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Volume 44, 2009 - Issue 6

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Doubly-Latent Models of School Contextual Effects: Integrating Multilevel and Structural Equation Approaches to Control Measurement and Sampling Error

Herbert W. Marsh, Oliver Lüdtke, Alexander Robitzsch, Ulrich Trautwein, Tihomir Asparouhov, Bengt Muthén & ... show all

Pages 764-802 | Published online: 11 Dec 2009

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Substantively we use these models to test the big-fish-little-pond effect (BFLPE), showing that individual student levels of academic self-concept (L1-ASC) are positively associated with individual level achievement (L1-ACH) and negatively associated with school-average achievement (L2-ACH)—a finding with important policy implications for the way schools are structured. Extending tests of the BFLPE in new directions, we show that the nonlinear effects of the L1-ACH (a latent quadratic effect) and the interaction between gender and L1-ACH (an $L1 \times L1$ latent interaction) are not significant. Although random-slope models show no significant school-to-school variation in relations between L1-ACH and L1-ASC, the negative effects of L2-ACH (the BFLPE) do vary somewhat with individual L1-ACH.

We conclude with implications for diverse applications of the set of latent contextual models, including recommendations about their implementation, effect size estimates (and confidence intervals) appropriate to multilevel models, and directions for further research in contextual effect analysis.

Notes

^aThe Mplus Web site (<http://www.statmodel.com/index.shtml>) contains the syntax for all 10 models and a more general description of Mplus convention for specifying the models (<http://www.statmodel.com/ugexcerpts.shtml>)



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