



random effects hurdle model composite model case resampling parametric bootstrap lack of fit zero-inflated Poisson multivariate normal multilevel GLM null (reduced) model unconditional growth model cross-level interaction intraclass correlation unconditional means model maximum likelihood estimate (MLE) trellis graph quasilielihood profile likelihood random slopes logit level two model Poisson regression binomial logistic regression variance components fixed effects mixture model lattice plot likelihood ratio test (LRT) one-parameter exponential family empirical logit plot percentile method bootstrapping overdispersion extra-binomial variation Wald-type inference negative binomial regression longitudinal quasi-Poisson spaghetti plot binary logistic regression deviance interaction nested models centering level one model relative risk (rate ratio) random intercepts three-level structure odds ratio indicator offset drop-in-deviance test crossed random effects restricted maximum likelihood (REML) covariance structure quasi-binomial likelihood residual deviance random effects hurdle model composite model case resampling parametric bootstrap lack of fit zero-inflated Poisson multivariate normal multilevel GLM null (reduced) model unconditional growth model cross-level interaction intraclass correlation unconditional means model maximum likelihood estimate (MLE) trellis graph quasilielihood profile likelihood random slopes logit level two model Poisson regression binomial logistic regression variance components fixed effects mixture model lattice plot likelihood ratio test (LRT) one-parameter exponential family empirical logit plot percentile method bootstrapping overdispersion extra-binomial variation Wald-type inference negative binomial regression longitudinal quasi-Poisson spaghetti plot binary logistic regression deviance interaction nested models centering level one model relative risk (rate ratio) random intercepts three-level structure odds ratio indicator offset drop-in-deviance test crossed random effects restricted maximum likelihood (REML) covariance structure quasi-binomial likelihood residual deviance