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INTRODUCTION

- Cautions over the potential perils of the use of fallible measures in path analysis have long been part of the methodological literature, but to date no effort has been made to assess the actual impact of measurement error on reported path analytic results.

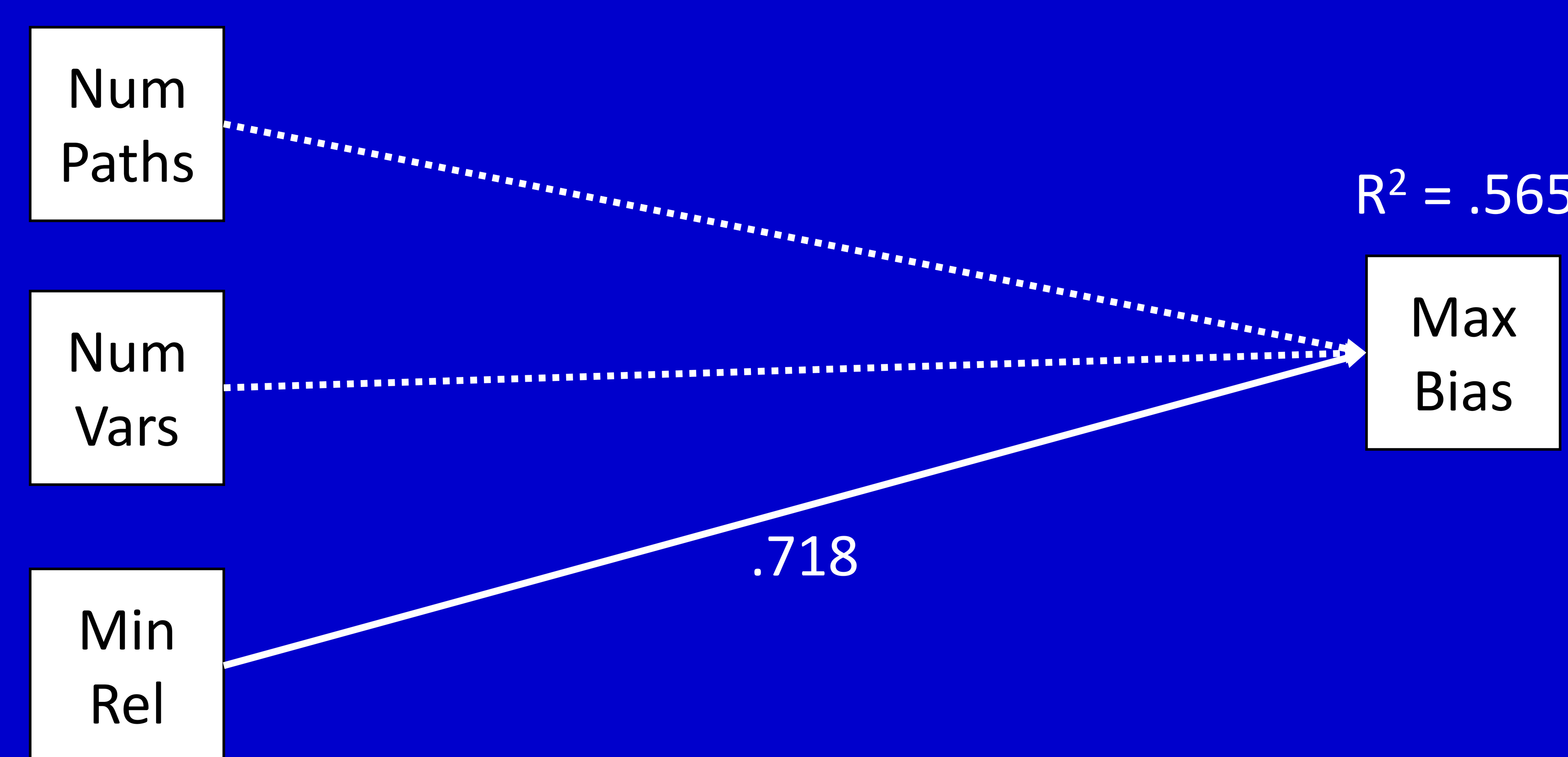
METHOD

1. Published articles employing path analysis from top psychology journals were identified (*N* = 138)
2. Models were reanalyzed employing single-indicator latent variable corrections for measurement error (*N* = 17 so far)
3. Expected bias due to measurement error for each path coefficient was computed as the difference between observed coefficient and reanalyzed coefficient
4. An aggregated model was estimated using number of paths, number of variables, and minimum reliability to predict maximum expected bias

RESULTS

- Expected bias was generally below .10, and always below .10 when all reliabilities were above .80
- Minimum reliability explained 50% of the variability in maximum expected bias, but no other predictors were significant

Measurement error causes bias in path coefficients, but using existing guidelines (reliability > .80) may ensure bias is not severe.



Use a QR code reader to visit the github page for Measurement Error Meta-Analysis

Measurement Error Meta-Analysis.

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THINGS TO CONSIDER

- Relative bias can be extreme for small coefficients, which is why we used absolute bias
- These corrections can (should!) be performed for path analyses, even if only to estimate the expected amount of bias due to measurement error
- Measurement error can also bias significance tests, but our sample did not show this to be a big issue
- Once more models are reanalyzed, a multilevel regression model predicting expected bias for each path coefficient will be estimated