

Supplement to: On the Robustness of Reciprocal Associations Between Personality and
Religiosity in a German Sample

Richard E. Lucas¹ & Julia Rohrer²

¹ Department of Psychology, Michigan State University

² Department of Psychology, University of Leipzig

Author Note

Correspondence concerning this article should be addressed to Richard E. Lucas, 316
Physics Rd., Michigan State University, East Lansing, MI 48823. E-mail: lucasri@msu.edu

Supplement to: On the Robustness of Reciprocal Associations Between Personality and
Religiosity in a German Sample

State Specific Estimates and Convergence Problems

Table 1

Estimates (with 95% confidence intervals) and convergence and estimation problems in the CLPM with latent traits and all traits modeled simultaneously

State	Agreeableness		Conscientiousness		Extraversion		Neuroticism		Openness	
	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate
Schleswig-Holstein	No	0.05 (-0.00, 0.10)	No	0.02 (-0.03, 0.07)	No	0.03 (-0.02, 0.08)	No	0.04 (-0.02, 0.10)	No	-0.00 (-0.05, 0.05)
Hamburg	Yes	0.05 (-0.02, 0.12)	Yes	0.02 (-0.05, 0.10)	Yes	0.04 (-0.02, 0.10)	Yes	0.00 (-0.05, 0.05)	Yes	-0.00 (-0.08, 0.07)
Lower Saxony	No	0.02 (-0.01, 0.04)	No	-0.00 (-0.03, 0.02)	No	0.00 (-0.02, 0.03)	No	-0.01 (-0.03, 0.02)	No	-0.02 (-0.05, 0.01)
North Rhine-Westphalia	No	0.03 (0.01, 0.05)	No	0.01 (-0.01, 0.03)	No	0.01 (-0.00, 0.03)	No	0.00 (-0.02, 0.02)	No	0.03 (0.01, 0.04)
Hesse	No	0.05 (0.01, 0.08)	No	0.03 (-0.01, 0.06)	No	0.02 (-0.01, 0.05)	No	-0.02 (-0.05, 0.01)	No	-0.03 (-0.06, 0.00)
Rhineland-Palatinate	No	-0.01 (-0.05, 0.03)	No	-0.02 (-0.06, 0.02)	No	0.00 (-0.03, 0.04)	No	0.01 (-0.03, 0.05)	No	-0.05 (-0.09, -0.01)
Baden-Wuerttemberg	No	0.02 (-0.01, 0.05)	No	-0.02 (-0.05, 0.00)	No	-0.00 (-0.02, 0.02)	No	-0.00 (-0.03, 0.02)	No	-0.02 (-0.04, 0.00)
Bavaria	No	-0.00 (-0.02, 0.02)	No	-0.01 (-0.03, 0.01)	No	-0.00 (-0.02, 0.02)	No	0.00 (-0.02, 0.02)	No	-0.02 (-0.04, 0.00)
Berlin	No	0.01 (-0.03, 0.05)	No	0.02 (-0.02, 0.05)	No	0.01 (-0.02, 0.04)	No	0.00 (-0.04, 0.04)	No	0.02 (-0.02, 0.05)
Brandenburg	No	0.01 (-0.03, 0.05)	No	-0.02 (-0.06, 0.02)	No	0.02 (-0.02, 0.05)	No	-0.02 (-0.05, 0.01)	No	-0.01 (-0.05, 0.04)
Mecklenburg-Western Pomerania	No	0.02 (-0.04, 0.08)	No	-0.01 (-0.06, 0.04)	No	0.01 (-0.04, 0.05)	No	-0.02 (-0.07, 0.03)	No	0.01 (-0.05, 0.07)
Saxony	No	0.00 (-0.03, 0.03)	No	0.00 (-0.03, 0.03)	No	0.00 (-0.02, 0.03)	No	0.00 (-0.03, 0.03)	No	0.03 (0.00, 0.06)
Saxony-Anhalt	No	0.02 (-0.02, 0.06)	No	0.01 (-0.03, 0.04)	No	-0.01 (-0.05, 0.02)	No	0.01 (-0.03, 0.05)	No	0.04 (0.00, 0.08)
Thuringia	No	0.00 (-0.03, 0.04)	No	0.02 (-0.02, 0.05)	No	-0.01 (-0.04, 0.02)	No	-0.02 (-0.06, 0.01)	No	-0.02 (-0.06, 0.01)

