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<p>Tiivistelmä-Referat-Abstract</p> <p>Methods for assessing the reliability of measurement scales were investigated.</p> <p>Reliability, which is defined as the ratio of the true variance to the total variance, is an important property of measurement. In order to estimate the reliability, the concepts of measurement model and measurement scale are required. The model specifies the structure of the measurement, and the scale, which is a combination of the measured items, represents a realization of the theoretical notions.</p> <p>The focus was on two measures of reliability: Cronbach's alpha, which is widely applied, and Tarkkonen's more general measure. Both measures are founded on the same definition of reliability, but they imply different assumptions about the model and the scale. Cronbach's alpha is based on the classical true score model of psychometrics, while Tarkkonen's measure belongs to a general framework of modelling the measurement. The measures were examined theoretically and by extensive Monte Carlo simulation experiments implemented in Survo environment.</p> <p>Cronbach's alpha is shown to be a restricted special case of Tarkkonen's measure. According to the simulation experiments, the statistical properties of Tarkkonen's measure proved to be acceptable. Conversely, the study revealed additional evidence concerning the unsuitability of Cronbach's alpha as a measure of reliability.</p> <p>The results suggest that Tarkkonen's measure of reliability should supersede Cronbach's alpha in all applications.</p>		
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