Supplement to: On the Robustness of Reciprocal Associations Between Personality and

Religiosity in a German Sample

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State Specific Estimates and Convergence Problems

These tables report the lagged associations from all models separately for each state. In addition, the tables report whether any estimation problems emerged (some of which prevented estimates from being calculated).

Traits Predicting Religion

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	0.13 (0.05, 0.21)	No	-0.07 (-0.17, 0.02)	No	0.11 (0.02, 0.21)	No	0.10 (0.03, 0.17)	No	-0.09 (-0.19, 0.01)
Hamburg	Yes	0.03 (-0.12, 0.18)	Yes	0.06 (-0.11, 0.23)	Yes	0.07 (-0.13, 0.28)	Yes	0.05 (-0.05, 0.14)	Yes	-0.14 (-0.37, 0.10)
Lower Saxony	No	0.03 (-0.00, 0.07)	No	0.02 (-0.03, 0.06)	No	-0.03 (-0.08, 0.01)	No	0.01 (-0.02, 0.04)	No	0.02 (-0.03, 0.07)
Bremen	Yes	NA	Yes	NA	Yes	NA	Yes	NA	Yes	NA
North Rhine-Westphalia	No	0.05 (0.02, 0.08)	No	-0.00 (-0.03, 0.02)	No	0.03 (-0.00, 0.05)	No	0.02 (-0.00, 0.03)	No	-0.05 (-0.08, -0.02)
Hesse	No	0.04 (-0.00, 0.09)	No	-0.02 (-0.07, 0.04)	No	0.03 (-0.02, 0.09)	No	0.02 (-0.01, 0.05)	No	-0.06 (-0.11, -0.00)
Rhineland-Palatinate	No	0.06 (0.01, 0.12)	No	-0.00 (-0.06, 0.06)	No	-0.05 (-0.11, 0.02)	No	0.01 (-0.03, 0.06)	No	0.01 (-0.05, 0.08)
Baden-Wuerttemberg	No	0.04 (0.01, 0.08)	No	0.01 (-0.02, 0.04)	No	0.01 (-0.03, 0.04)	No	-0.00 (-0.03, 0.02)	No	-0.05 (-0.08, -0.01)
Bavaria	No	0.05 (0.02, 0.07)	No	0.01 (-0.02, 0.04)	No	-0.02 (-0.05, 0.01)	No	-0.00 (-0.02, 0.02)	No	-0.03 (-0.06, -0.00)
Saarland	Yes	NA	Yes	NA	Yes	NA	Yes	NA	Yes	NA
Berlin	No	0.02 (-0.04, 0.09)	No	-0.03 (-0.10, 0.03)	No	0.04 (-0.02, 0.09)	No	0.03 (-0.01, 0.07)	No	-0.02 (-0.08, 0.04)
Brandenburg	No	0.09 (0.03, 0.14)	No	-0.05 (-0.12, 0.01)	No	0.05 (-0.02, 0.12)	No	0.03 (-0.01, 0.06)	No	-0.03 (-0.10, 0.04)
Mecklenburg-Western Pomerania	No	0.10 (-0.00, 0.20)	No	-0.04 (-0.14, 0.06)	No	-0.01 (-0.11, 0.10)	No	0.01 (-0.04, 0.06)	No	0.03 (-0.09, 0.14)
Saxony	No	0.04 (0.01, 0.07)	No	-0.04 (-0.07, -0.00)	No	-0.01 (-0.04, 0.03)	No	-0.01 (-0.03, 0.02)	No	0.02 (-0.02, 0.06)
Saxony-Anhalt	No	0.02 (-0.03, 0.06)	No	-0.01 (-0.05, 0.03)	No	-0.04 (-0.09, 0.01)	No	-0.02 (-0.05, 0.01)	No	0.05 (-0.01, 0.11)
Thuringia	No	0.01 (-0.04, 0.06)	No	0.01 (-0.04, 0.05)	No	-0.07 (-0.13, -0.01)	No	-0.01 (-0.04, 0.02)	No	0.06 (-0.01, 0.13)

