Disattenuation of correlation coefficients due to unreliability of measurement

Psychometrics Knowledge · https://psyasia.com/kb/disattenuation-of-correlation-coefficients-due-to-unreliability-of-measurement/

A common problem in psychometrics research is the fact that a correlation coefficient is indicative of the relationship between two variables plus measurement error. As a correction for measurement error, Nunnally (1978) provided an equation that results in the disattenuation of the correlation coefficient. The issue here is that in a 'real-world' setting, if there was a pure way of measuring two variables that did not incorporate error, the actual relationship between the variables would be stronger.

There is however debate as to the usefulness of this equation (Nunnally, 1978). The contention is that if a personality (or other) questionnaire is being used as a predictive tool, it is imperative that the measure is reliable before using it as a predictor. Correcting for attenuation has the effect of increasing confidence in the relationship between the measure and outcome (validity), without improving the consistency of this measurement (reliability).

Reference

Above text taken from Tyler, G. (2005) and referred to:
Nunnally, J.C. (1978). Psychometric Theory (Second Edition). New York: McGraw-Hill.