Table 2

Estimates (with 95% confidence intervals) and convergence and estimation problems in the RI-CLPM with latent traits and all traits modeled simultaneously

State	Agreeableness		Conscientiousness		Extraversion		Neuroticism		Openness	
	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate
Schleswig-Holstein	Yes	-0.14 (-1.00, 0.71)	Yes	-0.10 (-0.30, 0.10)	Yes	-0.10 (-0.43, 0.22)	Yes	0.20 (-0.01, 0.40)	Yes	-0.14 (-0.43, 0.14)
Hamburg	Yes	-0.17 (-0.78, 0.44)	Yes	-0.02 (-0.38, 0.35)	Yes	0.10 (-0.13, 0.33)	Yes	0.13 (-0.20, 0.45)	Yes	NA (NA, NA)
Lower Saxony	No	-0.08 (-0.20, 0.04)	No	-0.09 (-0.19, 0.01)	No	-0.02 (-0.14, 0.10)	No	0.06 (-0.07, 0.18)	No	-0.10 (-0.22, 0.02)
North Rhine-Westphalia	No	0.02 (-0.05, 0.09)	No	-0.02 (-0.08, 0.05)	No	0.01 (-0.06, 0.08)	No	0.05 (-0.02, 0.11)	No	0.07 (-0.00, 0.14)
Hesse	No	-0.05 (-0.20, 0.10)	No	0.03 (-0.10, 0.15)	No	-0.02 (-0.16, 0.12)	No	0.06 (-0.08, 0.19)	No	-0.07 (-0.23, 0.10)
Rhineland-Palatinate	No	-0.01 (-0.16, 0.14)	No	0.08 (-0.06, 0.22)	No	-0.04 (-0.16, 0.08)	No	-0.09 (-0.21, 0.04)	No	0.07 (-0.08, 0.21)
Baden-Wuerttemberg	No	0.03 (-0.08, 0.13)	No	0.01 (-0.08, 0.11)	No	0.05 (-0.05, 0.14)	No	-0.01 (-0.09, 0.08)	No	0.02 (-0.08, 0.13)
Bavaria	No	-0.03 (-0.13, 0.08)	No	-0.04 (-0.14, 0.06)	No	-0.00 (-0.10, 0.10)	No	0.00 (-0.09, 0.10)	No	0.02 (-0.08, 0.12)
Berlin	No	-0.00 (-0.23, 0.22)	No	-0.31 (-0.56, -0.06)	No	-0.08 (-0.33, 0.18)	No	0.06 (-0.17, 0.30)	No	0.05 (-0.21, 0.31)
Brandenburg	No	-0.03 (-0.18, 0.12)	No	-0.04 (-0.18, 0.10)	No	-0.09 (-0.25, 0.07)	No	0.06 (-0.09, 0.21)	No	0.15 (-0.01, 0.31)
Mecklenburg-Western Pomerania	Yes	-0.27 (-0.60, 0.05)	Yes	-0.18 (-0.40, 0.04)	Yes	-0.04 (-0.25, 0.17)	Yes	-0.08 (-0.38, 0.22)	Yes	-0.02 (-0.22, 0.17)
Saxony	No	-0.04 (-0.17, 0.09)	No	-0.07 (-0.19, 0.05)	No	0.07 (-0.07, 0.20)	No	-0.01 (-0.14, 0.12)	No	0.06 (-0.07, 0.18)
Saxony-Anhalt	Yes	-0.00 (-0.17, 0.17)	Yes	-0.03 (-0.16, 0.10)	Yes	0.07 (-0.12, 0.27)	Yes	-0.01 (-0.17, 0.15)	Yes	0.01 (-0.13, 0.15)
Thuringia	No	0.02 (-0.13, 0.18)	No	-0.09 (-0.24, 0.06)	No	-0.09 (-0.27, 0.09)	No	-0.19 (-0.34, -0.05)	No	-0.09 (-0.33, 0.16)

Table 3

Estimates (with 95% confidence intervals) and convergence and estimation problems in the CLPM with observed measures and all traits modeled simultaneously

