

CASE STUDY #3 (15 POINTS)

Due Monday, Feb. 17, 2025

College Graduation Rates

Do private colleges and universities do a better job of graduating their students than their public counterparts? Graduation rates are an important measure of a college or university. However, graduation rate alone may not tell the whole story. A recent report from the Higher Education Research Institute (HERI) at UCLA suggests that graduation rates tend to favor more selective private universities over (often) less selective public universities.

The following data were collected regarding graduation rate and average SAT (math plus verbal) for a sample of 20 public colleges/universities and 27 private colleges/universities (representing about 2% of public universities and about 1% of private universities). (Data are also available in Excel file on Brightspace.)

Public Colleges and Universities						Private Colleges and Universities					
Grad. rate	SAT	Grad. rate	SAT	Grad. rate	SAT	Grad. rate	SAT	Grad. rate	SAT	Grad. rate	SAT
34	950	37	960	30	855	54	961	100	1144	39	888
48	838	57	897	38	961	44	780	79	1070	97	1210
93	1240	53	996	38	925	72	1150	69	850	64	939
43	916	47	970	57	946	83	1410	75	993	70	1005
58	921	95	1211	47	785	74	1109	56	1043	95	1302
54	961	49	1202	32	926	75	900	53	1050	60	862
25	855	47	1017			64	1070	90	929	88	1171
						73	980	80	903	63	1143
						82	930	72	972	97	1220

Write a brief report (1-3 pages with graphs) that addresses the following questions. You should type your report and use the computer to create your graphs. To show your work, attach any calculations (these do not need to be typed) or computer output as an appendix.

- Some of the difference in public vs private graduation rates may be explained by the quality of students (or the selectivity of the university), which is represented in this data by the SAT score. Create a scatter plot (or plots) showing graduation rates against SAT. If you plot all the data on the same graph, use different colors and/or symbols for public and private schools. Determine the correlation(s) between graduation rate and SAT score. Does there appear to be a relationship between graduation rate and SAT score?
- Determine the least squares regression equation(s) for predicting graduation rate from SAT score. What does this equation tell you?
- Note that the mean SAT¹ score for Truman (at the time of these data) was 1190. From the regression equation you found above, predict the graduation rate for Truman at this time. In fact, the actual graduation rate was 76%. How well did the equation predict the Truman graduation rate? Grading will be based on **7 points** for your answer to part 1, **4 points** for your answer to part 2, **2 points** for your answer to part 3 and **2 points** for your overall presentation (paragraph form, grammar, etc.).

¹ Truman uses ACT-composite rather than SAT. The actual mean ACT score at this time was 26, which roughly matches an 1190 on the SAT.