# COMPARISON OF CONJUGATE GRADIENT METHODS FOR DEVELOPING THE MULTIPLE LINEAR REGRESSION MODEL FOR RICE PRODUCTION IN MALAYSIA.

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## DECLARATION BY CANDIDATE

I certify that this report and the project to which it refers the production of my own and that idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of discipline.

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# ABSTRACT

Linear regression is one of the basic model in statistics and it is also categorized an unconstrained optimization problem. It is used to determine the relationship between dependent and independent variables. This project focuses on the formation of regression models for the rice production in Malaysia by analyzing the effects of paddy population, planted area, human population and domestic consumption. The conjugate gradient method is used to solve the regression function through normal equation in matrix form. The conjugate gradient is chosen due to its ability to generate a solution for regression model and obtain the coefficient value of independent variables. The beta parameter from general conjugate equation is varied using four existing formula. The conjugate method is then compared with the result obtained from direct method and SPSS software. From the comparison, the conjugate gradient method with beta FR (Fletcher and Reeves) shows the least absolute error and declared as the best regression model for the rice production statistic.

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