State	Agreeableness		Conscientiousness		Extraversion		Neuroticism		Openness	
	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate
Schleswig-Holstein	No	0.04 (-0.01, 0.09)	No	0.03 (-0.02, 0.07)	No	-0.02 (-0.06, 0.03)	No	0.04 (-0.01, 0.08)	No	0.01 (-0.04, 0.05)
Hamburg	No	0.05 (-0.01, 0.11)	No	0.02 (-0.03, 0.08)	No	0.03 (-0.04, 0.09)	No	0.00 (-0.04, 0.05)	No	-0.00 (-0.06, 0.05)
Lower Saxony	No	0.04 (0.02, 0.07)	No	0.01 (-0.01, 0.04)	No	0.01 (-0.02, 0.03)	No	0.00 (-0.02, 0.03)	No	-0.01 (-0.03, 0.02)
Bremen	No	-0.02 (-0.11, 0.08)	No	-0.02 (-0.11, 0.08)	No	0.02 (-0.07, 0.10)	No	-0.02 (-0.10, 0.07)	No	0.01 (-0.07, 0.08)
North Rhine-Westphalia	No	0.06 (0.04, 0.07)	No	0.03 (0.01, 0.05)	No	0.00 (-0.01, 0.02)	No	-0.00 (-0.02, 0.02)	No	0.03 (0.01, 0.05)
Hesse	No	0.07 (0.04, 0.10)	No	0.04 (0.02, 0.07)	No	0.01 (-0.01, 0.04)	No	-0.00 (-0.03, 0.02)	No	-0.01 (-0.04, 0.02)
Rhineland-Palatinate	No	0.03 (-0.00, 0.07)	No	0.01 (-0.03, 0.05)	No	-0.02 (-0.05, 0.01)	No	0.00 (-0.03, 0.04)	No	-0.02 (-0.05, 0.01)
Baden-Wuerttemberg	No	0.05 (0.03, 0.07)	No	0.01 (-0.01, 0.03)	No	-0.00 (-0.02, 0.02)	No	0.01 (-0.01, 0.03)	No	-0.00 (-0.02, 0.02)
Bavaria	No	0.03 (0.01, 0.05)	No	0.01 (-0.01, 0.03)	No	-0.00 (-0.02, 0.01)	No	0.01 (-0.01, 0.02)	No	-0.01 (-0.03, 0.01)
Saarland	No	-0.06 (-0.14, 0.03)	No	-0.00 (-0.09, 0.09)	No	0.04 (-0.04, 0.12)	No	0.01 (-0.09, 0.10)	No	0.02 (-0.07, 0.10)
Berlin	No	0.03 (-0.01, 0.06)	No	0.03 (-0.00, 0.06)	No	0.01 (-0.02, 0.04)	No	-0.01 (-0.04, 0.03)	No	0.02 (-0.01, 0.06)
Brandenburg	No	0.03 (-0.01, 0.06)	No	-0.01 (-0.05, 0.03)	No	0.01 (-0.02, 0.04)	No	0.00 (-0.03, 0.04)	No	0.03 (-0.01, 0.07)
Mecklenburg-Western Pomerania	No	0.03 (-0.01, 0.08)	No	0.00 (-0.05, 0.05)	No	-0.00 (-0.05, 0.04)	No	-0.01 (-0.06, 0.03)	No	0.03 (-0.02, 0.08)
Saxony	No	0.01 (-0.01, 0.04)	No	0.01 (-0.02, 0.03)	No	-0.01 (-0.03, 0.01)	No	0.01 (-0.01, 0.03)	No	0.05 (0.02, 0.07)
Saxony-Anhalt	No	0.04 (0.01, 0.08)	No	0.02 (-0.01, 0.06)	No	0.00 (-0.03, 0.03)	No	0.00 (-0.03, 0.04)	No	0.07 (0.04, 0.10)
Thuringia	No	0.02 (-0.01, 0.05)	No	0.01 (-0.02, 0.04)	No	-0.01 (-0.04, 0.02)	No	-0.02 (-0.05, 0.01)	No	0.00 (-0.03, 0.03)

Table 4

Estimates (with 95% confidence intervals) and convergence and estimation problems in the RI-CLPM with observed measures and all traits modeled simultaneously