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	-0.58 (-3.57, 2.41)	Yes	-0.33 (-1.09, 0.43)	Yes	1.58 (-3.85, 7.01)	Yes	0.39 (-0.36, 1.13)	Yes	-0.83 (-3.31, 1.65)
Hamburg	Yes	-0.21 (-0.76, 0.34)	Yes	-0.13 (-0.65, 0.39)	Yes	0.01 (-0.57, 0.59)	Yes	0.27 (-0.20, 0.75)	Yes	0.14 (-0.19, 0.47)
Lower Saxony	No	0.06 (-0.16, 0.29)	No	-0.05 (-0.27, 0.17)	No	-0.05 (-0.23, 0.12)	No	0.05 (-0.08, 0.17)	No	0.02 (-0.17, 0.21)
Bremen	Yes	-1.83 (NA, NA)	Yes	0.17 (NA, NA)	Yes	-0.93 (NA, NA)	Yes	-0.26 (NA, NA)	Yes	2.84 (NA, NA)
North Rhine-Westphalia	No	0.10 (-0.03, 0.23)	No	-0.13 (-0.25, -0.00)	No	0.04 (-0.09, 0.17)	No	0.09 (0.01, 0.17)	No	-0.04 (-0.17, 0.09)
Hesse	No	0.21 (-1.07, 1.50)	No	-0.19 (-1.37, 0.99)	No	0.36 (-0.73, 1.45)	No	0.25 (-0.31, 0.82)	No	-0.45 (-1.61, 0.71)
Rhineland-Palatinate	No	0.03 (-0.19, 0.26)	No	0.07 (-0.14, 0.28)	No	-0.30 (-0.49, -0.10)	No	-0.08 (-0.20, 0.03)	No	0.36 (0.18, 0.54)
Baden-Wuerttemberg	No	-0.00 (-0.16, 0.16)	No	0.04 (-0.09, 0.18)	No	-0.09 (-0.26, 0.08)	No	-0.04 (-0.16, 0.08)	No	0.08 (-0.08, 0.23)
Bavaria	No	0.11 (-0.09, 0.32)	No	-0.10 (-0.29, 0.08)	No	-0.16 (-0.36, 0.03)	No	-0.04 (-0.18, 0.09)	No	0.06 (-0.13, 0.25)
Saarland	Yes	NA	Yes	NA	Yes	NA	Yes	NA	Yes	NA
Berlin	Yes	0.14 (-0.28, 0.56)	Yes	-0.27 (-0.55, 0.02)	Yes	0.15 (-0.40, 0.69)	Yes	0.14 (-0.22, 0.49)	Yes	-0.13 (-0.67, 0.40)
Brandenburg	Yes	0.14 (-0.33, 0.60)	Yes	-0.13 (-0.56, 0.30)	Yes	-0.37 (-0.86, 0.12)	Yes	-0.22 (-0.52, 0.08)	Yes	0.31 (-0.09, 0.72)
Mecklenburg-Western Pomerania	No	-0.17 (-0.55, 0.21)	Yes	0.03 (-0.38, 0.43)	Yes	0.27 (-0.09, 0.62)	Yes	-0.03 (-0.25, 0.18)	Yes	0.01 (-0.32, 0.33)
Saxony	No	0.07 (-0.11, 0.24)	No	-0.10 (-0.28, 0.09)	No	-0.01 (-0.28, 0.26)	No	-0.09 (-0.22, 0.04)	No	0.02 (-0.25, 0.30)
Saxony-Anhalt	Yes	0.18 (-0.08, 0.45)	Yes	-0.08 (-0.34, 0.18)	Yes	-0.04 (-0.32, 0.23)	Yes	0.06 (-0.11, 0.23)	Yes	-0.07 (-0.34, 0.20)
Thuringia	Yes	0.14 (-0.47, 0.75)	Yes	-0.14 (-0.63, 0.34)	Yes	-0.26 (-0.75, 0.24)	Yes	-0.19 (-0.44, 0.06)	Yes	0.32 (-0.38, 1.02)

