

Appendix

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1 Introduction

We created an appendix of meta-analysis paper. To be able to visualize the output, we used an example dataset taken from Gibson et al. 2011. The appendix includes forest plots, funnel plots and tables visualizing the results created in the meta-analysis.

If the effect sizes in the forest plot vary too much, then heterogeneity should be explored in more depth. This is done by taking the explanatory variables into account in a meta-regression. When taking various explanatory variables (moderators) into account, the resulting forest plot shows the

Table 1: Results of the meta-analysis. ES = Effect Size, Q = Test for residual heterogeneity, I^2 = residual heterogeneity, Egger's test and the fails-safe number for publication bias testing.

	ES	SE of ES	CI (lb)	CI (ub)	P(ES)	Q	P(Q)	I^2	Egger	P(Egger)	FSN
Meta-Analysis	-0.28	0.12	-0.52	-0.04	0.02	47.05	0.12	27.22	-0.44	0.66	77.00

Table 2: Results of the meta-regression (mixed-effects model). The model results are shown taking a moderator into account and displaying the coefficients. Results for the whole model are displayed as Q = Test for residual heterogeneity, I^2 = residual heterogeneity and QM = Test of Moderators.

	ES	SE of ES	CI (lb)	CI (ub)	P(ES)	Q	P(Q)	I^2	QM	P(QM)
intrcpt	-0.353	0.766	-1.85	1.15	0.645	22.7	0.54	0.000493	24.4	0.0278
continentAS	-0.377	0.423	-1.21	0.452	0.373					
continentCA	-0.0485	0.61	-1.24	1.15	0.937					
continentSA	-0.627	0.375	-1.36	0.108	0.0945					
metricric	0.119	0.254	-0.38	0.617	0.641					
disturbanceagf	0.331	0.745	-1.13	1.79	0.657					
disturbanceagr	0.701	0.936	-1.13	2.54	0.454					
disturbancebur	0.723	0.731	-0.709	2.15	0.322					
disturbanceoth	0.728	0.903	-1.04	2.5	0.42					
disturbancepas	-0.0589	0.979	-1.98	1.86	0.952					
disturbancepla	-0.203	0.868	-1.9	1.5	0.815					
disturbancesec	0.399	0.723	-1.02	1.82	0.581					
disturbancesel	0.796	0.691	-0.559	2.15	0.25					
disturbanceshd	-0.908	0.783	-2.44	0.626	0.246					

To assess possible publication bias, funnel plots can be used for visualization purposes. When publication bias is absent, the plot should have a symmetrical shape of a funnel around the mean effect size. This is because the precision of the estimation of effect size, should increase with sample size (smaller standard error).

The Baujat plot detects sources of heterogeneity. Studies which are aggregated to the far left of the plot contribute to more heterogeneity in the analysis. Plots which have high a high

