

Scott, J. S. (2001). Modeling aspects of students' attitudes and performance in an undergraduate introductory statistics course. PhD University of Georgia. Supervisor: Joseph Wisenbaker.

This study examined the role of attitudes toward statistics, mathematics anxiety, mathematics attitude, mathematics background, demographic variables, and performance for students in an undergraduate introductory statistics course. The study participants were 155 students enrolled in five classes of introductory statistics at a four year college in metropolitan Atlanta. Using a self-selected ID to assure anonymity, the students completed the Survey of Attitudes Toward Statistics (SATS) at the beginning and end of the term. The SATS provides scale scores for Affect, Cognitive Competence, Value, and Difficulty. They also completed a mathematics attitude and anxiety measure, a demographic questionnaire, and a mathematics history. Students revealed their ID's after completion of the study. This allowed performance data from the course and prerequisite mathematics information to be linked with other student data. Students participating in this study had fairly positive attitudes concerning their Cognitive Competence and the Value of statistics at the beginning of the course. Their feeling of Affect was almost neutral and they expected the course to be somewhat difficult. Statistics attitudes were slightly less positive at the end of course. There were no statistically significant differences in attitudes between first time enrollees and those who were repeating the course or between students who did and did not complete the course. Pre-course SATS attitudes were generally not related to gender or age of the students nor to the years of high school mathematics or number of college mathematics courses. All of the SATS subscales were correlated with student grades in the prerequisite course. Pre-course Affect and Cognitive Competence scales were highly correlated to mathematics attitude, math self-concept and statistics self-confidence and moderately correlated with mathematics anxiety. Path analysis was used to develop a conceptual model for statistics attitude and performance in the course using mathematics attitude, mathematics anxiety, and prerequisite grade as the exogeneous variables. In the path model, performance in the course was not influenced by either the pretest or posttest SATS. Performance during the statistics course did affect the posttest SATS scores.