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**PRELIMINARY TEST STOCHASTIC RESTRICTED LIU  
ESTIMATOR BASED ON WALD, LIKELIHOOD RATIO AND  
LANGRANGIAN MULTIPLIER TESTS IN THE LINEAR  
REGRESSION MODEL**

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Ridge type estimators are used to estimate regression parameters in a multiple linear regression model when multicollinearity exists among predictor variables. When different estimators are available, preliminary test estimation procedure is adopted to select a suitable estimator.

In this research two ridge estimators, the Stochastic Restricted Liu Estimator and Liu Estimator are combined to define a new preliminary test estimator, namely the Preliminary Test Stochastic Restricted Liu Estimator (PTSRLE). The stochastic properties of PTSRLE are derived, and the performance PTSRLE is compared using Wald (WA), Likelihood Ratio (LR) and Lagrangian Multiplier (LM) tests as a function of the shrinkage parameter  $d$  with respect to the Scalar Mean Square Error.

Based on this comparison, it was revealed that when  $d$  is small PTSRLE based on WA test has the smallest Scalar Mean Square Error followed by the estimators based on LR and LM tests, and if  $d$  is large enough and near one, the situation is reversed.