An Overview of Functions in the *metafor* Package

last updated: Nov 28 2022
(not all functions documented)

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

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

escalc()
vcalc()
rcalc()
conv.wald()
conv.fivenum()

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)

- 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; 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 functions

print()
summary()

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

fitted and predicted values

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

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

residuals and influential case diagnostics

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

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

funnel plot asymmetry / publication bias

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

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

confidence intervals and inference

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

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

plotting functions

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

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

various extractor functions

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

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