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	0.10 (0.05, 0.14)	No	0.00 (-0.06, 0.06)	No	0.04 (-0.01, 0.09)	No	0.09 (0.04, 0.15)	No	0.00 (-0.05, 0.05)
Hamburg	No	0.01 (-0.04, 0.07)	No	0.03 (-0.03, 0.08)	No	0.01 (-0.05, 0.07)	No	0.02 (-0.03, 0.07)	No	-0.02 (-0.08, 0.04)
Lower Saxony	No	0.02 (-0.01, 0.04)	No	0.02 (-0.01, 0.04)	No	-0.03 (-0.05, -0.00)	No	0.01 (-0.01, 0.04)	No	0.03 (0.00, 0.05)
Bremen	No	-0.00 (-0.11, 0.10)	No	-0.01 (-0.10, 0.09)	No	-0.03 (-0.14, 0.09)	No	-0.01 (-0.10, 0.08)	No	0.08 (-0.02, 0.18)
North Rhine-Westphalia	No	0.03 (0.01, 0.04)	No	0.01 (-0.00, 0.03)	No	0.00 (-0.01, 0.02)	No	0.02 (0.00, 0.03)	No	-0.01 (-0.03, 0.01)
Hesse	No	0.01 (-0.02, 0.04)	No	0.03 (-0.01, 0.06)	No	-0.02 (-0.04, 0.01)	No	0.02 (-0.01, 0.05)	No	-0.01 (-0.04, 0.02)
Rhineland-Palatinate	No	0.04 (0.00, 0.08)	No	-0.00 (-0.04, 0.04)	No	-0.04 (-0.07, 0.00)	No	0.01 (-0.03, 0.05)	No	0.03 (-0.00, 0.07)
Baden-Wuerttemberg	No	0.02 (0.00, 0.04)	No	0.02 (0.00, 0.04)	No	-0.01 (-0.03, 0.01)	No	-0.00 (-0.02, 0.02)	No	-0.02 (-0.04, 0.01)
Bavaria	No	0.02 (0.00, 0.04)	No	0.02 (0.00, 0.04)	No	-0.03 (-0.05, -0.01)	No	-0.00 (-0.02, 0.01)	No	-0.02 (-0.04, -0.00)
Saarland	No	0.10 (0.01, 0.18)	No	0.07 (-0.02, 0.16)	No	-0.05 (-0.14, 0.04)	No	-0.01 (-0.10, 0.08)	No	0.06 (-0.02, 0.15)
Berlin	No	0.02 (-0.02, 0.05)	No	-0.02 (-0.06, 0.01)	No	0.01 (-0.03, 0.04)	No	0.03 (-0.00, 0.06)	No	-0.00 (-0.04, 0.03)
Brandenburg	No	0.05 (0.02, 0.07)	No	-0.02 (-0.06, 0.01)	No	0.00 (-0.03, 0.04)	No	-0.00 (-0.04, 0.03)	No	0.03 (-0.01, 0.06)
Mecklenburg-Western Pomerania	No	0.04 (-0.00, 0.09)	No	0.02 (-0.03, 0.08)	No	0.01 (-0.04, 0.06)	No	0.01 (-0.04, 0.05)	No	0.02 (-0.03, 0.08)
Saxony	No	0.01 (-0.00, 0.03)	No	-0.02 (-0.04, 0.00)	No	0.00 (-0.02, 0.02)	No	-0.01 (-0.03, 0.01)	No	0.01 (-0.01, 0.03)
Saxony-Anhalt	No	0.02 (-0.00, 0.04)	No	-0.01 (-0.03, 0.02)	No	-0.02 (-0.04, 0.00)	No	-0.01 (-0.03, 0.02)	No	0.04 (0.00, 0.07)
Thuringia	No	-0.01 (-0.04, 0.02)	No	0.01 (-0.01, 0.04)	No	-0.03 (-0.06, -0.01)	No	-0.01 (-0.03, 0.02)	No	0.03 (0.01, 0.06)

