GRADUATE STUDENT RETENTION MODELING IN A LARGE PUBLIC UNIVERSITY

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Background: The relationship between students and a college is similar to the relationship between customers and a company. Student persistence is partially the result of student satisfaction with the college experience and effective education. High student satisfaction and retention rates lead to low attrition, enhanced reputation, and ultimately the success of academic programs. Increasingly colleges consider high student retention rates a sign of successful student education and colleges are starting to pay more attention to improving student retention. Based on the fourth national survey "what works in student retention" (ACT, 2010), student retention is influenced by numerous factors, such as (1) institutional characteristics, including the amount of financial aid available, academic advising, student involvement in campus life, and the social environment; (2) student characteristics, including motivation to succeed, study skills, job demands, financial resources, and academic integration. An extensive body of research has studied the influence of academic advising on student retention (Crockett, 1978; Tinto, 1993; ACT, 2010). In our study, we focus on the retention rate of graduate students (Master and Doctoral students) and examine how characteristics of the program and students differentially influence retention rates.

Methods: Data on student characteristics including College, Department, Program, Ethnicity, Degree level, STEM major (science, technology, engineering, or mathematics), school where the last degree was earned, GPA on the last 60 credits from their undergraduate program, and GMAT or GRE score were collected. Data on 5288 graduate students who enrolled in a large public southwest university from 2004 to 2007 were included in the analysis. We divided the students into three categories (active, completed, and discontinued). If a student does not enroll for two consecutive regular terms and the student has not achieved his/her academic goal

(graduation), we consider this student as having discontinued or dropped out. Students who are still active in the program or have completed the program are considered as retained. Binary logistic regression was conducted to analyze the data using IBM SPSS Statistics version 19. Some nonparametric (or distribution-free) statistical analysis was also conducted to provide a better understanding of the dataset and the results.

Results: Retention rates for the categorical variables were calculated and compared with the average retention rate of 69.2% for all students in UNT graduate programs. In the logistic regression model we found that GPA, GRE score, dummy variables for some departments, programs, ethnicity, and STEM status are significant predictors. For example, STEM students have lower retention rates than non-STEM students. Black students have lower retention rates and Asian students have higher retention rates. Doctoral students have similar retention rates when compared with masters students, but they have much lower completion rates than the master students during the limited range of years that were included. Students with higher GPA and GRE scores have a much higher probability of retention. Programs' retention rates were compared using a Chi-Square Test and significant differences in retention rates from the average were identified. This study can provide leading indicators for a predictive model and allow the estimation of the probability of retention for new students prior to enrollment in programs. Furthermore, the results can provide actionable information for helping programs or groups with low retention rates. For example, programs with lower retention rates would benefit from academic advising interventions, additional learning support center access, financial aid advice, and career advice at an early stage.