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A Cross-State Comparison of Postsecondary CTE Student Graduation Rates and Completions: Determining the Efficacy of Using IPEDS Data for Perkins Reporting

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Regression 1: Estimating Graduation Rates

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.851	.724	.679	6.3303

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3887.925	6	647.987	16.170	.000
Residual	1482.697	37	40.073		
Total	5370.622	43			

Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	-8.685	25.661		-.338	.737
AvgRetRate0507FT	.854	.297	.311	2.875	.007
AvgRetRate0507PT	.553	.274	.225	2.019	.051
AvgFinAid0507	.254	.077	.323	3.313	.002
AvgUnEmp0507	-3.035	1.147	-.261	-2.645	.012
AvgFTWomInFT	-.788	.295	-.286	-2.673	.011
AvgFTMinInFT	-.133	.072	-.191	-1.837	.074

Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	7.153	53.979	22.145	9.5088	44
Residual	-9.4105	17.9549	.0000	5.8721	44
Std. Predicted Value	-1.577	3.348	.000	1.000	44
Std. Residual	-1.487	2.836	.000	.928	44

Regression 2: Estimated Completions

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755	.570	.538	28.915

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	44403.239	3	14801.080	17.703	.000
Residual	33442.670	40	836.067		
Total	77845.909	43			

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	64.966	21.423		3.032	.004
PRE_GRADRATE	3.056	.468	.683	6.531	.000
CCCentGov	23.171	10.683	.231	2.169	.036
NEI_2008	-.721	.308	-.250	-2.341	.024

Simulating Graduation Rates and Completions

State	StateName	Graduation Rate 2004 Cohort ⁰	Estimated Graduation Rate ¹	Estimated Graduation Rate ²	Estimated Graduation Rate ³	State Contribution to National Community College Completions Per 1,000 Enrollment ⁰	State Contribution to National Community College Completions Per 1,000 Enrollment ¹	State Contribution to National Community College Completions Per 1,000 Enrollment ²	State Contribution to National Community College Completions Per 1,000 Enrollment ³
AL	Alabama	24.8%	22.5%	52.3%	52.3%	114	120	117	110
AR	Arkansas	15.2%	8.4%	41.9%	41.9%	86	88	90	104
AZ	Arizona	17.0%	13.0%	44.0%	44.0%	74	79	77	181
CA	California	20.6%	13.6%	49.7%	49.7%	74	68	82	225
CO	Colorado	18.2%	13.2%	45.3%	45.3%	93	97	96	235
CT	Connecticut	12.2%	7.1%	39.1%	39.1%	71	77	75	251
FL	Florida	31.2%	28.2%	61.1%	61.1%	118	117	125	173
GA	Georgia	19.5%	13.7%	47.0%	47.0%	81	80	85	181
HI	Hawaii	14.4%	15.3%	40.7%	40.7%	75	94	77	143
IA	Iowa	32.4%	29.4%	61.7%	61.7%	132	130	136	135
IL	Illinois	16.9%	9.7%	44.4%	44.4%	95	94	99	213
IN	Indiana	16.3%	9.7%	42.6%	42.6%	81	81	83	140
KS	Kansas	32.5%	27.6%	61.5%	61.5%	126	120	130	159
KY	Kentucky	23.2%	14.4%	52.5%	52.5%	129	123	137	147
LA	Louisiana	7.2%	1.2%	32.0%	32.0%	55	62	55	135
US ⁴		22.1%	17.1%	50.0%	50.0%	4270	4269	4445	7719

0: No change in independent variables

1: Unemployment Rate Doubles; No other independent variable changes

2: Retention Rate FT increases by in Rate FT increase by 33%; Retention Rate PT by 10%; Percent student receiving Financial Aid by 10%; Percent First-time minority students in all first-time students increase by 10%

3: Retention Rate FT increases by in Rate FT increase by 33%; Retention Rate PT by 10%; Percent student receiving Financial Aid by 10%; Percent First-time minority students in all first-time students increase by 10%; New Economy Index level raised from current level (57) to 62.5, an increase of 10%.

4: The graduation rate value is an average of all 44 states; the completion value is a sum over 44,000 enrollees, 1,000 for each state.