State	Agreeableness		Conscientiousness		Extraversion		Neuroticism		Openness	
	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate
Schleswig-Holstein	No	-0.06 (-0.21, 0.08)	No	-0.12 (-0.25, 0.01)	No	-0.11 (-0.27, 0.05)	No	0.22 (0.06, 0.37)	No	-0.08 (-0.28, 0.12)
Hamburg	No	-0.03 (-0.24, 0.18)	No	0.09 (-0.07, 0.24)	No	0.14 (-0.01, 0.28)	No	0.02 (-0.12, 0.15)	No	0.03 (-0.10, 0.16)
Lower Saxony	No	-0.01 (-0.08, 0.06)	No	-0.04 (-0.11, 0.03)	No	0.02 (-0.05, 0.10)	No	0.06 (-0.01, 0.14)	No	-0.06 (-0.13, 0.01)
Bremen	No	-0.09 (-0.31, 0.12)	No	-0.13 (-0.36, 0.10)	No	-0.03 (-0.32, 0.26)	No	0.24 (-0.02, 0.50)	No	0.30 (-0.03, 0.62)
North Rhine-Westphalia	No	0.01 (-0.03, 0.05)	No	-0.01 (-0.06, 0.03)	No	0.01 (-0.03, 0.06)	No	0.03 (-0.02, 0.07)	No	0.05 (0.01, 0.09)
Hesse	No	-0.02 (-0.09, 0.06)	No	0.00 (-0.08, 0.09)	No	-0.01 (-0.10, 0.08)	No	0.05 (-0.03, 0.13)	No	-0.06 (-0.16, 0.03)
Rhineland-Palatinate	No	0.01 (-0.08, 0.09)	No	0.09 (-0.01, 0.18)	No	-0.03 (-0.10, 0.05)	No	-0.07 (-0.16, 0.01)	No	0.08 (-0.01, 0.17)
Baden-Wuerttemberg	No	0.03 (-0.03, 0.09)	No	-0.01 (-0.07, 0.06)	No	0.04 (-0.02, 0.10)	No	-0.00 (-0.06, 0.06)	No	0.03 (-0.04, 0.10)
Bavaria	No	-0.03 (-0.09, 0.03)	No	-0.03 (-0.09, 0.03)	No	-0.01 (-0.08, 0.05)	No	-0.00 (-0.07, 0.06)	No	-0.00 (-0.06, 0.06)
Saarland	No	-0.22 (-0.50, 0.07)	No	0.28 (-0.04, 0.61)	No	0.23 (-0.06, 0.52)	No	0.03 (-0.35, 0.41)	No	0.09 (-0.21, 0.39)
Berlin	No	0.06 (-0.09, 0.22)	No	-0.12 (-0.28, 0.03)	No	0.01 (-0.14, 0.17)	No	0.03 (-0.13, 0.19)	No	0.08 (-0.05, 0.22)
Brandenburg	No	-0.05 (-0.14, 0.04)	No	-0.01 (-0.12, 0.10)	No	-0.02 (-0.13, 0.09)	No	0.02 (-0.08, 0.11)	No	0.04 (-0.05, 0.13)
Mecklenburg-Western Pomerania	No	-0.13 (-0.24, -0.03)	No	-0.06 (-0.18, 0.05)	No	0.06 (-0.06, 0.18)	No	-0.05 (-0.17, 0.07)	No	0.02 (-0.10, 0.14)
Saxony	No	-0.01 (-0.09, 0.07)	No	-0.03 (-0.13, 0.07)	No	0.02 (-0.07, 0.11)	No	-0.00 (-0.10, 0.10)	No	0.03 (-0.06, 0.11)
Saxony-Anhalt	No	-0.01 (-0.10, 0.08)	No	-0.03 (-0.10, 0.05)	No	0.02 (-0.09, 0.13)	No	-0.01 (-0.10, 0.09)	No	0.00 (-0.09, 0.10)
Thuringia	No	0.02 (-0.06, 0.11)	No	-0.01 (-0.09, 0.07)	No	-0.03 (-0.11, 0.05)	No	-0.12 (-0.22, -0.03)	No	-0.06 (-0.16, 0.05)

Table 5

Estimates (with 95% confidence intervals) and convergence and estimation problems in the CLPM with latent traits and individual traits modeled separately

