysis.

Appendix A-1: Colleges Sorted by IQR Distance in the 1993 Cohort Model

college name	college id	transfer rate	adjusted transfer rate	residual	iqr distance
MONTEREY	461	0.126	0.388	-0.262	-4.322
CITRUS	821	0.306	0.453	-0.147	-2.150
PALO VERDE	951	0.083	0.201	-0.118	-1.595
GLENDALE	731	0.281	0.370	-0.089	-1.044
RIVERSIDE	961	0.245	0.322	-0.077	-0.825
MT. SAN ANTONIO	851	0.324	0.401	-0.077	-0.823
SHASTA	171	0.273	0.339	-0.067	-0.617
SISKIYOUS	181	0.297	0.364	-0.066	-0.613
SANTA ANA	871	0.275	0.337	-0.062	-0.532
LAKE TAHOE	221	0.243	0.305	-0.062	-0.529
L.A. TRADE-TECH	746	0.153	0.210	-0.057	-0.433
NAPA VALLEY	241	0.268	0.323	-0.055	-0.396
LOS MEDANOS	313	0.289	0.341	-0.052	-0.349
ANTELOPE VALLEY	621	0.280	0.331	-0.051	-0.329
LONG BEACH CITY	841	0.276	0.324	-0.049	-0.277
COMPTON	711	0.110	0.156	-0.046	-0.235
CERRITOS	811	0.328	0.373	-0.046	-0.220
CYPRESS	861	0.343	0.385	-0.042	-0.146
SAN JOSE CITY	472	0.286	0.326	-0.040	-0.122
MARIN	334	0.376	0.417	-0.040	-0.121
ORANGE COAST	833	0.412	0.451	-0.039	-0.100
RIO HONDO	881	0.239	0.278	-0.039	-0.096
MT. SAN JACINTO	941	0.257	0.296	-0.039	-0.095
SOLANO	281	0.285	0.323	-0.038	-0.077
EVERGREEN VALLEY	471	0.303	0.339	-0.036	-0.044
SAN DIEGO CITY	71	0.272	0.308	-0.035	-0.028
LASSEN	131	0.300	0.334	-0.034	0.000
HARTNELL	451	0.304	0.338	-0.034	0.000
CHAFFEY	921	0.246	0.275	-0.029	
MARIN CED	335	0.323	0.351	-0.028	
BAKERSFIELD	521	0.311	0.338	-0.027	
VICTOR VALLEY	991	0.227	0.253	-0.027	
FULLERTON	862	0.387	0.413	-0.026	
ALLAN HANCOCK	611	0.326	0.350	-0.025	
CERRO COSO	522	0.279	0.304	-0.024	
SANTA BARBARA CITY	651	0.441	0.465	-0.024	

SEQUOIAS	561	0.307	0.329	-0.023	
MODESTO	592	0.356	0.378	-0.022	
BARSTOW	911	0.227	0.249	-0.021	
RANCHO SANTIAGO CED	872	0.357	0.378	-0.021	
CUYAMACA	21	0.320	0.338	-0.018	
L.A. CITY	741	0.271	0.288	-0.017	
L.A. HARBOR	742	0.270	0.287	-0.017	
MERCED	531	0.265	0.281	-0.016	
GAVILAN	441	0.329	0.345	-0.016	
PASADENA CITY	771	0.392	0.404	-0.012	
BUTTE	111	0.327	0.338	-0.011	
IRVINE VALLEY	892	0.427	0.437	-0.010	
SKYLINE	373	0.402	0.412	-0.009	
EL CAMINO	721	0.338	0.344	-0.007	
PALOMAR	61	0.425	0.431	-0.006	
SOUTHWESTERN	91	0.320	0.324	-0.004	
CHABOT	482	0.365	0.369	-0.004	
PORTERVILLE	523	0.255	0.258	-0.004	
OXNARD	682	0.369	0.372	-0.003	
SAN FRANCISCO CTRS	363	0.326	0.327	-0.001	
WEST L.A.	749	0.271	0.272	-0.001	
DIABLO VALLEY	312	0.484	0.485	-0.001	
SANTA ROSA	261	0.366	0.367	-0.001	
COSUMNES RIVER	232	0.363	0.361	0.002	
SAN MATEO	372	0.478	0.475	0.002	
VENTURA	683	0.402	0.399	0.003	
FRESNO CITY	571	0.362	0.358	0.003	
TAFT	691	0.228	0.221	0.007	
GOLDEN WEST	832	0.442	0.434	0.008	
EAST L.A.	748	0.263	0.255	0.008	
SAN FRANCISCO CITY	361	0.452	0.444	0.008	
LAS POSITAS	481	0.407	0.399	0.008	
SADDLEBACK	891	0.438	0.428	0.009	
COASTLINE	831	0.313	0.304	0.009	
GROSSMONT	22	0.415	0.403	0.012	
SANTA MONICA CITY	781	0.414	0.401	0.012	
AMERICAN RIVER	231	0.395	0.383	0.013	
L.A. SOUTHWEST	745	0.213	0.199	0.014	
VISTA	345	0.278	0.264	0.014	
MOORPARK	681	0.498	0.483	0.015	