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	0.07 (-0.03, 0.17)	No	-0.08 (-0.18, 0.02)	No	0.05 (-0.07, 0.16)	No	0.21 (0.11, 0.31)	No	-0.05 (-0.15, 0.06)
Hamburg	No	-0.22 (-0.48, 0.03)	No	0.07 (-0.08, 0.21)	No	0.07 (-0.15, 0.30)	No	0.12 (-0.07, 0.30)	No	0.02 (-0.12, 0.17)
Lower Saxony	No	0.02 (-0.04, 0.08)	No	-0.02 (-0.08, 0.05)	No	-0.01 (-0.07, 0.06)	No	0.05 (-0.02, 0.11)	No	-0.00 (-0.07, 0.06)
Bremen	No	-0.05 (-0.31, 0.21)	No	0.02 (-0.26, 0.30)	No	-0.25 (-0.58, 0.09)	No	0.03 (-0.19, 0.25)	No	0.32 (0.01, 0.62)
North Rhine-Westphalia	No	0.01 (-0.03, 0.05)	No	-0.03 (-0.07, 0.02)	No	0.01 (-0.03, 0.05)	No	0.05 (0.00, 0.09)	No	-0.01 (-0.05, 0.04)
Hesse	No	-0.02 (-0.09, 0.05)	No	0.05 (-0.03, 0.13)	No	-0.03 (-0.11, 0.04)	No	0.09 (0.01, 0.16)	No	-0.06 (-0.14, 0.03)
Rhineland-Palatinate	No	-0.00 (-0.08, 0.08)	No	0.04 (-0.05, 0.13)	No	-0.07 (-0.15, 0.01)	No	-0.05 (-0.13, 0.03)	No	0.13 (0.05, 0.20)
Baden-Wuerttemberg	No	0.02 (-0.04, 0.08)	No	0.01 (-0.05, 0.06)	No	-0.02 (-0.08, 0.04)	No	-0.02 (-0.08, 0.04)	No	0.03 (-0.04, 0.09)
Bavaria	No	-0.01 (-0.06, 0.04)	No	-0.00 (-0.05, 0.05)	No	-0.07 (-0.13, -0.02)	No	-0.03 (-0.09, 0.02)	No	-0.01 (-0.06, 0.05)
Saarland	No	-0.03 (-0.35, 0.28)	No	0.13 (-0.10, 0.36)	No	-0.03 (-0.27, 0.21)	No	0.03 (-0.20, 0.25)	No	0.12 (-0.16, 0.39)
Berlin	No	0.04 (-0.06, 0.13)	No	-0.10 (-0.19, -0.01)	No	0.01 (-0.09, 0.11)	No	0.07 (-0.02, 0.15)	No	-0.00 (-0.08, 0.08)
Brandenburg	No	-0.01 (-0.11, 0.09)	No	-0.01 (-0.12, 0.11)	No	-0.08 (-0.20, 0.05)	No	-0.10 (-0.19, -0.00)	No	0.08 (-0.02, 0.18)
Mecklenburg-Western Pomerania	No	-0.01 (-0.11, 0.08)	No	-0.01 (-0.14, 0.11)	No	0.11 (-0.01, 0.22)	No	-0.03 (-0.14, 0.08)	No	-0.00 (-0.10, 0.10)
Saxony	No	0.05 (-0.00, 0.09)	No	-0.05 (-0.10, 0.01)	No	0.01 (-0.04, 0.07)	No	-0.04 (-0.10, 0.02)	No	-0.01 (-0.07, 0.05)
Saxony-Anhalt	No	0.09 (0.01, 0.16)	No	-0.03 (-0.10, 0.04)	No	-0.04 (-0.13, 0.05)	No	0.03 (-0.05, 0.12)	No	0.01 (-0.07, 0.09)
Thuringia	No	-0.01 (-0.08, 0.07)	No	-0.03 (-0.12, 0.07)	No	-0.02 (-0.10, 0.07)	No	-0.02 (-0.10, 0.07)	No	0.01 (-0.09, 0.11)

