Community College Transfer Rates:
A Re-Analysis of Statewide Data

Office of Planning, Research, & Grants Development
San Joaquin Delta College

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Introduction

In March of 2002, the Community College Chancellor's Office released a report on transfer capacity and readiness in the state's higher education system (see Chancellor's Office, *Transfer Capacity and Readiness in the California Community Colleges,* 2002). The document provided an in-depth study of transfer centers and their needs, along with some newly released data on transfer rates and an effort to identify community colleges with "persistently low transfer rates." On this last point, Chancellor's Office staff used county level data and measures of the academic skills of entering freshmen, to develop a statistical model that predicted "expected" transfer rates on the basis of "exogenous" factors that were largely out of the control of community colleges. These factors included the skill levels of entering students, the age make-up of entering students, economic conditions (such as income levels and unemployment), and the college's proximity to a nearby California State University campus. The logic behind the model was that colleges would typically have higher transfer rates if they had larger proportions of better trained students of traditional college age, with larger income levels and lower unemployment rates. Additionally, it was believed that some community colleges might benefit from higher transfer rates simply because they were in close proximity to a CSU campus that served as a magnet for transfer students.

The data in the transfer report were widely read by directors of transfer centers and institutional researchers at the community colleges in an effort to assess the effectiveness of their operations. Yet the data have not been reanalyzed to provide a detailed benchmark for internal use at San Joaquin Delta College. In the context of examining some of the data, it was discovered that the results listed in the Chancellor's Office report provided a different level of success than those generated by analysis within the college's Office of Planning, Research, and Grants Development. This brief report is designed to present the data in a new light, and to discuss some of the implications of the findings for institutional effectiveness.

Methods

The data analyzed in this report are drawn directly from the Chancellor's Office web site that contains the initial data. The data were copied from the appendix of the web-based document and loaded into a file in Microsoft Excel. The data were then analyzed using the regression

function to establish a regression model using the five exogenous variables found in the Chancellor's Office report to "explain" the variance in transfer rates for the 1993-99 cohort of first time degree seeking students. The regression model took the form of the following equation:

$$\begin{aligned} \text{1993-99 Transfer Rate} = a &+ b_1 (\text{API Index}) \\ &+ b_2 (\text{Pct Over 25}) \\ &+ b_3 (\text{Income}) \\ &+ b_4 (\text{County Unemployment}) \\ &+ b_5 (\text{Miles to the Nearest CSU}) \\ &+ \text{error term} \end{aligned}$$

The API Index measure provides an indexed score of entering freshmen and their mean performance on high school senior year standardized exams. Chancellor's Office staff used records from the State Department of Education and the Chancellor's Office Management Information System to match scores from the tests with students who enrolled at community colleges for the first time in fall 1993. Higher API scores reflect a student body that enters college with higher performance scores from high school, and thus, it is presumed they will have a higher likelihood of transferring to a four-year college. Conversely, greater percentages of students over the age of 25 will likely mean a greater proportion of returning adult students who are pursuing vocational interests rather than transfer – thus generating an expectation of lower transfer rates. Income and unemployment variables are expected to have an impact on transfer rates. Where income levels are higher, transfer rates are expected to be higher. Likewise, lower unemployment should translate to higher transfer rates for a community college. Finally, it is expected that colleges close to a California State University would naturally have higher transfer rates than community colleges more remote from a CSU campus.

Results

The raw data for the study are provided in Table 1 of the appendix, with Delta College figures highlighted in the table. The data are sorted by colleges based on the difference between their ***actual*** transfer rate and their ***expected*** transfer rate using a multiple regression model to predict rates. In this ranking scheme, Delta College placed 16th out of 106 colleges for which data was available. In other words, of the colleges that had higher transfer rates than would have been predicted by the set of variables, Delta College ranked 16th in performance (33.6% transfer rate compared to an expected rate of 28.2%).

One of the strongest explanatory variables in the model was the API Index. Figure 1 in the appendix provides a graphical display of the positive correlation between API scores and transfer rates. Generally speaking, as a college's measure of API performance goes up, there is a corresponding increase in transfer rates. The coefficient suggests an almost one-to-one relationship: as the mean API score increases by one point, the colleges tended to display a 1.16-point increase in the transfer rate. In a bivariate regression equation, the API measure explained 37 percent of the variance in the transfer rate. The regression line superimposed on the graph allows one to see that half of the colleges had higher than expected transfer rates, while half had lower than expected rates. Delta College has been signified on the graph as having a higher than expected transfer rate (a data point above the slope of the regression line).