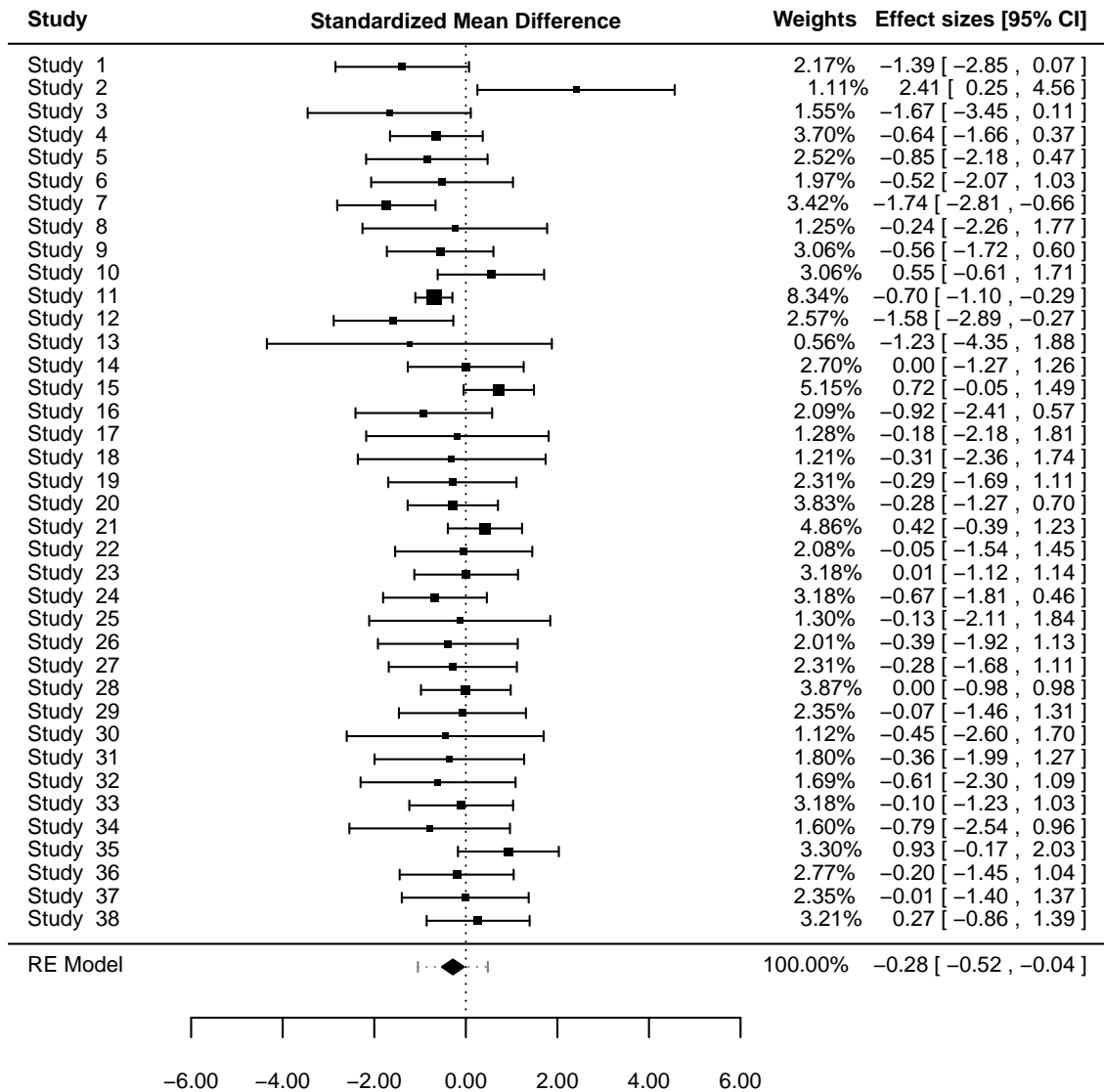


Figure 1: Forest plot of a random effects model. The study and its respective effect size (ES) is shown. The weight given to the study (%) as well as the effect size (ES) [+95% CI] are shown.

