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MULTIPLE REGRESSION MODELS FOR MUNGBEAN PRODUCTION

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MULTIPLE REGRESSION MODELS FOR MUNGBEAN PRODUCTION

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ABSTRACT

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The study entitled "Multiple Regression Models for Mungbean Production" was conducted at Cavite State University from January to March 1999. It aimed to estimate a production function for mungbean in selected farms in Batangas.

Specification of the model used in production function had been based on the variables namely: area, fertilizer, labor and operating expenses. In an attempt to relax the assumption of the ordinary least squares, autocorrelation, multicollinearity and heteroscedasticity were tested to obtain the best fitting model.

The production function involved actual yield obtained from production usingthe variables mentioned. The regression revealed that area gave the most significant contribution to the production level. Operating expenses likewise contributed to the yield level, especially when the amount of fertilizer was subsumed to this variable.

The coefficient of determination revealed an impressive result, which meant that the production level was explained mainly by the variables included in the model. However, it is expected that a more acceptable values of the coefficients would be obtained from the regression if more variables would be introduced in the model, hence recommended.

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MULTIPLE REGRESSION MODELS FOR MUNGBEAN PRODUCTION [1/]

Ramerson M. Rupido

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INTRODUCTION

Background of the Study

Regression analysis is concerned with the study of the dependence of one variable, the dependent variable, on one or more other variables, the explanatory variables, in order to estimate and/or predict the population mean or average value of the former in terms of the known or fixed (in repeated sampling) values of the latter (Gujarati, 1988). In regression analysis, there is an asymmetry in the way the dependent and explanatory variables are treated. The dependent variable is assumed to be statistical, random or stochastic, that is to have a probability distribution. The explanatory variables, on the other hand are assumed to have fixed values (in repeated sampling).

The analysis can be based on observational data because some or all of the independent variables are not susceptible to direct control. Multiple regression analysis is also highly useful in experimental situations wherein the experimenter can control the independent variables. A experimenter will wish to investigate a number of independent