When examining the full regression model (Table 2), three of the variables proved to have a statistically significant effect on the transfer rate (API Index, percent over 25, and miles to the nearest CSU campus). Thus, the data can lead us to reject three null hypotheses about the impact of these variables. Where the API Index is higher, transfer rates are significantly higher (b = .78). Where there are more students over the age of 25, there are lower transfer rates (b = -.46), and campuses further away from CSU centers do have statistically lower transfer rates (b = -.04).

Conclusion

Using data from a previously published Chancellor's Office study, a reanalysis of transfer rates indicates that Delta College has a transfer rate that is higher than expected, and ranks among the top 20 community colleges in the state (in terms of expected versus actual performance). In terms of overall performance, however, the college's transfer rate is not that stellar. Indeed, the overall transfer rate places it 37th out of 106 colleges. While this is not as impressive as a 16th place rank, it does still place the college's transfer rate near the top third of all California community colleges.

Perhaps part of the reason for this low transfer level is that the college does not feature a high number of highly qualified students upon entrance. Additionally, students at the college face economic burdens that are not as significant at other community colleges in the state. Indeed, when accounting for these exogenous factors, Delta College students actually stand out very well in relation to other community college students. Part of the answer to this success may lie in the focused student services students receive, or in the operation of a transfer center that may provide better services than at other colleges. Thus, it might be argued that as a measure of institutional effectiveness, the data demonstrate that the College has an effective complement of transfer activities in place to improve students' lives (at least in relation to other community colleges). But this speculation would be premature without detailed analysis of spending and service levels at the various colleges on transfer functions. In essence, these unmeasured variables are a part of the "error term," and might provide some basis for improving the percentage of variance explained in the regression model if they were measured. Regardless, the data do suggest that transfer rates are higher than expected, and far removed from the Chancellor's Office listing of persistently low transfer institutions.

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TABLE 1
Analysis of Community College Transfer Rates and Five Exogenous Variables, 1993-99

DEFINITIONS

API Index = Indexed score for a college's freshmen on standardized tests
Pct Over 25 = The percentage of freshmen over the age of 25
Income = Income per capita in the county
County Unemp = County Unemployment rate
Miles to CSU = Miles to the nearest CSU campus
Transfer Rate 93-99 = The six year transfer rate for first time degree seeking students who initially enrolled in 1993
Exp Regress Results = Regression estimate of expected transfer rate, analysis by the Office of Planning, Research, and Grants Development
Residual 93-99 = The difference between the actual transfer rate and expected transfer rate using the regression results

