

Factors Influencing Students' Grade Point Average: A Case Study of Level II Undergraduates in the Faculty of Science University of Ruhuna, Sri Lanka

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Academic performance use to evaluate the student achievements within an educational environment. At the university level, academic performance is often quantified through grades and the Grade Point Average (GPA). Many factors can affect the GPA. This study aims to investigate the factors affecting the GPA of level II undergraduates of the Faculty of Science, University of Ruhuna, Sri Lanka. Specifically, the study investigates the effect of Z-Score, results of Level I English, lecture attendance, Degree Program, gender, stay in the hostel or not, and attempt at GCE A/L examination on GPA. The study collected secondary data of 619 undergraduates. The descriptive statistical analytical techniques, Kruskal-Wallis test, Wilcoxon rank sum test, ANOVA in Bootstrap, and two sample t-test in Bootstrap were used in the data analysis. Ordinary Least Squares method (OLS) and bootstrap regression methods were used to construct the regression models. According to the results, a higher proportion of female students (58%) showed a better academic performance than male students (p -value < 0.001). The performance of male students who following Physical Science Degree was lower than the other degree programs. The students who got admission to the university on their 1st attempt performed better in the university. The non-parametric tests and Bootstrap approaches showed that, GPA was not affected whether students staying in the hostel or not (p -value > 0.05). The paired bootstrap regression method yielded a model with better accuracy. We can conclude that Z-Score, results of Level I English, lecture attendance, and Degree Program, gender, and attempt at the GCE A/L examination influenced to the students' GPA and, the bootstrap approach can be used effectively for the data set with unknown distributions. These results will further assist students, lecturers, administrators, and policymakers in observing and taking appropriate action to improve academic performance.

Keywords: Academic Performance, Grade Point Average, Bootstrap, Regression, Non-Parametric Methods