Simulating Graduation Rates and Completions

State	StateName	Graduation Rate 2004 Cohort ⁰	Estimated Graduation Rate ¹	Estimated Graduation Rate ²	Estimated Graduation Rate ³	State Contribution to National Community College Completions Per 1,000 Enrollment ⁰	State Contribution to National Community College Completions Per 1,000 Enrollment ¹	State Contribution to National Community College Completions Per 1,000 Enrollment ²	State Contribution to National Community College Completions Per 1,000 Enrollment ³
MA	Massachusetts	14.6%	9.0%	41.7%	41.7%	40	39	43	291
MD	Maryland	20.2%	17.3%	48.2%	48.2%	69	73	74	242
ME	Maine	33.3%	27.7%	62.2%	62.2%	151	145	154	185
MI	Michigan	16.5%	4.4%	45.2%	45.2%	71	56	79	187
MN	Minnesota	29.6%	25.1%	57.6%	57.6%	131	129	133	221
MO	Missouri	20.5%	13.6%	48.5%	48.5%	94	91	99	140
MS	Mississippi	12.0%	-0.2%	40.5%	40.5%	80	71	89	91
MT	Montana	28.7%	26.8%	55.9%	55.9%	120	123	120	137
NC	North Carolina	13.8%	7.7%	41.0%	41.0%	89	94	94	193
ND	North Dakota	47.3%	46.4%	76.6%	76.6%	176	170	176	140
NE	Nebraska	24.7%	23.4%	52.0%	52.0%	101	108	103	165
NH	New Hampshire	27.9%	25.6%	55.2%	55.2%	125	129	125	226
NJ	New Jersey	21.6%	16.6%	50.3%	50.3%	76	74	82	231
NM	New Mexico	12.7%	8.3%	37.8%	37.8%	66	73	65	159
NY	New York	28.8%	23.2%	58.0%	58.0%	100	92	105	223
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OH	Ohio	22.9%	14.8%	51.3%	51.3%	97	89	102	159
OK	Oklahoma	12.2%	8.3%	38.0%	38.0%	71	81	73	129
OR	Oregon	10.4%	1.9%	35.8%	35.8%	51	49	51	192
PA	Pennsylvania	19.6%	14.5%	48.0%	48.0%	82	83	89	176
SC	South Carolina	12.0%	1.9%	38.9%	38.9%	90	87	94	169
SD	South Dakota	54.0%	52.9%	85.6%	85.6%	199	189	204	129
TN	Tennessee	15.6%	8.5%	43.2%	43.2%	79	78	84	140
TX	Texas	17.3%	11.2%	44.4%	44.4%	73	73	77	187
UT	Utah	30.3%	28.9%	58.3%	58.3%	109	111	110	203
VA	Virginia	21.1%	19.9%	48.4%	48.4%	75	82	77	228
WA	Washington	19.7%	13.1%	47.8%	47.8%	89	87	94	270
WI	Wisconsin	34.4%	29.0%	65.0%	65.0%	134	125	141	154
WV	West Virginia	19.4%	14.3%	46.9%	46.9%	101	104	105	96
WY	Wyoming	31.6%	30.2%	61.0%	61.0%	133	136	138	121
US ⁴		22.1%	17.1%	50.0%	50.0%	4270	4269	4445	7719

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Enrollment Projections and Completion Simulations

Year	Value	Enrollment_H		Graduation Rates	CC Enrollment 2020 ('000s)	Estimated Completions Per 44,000 of Enrollment ⁴	2005-2007 Completions Per 100,000 ENR	CC Completions ⁴
2006	0	15,184						
2007	1	15,414						
2008	2	15,657	Input Changes ⁰	22.1%	9,097	4,270	9,705	882,823
2009	3	15,876						
2010	4	16,083						
2011	5	16,296						
2012	6	16,513	Input Changes ¹	17.1%	9,097	4,269	9,703	882,707
2013	7	16,747						
2014	8	16,951						
2015	9	17,108						
2016	10	17,271	Input Changes ²	50.0%	9,097	4,444	10,100	918,797
2017	11	17,452						
2018	12	17,764						
2019	13	17,979						
2020	14	18,194	Input Changes ³	50.0%	9,097	7,719	17,543	1,595,903
Intercept		15184						

slope 215 0: No change in independent variables in both regressions
 1: Unemployment Rate Doubles; No other independent variable changes
 2: Retention Rate FT increases by in Rate FT increase by 33%; Retention Rate PT by 10%; Percent student receiving Fin Aid by 10%; Percent First-time minority students in all first-time students increase by 10%; no change in independent variables in the completion regression
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2020 CC ENR⁵

9,097

5: Enrollment projections are based on the high projections made by NCES

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