State	Agreeableness		Conscientiousness		Extraversion		Neuroticism		Openness	
	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate
Schleswig-Holstein	No	0.02 (-0.04, 0.07)	No	-0.01 (-0.06, 0.05)	No	0.03 (-0.02, 0.08)	No	0.04 (-0.02, 0.10)	No	-0.01 (-0.07, 0.05)
Hamburg	Yes	0.02 (-0.07, 0.10)	No	-0.01 (-0.08, 0.06)	No	0.02 (-0.04, 0.08)	No	-0.00 (-0.06, 0.05)	Yes	0.02 (-0.05, 0.09)
Lower Saxony	No	0.02 (-0.01, 0.04)	No	-0.01 (-0.03, 0.02)	No	0.00 (-0.02, 0.03)	No	0.00 (-0.02, 0.03)	No	-0.02 (-0.05, 0.01)
Bremen	Yes	-0.02 (-0.11, 0.06)	No	-0.07 (-0.18, 0.04)	No	0.02 (-0.07, 0.11)	Yes	-0.07 (-0.17, 0.04)	No	-0.05 (-0.13, 0.03)
North Rhine-Westphalia	No	0.02 (0.00, 0.04)	No	0.00 (-0.01, 0.02)	No	0.01 (-0.01, 0.02)	No	-0.00 (-0.02, 0.02)	No	0.02 (0.01, 0.04)
Hesse	No	0.05 (0.02, 0.08)	No	0.02 (-0.01, 0.05)	No	0.02 (-0.01, 0.04)	No	-0.02 (-0.05, 0.01)	No	-0.03 (-0.07, -0.00)
Rhineland-Palatinate	No	-0.02 (-0.07, 0.02)	No	-0.02 (-0.06, 0.02)	No	-0.01 (-0.04, 0.03)	No	0.02 (-0.02, 0.06)	No	-0.05 (-0.08, -0.01)
Baden-Wuerttemberg	No	0.02 (-0.00, 0.05)	No	-0.01 (-0.04, 0.01)	No	-0.00 (-0.02, 0.02)	No	0.00 (-0.02, 0.03)	No	-0.02 (-0.04, 0.00)
Bavaria	No	0.00 (-0.02, 0.02)	No	-0.01 (-0.03, 0.01)	No	-0.00 (-0.02, 0.02)	No	0.01 (-0.01, 0.03)	No	-0.02 (-0.04, 0.00)
Saarland	No	-0.12 (-0.21, -0.02)	No	-0.04 (-0.14, 0.05)	No	0.00 (-0.09, 0.09)	No	-0.02 (-0.13, 0.09)	No	-0.02 (-0.11, 0.08)
Berlin	No	-0.00 (-0.04, 0.04)	No	0.01 (-0.02, 0.04)	No	0.01 (-0.02, 0.04)	No	0.00 (-0.04, 0.04)	No	0.01 (-0.03, 0.04)
Brandenburg	No	0.01 (-0.02, 0.05)	No	-0.03 (-0.07, 0.02)	No	0.02 (-0.02, 0.05)	No	0.02 (-0.02, 0.05)	No	-0.00 (-0.05, 0.04)
Mecklenburg-Western Pomerania	No	0.03 (-0.03, 0.09)	No	-0.01 (-0.07, 0.04)	No	0.01 (-0.04, 0.05)	No	-0.02 (-0.07, 0.03)	No	0.02 (-0.04, 0.08)
Saxony	No	-0.02 (-0.04, 0.01)	No	0.00 (-0.03, 0.03)	No	0.00 (-0.02, 0.02)	No	-0.00 (-0.03, 0.02)	No	0.03 (0.00, 0.06)
Saxony-Anhalt	No	0.03 (-0.00, 0.07)	No	0.02 (-0.02, 0.05)	No	-0.00 (-0.04, 0.03)	No	0.00 (-0.04, 0.04)	No	0.05 (0.01, 0.09)
Thuringia	No	0.01 (-0.02, 0.05)	No	0.01 (-0.02, 0.05)	No	-0.01 (-0.04, 0.02)	Yes	-0.02 (-0.05, 0.01)	No	-0.02 (-0.06, 0.01)

Table 6

Estimates (with 95% confidence intervals) and convergence and estimation problems in the RI-CLPM with latent traits and individual traits modeled separately

