ABSTRACT

Practical value is one indicator of the quality improvement of health education, especially in terms of nursing care competency which is currently the society demands. Variables that affect value practice are theory, IQ value, test entrance scores, income of parent and direction of Senior High School used as predictor variables. Regression analysis can be done through two approaches, the most common approach and is often used was the parametric approach which assumes that the regression function shape was known and if there is no any information about the regression function shape of the approach used a nonparametric approach. If both approaches are combined is formed semiparametric approach. Semiparametric regression estimation technique used Spline, because Spline has the advantage because to overcome that showed pattern behavioral changes in a particular sub with knot points. The purpose of this study was to examine the spline semiparametric estimator multivariable regression model using least squares and choose the best spline regression models with Generalized Cross Validation criterion (GCV) and the Mean Square Error (MSE) and application to Practical value help program S-Plus. The data used are the average data value student practice William Booth Surabaya Collage of health science against the average value of the theory, the IQ value, entrance test scores, parental income and direction of Senior High School. The results showed that the best regression model was a spline regression multivariable model spline knot point mixed, with minimum GCV, 4.946838, MSE 4.405518 and determination coefficient (R2) 0.6444852.

Keywords: Generalized Cross Validation (GCV), Least Square, Mean Square Error (MSE), semiparametric regression, Spline, Knot Point.