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	0.09 (0.03, 0.15)	No	-0.01 (-0.07, 0.06)	No	0.07 (0.02, 0.12)	No	0.08 (0.02, 0.14)	No	0.02 (-0.04, 0.07)
Hamburg	Yes	0.05 (-0.03, 0.13)	No	0.02 (-0.04, 0.09)	No	-0.01 (-0.08, 0.05)	Yes	0.01 (-0.05, 0.07)	Yes	-0.06 (-0.13, 0.02)
Lower Saxony	No	0.03 (-0.00, 0.05)	No	0.02 (-0.01, 0.05)	No	-0.00 (-0.03, 0.02)	No	0.01 (-0.02, 0.03)	No	0.02 (-0.01, 0.04)
Bremen	Yes	0.00 (-0.07, 0.07)	No	-0.03 (-0.11, 0.05)	Yes	-0.00 (-0.12, 0.11)	No	0.01 (-0.12, 0.15)	No	0.09 (-0.01, 0.20)
North Rhine-Westphalia	No	0.04 (0.02, 0.06)	No	0.02 (0.00, 0.04)	No	0.01 (-0.00, 0.03)	No	0.01 (-0.01, 0.03)	No	-0.01 (-0.02, 0.01)
Hesse	No	0.02 (-0.01, 0.06)	No	0.01 (-0.03, 0.04)	No	0.01 (-0.02, 0.03)	No	0.01 (-0.02, 0.04)	No	-0.02 (-0.05, 0.02)
Rhineland-Palatinate	No	0.04 (-0.00, 0.08)	No	0.00 (-0.04, 0.04)	No	-0.02 (-0.06, 0.02)	No	0.01 (-0.03, 0.06)	No	0.00 (-0.03, 0.04)
Baden-Wuerttemberg	No	0.03 (0.01, 0.06)	No	0.02 (-0.00, 0.04)	No	-0.00 (-0.02, 0.02)	No	-0.00 (-0.03, 0.02)	No	-0.02 (-0.05, 0.00)
Bavaria	No	0.03 (0.01, 0.05)	No	0.01 (-0.01, 0.03)	No	-0.03 (-0.04, -0.01)	No	0.00 (-0.02, 0.02)	No	-0.03 (-0.05, -0.01)
Saarland	No	0.17 (0.06, 0.28)	No	0.10 (0.01, 0.20)	No	0.03 (-0.05, 0.12)	No	-0.01 (-0.11, 0.09)	No	0.10 (-0.00, 0.19)
Berlin	No	-0.00 (-0.05, 0.04)	No	-0.02 (-0.06, 0.03)	No	0.01 (-0.03, 0.05)	No	0.02 (-0.02, 0.06)	No	0.01 (-0.03, 0.05)
Brandenburg	No	0.06 (0.03, 0.10)	No	-0.00 (-0.04, 0.04)	No	0.03 (-0.00, 0.07)	No	-0.00 (-0.04, 0.04)	No	0.03 (-0.01, 0.08)
Mecklenburg-Western Pomerania	No	0.07 (0.01, 0.13)	No	0.04 (-0.01, 0.09)	No	0.03 (-0.02, 0.08)	No	0.00 (-0.05, 0.05)	No	0.04 (-0.02, 0.10)
Saxony	No	0.03 (0.01, 0.05)	No	-0.01 (-0.03, 0.01)	No	0.01 (-0.01, 0.03)	No	-0.01 (-0.03, 0.02)	No	0.01 (-0.01, 0.04)
Saxony-Anhalt	No	0.01 (-0.02, 0.04)	No	-0.00 (-0.03, 0.03)	No	-0.01 (-0.03, 0.02)	No	-0.01 (-0.04, 0.02)	No	0.02 (-0.01, 0.06)
Thuringia	No	0.00 (-0.03, 0.03)	No	0.01 (-0.02, 0.04)	No	-0.02 (-0.05, 0.01)	Yes	-0.01 (-0.03, 0.02)	No	0.02 (-0.01, 0.05)