State	Agreeableness		Conscientiousness		Extraversion		Neuroticism		Openness	
	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate
Schleswig-Holstein	Yes	NA (NA, NA)	No	-0.23 (-0.40, -0.05)	No	0.03 (-0.20, 0.26)	No	0.30 (0.08, 0.52)	No	-0.26 (-0.61, 0.10)
Hamburg	Yes	0.01 (-0.16, 0.18)	No	0.06 (-0.16, 0.27)	No	0.15 (-0.02, 0.32)	No	-0.04 (-0.24, 0.16)	Yes	NA (NA, NA)
Lower Saxony	No	-0.02 (-0.13, 0.09)	No	-0.04 (-0.13, 0.04)	No	-0.01 (-0.11, 0.09)	No	0.07 (-0.05, 0.20)	No	-0.10 (-0.23, 0.02)
Bremen	Yes	0.15 (-0.18, 0.47)	Yes	-0.30 (-0.93, 0.33)	No	-0.16 (-0.47, 0.16)	Yes	0.22 (-0.15, 0.59)	No	0.49 (0.11, 0.86)
North Rhine-Westphalia	No	0.01 (-0.05, 0.07)	No	-0.03 (-0.08, 0.03)	No	0.03 (-0.03, 0.08)	No	0.04 (-0.02, 0.10)	No	0.05 (-0.00, 0.10)
Hesse	No	-0.04 (-0.16, 0.08)	No	0.04 (-0.08, 0.16)	No	-0.00 (-0.12, 0.11)	No	0.06 (-0.08, 0.19)	No	-0.12 (-0.30, 0.07)
Rhineland-Palatinate	No	0.01 (-0.14, 0.16)	No	0.09 (-0.03, 0.20)	No	-0.00 (-0.11, 0.10)	No	-0.11 (-0.23, 0.02)	No	0.11 (-0.02, 0.24)
Baden-Wuerttemberg	No	0.03 (-0.07, 0.13)	No	0.02 (-0.08, 0.12)	No	0.04 (-0.04, 0.13)	No	-0.00 (-0.08, 0.07)	No	0.02 (-0.07, 0.11)
Bavaria	No	-0.04 (-0.14, 0.05)	No	-0.07 (-0.15, 0.01)	No	-0.01 (-0.08, 0.05)	No	0.00 (-0.10, 0.11)	No	-0.03 (-0.12, 0.06)
Saarland	Yes	-0.12 (-0.65, 0.41)	No	0.25 (-0.18, 0.67)	Yes	0.31 (-0.11, 0.73)	No	-0.12 (-0.73, 0.49)	Yes	0.06 (-0.29, 0.41)
Berlin	No	-0.02 (-0.28, 0.24)	No	-0.22 (-0.49, 0.04)	No	0.06 (-0.39, 0.51)	No	0.04 (-0.19, 0.28)	No	0.14 (-0.13, 0.40)
Brandenburg	No	-0.07 (-0.21, 0.07)	No	-0.06 (-0.18, 0.07)	No	-0.06 (-0.21, 0.08)	No	0.04 (-0.12, 0.20)	No	0.09 (-0.07, 0.25)
Mecklenburg-Western Pomerania	No	-0.15 (-0.38, 0.08)	No	-0.10 (-0.24, 0.04)	No	-0.09 (-0.15, 0.33)	No	-0.09 (-0.31, 0.14)	No	0.02 (-0.17, 0.21)
Saxony	Yes	-0.11 (-0.25, 0.03)	No	-0.05 (-0.16, 0.06)	No	0.04 (-0.07, 0.14)	No	-0.00 (-0.11, 0.11)	No	0.05 (-0.06, 0.17)
Saxony-Anhalt	No	-0.05 (-0.17, 0.08)	No	-0.03 (-0.13, 0.08)	No	0.04 (-0.12, 0.19)	No	-0.00 (-0.17, 0.16)	No	-0.00 (-0.14, 0.13)
Thuringia	No	0.03 (-0.10, 0.16)	No	-0.04 (-0.15, 0.08)	No	-0.08 (-0.19, 0.04)	Yes	-0.18 (-0.31, -0.04)	No	-0.05 (-0.17, 0.08)

