

## **Application of Multiple Linear Regression in Identifying Contributing Factors in Students' Academic Achievement**

### **ABSTRACT**

Academic achievement is defined as the capacity to study, recall information or facts, and transmit knowledge in written or verbal form. It is one of the most essential measures of comprehension and learning in all educational systems. It is crucial to identify the factors that would affect students' achievement to enhance their achievement in academics. Hence, this research was intended to determine the significant factors that contribute to educational success. This study included internal factors such as self-esteem, emotional intelligence, intelligence, and the students' personalities, whereas parental education and household income were used as the external factors. Students' academic success was measured using their cumulative grade point average. This study involved 327 final-year undergraduate students from the Faculty of Science and Natural Resources and was selected through a stratified sampling method. The data were analysed using stepwise multiple linear regression. Three regression models have been developed: the internal factors model, the external factors model, and the combined internal and external factors model. The three models were compared for the identification of significant contributing factors. The internal factors model exposed that self-esteem and intelligence were significant factors in educational achievement while the external factors model showed that only maternal education was a significant factor in students' performance. The combined internal and external factors model discovered that maternal education together with self-esteem were significant factors affecting students' achievement. The findings indicated that self-esteem, intelligence, and maternal education were significant factors in students' learning outcomes. Therefore, it is highly recommended for the government to collaborate with university administration, educators, and parents to develop strategies or programs focusing on these three factors to improve students' academic performance