COLUMBIA	591	0.351	0.336	0.015	
SAN DIEGO MIRAMAR	73	0.379	0.362	0.016	
DESERT	931	0.272	0.255	0.017	
MIRA COSTA	51	0.385	0.367	0.018	
CABRILLO	411	0.403	0.385	0.018	
OHLONE	431	0.452	0.434	0.019	0.000
MISSION	492	0.350	0.328	0.021	0.048
WEST VALLEY	493	0.468	0.446	0.022	0.063
CRAFTON HILLS	981	0.329	0.304	0.025	0.126
SIERRA	271	0.434	0.406	0.028	0.183
SAN BERNARDINO	982	0.244	0.210	0.033	0.279
IMPERIAL VALLEY	31	0.329	0.287	0.041	0.430
L.A. MISSION	743	0.324	0.278	0.046	0.509
SACRAMENTO CITY	233	0.444	0.398	0.047	0.533
CONTRA COSTA	311	0.324	0.276	0.048	0.551
FOOTHILL	422	0.494	0.445	0.050	0.587
CANYONS	661	0.475	0.423	0.053	0.642
SAN DIEGO MESA	72	0.445	0.392	0.053	0.647
YUBA	291	0.326	0.271	0.055	0.689
CUESTA	641	0.491	0.434	0.056	0.715
L.A. VALLEY	747	0.345	0.288	0.058	0.737
REDWOODS	161	0.393	0.328	0.065	0.884
WEST HILLS	581	0.304	0.237	0.067	0.910
CANADA	371	0.456	0.388	0.067	0.919
DE ANZA	421	0.497	0.426	0.070	0.977
MENDOCINO	141	0.380	0.308	0.072	1.020
MERRITT	344	0.289	0.215	0.075	1.060
LANEY	343	0.368	0.292	0.076	1.085
REEDLEY	572	0.414	0.336	0.078	1.129
SAN JOAQUIN DELTA	551	0.361	0.280	0.081	1.178
FEATHER RIVER	121	0.366	0.277	0.089	1.342
L.A. PIERCE	744	0.445	0.344	0.101	1.558
ALAMEDA	341	0.381	0.260	0.121	1.931

Appendix A-2: Colleges Sorted by IQR Distance in the 1994 Cohort Model

college name	college id	transfer rate	adjnsted transfer rate	residnal	iqr distance
MONTEREY	461	0.112	0.410	-0.299	-4.097
FEATHER RIVER	121	0.307	0.440	-0.133	-1.519
PALO VERDE	951	0.093	0.225	-0.132	-1.510
LAKE TAHOE	221	0.258	0.360	-0.102	-1.043
CITRUS	821	0.352	0.446	-0.094	-0.912
TAFT	691	0.167	0.246	-0.079	-0.683
RIO HONDO	881	0.249	0.323	-0.075	-0.614
LOS MEDANOS	313	0.280	0.353	-0.073	-0.589
GLENDALE	731	0.285	0.347	-0.062	-0.411
CERRITOS	811	0.314	0.370	-0.056	-0.326
BARSTOW	911	0.199	0.254	-0.055	-0.305
OXNARD	682	0.318	0.371	-0.053	-0.280
SANTA BARBARA CITY	651	0.474	0.527	-0.053	-0.270
MT. SAN ANTONIO	851	0.341	0.393	-0.052	-0.258
L.A. TRADE-TECH	746	0.165	0.217	-0.052	-0.254
SAN JOSE CITY	472	0.294	0.344	-0.050	-0.230
RANCHO SANTIAGO CED	872	0.304	0.353	-0.050	-0.223
GAVILAN	441	0.314	0.363	-0.049	-0.220
BUTTE	111	0.315	0.362	-0.047	-0.184
COLUMBIA	591	0.297	0.342	-0.046	-0.165
MARIN CED	335	0.377	0.422	-0.045	-0.151
GROSSMONT	22	0.376	0.419	-0.043	-0.115
EVERGREEN VALLEY	471	0.313	0.355	-0.042	-0.110
CHAFFEY	921	0.232	0.274	-0.042	-0.103
SOLANO	281	0.300	0.341	-0.041	-0.085
VISTA	345	0.245	0.284	-0.039	-0.057
SISKIYOUS	181	0.315	0.351	-0.036	-0.006
SHASTA	171	0.339	0.374	-0.035	0.000
MARIN	334	0.386	0.421	-0.035	
MT. SAN JACINTO	941	0.286	0.318	-0.032	
CUYAMACA	21	0.291	0.323	-0.032	
ORANGE COAST	833	0.445	0.477	-0.032	
ANTELOPE VALLEY	621	0.301	0.332	-0.031	
SANTA ANA	871	0.313	0.343	-0.030	
COMPTON	711	0.135	0.164	-0.029	

