

Validation of a German Version of Kelley's (1992) Followership Questionnaire.

ESM 7. Ant Colony Optimization.

Since some of the models we used in Study 2 had problematic model fit, we used the method of Ant Colony Optimization (ACO; Oлару et al., 2019) to identify sets of items that fit the model and thus improve construct validity. ACO was computed with the STUART package in R (Schultze, 2020), which refers to the classical Max-Min Ant-System (Stützle & Hoos, 2000). With the optimization we tried to minimize RMSEA while maximizing the reliability. The models were adjusted as follows:

Model fit of personal initiative

Model	χ^2 (df)	χ^2 /df	CFI	RMSEA (90 CI)	WRMR
Initial model	132.826*** (14)	8.845	.966	.149 (.127-.173)	1.055
Final model	11.322* (5)	2.264	.997	.058 (.008-.103)	.364

Notes. $N = 413$. Final model: 5 of initial 7 items.

* $p < .05$. *** $p < .001$.

Model fit of self-responsibility

Model	χ^2 (df)	χ^2 /df	CFI	RMSEA (90 CI)	WRMR
Initial model	1415.408*** (170)	8.326	.608	.135 (.129-.142)	2.248
Final model	111.895*** (27)	4.144	.950	.088 (.072-.106)	.919

Notes. $N = 413$. Final model: 9 of initial 20 items.

*** $p < .001$.

Model fit of SITs

Model	χ^2 (df)	χ^2 /df	CFI	RMSEA (90 CI)	WRMR
Initial model	359.377*** (98)	3.667	.928	.081 (.072-.090)	1.222
Final model	303.157*** (84)	3.609	.934	.080 (.070-.090)	1.164

Notes. $N = 413$. Final model: All items of pressure, flattering, engaging superior authority and 3 of initial 4 items of rational influence.

*** $p < .001$.

Model fit of LMX

Model	χ^2 (df)	χ^2 /df	CFI	RMSEA (90 CI)	WRMR
Initial model	79.401*** (14)	5.672	.992	.108 (.086-.132)	.715
Final model	21.567* (9)	2.396	.998	.059 (.027-.092)	.395

Notes. $N = 413$. Final model: 6 of initial 7 items.

* $p < .05$. *** $p < .001$.

Model fit of job satisfaction

Model	χ^2 (df)	χ^2 /df	CFI	RMSEA (90 CI)	WRMR
Initial model	97.887*** (14)	6.992	.978	.122 (.100-.146)	.862
Final model	5.711 (5)	1.142	1.000	.019 (.000-.074)	.258

Notes. $N = 413$. Final model: 5 of initial 7 items.

*** $p < .001$.

Model fit of organizational commitment

Model	χ^2 (df)	χ^2 /df	CFI	RMSEA (90 CI)	WRMR
Initial model	595.275*** (90)	6.614	.946	.118 (.110-.128)	1.318
Final model	91.423*** (27)	3.386	.988	.077 (.060-.095)	.645

Notes. $N = 413$. Final model: 9 of initial 15 items.

*** $p < .001$.

Model fit of OCBs

Model	χ^2 (df)	χ^2 /df	CFI	RMSEA (90 CI)	WRMR
Initial model	98.119*** (34)	2.886	.965	.069 (.053-.085)	.790

Notes. $N = 413$. No adjustments.

*** $p < .001$.

Model fit of emotional exhaustion

Model	χ^2 (df)	χ^2 /df	CFI	RMSEA (90 CI)	WRMR
Initial model	224.949*** (27)	8.331	.965	.138 (.121-.155)	1.236
Final model	21.993** (9)	2.444	.994	.061 (.029-.094)	.488

Notes. $N = 413$. Final model: 6 of initial 9 items.

** $p < .01$. *** $p < .001$.

Model fit of Big Five personality traits

Model	χ^2 (df)	χ^2 /df	CFI	RMSEA (90 CI)	WRMR
Initial model	1158.715*** (179)	6.473	.847	.116 (.110-.122)	1.945
Final model	575.584*** (125)	4.605	.920	.094 (.086-.102)	1.467

Notes. $N = 413$. Final model: All items of agreeableness and conscientiousness, 4 of initial 5 items of extraversion and openness, 3 of initial 4 items of neuroticism.

*** $p < .001$.

References:

- Olaru, G., Schroeders, U., Hartung, J., & Wilhelm, O. (2019). Ant Colony Optimization and local weighted structural equation modeling. A tutorial on novel item and person sampling procedures for personality research. *European Journal of Personality, 33*(3), 400–419. <https://doi.org/10.1002/per.2195>.
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- Stützle, T. & Hoos, H. H. (2000). MAX-MIN ant system. *Future Generation Computer Systems, 16*(8), 889–914. [https://doi.org/10.1016/S0167-739X\(00\)00043-1](https://doi.org/10.1016/S0167-739X(00)00043-1)