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Factors Influencing First Year Undergraduate Students to Choose an Engineering Major

Aaron Afriat, Dr. Joyce B. Main, and Hossein EbrahimiNejad
School of Engineering Education, Purdue University

ABSTRACT

Although there are a number of studies investigating why students choose to major in engineering as a field, there are few studies that focus on students' specific discipline choice within engineering. Examining factors that influence engineering major choice provides academic institutions with important information for developing strategies to encourage students to consider the wide range of engineering disciplines available. The study addresses the following research question: Which factors influence first year undergraduate engineering students' choice of major? To identify factors that are associated with selecting a specific major, such as Mechanical Engineering, a survey was administered to First-Year Engineering (FYE) students at a large Midwestern research university. A total of 1,206 students responded to the survey of which 941 were men and 265 women. The likelihood a student will major in a specific discipline (Mechanical, Civil, Electrical, Industrial, or Chemical) was estimated using logit regression. Preliminary findings suggest that student interest (the desire to learn about an engineering discipline), engineering self-efficacy (the belief in one's ability to succeed in engineering), and first year grade point average are associated with major choice in engineering. Identifying factors that are associated with selecting a specific engineering discipline provides important information for academic institutions to further guide engineering students in their major decision making process.

KEYWORDS

Major choice, first-year engineering, engineering education