

Tool	Description	Supporting evidence	References
StatCheck (http://statcheck.io/)	An R package with an accompanying shiny app that flags results containing inconsistent p values. <i>Pros:</i> Simple and easy to use. <i>Cons:</i> Limited to relatively simple statistics. May unfairly flag p values that have been adjusted for multiple tests (but this is fairly uncommon, see Nuijten, 2018).	In a sample of over 250K articles published from 1985–2013, over half of the articles were flagged as having at least one p -value that was inconsistent with its test statistics degrees of freedom.	Nuijten et al. (2016), Nuijten (2018)
GRIM (https://osf.io/3fcbr)	A simple mathematical technique that can verify statistical means in research reports for Likert-type data. <i>Pros:</i> Simple and easy to use. <i>Cons:</i> Useful for a relatively smaller subset of samples (e.g., $n < 100$).	Of 71 articles examined, 36 (50.7%) contained at least one error.	Brown & Heathers (2017)
GRIMMER	Same as GRIM but for verifying standard deviations. <i>Cons:</i> Not as easy or straightforward to implement.	–	Anaya (2016)
SPRITE (https://steamtraen.shinyapps.io/rsprite/)	Allows an assessment of the kinds of data distributions that are possible for ordinal data with given mean and standard deviation. <i>Pros:</i> Simple and easy to use. <i>Cons:</i> Can become overwhelming (and may be unnecessary when distributional assumptions are evident in the field).	–	Heathers et al. (2018)
DeBIT	A simple test of whether the means and standard deviations for binary variables are reported consistently.	Though no systematic investigation has been published, DeBIT was used by Pickett (2020) to identify inconsistencies in articles that were eventually retracted.	Heathers & Brown (2019)
Discrepancies in reported degrees of freedom for measurement and structural models (https://gmuiopsych.shinyapps.io/degreesoffreedom/)	Tests whether a model with k manifest variables and m latent correlated variables has the appropriate degrees of freedom, which should be $k \times (k + 1) / 2 - 2k - (m \times (m - 1) / 2)$. <i>Pros:</i> Simple and easy to implement. <i>Cons:</i> To carefully evaluate the results of using SEM (i.e., RMSEA, CFI, TLI), other formulas are needed (see Crede & Harms, 2019).	Discrepancies in reported degrees of freedom have appeared with concerning frequency in top tier management and applied psychology journals (see Crede & Harms, 2019; Cortina et al., 2017). A similar examination of top-tier journals (i.e., <i>JOM</i> , <i>JOB</i> , <i>PPsych</i>) found that 90% of studies contained at least one discrepancy (Crede & Harms, 2019).	Crede & Harms, 2019; Cortina et al. (2017); Rigdon (1994)