Contribution ID: **78** Type: **Poster**

# An R package for applying meta-analytical procedures under a mixture model approach

*Wednesday 23 July 2025 17:15 (15 minutes)*

## Poster

An R package for applying meta-analytical procedures under a mixture model approach

## Abstract

Suero et al. (in press) formulated a meta-analytical random effects model (REM) under a mixture model framework intended to resolve some inconsistencies of the classical REM model to the standardized mean difference, g. In this work we present an R package, MixtureREM, that implements the procedures developed so far under the mixture model approach. It provides unbiased point estimates of the mean and variance of the parametric effect size, confidence intervals for the mean and estimated values of the variance of g independent of the values of g itself. The package also includes tests of homogeneity of the parametric effect sizes of the studies with higher statistical power and type I error rates closer to the nominal value than the test developed under the classic model. We will show an example of use of the package, including an additional function for random generation of meta-analytic datasets of g allowing to manipulate several key factors.

## Keywords

meta-analysis, mixture-model, estimation, homogeneity-test

**Primary authors:** DURÁN, Juan I. (Universidad Autónoma de Madrid); Dr SUERO, Manuel (Universidad Autónoma de Madrid); Dr BOTELLA, Juan (Universidad Autónoma de Madrid)

**Presenters:** DURÁN, Juan I. (Universidad Autónoma de Madrid); Dr SUERO, Manuel (Universidad Autónoma de Madrid); Dr BOTELLA, Juan (Universidad Autónoma de Madrid)

**Session Classification:** Poster Session 2

**Track Classification:** Statistical analyses: Statistical analyses