Data Analytics for Admission Process: Bachelor of Engineering Program

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Abstract. Higher education provides opportunities to many occupations, influencing one's career. Higher education admissions processes vary by country or university, from reviewing materials to admissions decisions. Different admissions philosophies may influence applicants' eligibility for higher education and admission versus choice of admission. However, the intense competition among hundreds of applicants has compelled universities to upgrade their recruitment procedures to accept students with exceptional potential. Data analysis procedures have been applied in many areas to extract valuable insights from available data. Many industries acquire, store, and analyze data to make strategic decisions and gain valuable knowledge. Data analytic has been applied in the education industry to facilitate improved decisions in various sectors, including the development of tailored and dynamic learning programs, the enhancement of grading systems, and the prediction of a student's optimal future career. Therefore, the purpose of this research is to apply data analytics to facilitate a data-driven decision process based on prospective and current student data. The academic performance of current engineering students in both university and high school is analyzed in this study. Since there are 13 engineering programs considered, the different environmental settings of schools or engineering programs are also taken into account. Additionally, the impact of COVID-19 on the teaching and learning process in recent years was considered. The results were used to enhance the first-year engineering academic support program and evaluate the effectiveness of the current admissions procedure.

Keywords. Data analysic, Admission process, Data-driven decision making, Educational management

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