

## STUDENTS AS INNOVATORS AND NEW MAJORS AS INNOVATIONS: IMPACT ON STUDENT RETENTION

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### ABSTRACT

As with most businesses, colleges and universities realize the importance of developing new major fields of study to remain viable. In this study a "new major" is defined as a newly-launched, degree-specific area of study consisting of both required and elective courses offered by a degree-granting university that has met state and university requirements. In this study students are considered innovators if they enroll in new majors as matriculating freshmen. A large database of student records is used to specify two logistic regression equations.

The database of student records is a component of the administrative data system at a private university in the Northeast United States. It contains information on matriculating freshmen, including the major area of study chosen. Nearly 95% of freshmen declared their major during matriculation. The portion of the database from 1992 to 2003 is used to develop our models. Part of the database includes matriculating freshmen responses to a 79-item survey measuring general attitudes and opinions, high school experiences and college expectations. Principal axis factor analysis of these self-report survey items reveals twenty two factors for which factors scores are estimated and subsequently employed as predictor variables in the two logistic regression models. In addition to the factor scores, personal information collected from students during application, registration, and other administrative procedures required to process their admission and registration are also included as predictor variables.

The first logistic regression analysis uses choice of new versus old major as the dependent variable. The university introduced ten new majors from 1993 to 2003, including such majors as digital media arts, international business, accounting information

systems and bio-informatics. The level of the academic degree that the matriculating freshman ultimately expects to obtain has the strongest relationship with probability of choosing to enroll in a new major. The higher the level of the degree the less likely the student is to choose a new major. Students are more likely to enroll in a new major the greater the effort they devote to high school course work, the higher their SAT verbal test scores, the more musical experience they have in high school and the greater their social goals. On the other hand, students are less likely to enroll in a new major as the number of high school activities in which the student participates increases, as the moral values and work ethic become weaker, and as the SAT math test scores decline.

A second logistic regression analysis uses attrition as the dependent variable. Students who drop out of college at any time during their four-year tenure are classified as dropouts while others are classified as persistors. Choice of new versus old major was added to the predictor variables for this analysis. Family income level is the strongest predictor of attrition followed by high school academic average. Probability of dropping out significantly increases with more deviant behavior in high school, higher quality of faculty at the university, and the higher the degree to which the student aspires. Probability of dropping out significantly decreases with higher family income levels, higher high school academic averages, the decision to enroll in a new major, a greater importance of family and friends, higher quality of the high school attended, devotion of extra effort to success in high school, and higher education levels of the student's father. This study provides a further understanding of the role of launching new majors in attracting higher quality students and improving student retention.