

Psychometric properties of the Scientific Reasoning Scale

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Poster

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Abstract

Scientific reasoning (SR) plays a crucial role in daily life, influencing individuals' abilities to formulate scientific questions, collect data, critically evaluate information, and draw informed conclusions. Currently, there are limited tools available for measuring SR that are tailored to specific age groups or countries, which restricts the comparability of results due to the unique characteristics of these tools. The Scientific Reasoning Scale (SRS), validated in both the United States and Turkey, assesses an individual's capacity to evaluate scientific evidence. To enhance generalizability across diverse populations, it is essential to validate this scale within different cultural contexts.

This study aims to validate the SRS in the Italian context using a representative sample of 897 Italian adults aged 18 and over. A survey was conducted through Qualtrics. This validation process, employing a unified view of validity, seeks to establish the scale's validity through various evidence sources: factorial structure, generalizability, convergent validity, criterion-related validity, known-group evidence, and reliability. To examine the factorial structure of the scale, we intend to use Structural Equation Modeling (SEM) within the framework of Classical Test Theory (CTT) and conduct Confirmatory Factor Analysis (CFA). Furthermore, to discuss the scale's generalizability, we plan to perform measurement invariance analyses to ensure that the scale holds the same meaning across different genders and age groups.

The results will facilitate an assessment of the adequacy of this instrument's adaptation and potentially address the existing gap in the evaluation of SR skills within the Italian context.

Keywords

SRS, CTT, SEM, CFA, MI

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