EPSY 8268

Two datasets based on meta-analyses.

SOCIAL SKILLS META-ANALYSIS DATA

The social skills meta-analysis data in file **meta20.sav** contain the coded outcomes of 20 studies that investigate the effect of social skills training on social anxiety. All studies use an experimental group/control group design. Explanatory variables are the duration of the training in weeks, the reliability of the social anxiety measure used in each study (2 values, taken from the official test manual), and the studies’ sample size. The data are simulated.

|  |  |
| --- | --- |
| study | study id |
| weeks | duration of intervention (ranges from 1 to 9) |
| g | Glass's g |
| d | Hedges & Olkin's d |
| varofd | Vj (essentially works for both g and d) |
| p | p value for test of d<=0 |
| nexp | experimental group N |
| ncon | control group N |
| rii | reliability of test used |
| ntot | total sample size |
| w | weight: 1/*Vj* |

In this dataset, d or g could be used as the effect size (outcome) and predictors could include weeks or rii (reliability).

ASTHMA & LRD META-ANALYSIS DATA

The asthma and LRD data, **astlrd.sav**, are from Nam, Mengersen and Garthwaite (2003). The data are from a set of students that investigate the relationship between children’s environmental exposure to smoking (ETS) and the child health outcomes asthma and lower respiratory disease (LRD). Available are the logged odds-ratio for asthma and LRD, and their standard errors. Study level variables are average age of subjects, publication year, smoking (0=parents, 1=other in household), and covariate adjustment used (0=not, 1=yes).

There are two effect sizes, the logged odds ratio for asthma and LRD. Only a few studies report both.

|  |  |
| --- | --- |
| ID | study ID |
| Size | sample size |
| Age | mean child age |
| Year | year of publication |
| USUK | 1=study took place in US or UK (including 35 out of 67 studies); 0=other |
| Smoke | Exposure to smoking (0=parental exposure; 1=others in household exposure)  All children were exposed to smoking. |
| Adj | 1= effects based on covariate adjustment; 0= no covariate adjustment |
| OddsRat | Odds Ratio |
| LOR | Logged Odds Ratio – the effect size appropriate for analysis |
| SE\_LOR | SE of LOR |
| VarLor | Vj |
| w | Weight (1/Vj) |
| AstLrd | 1=Astma; 0=LRD |
| LrdAst | 1=LRD; 0=Astma |

LOR is the appropriate outcome. Predictors could include age, year, usuk, smoke, and adj.

META-ANALYSIS OF TEST SCORE RELIABLITIES

The dataset **math8alpha.sav** includes estimates of coefficient alpha based on test score data from an 8th grade mathematics test administered in 512 schools (each school is treated as a study from which we estimate score reliability). Coefficient alpha was estimated for scores in each school. This examines the extent to which reliability varies across different samples of students (different schools). The only school variables that are available is the proportion of females and the mean score in the school. Reliabilities have been corrected for range restriction (differences in heterogeneity of scores or score variance). Since the sampling distribution of reliabilities is skewed, they have been transformed into *t*, a normalizing and variance stabilizing transformation that also reverses the direction of the reliabilities (higher values indicate lower reliability; lower values indicate higher reliability).

|  |  |
| --- | --- |
| id | school ID |
| alpha | Coefficient Alpha in school j |
| mean | mean test score in school j |
| sd | sd of test scores in school j |
| prop\_fem | Proportion of Female students in school j |
| n | nj (number of students tested in school j) |
| obsrvd\_v | observed variance in school j |
| adj\_alph | adjusted alpha (adjusted for range restriction) |
| t | t-transformed alpha |
| v | Vj for t-transformed alpha |
| w | w: 1/Vj |
| t\_adj | t-transformed adjusted-alpha |
| v\_adj | Vj for t-transformed adjusted-alpha |
| w\_adj | w: 1/Vj\_adjusted |

There are two possible outcome effect size estimates:

t is the transformed alpha, without adjusting alpha for range restriction.

t\_adj is the transformed alpha FOR the adjusted alpha, correcting for range restriction.

You could model the adjusted t-transformed alpha, which should have dramatically less variance than the uncorrected alphas. Or you could model the unadjusted t-transformed alphas (t) and use obsrvd\_v to explain variation – and see that much of the variation in coefficient alpha is due to differences in group heterogeneity (school variance).

Possible predictors include mean, prop\_fem. The real issue is to evaluate the extent to which alpha varies across schools.