Table 7

Estimates (with 95% confidence intervals) and convergence and estimation problems in the CLPM with observed measures and individual traits modeled separately

State	Agreeableness		Conscientiousness		Extraversion		Neuroticism		Openness	
	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate
Schleswig-Holstein	No	0.04 (-0.00, 0.09)	No	0.02 (-0.03, 0.06)	No	-0.01 (-0.06, 0.03)	No	0.04 (-0.01, 0.08)	No	0.01 (-0.04, 0.05)
Hamburg	No	0.04 (-0.01, 0.10)	No	0.01 (-0.04, 0.07)	No	0.02 (-0.04, 0.08)	No	-0.00 (-0.04, 0.04)	No	-0.00 (-0.05, 0.05)
Lower Saxony	No	0.04 (0.02, 0.07)	No	0.01 (-0.01, 0.03)	No	0.00 (-0.02, 0.02)	No	0.00 (-0.02, 0.03)	No	-0.01 (-0.03, 0.02)
Bremen	No	-0.02 (-0.11, 0.07)	No	-0.03 (-0.12, 0.05)	No	0.01 (-0.07, 0.10)	No	-0.02 (-0.10, 0.07)	No	-0.01 (-0.08, 0.06)
North Rhine-Westphalia	No	0.05 (0.04, 0.07)	No	0.03 (0.01, 0.04)	No	0.00 (-0.01, 0.02)	No	0.00 (-0.02, 0.02)	No	0.03 (0.01, 0.04)
Hesse	No	0.07 (0.04, 0.10)	No	0.04 (0.02, 0.07)	No	0.01 (-0.01, 0.04)	No	-0.00 (-0.03, 0.02)	No	-0.01 (-0.04, 0.01)
Rhineland-Palatinate	No	0.03 (-0.00, 0.06)	No	0.01 (-0.03, 0.05)	No	-0.02 (-0.05, 0.01)	No	0.01 (-0.03, 0.04)	No	-0.02 (-0.05, 0.01)
Baden-Wuerttemberg	No	0.05 (0.03, 0.07)	No	0.01 (-0.01, 0.03)	No	-0.01 (-0.02, 0.01)	No	0.01 (-0.01, 0.03)	No	-0.00 (-0.02, 0.02)
Bavaria	No	0.03 (0.01, 0.05)	No	0.01 (-0.01, 0.03)	No	-0.00 (-0.02, 0.01)	No	0.01 (-0.01, 0.02)	No	-0.01 (-0.03, 0.01)
Saarland	No	-0.06 (-0.14, 0.02)	No	0.02 (-0.07, 0.10)	No	0.05 (-0.03, 0.13)	No	-0.01 (-0.10, 0.09)	No	0.02 (-0.06, 0.11)
Berlin	No	0.03 (-0.01, 0.06)	No	0.03 (-0.00, 0.06)	No	0.01 (-0.02, 0.03)	No	-0.00 (-0.04, 0.03)	No	0.02 (-0.01, 0.05)
Brandenburg	No	0.02 (-0.01, 0.05)	No	-0.01 (-0.05, 0.02)	No	0.01 (-0.02, 0.04)	No	0.01 (-0.02, 0.04)	No	0.03 (-0.01, 0.06)
Mecklenburg-Western Pomerania	No	0.03 (-0.02, 0.08)	No	0.00 (-0.04, 0.05)	No	-0.00 (-0.05, 0.04)	No	-0.02 (-0.06, 0.03)	No	0.04 (-0.01, 0.09)
Saxony	No	0.01 (-0.01, 0.03)	No	0.01 (-0.02, 0.03)	No	-0.01 (-0.03, 0.01)	No	0.01 (-0.01, 0.03)	No	0.04 (0.02, 0.06)
Saxony-Anhalt	No	0.04 (0.01, 0.08)	No	0.02 (-0.01, 0.06)	No	0.00 (-0.03, 0.03)	No	0.00 (-0.03, 0.03)	No	0.07 (0.04, 0.10)
Thuringia	No	0.02 (-0.01, 0.05)	No	0.01 (-0.02, 0.04)	No	-0.01 (-0.04, 0.02)	No	-0.01 (-0.04, 0.02)	No	0.00 (-0.03, 0.03)

