

An Overview of Functions in the *metafor* Package

last updated: Mar 16 2022
(not all functions documented)

given the required data (e.g., means, SDs, and group sizes; counts for 2x2 tables; correlations and sample sizes), calculate the desired effect size or outcome measure for the meta-analysis (e.g., standardized mean differences, log odds or risk ratios, risk differences, r-to-z transformed correlations, ...) and the corresponding sampling variances (or an entire variance-covariance matrix for dependent estimates)

- functions in the 'util' package to:
- read in data from ASCII file
 - see also 'foreign', 'readxl', and 'haven' packages for reading in other data formats

read.table()
read.csv()
read.delim()

escalc()
vcalc()

- yi = observed outcomes or effect size estimates
- vi = corresponding sampling variances (or 'V' for an entire var-cov matrix)

rma.uni()
rma.mh()
rma.peto()
rma.glmm()
rma.mv()

- rma.uni() = equal/fixed- and random/mixed-effects models ("inverse-variance" method; normal-normal models)
- rma.mh() = Mantel-Haenszel method
- rma.peto() = Peto's method (equal/fixed-effects model)
- rma.glmm() = equal/fixed- and random/mixed-effects models (binomial-normal and Poisson-normal models)
- rma.mv() = equal/fixed- and random/mixed-effects multivariate/multilevel models (normal-normal models)

note: rma.uni() takes either 'yi' and 'vi' as input or one can supply the required data to calculate the desired effect size or outcome measure for the meta-analysis directly; rma.mh(), rma.peto(), and rma.glmm() require that the raw counts are supplied; rma.mv() takes 'yi' and 'V' as input (V is the variance-covariance matrix of the sampling errors)

print()
summary()
aggregate()

print()
summary()

fitted()
predict()
blup()
ranef()
cumul()

residuals()
rstandard()
rstudent()
hatvalues()
weights()
influence()
leave1out()

ranktest()
regtest()
trimfill()
hc()
tes()
selmodel()

confint()
anova()
permutest()
robust()
vif()

forest()
funnel()
labbe()
radial()
qqnorm()
baujat()
gosh()
regplot()
plot()

logLik()
deviance()
fitstats()
AIC(), BIC()
coef()
vcov()

print functions

fitted and predicted values

residuals and influential case diagnostics

funnel plot asymmetry / publication bias

confidence intervals and inference

plotting functions

various extractor functions

note: class of fitted model object is the same as the function name; so print() for an object of class 'rma.uni' actually calls print.rma.uni() and so on

note: blup() only for 'rma.uni' objects; ranef() only for 'rma.uni' and 'rma.mv' objects; cumul() not for 'rma.mv' or 'rma.glmm' objects

note: all functions implemented for 'rma.uni' objects; coverage of functions for other objects varies (see docs)

note: regtest() not for 'rma.glmm' or 'rma.mv' objects; trimfill(), hc(), tes(), selmodel() only for 'rma.uni' objects

note: confint() not for 'rma.glmm' objects; anova() and robust() only for 'rma.uni' and 'rma.mv' objects; permutest() only for 'rma.uni' objects

note: forest() and funnel() also take 'yi' and 'vi' as input; qqnorm(), baujat(), gosh() and plot() not for 'rma.glmm' or 'rma.mv' objects

note: coef() also for 'permutest.rma.uni' and 'summary.rma' objects