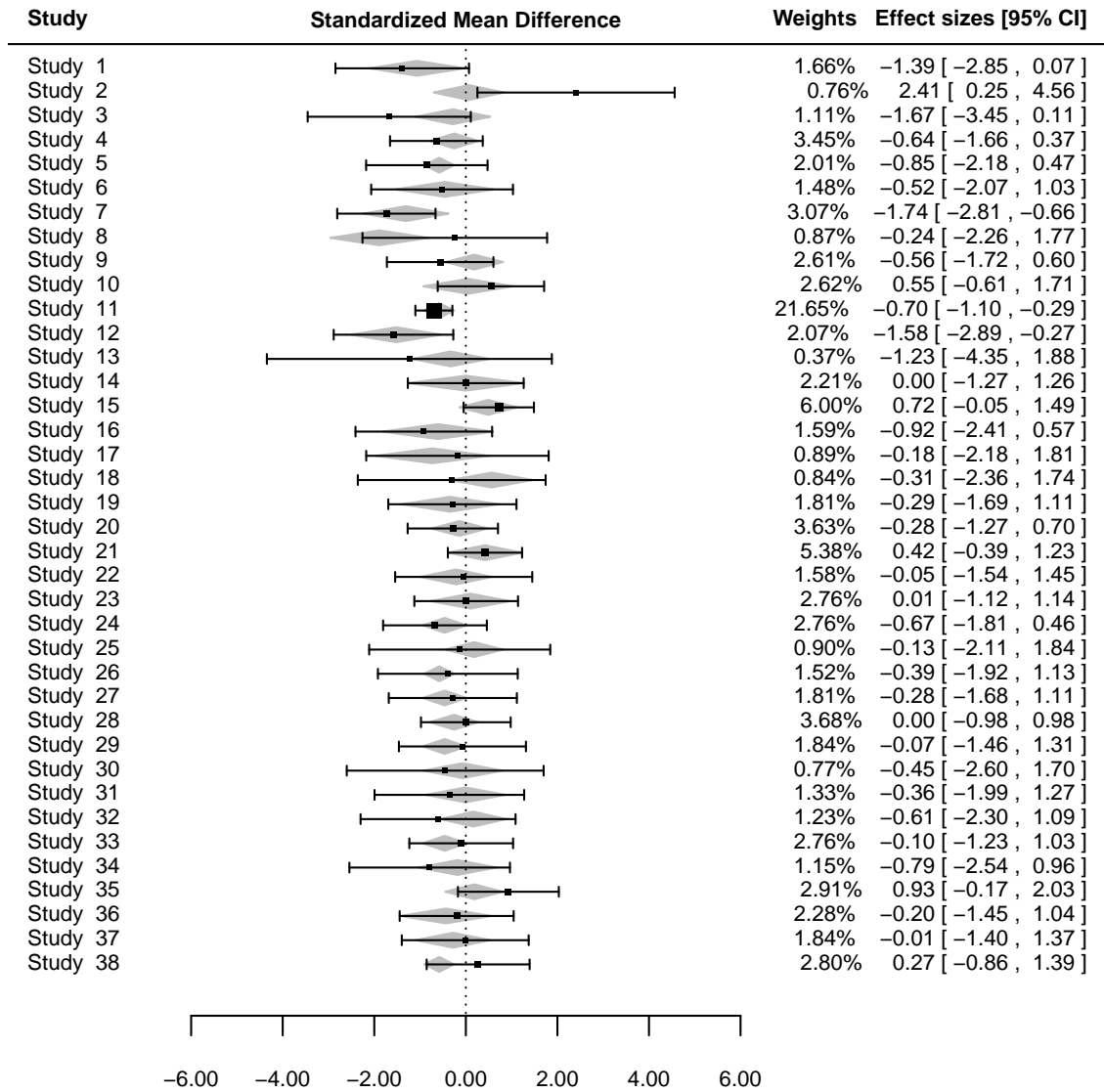


Figure 2: Forest plot of a random effects regression model. The column on the left represents the study. The weighted percentage is shown as well as the effect size (ES) [\pm 95% CI]

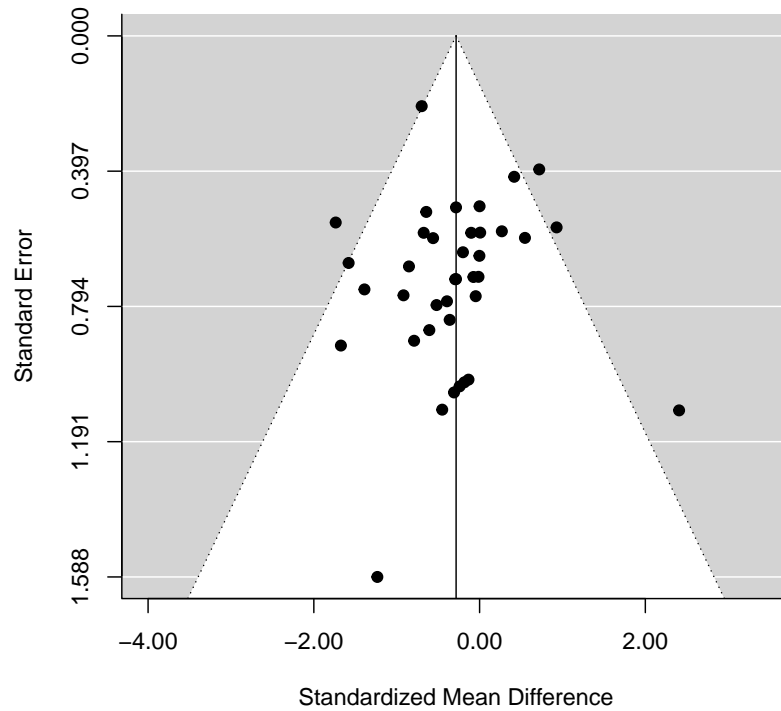


Figure 3: Funnel plot of random effects model displaying possible publication bias. The true ES is displayed by the solid vertical line.

contribution to the overall heterogeneity and have a high influence on the overall result, should be looked at more critically and compare these studies to the results obtained in the sensitivity analysis table REF!!!!.

The Galbraith plot provides visual information on the heterogeneity of the meta-analysis. Values which are closer to the origin have a higher SE and are therefore less precise than values aggregated away from the origin. The curved axis indicates the individual observed effect sizes or outcomes and the line coming from (0,0) indicates the individual effect size or outcome for that specific point.