Table 8

Estimates (with 95% confidence intervals) and convergence and estimation problems in the RI-CLPM with observed measures and individual traits modeled separately

State	Agreeableness		Conscientiousness		Extraversion		Neuroticism		Openness	
	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate	Prob.	Estimate
Schleswig-Holstein	No	-0.09 (-0.25, 0.06)	No	-0.18 (-0.32, -0.05)	No	-0.16 (-0.36, 0.04)	No	0.23 (0.07, 0.39)	No	-0.14 (-0.35, 0.08)
Hamburg	No	-0.07 (-0.34, 0.19)	No	0.08 (-0.06, 0.22)	No	0.13 (-0.01, 0.26)	No	-0.02 (-0.12, 0.09)	No	-0.01 (-0.13, 0.10)
Lower Saxony	No	-0.01 (-0.08, 0.06)	No	-0.04 (-0.11, 0.03)	No	0.02 (-0.06, 0.09)	No	0.06 (-0.01, 0.13)	No	-0.06 (-0.13, 0.01)
Bremen	No	-0.05 (-0.23, 0.14)	No	-0.17 (-0.40, 0.06)	No	-0.05 (-0.34, 0.24)	No	0.19 (-0.04, 0.42)	No	0.25 (-0.03, 0.52)
North Rhine-Westphalia	No	0.01 (-0.03, 0.05)	No	-0.01 (-0.06, 0.03)	No	0.01 (-0.03, 0.05)	No	0.02 (-0.02, 0.07)	No	0.04 (0.00, 0.09)
Hesse	No	-0.02 (-0.10, 0.06)	No	0.00 (-0.08, 0.09)	No	-0.00 (-0.09, 0.08)	No	0.05 (-0.03, 0.13)	No	-0.05 (-0.15, 0.04)
Rhineland-Palatinate	No	0.02 (-0.07, 0.10)	No	0.09 (-0.01, 0.18)	No	-0.03 (-0.11, 0.05)	No	-0.07 (-0.16, 0.01)	No	0.07 (-0.02, 0.16)
Baden-Wuerttemberg	No	0.02 (-0.04, 0.08)	No	-0.01 (-0.07, 0.06)	No	0.04 (-0.02, 0.11)	No	-0.00 (-0.06, 0.06)	No	0.03 (-0.04, 0.09)
Bavaria	No	-0.02 (-0.08, 0.03)	No	-0.03 (-0.09, 0.03)	No	-0.00 (-0.06, 0.06)	No	-0.01 (-0.07, 0.06)	No	-0.01 (-0.07, 0.06)
Saarland	No	-0.16 (-0.49, 0.17)	No	0.29 (0.02, 0.55)	No	0.24 (-0.11, 0.60)	No	-0.08 (-0.52, 0.36)	No	0.17 (-0.18, 0.52)
Berlin	No	0.05 (-0.11, 0.22)	No	-0.12 (-0.27, 0.02)	No	0.04 (-0.13, 0.21)	No	0.04 (-0.12, 0.20)	No	0.08 (-0.06, 0.22)
Brandenburg	No	-0.05 (-0.14, 0.04)	No	-0.02 (-0.13, 0.08)	No	-0.02 (-0.13, 0.08)	No	0.02 (-0.08, 0.12)	No	0.04 (-0.05, 0.14)
Pomerania	No	-0.13 (-0.24, -0.02)	No	-0.04 (-0.18, 0.09)	No	0.09 (-0.04, 0.21)	No	-0.05 (-0.17, 0.07)	No	0.03 (-0.09, 0.15)
Saxony	No	-0.01 (-0.09, 0.07)	No	-0.02 (-0.12, 0.08)	No	0.02 (-0.07, 0.11)	No	0.01 (-0.09, 0.11)	No	0.03 (-0.05, 0.11)
Saxony-Anhalt	No	-0.02 (-0.10, 0.07)	No	-0.03 (-0.10, 0.04)	No	0.02 (-0.08, 0.12)	No	-0.01 (-0.11, 0.08)	No	-0.00 (-0.10, 0.09)
Thuringia	No	0.02 (-0.07, 0.10)	No	-0.01 (-0.10, 0.07)	No	-0.05 (-0.12, 0.03)	No	-0.11 (-0.20, -0.02)	No	-0.07 (-0.17, 0.03)

References