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	-0.19 (-0.30, -0.07)	No	0.11 (-0.11, 0.33)	No	0.27 (0.14, 0.39)	No	-0.10 (-0.28, 0.08)
Hamburg	Yes	-0.11 (-0.41, 0.20)	No	0.03 (-0.20, 0.26)	No	0.11 (-0.25, 0.48)	No	0.15 (-0.23, 0.54)	Yes	NA (NA, NA)
Lower Saxony	No	0.03 (-0.07, 0.12)	No	-0.02 (-0.11, 0.07)	No	-0.03 (-0.13, 0.06)	No	0.07 (-0.04, 0.18)	No	-0.03 (-0.13, 0.08)
Bremen	Yes	0.14 (-0.13, 0.41)	Yes	-0.20 (-0.73, 0.33)	Yes	-0.51 (-1.12, 0.10)	Yes	-0.12 (-0.50, 0.25)	No	0.95 (0.65, 1.25)
North Rhine-Westphalia	No	0.02 (-0.05, 0.10)	No	-0.05 (-0.12, 0.02)	No	-0.00 (-0.06, 0.06)	No	0.07 (0.00, 0.14)	No	-0.02 (-0.10, 0.06)
Hesse	No	-0.07 (-0.22, 0.08)	No	0.02 (-0.10, 0.14)	No	-0.03 (-0.14, 0.09)	No	0.11 (0.01, 0.21)	No	-0.10 (-0.32, 0.11)
Rhineland-Palatinate	No	0.07 (-0.06, 0.20)	No	0.09 (-0.03, 0.21)	No	-0.04 (-0.15, 0.08)	No	-0.07 (-0.18, 0.04)	No	0.17 (0.05, 0.29)
Baden-Wuerttemberg	No	0.02 (-0.08, 0.12)	No	0.03 (-0.05, 0.12)	No	-0.02 (-0.12, 0.07)	No	-0.03 (-0.15, 0.09)	No	0.05 (-0.06, 0.16)
Bavaria	No	-0.00 (-0.08, 0.08)	No	-0.06 (-0.15, 0.02)	No	-0.09 (-0.19, 0.01)	No	-0.04 (-0.16, 0.08)	No	-0.04 (-0.12, 0.04)
Saarland	Yes	0.86 (-0.28, 2.00)	No	0.14 (-0.14, 0.42)	Yes	0.45 (-0.38, 1.27)	Yes	0.00 (-0.27, 0.28)	Yes	0.45 (-0.22, 1.12)
Berlin	No	-0.08 (-0.26, 0.10)	No	-0.17 (-0.34, 0.01)	No	0.02 (-0.31, 0.35)	No	0.09 (-0.12, 0.30)	No	-0.02 (-0.22, 0.19)
Brandenburg	No	0.02 (-0.14, 0.19)	No	-0.05 (-0.20, 0.10)	No	-0.07 (-0.22, 0.07)	No	-0.15 (-0.33, 0.03)	No	0.12 (-0.02, 0.25)
Mecklenburg-Western Pomerania	No	0.00 (-0.15, 0.15)	No	0.02 (-0.14, 0.19)	No	0.22 (-0.00, 0.44)	No	-0.08 (-0.32, 0.16)	No	0.05 (-0.14, 0.24)
Saxony	Yes	0.05 (-0.03, 0.13)	No	-0.06 (-0.14, 0.02)	No	0.00 (-0.10, 0.10)	No	-0.08 (-0.17, 0.01)	No	-0.00 (-0.08, 0.08)
Saxony-Anhalt	No	0.06 (-0.04, 0.15)	No	-0.00 (-0.09, 0.09)	No	-0.02 (-0.14, 0.10)	No	0.04 (-0.09, 0.17)	No	-0.01 (-0.12, 0.10)
Thuringia	No	0.02 (-0.12, 0.16)	No	-0.04 (-0.17, 0.09)	No	-0.02 (-0.15, 0.11)	Yes	-0.08 (-0.24, 0.07)	No	-0.01 (-0.41, 0.40)

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	0.09 (0.04, 0.13)	No	0.02 (-0.03, 0.08)	No	0.04 (-0.01, 0.08)	No	0.07 (0.02, 0.12)	No	0.02 (-0.03, 0.07)
Hamburg	No	0.01 (-0.04, 0.07)	No	0.03 (-0.03, 0.08)	No	-0.00 (-0.06, 0.06)	No	0.02 (-0.03, 0.07)	No	-0.03 (-0.09, 0.03)
Lower Saxony	No	0.02 (-0.00, 0.04)	No	0.02 (0.00, 0.04)	No	-0.01 (-0.03, 0.01)	No	0.01 (-0.01, 0.03)	No	0.03 (0.00, 0.05)
Bremen	No	0.02 (-0.06, 0.11)	No	-0.00 (-0.08, 0.08)	No	0.00 (-0.10, 0.10)	No	-0.02 (-0.11, 0.06)	No	0.08 (0.00, 0.17)
North Rhine-Westphalia	No	0.03 (0.02, 0.05)	No	0.02 (0.01, 0.04)	No	0.01 (-0.01, 0.02)	No	0.01 (-0.00, 0.03)	No	-0.00 (-0.01, 0.01)
Hesse	No	0.02 (-0.01, 0.04)	No	0.03 (-0.00, 0.05)	No	-0.01 (-0.04, 0.01)	No	0.02 (-0.01, 0.04)	No	-0.01 (-0.04, 0.02)
Rhineland-Palatinate	No	0.04 (0.01, 0.08)	No	0.01 (-0.03, 0.04)	No	-0.02 (-0.05, 0.01)	No	0.01 (-0.03, 0.04)	No	0.02 (-0.01, 0.06)
Baden-Wuerttemberg	No	0.03 (0.01, 0.05)	No	0.03 (0.01, 0.05)	No	-0.01 (-0.03, 0.01)	No	-0.01 (-0.02, 0.01)	No	-0.01 (-0.03, 0.01)
Bavaria	No	0.02 (0.00, 0.04)	No	0.02 (0.00, 0.03)	No	-0.03 (-0.04, -0.01)	No	-0.00 (-0.02, 0.01)	No	-0.02 (-0.04, -0.00)
Saarland	No	0.13 (0.04, 0.21)	No	0.08 (-0.00, 0.17)	No	0.01 (-0.07, 0.10)	No	-0.01 (-0.10, 0.07)	No	0.10 (0.02, 0.18)
Berlin	No	0.01 (-0.03, 0.04)	No	-0.01 (-0.05, 0.02)	No	0.00 (-0.03, 0.03)	No	0.02 (-0.01, 0.06)	No	0.00 (-0.03, 0.03)
Brandenburg	No	0.05 (0.02, 0.07)	No	-0.00 (-0.03, 0.03)	No	0.02 (-0.02, 0.05)	No	-0.01 (-0.05, 0.02)	No	0.03 (-0.01, 0.06)
Mecklenburg-Western Pomerania	No	0.05 (0.00, 0.10)	No	0.04 (-0.01, 0.09)	No	0.03 (-0.02, 0.07)	No	-0.00 (-0.04, 0.04)	No	0.03 (-0.02, 0.08)
Saxony	No	0.01 (-0.01, 0.03)	No	-0.01 (-0.03, 0.01)	No	0.01 (-0.01, 0.02)	No	-0.01 (-0.03, 0.01)	No	0.01 (-0.01, 0.03)
Saxony-Anhalt	No	0.02 (-0.00, 0.04)	No	0.00 (-0.02, 0.03)	No	-0.01 (-0.03, 0.01)	No	-0.01 (-0.03, 0.02)	No	0.03 (-0.00, 0.06)
Thuringia	No	0.00 (-0.03, 0.03)	No	0.01 (-0.01, 0.04)	No	-0.02 (-0.04, 0.01)	No	-0.00 (-0.03, 0.02)	No	0.02 (-0.00, 0.05)