College Name	API Index	Pct Over 25	Income	County Unemp	Miles to CSU	Transfer Rate 93-99	Exp Regress Results	Residual 93-99
ALAMEDA	41.778	30.8	28672	5	16.4	37.16	23.3	13.8
CANYONS	49.689	14.6	24860	8.2	17.5	45.74	36.2	9.6
COASTLINE	45.81	59.9	29062	4.1	13	23.01	13.5	9.5
LANEY	42.855	33.0	28672	5	15.7	32.1	23.2	8.9
MENDOCINO	47.821	30.7	20831	8.5	71.8	33.16	24.6	8.5
DE ANZA	52.238	17.3	35003	3.6	10.5	47.04	38.8	8.2
L.A. PIERCE	49.22	20.7	24860	8.2	6.1	40.74	33.5	7.2
CANADA	44.271	16.6	39413	3.4	24.8	40.12	33.0	7.2
L.A. SOUTHWEST	35.572	50.9	24860	8.2	7.9	15.77	9.0	6.7
MISSION	45.694	36.7	35003	3.6	6.8	31.62	25.0	6.6
CUESTA	55.048	11.1	21984	5.5	5	48.43	42.2	6.2
FEATHER RIVER	46.271	25.0	21508	12	86.4	31.52	25.3	6.2
DIABLO VALLEY	53.957	14.4	32558	4.9	33.4	46.26	40.2	6.1
REEDLEY	46.821	16.0	19329	13.1	32.1	37.61	31.7	5.9
SAN FRANCISCO CITY	51.092	21.1	39140	4.7	3	42.87	37.0	5.8
SAN JOAQUIN DELTA	46.264	21.6	19462	11.2	49.2	33.68	28.2	5.5
CABRILLO	48.546	20.8	28225	8.3	36	37.63	32.2	5.5
FOOTHILL	52.85	18.7	35003	3.6	16	43.89	38.4	5.4
COLUMBIA	50.489	26.8	19237	14.1	86.2	32.33	27.4	4.9
MOORPARK	55.158	9.9	26057	7.1	22.6	47.14	42.6	4.5
GOLDEN WEST	48.583	14.2	29062	4.1	11	40.82	36.5	4.3
SAN DIEGO MESA	52.022	20.6	24836	5.3	8.5	39.99	35.8	4.2
SACRAMENTO CITY	54.221	23.0	23786	6.1	6.2	40.49	36.3	4.2
L.A. VALLEY	44.357	28.5	24860	8.2	10.4	29.68	26.0	3.7
MERRITT	40.573	39.1	28672	5	13.6	22.13	18.7	3.4
L.A. MISSION	41.699	27.1	24860	8.2	11.9	27.75	24.5	3.3
PASADENA CITY	46.746	12.8	24860	8.2	9.2	38.05	35.0	3.0
SAN MATEO	51.625	11.3	39413	3.4	19.4	44.33	41.3	3.0
WEST VALLEY	51.808	14.6	35003	3.6	13.1	42.53	39.6	2.9
COSUMNES RIVER	50.14	19.7	23786	6.1	13.2	37.22	34.3	2.9
OHLONE	51.74	13.9	28672	5	13.5	41.78	38.9	2.9
AMERICAN RIVER	52.541	23.9	23786	6.1	9.5	37.15	34.4	2.7

