Elastic Net Regression − R Report

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Dataset used: D:/DATA ANALYSIS/H Regression Tests and Models/Accelerated Failure Time Model/dataset.csv

Target variable: G3

Rows used: 649

Predictor columns after model.matrix: 41

Training rows: 487

Test rows: 162

Cross−validation folds: 10

Selected Elastic Net Hyperparameters

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Best lambda: 0.07909967

Best l1_ratio / alpha mixing: 0.9

Nonzero selected coefficients: 16

Test Performance

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MAE: 0.78911

RMSE: 1.10875

R−squared: 0.881831

Adjusted R−squared using nonzero features: 0.868792

Interpretation

Elastic Net Regression combines lasso and ridge regularization.

The selected l1_ratio controls the lasso−ridge balance, while lambda controls shrinkage strength.

Use the residual and prediction charts to judge model generalization and error behavior.

Files Generated

Charts folder: D:/DATA ANALYSIS/H Regression Tests and Models/Elastic Net Regression/R_Output/charts

Tables folder: D:/DATA ANALYSIS/H Regression Tests and Models/Elastic Net Regression/R_Output/tables

TXT folder: D:/DATA ANALYSIS/H Regression Tests and Models/Elastic Net Regression/R_Output/txt

PDF folder: D:/DATA ANALYSIS/H Regression Tests and Models/Elastic Net Regression/R_Output/pdf