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if (rma.REpval < 0.05){if(length(which(sens.REpval > 0.05) > 0)) paste0("The leave-one out analysis shows that the effect size of the meta-analysis is not significant anymore when following study(ies) is left out:", which(sens.REpval > 0.05))}else{paste0("The leave – one out analysis shows that no effect size is significant when the following study(ies) is left out:", which(sens.REpval > 0.05))}
if (rma.REpval < 0.05){if(length(which(sens.REpval < 0.05) > 0)) paste0("The leave-one out analysis shows that significance is yielded by leaving out the following study(ies):", which(sens.REpval < 0.05))}else{paste0("The leave – one out analysis shows that no effect size is significant when the following study(ies) is left out:", which(sens.REpval < 0.05))}
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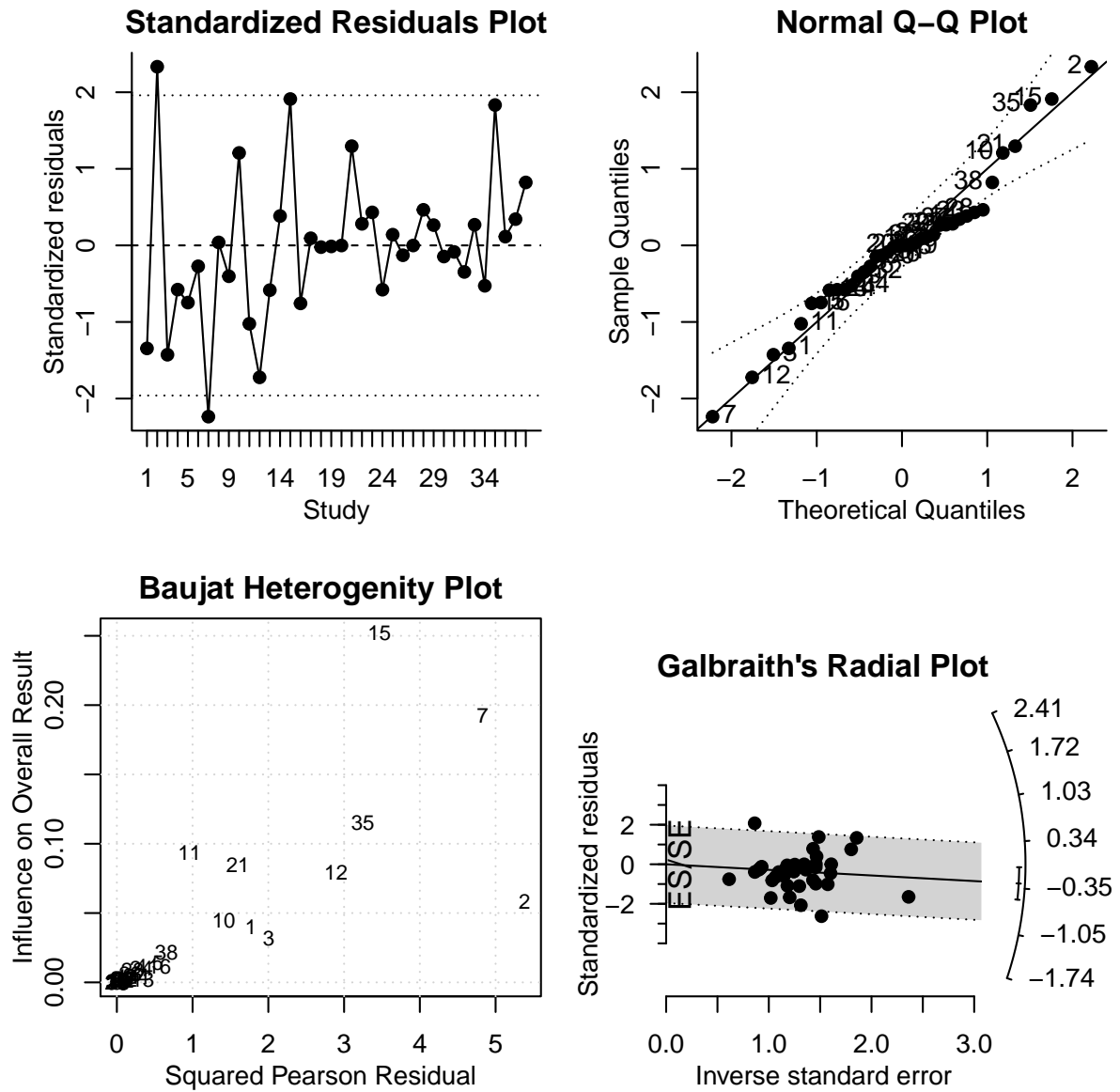


Figure 4: Diagnostic plots for diagnostics of meta analysis. Standardized residual plot, normal Q-Q plot, Baujat heterogeneity plot and Galbraith's radial plot are shown.