MENDOCINO	141	0.297	0.326	-0.028	
MOORPARK	681	0.465	0.492	-0.027	
HARTNELL	451	0.311	0.333	-0.022	
MERCED	531	0.296	0.318	-0.022	
EL CAMINO	721	0.334	0.353	-0.019	
SAN DIEGO MIRAMAR	73	0.361	0.378	-0.017	
SAN DIEGO CITY	71	0.282	0.297	-0.015	
DIABLO VALLEY	312	0.475	0.489	-0.014	
CERRO COSO	522	0.303	0.316	-0.013	
L.A. HARBOR	742	0.259	0.270	-0.011	
CANYONS	661	0.440	0.450	-0.010	
L.A. CITY	741	0.280	0.288	-0.008	
PALOMAR	61	0.432	0.438	-0.006	
SANTA ROSA	261	0.389	0.395	-0.006	
SOUTHWESTERN	91	0.303	0.308	-0.005	
ALLAN HANCOCK	611	0.349	0.354	-0.005	
SEQUOIAS	561	0.326	0.331	-0.005	
AMERICAN RIVER	231	0.400	0.404	-0.004	
CYPRESS	861	0.377	0.381	-0.003	
BAKERSFIELD	521	0.331	0.334	-0.003	
SAN FRANCISCO CITY	361	0.450	0.452	-0.002	
IRVINE VALLEY	892	0.430	0.432	-0.002	
SANTA MONICA CITY	781	0.407	0.408	0.000	
MIRA COSTA	51	0.372	0.371	0.001	
MODESTO	592	0.386	0.385	0.001	
RIVERSIDE	961	0.335	0.332	0.003	
CHABOT	482	0.355	0.352	0.004	
IMPERIAL VALLEY	31	0.262	0.259	0.004	
SADDLEBACK	891	0.434	0.429	0.004	
VICTOR VALLEY	991	0.264	0.259	0.005	
PORTERVILLE	523	0.267	0.261	0.006	
PASADENA CITY	771	0.403	0.397	0.006	
CABRILLO	411	0.423	0.415	0.008	
SIERRA	271	0.441	0.431	0.010	
SAN MATEO	372	0.463	0.449	0.014	
SKYLINE	373	0.427	0.413	0.014	
WEST L.A.	749	0.272	0.255	0.016	
CRAFTON HILLS	981	0.343	0.325	0.018	
WEST VALLEY	493	0.472	0.454	0.018	
FRESNO CITY	571	0.389	0.371	0.018	

