

## Analysis of Path Nonparametric Truncated Spline Maximum Cubic Order in Farmers Loyalty Modeling

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**Abstract :** Path analysis tests the relationship between variables through cause and effect. Before conducting further tests on path analysis, the assumption of linearity must be met. If the shape of the relationship is not linear and the shape of the curve is unknown, then use a nonparametric approach, one of which is a truncated spline. The purpose of this study is to estimate the function and get the best model on the nonparametric truncated spline path of linear, quadratic, and cubic orders with 1 and 2-knot points and determine the significance of the best function estimator in modeling farmer loyalty through the jackknife resampling method. This study uses secondary data through questionnaires to farmers in Sumbawa Regency who use SP-36 subsidized fertilizer products as many as 100 respondents. Based on the results of the analysis, it is known that the best-truncated spline nonparametric path model is the quadratic order of 2 knots with a coefficient of determination of 85.50%; the significance of the best-truncated spline nonparametric path estimator shows that all exogenous variables have a significant effect on endogenous variables.

**Keywords :** nonparametric path analysis, farmer loyalty, jackknife resampling, truncated spline

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