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	0.04 (-0.06, 0.14)	No	-0.14 (-0.24, -0.04)	No	-0.04 (-0.16, 0.08)	No	0.21 (0.11, 0.31)	No	-0.06 (-0.17, 0.06)
Hamburg	No	-0.29 (-0.65, 0.07)	No	0.03 (-0.11, 0.16)	No	0.09 (-0.15, 0.32)	No	0.11 (-0.06, 0.28)	No	0.03 (-0.11, 0.17)
Lower Saxony	No	0.01 (-0.06, 0.07)	No	-0.01 (-0.08, 0.05)	No	-0.01 (-0.07, 0.05)	No	0.05 (-0.01, 0.11)	No	-0.00 (-0.07, 0.06)
Bremen	No	0.01 (-0.29, 0.32)	No	-0.07 (-0.42, 0.29)	No	-0.24 (-0.61, 0.14)	No	0.07 (-0.16, 0.31)	No	0.19 (-0.06, 0.44)
North Rhine-Westphalia	No	-0.00 (-0.04, 0.04)	No	-0.02 (-0.07, 0.02)	No	0.00 (-0.04, 0.04)	No	0.05 (0.00, 0.09)	No	-0.01 (-0.05, 0.04)
Hesse	No	-0.03 (-0.10, 0.03)	No	0.03 (-0.05, 0.10)	No	-0.05 (-0.12, 0.02)	No	0.09 (0.02, 0.16)	No	-0.06 (-0.14, 0.03)
Rhineland-Palatinate	No	0.03 (-0.05, 0.10)	No	0.06 (-0.03, 0.15)	No	-0.03 (-0.11, 0.05)	No	-0.06 (-0.14, 0.03)	No	0.10 (0.03, 0.18)
Baden-Wuerttemberg	No	0.02 (-0.04, 0.07)	No	0.02 (-0.04, 0.07)	No	-0.00 (-0.06, 0.06)	No	-0.02 (-0.08, 0.03)	No	0.03 (-0.04, 0.09)
Bavaria	No	-0.02 (-0.07, 0.03)	No	-0.01 (-0.06, 0.04)	No	-0.06 (-0.12, -0.01)	No	-0.03 (-0.08, 0.02)	No	-0.03 (-0.08, 0.03)
Saarland	No	0.07 (-0.22, 0.37)	No	0.20 (0.01, 0.38)	No	0.08 (-0.18, 0.33)	No	-0.01 (-0.25, 0.23)	No	0.17 (-0.12, 0.45)
Berlin	No	0.01 (-0.08, 0.11)	No	-0.10 (-0.19, -0.01)	No	0.00 (-0.11, 0.12)	No	0.07 (-0.03, 0.17)	No	-0.01 (-0.10, 0.07)
Brandenburg	No	-0.00 (-0.09, 0.09)	No	-0.01 (-0.11, 0.09)	No	-0.04 (-0.15, 0.06)	No	-0.08 (-0.18, 0.02)	No	0.07 (-0.03, 0.17)
Mecklenburg-Western Pomerania	No	-0.00 (-0.10, 0.10)	No	0.02 (-0.13, 0.16)	No	0.10 (-0.00, 0.20)	No	-0.03 (-0.14, 0.08)	No	0.02 (-0.08, 0.12)
Saxony	No	0.04 (-0.01, 0.08)	No	-0.03 (-0.09, 0.03)	No	0.01 (-0.04, 0.07)	No	-0.04 (-0.10, 0.02)	No	-0.00 (-0.06, 0.05)
Saxony-Anhalt	No	0.06 (-0.01, 0.14)	No	-0.00 (-0.07, 0.06)	No	-0.03 (-0.11, 0.05)	No	0.02 (-0.06, 0.10)	No	0.00 (-0.07, 0.08)
Thuringia	No	-0.00 (-0.07, 0.07)	No	-0.03 (-0.12, 0.06)	No	-0.03 (-0.11, 0.05)	No	-0.01 (-0.10, 0.08)	No	-0.00 (-0.10, 0.09)