College Name	API Index	Pct Over 25	Income	County Unemp	Miles to CSU	Transfer Rate 93-99	Exp Regress Results	Residual 93-99
EAST L.A.	39.815	25.0	24860	8.2	4	26.8	24.3	2.5
CERRO COSO	52.631	40.1	18444	12.7	130	23.67	21.2	2.4
DESERT	42.398	23.7	20291	8.2	73.3	25.62	23.5	2.2
OXNARD	43.849	16.6	26057	7.1	9.5	33.33	31.2	2.1
FRESNO CITY	47.636	19.4	19329	13.1	6.6	33.89	31.8	2.1
LAS POSITAS	55.748	20.9	28672	5	19	40.65	38.6	2.0
VENTURA	48.536	10.9	26057	7.1	13.5	39.01	37.3	1.7
L.A. CITY	40.01	31.0	24860	8.2	8.2	23.01	21.5	1.5
HARTNELL	39.808	19.4	26018	11.1	15.2	27.8	26.4	1.4
IMPERIAL VALLEY	40.527	31.8	15444	29.5	112.2	16.19	15.1	1.1
SADDLEBACK	55.718	15.2	29062	4.1	35	41.78	40.7	1.1
REDWOODS	52.984	19.1	19936	7.5	8	37.52	36.4	1.1
MIRA COSTA	53.312	21.7	24836	5.3	11.1	37.19	36.2	1.0
MODESTO	49.499	22.9	19237	14.1	14.5	32.26	31.3	0.9
CHABOT	46.27	16.8	28672	5	4	34.63	33.7	0.9
SANTA BARBARA	54.088	10.9	26554	5.7	44.1	41.33	40.6	0.8
SEQUOIAS	44.867	16.1	17427	15.9	49.2	29.74	29.1	0.7
BARSTOW	46.544	41.1	18632	7.3	89	18.6	18.0	0.6
BUTTE	50.196	19.6	19144	8.9	23	33.63	33.3	0.4
SANTA ROSA	51.508	25.7	27392	4.4	10.1	33.62	33.4	0.3
PORTERVILLE	43.246	34.0	18444	12.7	62.2	19.59	19.4	0.2
SAN DIEGO MIRAMAR	53.121	25.0	24836	5.3	13.9	34.51	34.4	0.1
WEST HILLS	40.56	32.4	19329	13.1	77.1	17.55	17.5	0.0
SOLANO	50.551	36.3	21545	7.6	49.1	25.24	25.3	0.0
VISTA	49.037	51.4	28672	5	20.2	19.44	19.5	0.0
GAVILAN	43.762	18.2	35003	3.6	35.3	30.58	30.8	-0.2
BAKERSFIELD	45.735	17.8	18444	12.7	20	30.17	30.4	-0.3
PALOMAR	57.743	17.2	24836	5.3	1.6	41.75	42.1	-0.3
IRVINE VALLEY	54.781	16.4	29062	4.1	23.4	39.53	39.9	-0.3
SISKIYOUS	51.865	20.6	18960	13.5	140.7	28.77	29.1	-0.3
CERRITOS	42.711	16.4	24860	8.2	10.5	29.79	30.2	-0.4
LASSEN	53.382	23.4	16580	10.6	101.7	29.93	30.4	-0.5
SAN BERNARDINO	43.373	30.0	18632	7.3	7.7	23.22	23.8	-0.6
WEST L.A.	42.673	43.1	24860	8.2	15.8	17.01	17.8	-0.8
MERCED	43.073	24.9	16972	16.3	30.8	23.44	24.3	-0.9
EL CAMINO	46.008	17.2	24860	8.2	6	31.51	32.6	-1.1
ORANGE COAST	51.794	13.1	29062	4.1	20	38.09	39.2	-1.1
LONG BEACH CITY	43.77	23.5	24860	8.2	4.1	26.91	28.0	-1.1
FULLERTON	49.567	13.5	29062	4.1	1	36.88	38.0	-1.1
CRAFTON HILLS	49.668	19.9	18632	7.3	21.9	31.36	32.8	-1.4
ALLAN HANCOCK	50.001	22.0	26554	5.7	33.6	31.33	32.7	-1.4
TAFT	40.926	25.4	18444	12.7	24.9	21.08	23.0	-1.9
L.A. HARBOR	42.279	22.8	24860	8.2	9.1	25.03	27.0	-2.0
CONTRA COSTA	39.758	38.0	32558	4.9	26.8	16.53	18.6	-2.1
SIERRA	54.162	17.6	28314	5.3	20.5	36.35	38.8	-2.4
SKYLINE	51.134	20.3	39413	3.4	7.6	34.83	37.3	-2.5
PALO VERDE	44.744	53.7	20291	8.2	176.9	4.88	7.4	-2.6

College Name	API Index	Pct Over 25	Income	County Unemp	Miles to CSU	Transfer Rate 93-99	Exp Regress Results	Residual 93-99
COMPTON	30.834	42.3	24860	8.2	1.6	6.62	9.5	-2.9
YUBA	46.283	27.3	15295	15	47.1	21.92	24.9	-3.0
CHAFFEY	44.524	24.4	18632	7.3	21	23.46	26.7	-3.3
SHASTA	52.376	24.8	20344	9.9	73.5	27.33	30.7	-3.3
ANTELOPE VALLEY	49.518	31.6	24860	8.2	54	23.24	26.8	-3.6
RIO HONDO	41.15	23.9	24860	8.2	11.2	21.87	25.5	-3.7
CYPRESS	47.462	14.1	29062	4.1	9.7	32.03	35.7	-3.7
VICTOR VALLEY	49.657	36.5	18632	7.3	28.7	20.79	24.9	-4.1
L.A. TRADE-TECH	37.115	36.1	24860	8.2	7.6	12.67	17.0	-4.3
LAKE TAHOE	50.938	35.6	24401	6.2	193.7	15.69	20.5	-4.8
MT. SAN ANTONIO	46.711	13.2	24860	8.2	1.9	30.27	35.1	-4.8
SAN DIEGO CITY	48.817	33.2	24836	5.3	10.4	22.49	27.4	-5.0
SANTA ANA	42.387	17.0	29062	4.1	10.6	25.42	30.4	-5.0
MT. SAN JACINTO	52.002	31.5	20291	8.2	41.2	23.48	28.7	-5.2
GLENDALE	47.094	14.7	24860	8.2	23	28.37	33.9	-5.5
SANTA MONICA	47.971	18.1	24860	8.2	19.3	27.43	33.2	-5.7
EVERGREEN VALLEY	47.229	25.5	35003	3.6	9	25.31	31.2	-5.9
LOS MEDANOS	48.477	31.8	32558	4.9	46.2	21.41	27.5	-6.0
SAN JOSE CITY	47.261	33.2	35003	3.6	4	21.34	28.0	-6.6
SOUTHWESTERN	42.731	12.8	24836	5.3	17	24.74	31.7	-7.0
RIVERSIDE	45.902	19.2	20291	8.2	17.5	21.53	30.5	-9.0
NAPA VALLEY	48.154	36.9	29185	5.9	51.3	15.15	24.2	-9.0
GROSSMONT	53.058	14.4	24836	5.3	6.7	28.71	39.5	-10.8
CUYAMACA	50.682	20.3	24836	5.3	9.8	22.74	34.8	-12.1
CITRUS	46.885	14.2	24860	8.2	11.6	19.98	34.4	-14.4
MARIN	54.04	30.8	47278	3.4	19.5	20.07	35.4	-15.3
MONTEREY	46.803	26.6	26018	11.1	4.9	8.55	29.0	-20.4

