REGRESSION ANALYSIS OF THE ACADEMIC PERFORMANCE OF BS APPLIED MATHEMATICS STUDENTS OF CAVITE STATE UNIVERSITY DURING THE SECOND SEMESTER A.Y. 2013-2014

THESIS

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ABSTRACT

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This study entitled "Regression Analysis of the Academic Performance of BS Applied Mathematics Students of Cavite State University During the Second Semester A.Y. 2013-2014" was conducted at Cavite State University Main Campus from June 2014 to February 2015. Generally, it aimed to provide regression analysis of the academic performance of the BS Applied Mathematics students of Cavite State University during the second semester A.Y. 2013-2014. Specifically, it aimed to (1) determine the academic performance of the BS Applied Mathematics students of Cavite State University – Main Campus during the second semester A.Y. 2013-2014 in terms of demographic profile, (2) determine the predictors of their academic performance; (3) determine the predictor variables with multicollinearity; (4) detect outliers in the data set; and (5) develop a multiple regression model that provides the relationship of the demographic profile and the academic performance of the participants.

The study used descriptive-correlational method of research. The study involved 46 BS Applied Mathematics students as the participants of the study. The instrument used in gathering the data needed was questionnaire.

The variables used in the study were age, gender, year level, monthly family income, type of secondary school, height, weight, mother's educational attainment,

father's educational attainment, sibling order, parent's status, daily study hours, and the academic performance.

Regression analysis was used to determine the predictors of academic performance. The demographic profiles were associated to the academic performance of students. Multiple regression models were developed with the demographic profile as the independent variable and the academic performance as the dependent variable. The models were validated using regression diagnostics to select the best multiple regression model.

It was revealed in the study that height and weight are multicollinear. No outlier was also detected in the study.

Height, monthly family income and daily study hours were found to be predictors of academic performance. The regression equation is given by

$$y = .015\ (\text{Height}) + (-0.00000317)(Family\ Income) + (-.143)\ (Daily\ Study\ Hours)$$

Based on the findings, the following conclusions were drawn; (1) majority of the BS Applied Mathematics students have a GPA ranging from 2.0 to 2.49 which is interpreted as "Good"; (2) daily study hours and height were significantly related to the academic performance. It implies that daily study hours and height influenced the academic performance of students. Daily study hours is directly proportional to the academic performance of students. In terms of the height, the smaller a student is, the better his/her academic performance; (3) height and weight are multicollinear. This means that height and weight are correlated with each other. They might provide confusing results and redundant information about the academic performance of students

if both variables are included in the multiple regression model; (4) There are no extreme outliers detected in the study which implies that there are no data points that are numerically distant from the rest of the observations; and (5) a multiple regression model was generated. The academic performance of students can be predicted using height, monthly family income, and daily study hours as the predictor variables.

Based on the conclusions of this study, the following are highly recommended; (1) the students should exert more time and effort in studying to improve their academic performance; (2) future researchers should include interaction of height and weight in developing another regression model since these variables are multicorrelated; (3) more respondents should be considered in future researches for more accurate results; and (4) other variables should be considered to identify other factors and to establish stronger relationship between those factors and academic performance of students.

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INTRODUCTION

Everyone has an intense desire to acquire education. It is the level of education that helps people earn respect and recognition. Education is really a means of gaining knowledge and discovering new things. It is a key to success, personal growth and progress of a nation.

Many universities and colleges are offering good quality education. It is their responsibility to mold students to become globally competitive and well-equipped individuals.

The performance of the students has a great impact and is a critical measure of the quality of education in an institution. The main products of universities are students. Upon graduation, they may become the manpower for the industry, government or other sectors. According to Ibrahim and Rusli (2007), the students' performances are vital in