Religion Predicting Traits

Table 9

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)
Bremen	Yes	NA	Yes	NA	Yes	NA	Yes	NA	Yes	NA
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)
Saarland	Yes	NA	Yes	NA	Yes	NA	Yes	NA	Yes	NA
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 (-0.02, 0.05)	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 10

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)
Bremen	Yes	NA	Yes	NA	Yes	NA	Yes	NA	Yes	NA
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)
Saarland	Yes	NA	Yes	NA	Yes	NA	Yes	NA	Yes	NA
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 11

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 12

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 13

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	Estimate	Prob.	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)	0.04 (-0.02, 0.10)	No	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)	-0.00 (-0.06, 0.05)	Yes	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)	0.00 (-0.02, 0.03)	No	No	-0.02 (-0.05, 0.01)
Bremen	Yes	-0.02 (-0.11, 0.06)	No	-0.07 (-0.18, 0.04)	Yes	0.02 (-0.07, 0.11)	-0.07 (-0.17, 0.04)	Yes	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)	-0.00 (-0.02, 0.02)	No	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)	-0.02 (-0.05, 0.01)	No	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)	0.02 (-0.02, 0.06)	No	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)	0.00 (-0.02, 0.03)	No	No	-0.02 (-0.04, 0.01)
Bavaria	No	0.00 (-0.02, 0.02)	No	-0.01 (-0.03, 0.01)	No	-0.00 (-0.02, 0.02)	0.01 (-0.01, 0.03)	No	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)	-0.02 (-0.13, 0.09)	No	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)	0.00 (-0.04, 0.04)	No	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)	0.02 (-0.02, 0.05)	No	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)	-0.02 (-0.07, 0.03)	No	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)	-0.00 (-0.03, 0.02)	No	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)	0.00 (-0.04, 0.04)	No	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)	-0.02 (-0.05, 0.01)	Yes	No	-0.02 (-0.06, 0.01)

Table 14

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	No	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)	No	-0.30 (-0.93, 0.33)	Yes	-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	No	-0.12 (-0.65, 0.41)	No	0.25 (-0.18, 0.67)	No	0.31 (-0.11, 0.73)	No	-0.12 (-0.73, 0.49)	No	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	No	-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 15

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	Yes	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)	Yes	-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	Yes	-0.02 (-0.11, 0.07)	No	-0.03 (-0.12, 0.05)	Yes	0.01 (-0.07, 0.10)	Yes	-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)	Yes	-0.01 (-0.04, 0.02)	No	0.00 (-0.03, 0.03)

Table 16

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	Yes	-0.07 (-0.34, 0.19)	No	0.08 (-0.06, 0.22)	No	0.13 (-0.01, 0.26)	Yes	-0.02 (-0.12, 0.09)	Yes	-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	Yes	-0.05 (-0.23, 0.14)	No	-0.17 (-0.40, 0.06)	Yes	-0.05 (-0.34, 0.24)	Yes	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)
Mecklenburg-Western 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)	Yes	-0.11 (-0.20, -0.02)	No	-0.07 (-0.17, 0.03)

References