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API Index = Indexed score for a college's freshmen on standardized tests
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FIGURE 1
Correlation between API Index and Transfer Rate
1993-99 Cohort of First Time Degree Seeking Students

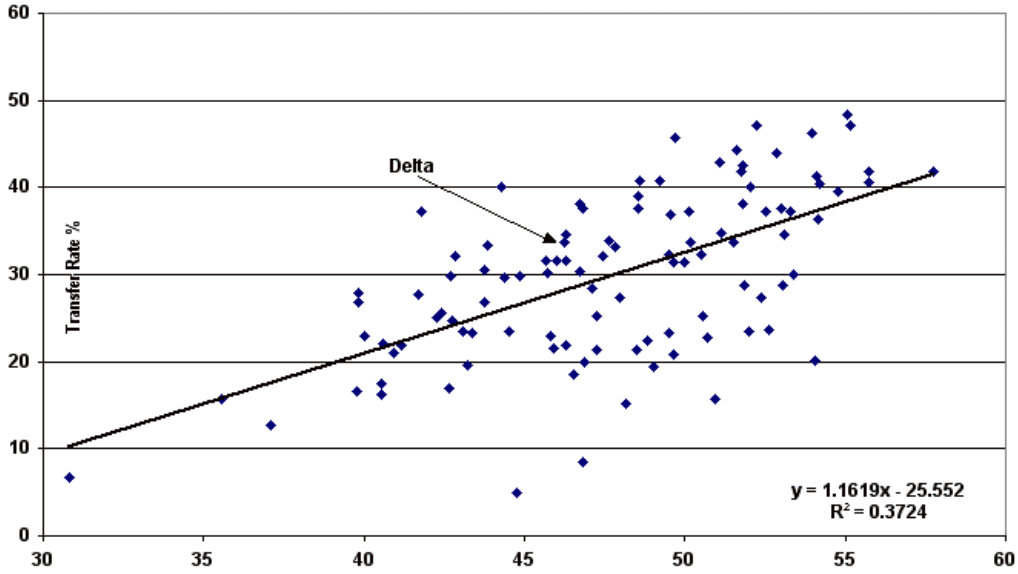

TABLE 2

Regression Results for Five Exogenous Variables and the 1993-99 Transfer Rate

Regression Statistics					
Multiple R	0.819				
R Square	0.670				
Adjusted R Square	0.654				
Standard Error	5.550				
Observations	106				
ANOVA					
	df	***SS***	***MS***	***F***	***Signif F***
Regression	5	6256.715	1251.343	40.624	0.000
Residual	100	3080.269	30.803		
Total	105	9336.984			
	Coefficients	***Standard Error***	***t Stat***	***P-value***	
Intercept	1.727	9.276	0.186	0.853	
API Index	0.780	0.135	5.769	0.000	
Pct Over 25	-0.455	0.065	-6.953	0.000	
Income	0.000	0.000	1.038	0.302	
County Unemp	-0.047	0.226	-0.209	0.835	
Miles to CSU	-0.040	0.019	-2.093	0.039	