LAS POSITAS	481	0.419	0.399	0.020	
NAPA VALLEY	241	0.367	0.346	0.022	
MISSION	492	0.353	0.330	0.023	
DESERT	931	0.290	0.266	0.024	
FULLERTON	862	0.438	0.411	0.026	
LONG BEACH CITY	841	0.310	0.282	0.028	
SAN DIEGO MESA	72	0.430	0.401	0.029	0.000
LANEY	343	0.343	0.313	0.030	0.022
OHLONE	431	0.491	0.460	0.031	0.026
ALAMEDA	341	0.363	0.332	0.031	0.038
L.A. MISSION	743	0.325	0.290	0.035	0.096
GOLDEN WEST	832	0.445	0.410	0.035	0.098
L.A. SOUTHWEST	745	0.226	0.186	0.040	0.170
SAN BERNARDINO	982	0.252	0.211	0.040	0.178
COASTLINE	831	0.359	0.319	0.040	0.178
SAN FRANCISCO CTRS	363	0.390	0.347	0.043	0.216
CONTRA COSTA	311	0.334	0.291	0.043	0.217
VENTURA	683	0.433	0.388	0.045	0.253
EAST L.A.	748	0.274	0.228	0.046	0.262
SAN JOAQUIN DELTA	551	0.395	0.349	0.046	0.262
MERRITT	344	0.266	0.220	0.046	0.264
LASSEN	131	0.356	0.305	0.051	0.340
FOOTHILL	422	0.497	0.443	0.054	0.386
COSUMNES RIVER	232	0.419	0.364	0.054	0.395
SACRAMENTO CITY	233	0.489	0.432	0.056	0.427
CUESTA	641	0.483	0.424	0.060	0.476
YUBA	291	0.333	0.269	0.064	0.541
L.A. VALLEY	747	0.370	0.300	0.070	0.636
WEST HILLS	581	0.320	0.248	0.072	0.676
REDWOODS	161	0.440	0.353	0.087	0.902
CANADA	371	0.456	0.366	0.090	0.952
DE ANZA	421	0.503	0.411	0.091	0.969
L.A. PIERCE	744	0.452	0.346	0.106	1.191
REEDLEY	572	0.483	0.338	0.145	1.802

Appendix A-3: Colleges Sorted by IQR Distance in the 1995 Cohort Model

college name	college id	transfer rate	adjusted transfer rate	residual	iqr distance
PALO VERDE	951	0.053	0.289	-0.237	-3.705
MONTEREY	461	0.247	0.414	-0.167	-2.453
MARIN CED	335	0.297	0.432	-0.134	-1.865
CITRUS	821	0.346	0.473	-0.127	-1.737
ANTELOPE VALLEY	621	0.278	0.356	-0.077	-0.841
SISKIYOUS	181	0.323	0.399	-0.077	-0.829
COLUMBIA	591	0.320	0.395	-0.076	-0.812
EVERGREEN VALLEY	471	0.322	0.387	-0.065	-0.610
VISTA	345	0.250	0.307	-0.057	-0.481
MARIN	334	0.385	0.442	-0.057	-0.473
LOS MEDANOS	313	0.299	0.354	-0.055	-0.443
GLENDALE	731	0.334	0.388	-0.055	-0.431
RIO HONDO	881	0.287	0.338	-0.051	-0.372
TAFT	691	0.230	0.280	-0.050	-0.354
CERRO COSO	522	0.305	0.354	-0.049	-0.339
SANTA ANA	871	0.307	0.353	-0.046	-0.274
SAN JOSE CITY	472	0.328	0.372	-0.044	-0.246
CERRITOS	811	0.335	0.377	-0.042	-0.209
MT. SAN JACINTO	941	0.308	0.347	-0.040	-0.164
COMPTON	711	0.128	0.168	-0.040	-0.164
RANCHO SANTIAGO CED	872	0.293	0.333	-0.039	-0.159
MT. SAN ANTONIO	851	0.345	0.382	-0.037	-0.124
SANTA BARBARA CITY	651	0.457	0.492	-0.035	-0.081
SAN BERNARDINO	982	0.179	0.213	-0.035	-0.078
SHASTA	171	0.346	0.381	-0.035	-0.075
WEST VALLEY	493	0.475	0.508	-0.033	-0.046
CRAFTON HILLS	981	0.255	0.288	-0.033	-0.044
OXNARD	682	0.315	0.346	-0.031	0.000
VICTOR VALLEY	991	0.255	0.286	-0.030	
L.A. TRADE-TECH	746	0.195	0.225	-0.029	
SAN FRANCISCO CTRS	363	0.320	0.347	-0.027	
MODESTO	592	0.383	0.410	-0.027	
LONG BEACH CITY	841	0.289	0.310	-0.021	
CYPRESS	861	0.370	0.389	-0.019	
FULLERTON	862	0.369	0.388	-0.019	
FEATHER RIVER	121	0.372	0.390	-0.018	
SEQUOIAS	561	0.336	0.354	-0.017	

