Práctica 4: Business School Rank Prediction

1 Files included
MBA2014.xlsx – Global MBA schools ranking data

2 The assignment
This Financial Times (FT) MBA school ranking evaluates full-time MBA programmes. This year, 153 schools took part, having met strict entry criteria. All are internationally accredited and their MBAs have run for at least four years. The ranking is compiled using data collected from the schools and a survey of alumni who completed full-time MBAs in 2010. For schools to be ranked, 20 per cent of their alumni must respond to the FT survey, with at least 20 fully completed responses.

Your job is to obtain the most accurate predictive model for ranking positions based on the attributes contained in the data set and the information provided about the ranking methodology. Your model should be useful for predicting a particular school ranking given its attribute values. You may model the problem as a regression problem.

Model evaluation: The accuracy of your model is to be measured by its correlation coefficient obtained by leave-one-out evaluation (i.e. k-fold cross validation where k=number of training examples).

Data Attributes
Weights for ranking criteria are shown in brackets as a percentage of the overall ranking.
Audit year: indicates the most recent year that KPMG audited the school, applying specified audit procedures relating to data submitted towards the ranking.
Salary today: average alumnus salary three years after graduation, US$ PPP equivalent. This figure is not used in the ranking.
Weighted salary (20): average alumnus salary three years after graduation, US$ PPP equivalent, with adjustment for variations between sectors.
Salary increase (20): average difference in alumnus salary before the MBA to now. Half of this figure is calculated according to the absolute salary increase, and half according to the percentage increase relative to pre-MBA salary – the "salary percentage increase" figure published in the table.
Value for money (3): calculated using salary today, course length, fees and other costs, including lost income during the MBA.
Career progress (3): calculated according to changes in the level of seniority and the size of company alumni are working in now, compared with before their MBA.
Aims achieved (3): the extent to which alumni fulfilled their stated goals or reasons for doing an MBA.
Placement success (2): effectiveness of the school careers service in supporting student recruitment, as rated by their alumni.
Employed at three months (2): percentage of the most recent graduating class who had found employment or accepted a job offer within three months of completing their studies. The figure in brackets is the percentage of the class for which the school was able to provide employment data, and is used to calculate the school's final score in this category.
Alumni recommend (2): calculated according to selection by alumni of three schools from which they would recruit MBA graduates.
Female faculty (2): percentage of female faculty. For the three gender-related criteria, schools with a 50:50 (male/female) composition receive the highest possible score.

Female students (2): percentage of female students on the full-time MBA.
Women board (1): percentage of female members on the school's advisory board.
International faculty (4): calculated according to the diversity of faculty by citizenship and the percentage whose citizenship differs from their country of employment – the figure published in the table.
International students (4): calculated according to the diversity of current MBA students by citizenship and the percentage whose citizenship differs from the country in which they study – the figure published in the table.
International board (2): percentage of the board whose citizenship differs from the country in which the school is based.
International mobility (6): calculated according to whether alumni worked in different countries pre-MBA, on graduation and three years after graduation.
International course experience (3): calculated according to whether the most recent graduating MBA class completed exchanges, research projects, study tours and company internships in countries other than where the school is based.
Languages (1): number of extra languages required on completion of the MBA.
Faculty with doctorates (5): percentage of full-time faculty with a doctoral degree.
FT doctoral rank (5): calculated according to the number of doctoral graduates from each business school during the past three years. Extra points are awarded if these graduates took up faculty positions at one of the top 50 full-time MBA schools of 2013.
FT research rank (10): calculated according to the number of articles published by each school's current full-time faculty members in 45 selected academic and practitioner journals between January 2011 and October 2013. The rank combines the absolute number of publications with the number weighted relative to the faculty's size.

An FT score is then calculated for each school. First, Z-scores – mathematical formulae that reflect the range of scores between the top and bottom school – are calculated for each ranking criterion. These scores are weighted according to the weights in the ranking key and added to give a final score. The top 100 schools are ranked accordingly to form the 2014 ranking. More details can be found in http://www.ft.com/intl/cms/s/2/5728ac98-7c7f-11e3-b514-00144feabdc0.html#axzz31lpwhKjV

Submitting your answer

The práctica can be solved in teams of two people (1 submission per team). Submission is through the Aula Global. Submissions should contain the code of the files you modified and the plots your programs generated. Deadline is the beginning of the next práctica. Late submissions will be penalized.