Insight Resume Analysis
January 2009

Background

The Insight Resume (IR) was submitted by all freshman applicants to OSU for the first time in 2003-04 application year, making the Fall 2004 entering freshman cohort the first group for which performance at OSU relative to IR scores could be tracked. Data for the freshman cohorts entering in Fall 2005, Fall 2006 and Fall 2007 are also now available. To evaluate the impact of IR scores, two measures of “success at OSU” are considered—retention and graduation. A student is said to be retained if he/she is enrolled at OSU in the Fall term of his/her second year, whereby retention data is available for all four entering freshman cohorts (2004 through 2007). For the 2004 cohort, four-year graduation data are also available. To account for demographic and socio-economic differences, gender, ethnicity and Pell-status (an indicator of whether a student is eligible for a Pell grant) are considered, as is first year GPA, a factor known to be important in explaining retention beyond the first year. For the 2004 cohort, cumulative GPA in the final term at OSU is considered in the graduation analysis.

Summary of Analysis

Both retention and graduation are binary variables, so logistic regression is an appropriate statistical model for understanding relationships between these outcomes and explanatory factors of interest. Each cohort is analyzed separately. For the retention analysis, a preliminary model including gender, ethnicity, Pell-status, and first year GPA is obtained, and IR score is then added to determine if any gain can be made in explaining retention. For the graduation analysis a similar approach fits a preliminary model with gender, ethnicity, Pell-status, and final term GPA before adding IR score. The predictive ability of all models is examined by estimating the models using 80% of each cohort and predicting retention (and graduation for the 2004 cohort) for the remaining 20%.
Summary of Findings

1. Retention analysis.

   (a) **2004 cohort.** For students with matching demographics, Pell-status and first-year GPA, a one-unit difference in IR scores is associated with higher odds of retention (between roughly 7% and 15% higher odds of retention) for those with the higher IR score.

   (b) **2005 cohort.** Some ethnic groups (Blacks and Native Americans) appear to have increased odds of retention relative to other ethnic groups when their IR scores increase, everything else being the same. It is difficult to quantify these increases as they tend to occur in tandem with effects of GPA.

   (c) **2006 cohort.** No evidence of an effect due to IR scores.

   (d) **2007 cohort.** No evidence of an effect due to IR scores.


   For students with matching demographics, Pell-status and cumulative GPA, a one-unit difference in IR scores is associated with higher odds of graduation (between roughly 3% and 11%) for those with the higher IR score.

3. Prediction analysis.

   In no case does inclusion of IR scores offer substantive improvements in predictions. This suggests that while some statistically significant effects of IR scores are observed, these effects are small relative to the effects of other factors, especially GPA.

Comments

The statistical significance of the IR in both the 2004 and 2005 cohorts’ retention analysis and the 2004 cohort graduation analysis is compelling. These are large cohorts of students, and the additional effects due to the IR, after accounting for gender, ethnicity, Pell-status, and GPA are not likely due to chance. The negligible improvements in predictive ability using the IR scores does, however, suggest that these effects are small relative those of other factors. The absence of effects due to IR scores in the 2006 and 2007 cohorts may be explained by an intermediate use of the IR to direct at-risk students to support services on campus, though such a “wash-out” effect has not been rigorously studied.