

Supporting Information

S1 Table

Empirical Type 1 Error with Shared Environment and More Stringent Ascertainment.

Complete Data or Partially Missing Data	Setting of (π_a, π_c)	MQLS-LIN	MQLS-LOG	CERAMIC
Partially Missing	(.2, .6)	.051	.049	.049
Partially Missing	(.8, 0)	.048	.048	.048
Complete	(.2, .6)	.050	.050	.050
Complete	(.8, 0)	.050	.050	.048

All tests adjust for covariates. Traits are generated by the liability threshold model, where π_a is the proportion of total liability variance that is due to polygenic effects and π_c is the proportion due to covariate effects. In each case, the shared environment effect accounts for 10% of the total liability variance, and the error variance also accounts for 10% of the total liability variance. Ascertainment setting B is used. The numbers of individuals sampled in each simulation replicate are 1200, 2000, 600, and 1000, in rows 1-4, respectively. Association is tested at a non-causal SNP, which has MAF .2, and type 1 error is assessed empirically at significance level .05. Empirical type 1 error is based on 25,000 replicates. The radius of the 95% confidence interval is .0027.