
ISyE 2028 – Basic Statistical Methods - Fall 2015
Bonus Project: “Big” Data Analytics Proposal

By: **Alan G. Johnson**

Title: **Analysis of the Relationship between University Ranking and Endowment**

Introduction:

Each year many students look to rankings of universities to help them decide which school to attend. Universities have endowments which are financial assets that are donated to the schools that are then invested in order to grow an income that can be used for that year. The universities can use this income in order to hire professors, upgrade facilities, or fund more scholarships, and the endowments can also lower student tuition which is often the most important factor for a student choosing which school to attend. I want to investigate whether there is a relationship between a university’s endowment and its ranking by *U.S. News & World Report*.

Data Source:

I plan to use the annual rankings of universities from the American media company *U.S. News & World Report* as my source of rankings for the universities. I chose this ranking because it is one of the most noteworthy rankings that comes out each year and there is easy access to its data. I also have access to previous years’ rankings, which could be useful. The data for university endowments is widely published on the internet. I also have access to the data for previous years of university endowments. The endowments are measured in US dollars. These forms of data lend themselves to covariance analysis and linear regression.

Method:

I hope to find a relationship between the university’s endowment and ranking that will allow me to create a model to predict a university’s ranking based on a certain endowment amount. This result would be useful for students that are looking for universities to attend for undergraduate or postgraduate studies by looking at the university’s financial resources. I can use R and Excel to perform linear regression and analysis of covariance for the data sets, and I can use Tableau to visualize my findings. I expect to find that a university with a larger endowment would receive a higher ranking than a school with a lower endowment.