

Examining Parameter Differences in Latent State-Trait Models: Modeling Loneliness During COVID-19 Lockdowns Using a Bayesian Moderated Nonlinear Latent State-Trait Approach

Fabian Münch¹⁾, Julia Freitag¹⁾, Marcus Mund²⁾ & Tobias Koch¹⁾

¹⁾ *Friedrich-Schiller-Universität Jena, Germany*

²⁾ *Alpen-Adria-Universität Klagenfurt, Germany*

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Latent state-trait (LST) models are widely used for analyzing complex longitudinal data that may exhibit both trait change and autoregressive (carry-over) effects. Oeltjen and colleagues (2022) recently proposed a moderated nonlinear LST (MNLST) approach that allows researchers to include both time-varying and time-invariant variables to explain differences in additive and multiplicative trait change parameters as well as state residual variances and autoregressive effects. The present talk aims at (1) illustrating the MNLST approach using data of a study examining loneliness across six measurement occasions during COVID-19 lockdown periods in Germany; (2) presenting model set-up in a Bayesian framework using the probabilistic programming language Stan; and (3) illustrating Bayesian model evaluation using posterior predictive checks and leave-one-out cross-validation.