**[Case 03. Alumni Giving](https://bb.uhd.edu/webapps/assignment/uploadAssignment?content_id=_5334233_1&course_id=_97649_1&group_id=&mode=view)**

Attached Files:

* [[File](https://bb.uhd.edu/bbcswebdav/pid-5334233-dt-content-rid-49636311_1/xid-49636311_1) T03. CaseData.xlsx](https://bb.uhd.edu/bbcswebdav/pid-5334233-dt-content-rid-49636311_1/xid-49636311_1) (10.584 KB)

**Due by the end of the day 04/09.**

Alumni donations are an important source of revenue for colleges and universities. If administrators could determine the factors that could lead to increases in the percentage of alumni who make a donation, they might be able to implement policies that could lead to increased revenues. Research shows that students who are more satisfied with their contact with teachers are more likely to graduate. As a result, one might suspect that smaller class sizes and lower student/faculty ratios might lead to a higher percentage of satisfied graduates, which in turn might lead to increases in the percentage of alumni who make a donation.

The data for 48 national universities are in the attached file. The Graduation Rate column is the percentage of students who initially enrolled at the university and graduated. The % of Classes Under 20 column shows the percentages of classes with fewer than 20 students that are offered. The Student/Faculty Ratio column is the number of students enrolled divided by the total number of faculty. Finally, the Alumni Giving Rate column is the percentage of alumni who made a donation to the university.

Try to answer the following questions:

1. Characterize and summarize the data. For each variable, please characterize its central tendency and variability. For each pair of variables, please show their correlation. Make comments on your results.
2. Develop an estimated simple linear regression model that can be used to predict the alumni giving rate, given the graduation rate. Discuss your findings.
3. Develop an estimated multiple linear regression model that could be used to predict the alumni giving rate using the Graduation Rate, % of Classes Under 20, and Student/ Faculty Ratio as independent variables. Discuss your findings.
4. Based on the results in parts (2) and (3), do you believe another regression model may be more appropriate? Estimate this model, and discuss your results.
5. What conclusions and recommendations can you derive from your analysis? What universities are achieving a substantially higher alumni giving rate than would be expected, given their Graduation Rate, % of Classes Under 20, and Student/Faculty Ratio? What universities are achieving a substantially lower alumni giving rate than would be expected, given their Graduation Rate, % of Classes Under 20, and Student/ Faculty Ratio? What other independent variables could be included in the model?

**Check the Guidance to the Case Analysis below:**

[**T03. CaseGuidance.pdf**](https://bb.uhd.edu/bbcswebdav/pid-5334233-dt-content-rid-49636312_1/xid-49636312_1)[**T03. CaseGuidance.pdf - Alternative Formats**](https://bb.uhd.edu/webapps/blackboard/content/listContent.jsp?course_id=_97649_1&content_id=_5332081_1&mode=reset)