SOLANO	281	0.352	0.369	-0.017	
ORANGE COAST	833	0.462	0.478	-0.017	
CUYAMACA	21	0.341	0.358	-0.016	
SANTA ROSA	261	0.407	0.424	-0.016	
BAKERSFIELD	521	0.330	0.345	-0.015	
DIABLO VALLEY	312	0.468	0.482	-0.014	
HARTNELL	451	0.336	0.350	-0.014	
CABRILLO	411	0.426	0.439	-0.013	
MENDOCINO	141	0.325	0.338	-0.013	
BUTTE	111	0.343	0.355	-0.012	
CHAFFEY	921	0.276	0.287	-0.011	
LAS POSITAS	481	0.425	0.435	-0.010	
GROSSMONT	22	0.404	0.413	-0.009	
PALOMAR	61	0.432	0.440	-0.008	
EL CAMINO	721	0.351	0.358	-0.007	
L.A. HARBOR	742	0.295	0.302	-0.007	
SAN DIEGO CITY	71	0.321	0.328	-0.006	
GOLDEN WEST	832	0.417	0.420	-0.004	
EAST L.A.	748	0.265	0.268	-0.003	
L.A. SOUTHWEST	745	0.198	0.200	-0.002	
SANTA MONICA CITY	781	0.413	0.415	-0.001	
L.A. CITY	741	0.272	0.272	0.000	
AMERICAN RIVER	231	0.417	0.415	0.002	
GAVILAN	441	0.387	0.385	0.002	
NAPA VALLEY	241	0.357	0.354	0.003	
ALLAN HANCOCK	611	0.378	0.375	0.003	
LASSEN	131	0.328	0.324	0.004	
PASADENA CITY	771	0.431	0.427	0.004	
RIVERSIDE	961	0.343	0.337	0.006	
DESERT	931	0.286	0.280	0.006	
SOUTHWESTERN	91	0.315	0.309	0.006	
SAN DIEGO MIRAMAR	73	0.388	0.381	0.006	
FRESNO CITY	571	0.377	0.369	0.007	
SAN FRANCISCO CITY	361	0.452	0.445	0.007	
LANEY	343	0.324	0.315	0.008	
LAKE TAHOE	221	0.383	0.375	0.008	
BARSTOW	911	0.271	0.262	0.009	
MERCED	531	0.312	0.304	0.009	
CANYONS	661	0.440	0.429	0.011	
IMPERIAL VALLEY	31	0.298	0.288	0.011	

SIERRA	271	0.462	0.448	0.013	
MERRITT	344	0.279	0.265	0.014	
CUESTA	641	0.465	0.449	0.015	
SADDLEBACK	891	0.466	0.442	0.023	
MIRA COSTA	51	0.393	0.368	0.025	0.000
SAN MATEO	372	0.491	0.463	0.028	0.053
FOOTHILL	422	0.497	0.468	0.029	0.079
MOORPARK	681	0.513	0.482	0.031	0.100
VENTURA	683	0.419	0.387	0.032	0.124
SKYLINE	373	0.477	0.445	0.032	0.129
COSUMNES RIVER	232	0.417	0.384	0.033	0.146
L.A. MISSION	743	0.324	0.290	0.033	0.151
CHABOT	482	0.399	0.365	0.034	0.152
IRVINE VALLEY	892	0.467	0.433	0.034	0.154
COASTLINE	831	0.362	0.327	0.035	0.179
SAN DIEGO MESA	72	0.449	0.413	0.036	0.194
OHLONE	431	0.488	0.452	0.036	0.198
REDWOODS	161	0.406	0.361	0.044	0.344
CANADA	371	0.441	0.397	0.044	0.345
L.A. VALLEY	747	0.360	0.314	0.045	0.364
WEST L.A.	749	0.327	0.280	0.047	0.388
SAN JOAQUIN DELTA	551	0.383	0.336	0.047	0.391
MISSION	492	0.405	0.350	0.055	0.533
DE ANZA	421	0.535	0.475	0.060	0.631
YUBA	291	0.367	0.302	0.064	0.708
ALAMEDA	341	0.367	0.302	0.065	0.721
PORTERVILLE	523	0.330	0.261	0.068	0.773
CONTRA COSTA	311	0.375	0.302	0.073	0.852
L.A. PIERCE	744	0.442	0.361	0.081	1.009
WEST HILLS	581	0.373	0.283	0.090	1.159
SACRAMENTO CITY	233	0.518	0.426	0.092	1.200
REEDLEY	572	0.446	0.336	0.110	1.530

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Publication Date: 4/14/2003

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