Examining the Attitude Towards Science Questionnaire for Primary School Students in Sabah using Partial Least Squares Structural Equation Modelling

ABSTRACT

The main purpose of this study is to develop a valid and reliable instrument for measuring primary school students' attitude towards science (ATS) in Sabah, Malaysia. The instrument was adapted from the Attitude towards Science Measure (ATSM) based on some theoretical and research review. The instrument focused on six sub-constructs of attitude towards science: Learning science in school, practical work in science, science outside of school, the importance of science, self-concept in science, and future participation in science. A total of 452 primary school students in Sabah had responded to the 37-item questionnaire. The internal consistency reliability (composite reliability and Cronbach's Alpha coefficient), convergent validity (Average Variance Extracted), and discriminant validity (cross-loadings, Fornell-Larcker criterion, and Heterotrait-Monotrait ratio) for each item of the instrument were being assessed. The results of PLS-SEM analysis show that all scales were unidimensional. Internal reliability using Cronbach's alpha varies between .651 to .723, and the composite reliability varies between .801 to .844, indicating a satisfactory level of internal consistency. The instrument assessment has shown that ATS is a valid and reliable instrument to measure 10-12 years old primary school students' interests, attitudes, values, and priorities in issues related to science.