ABSTRACT

A multilevel SEM measurement model of social cohesion

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Background: In spite of its recent currency both in academic research and political rhetoric, there are numerous attempts to define and conceptualize the social cohesion concept but there has been little attention to provide a rigorous and empirically tested definition (Dickes, Valentova and Borsenberger 2009).

Many scholars referred to social cohesion as a multidimensional concept (Jenson 1998, Bernard 1999, Berger-Schmitt 2000), but, once again, there are few empirical corroborations of this multidimensionality. Moreover, there are even fewer studies that address social cohesion in a framework of cross-cultural validation of the indicators testing the equivalence of the factorial structure across the countries. Finally, as far as I know there is no study that attempt to provide an empirically tested multilevel definition of social cohesion specifying a Multilevel Structural Equation Model.

Objectives: This study aims to cover this gap. More specifically, the purpose of this study is threefold. First of all, I provide a theoretical construct of social cohesion taking into account not only its multidimensionality but also its multilevel structure. Indeed, we cannot ignore the influence of the context on individuals’ behavior. In the second step, to test the validity of this
theoretical construct, I perform a multilevel confirmatory factor analysis in order to verify if the conceptual structure suggested in first step holds. In the final step, I examine if the multilevel model of social cohesion holds across countries. In this regard, I test the cross-level structural equivalence of the social cohesion trying to provide a multilevel confirmatory factor analysis model of social cohesion in order to verify if the same latent structure holds both at individual and country level. In other words, I test the measurement invariance of the social cohesion construct to evaluate if the factorial structure and the Lambda coefficients (and residual variances) remain the same across all countries (Jak, Oort and Dolan 2013, Davidov et alii 2012). Indeed, only under the scalar invariance condition a researcher can compare the latent means across the countries drawing significant conclusion. Conversely, if scalar or metric invariance is absent, there could be a cluster bias (Jak, Oort and Dolan 2013).

**Methods:** The analyses are based on the “Multilevel ESS Dataset” (wave 6) that contains more than 6000 variables and 50000 observations. Driven by theory, I select from this huge dataset the indicators that will form the model of social cohesion. I test different individual (level-1) confirmative factor models performing first a one latent variable model (a general factor model) then a multifactor model to verify the mono or multidimensionality of social cohesion. Finally I try to fit a second order confirmative factor model checking if there are second order factors that can explain the first order factorial structure. At country level, allowing the coefficients to be random, I test a random coefficient model trying both to impose the same structure got at individual level and to constrain the Lambda coefficient to be equal across levels with residual variances constrained to zero. The first condition is useful to verify if the model is structurally equivalent across levels. The latter one is fundamental to test the measurement invariance of the model.

**Results:** The outcomes of the analysis reveal that, as hypothesized, the social cohesion is a multidimensional concept since the one or general factor model shows a bad fit of the data. Secondly, the proposed measurement model of social cohesion (that posit the same structure at individual and country level) not only shows a good fit to the data but the multilevel confirmative factor model also shows a good measurement invariance. That is, the factorial structure is equivalent across the individual and country level plus the coefficients are equivalent across the countries. In other words, the random coefficient confirmative factorial analysis model is tenable.

**Conclusions:** These results prove that social cohesion could be considered properly as a multilevel concept and a researcher cannot ignore the structure and the influence of the context now that new statistical techniques (as the merging of the multilevel analysis and the structural equation models) allow to deal with the complexity of human behaviour. At the end of the paper I present a multilevel definition of social cohesion splitting the total effect up in individual effect and aggregate effect.
Main references


