

How to measure climate change worry in adolescents? Analyzing the adequacy of a dichotomous response scale for the *Climate Change Worry Scale* through Item Response Theory

Sofia Santisi, Laura Di Leonardo, Caterina Primi, & Maria Anna Donati

NEUROFARBA Department – University of Florence

Climate change worry (CCW) is a motivating factor for the implementation of pro-environmental behaviors, especially among youth. Consequently, it is particularly relevant to identify the best item response scale to assess this trait among adolescents to plan preventive interventions. We focused on the *Climate Change Worry Scale* (CCWS), a unidimensional instrument with ten items having a 5-point ordered frequency response scale. The CCWS has been developed for adults and validated with adolescents by applying Classical Theory of Test. We employed Item Response Theory (IRT) to test the hypothesis that a dichotomous response scale (*No/Yes*) would be more adequate than the original polytomous scale (from *Never* to *Always*). Our prediction was that CCW indicators among adolescents can be assessed for being present or absent more than as a continuum in terms of frequency. Participants were 1846 adolescents (58% male; $M_{\text{age}} = 16.37$ years, $SD = 1.25$). All the items, except for item 1, did not fit to the Graded Response Model, while all the items fitted under the 2PL model for dichotomous items. When referring to this model, Test Information Function showed high levels of information, especially at low levels of trait. Thus, CCWS items resulted to be more adequate to discriminate adolescents who are not worried about climate change, more than assessing the continuum of CCWS, as expected by using a 5-point response scale. Further studies are needed to better analyze the functioning of a dichotomous response scale for the CCWS.