

INTISARI

PENERAPAN *MODIFIED RESTRICTED LIU* ESTIMATOR DALAM MENANGANI MASALAH MULTIKOLINEARITAS PADA MODEL REGRESI LOGISTIK

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Regresi logistik merupakan analisis yang digunakan untuk mengetahui hubungan antara variabel dependen yang berdistribusi tak normal dengan variabel independen, dimana variabel dependen mempunyai dua atau lebih kategori. Koefisien parameter regresi logistik dapat diestimasi dengan metode maksimum *likelihood* estimator. Terdapat alternatif lain yang dapat mengestimasi koefisien parameter regresi logistik yaitu metode *restricted maximum likelihood* estimator dengan mempertimbangkan batasan linear. Namun ketika terdapat masalah multikolinearitas, metode *modified restricted liu* estimator lebih tepat digunakan.

Pada skripsi ini, *modified restricted liu* estimator pada analisis regresi logistik diaplikasikan untuk memodelkan faktor-faktor yang mempengaruhi risiko kredit macet di BPRS Khasanah Ummat Purwokerto, dimana terdapat masalah multikolinearitas. Rata-rata kuadrat galat dari *restricted maximum likelihood* estimator dan *modified restricted liu* estimator akan dibandingkan. Kemudian diperoleh hasil yang menunjukkan bahwa *modified restricted liu* estimator memberikan nilai rata-rata kuadrat galat yang lebih kecil dari *restricted maximum likelihood* estimator.

Kata kunci: regresi logistik, MLE, *restricted* MLE, multikolinearitas, liu estimator, *modified restricted liu* estimator, MSE.

ABSTRACT

IMPLEMENTATION OF MODIFIED RESTRICTED LIU ESTIMATOR FOR SOLVING MULTICOLLINEARITY IN LOGISTIC REGRESSION MODEL

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Logistic regression is an analysis used to determine the relationship between the dependent variable which is abnormally distributed and independent variables, where the dependent variable has two or more categories. The logistic regression parameter coefficient can be estimated using the maximum likelihood estimator method. There are other alternatives that can estimate the logistic regression parameter coefficient, namely the restricted method of maximum likelihood estimator by considering linear constraints. But when there are multicollinearity problems, the modified restricted liu estimator method is more appropriate to use.

In this paper, modified restricted liu estimator in logistic regression analysis was applied to analyze the factors that affect the credit risk in BPRS Khasanah Ummat Purwokerto, where there are multicollinearity problems. The MSE of the restricted maximum likelihood estimator and modified restricted liu estimator will also be compared. Then the results obtained showed that modified restricted liu estimator gives a mean squared error is smaller than the restricted maximum likelihood estimator.

Keywords: logistics regression, MLE, restricted MLE, multicollinearity, liu estimator, modified restricted liu estimator, MSE.