

CORRECTIONS FOR THE WALD RESIDUALS IN GENERALIZED LINEAR MODELS

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- **ABSTRACT:** *The theory of generalized linear models is used in statistics, for analysing data from distributions which belong to the exponential family of distributions. Some examples are binomial, gamma and inverse Gaussian distribution, among others. After fitting a model in order to check the adequacy of fitting, diagnostic techniques are used. The properties of residuals in generalized linear models are not well known, and asymptotic results are the only recourse. This work aims to study the asymptotic properties of Wald residual, and to obtain corrections to make the distribution of the modified residuals closer to the standard normal. An application of the corrections for Wald residuals was done for a dataset with the response variable as a count, and to model, was used the Poisson distribution. A Monte Carlo simulation study, was performed showing that the distribution of the corrected Wald residuals, is closer to the standard normal distribution.*
- **KEYWORDS:** *Generalized linear models; exponential family; regression models; Taylor expansion; Wald residual.*

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