TECHNISCHE UNIVERSITÄT DRESDEN
Professur für METHODEN DER PSYCHOLOGIE UND KOGNITIVE MODELLIERUNG
TUD:SC Disruption and Societal Change

I FEEL AND I KNOW THINGS
INTEGRATING CLIMATE ANXIETY AND KNOWLEDGE ABOUT CLIMATE CHANGE IN EXPLAINING ENVIRONMENTAL BEHAVIOUR

Gundula Thiele, M.Sc., Prof. Stefan Scherbaum, Dr. Caroline Surrey | Contact: gundula.thiele@tu-dresden.de

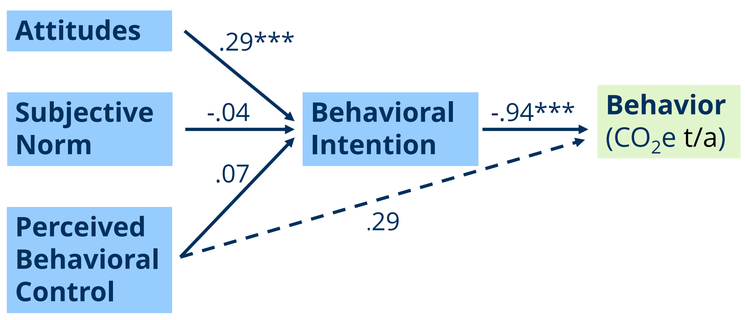
Initial idea: Integrating climate change knowledge and anxiety into the Theory of Planned Behavior (TPB; 1,4)

- Broadening the theory – knowledge and anxiety as cognitive and affective sides of representing and processing climate change
- Potential pathways for future interventions
- Foundation for methodological extensions: theory-reduced modelling

The problem: Heterogeneous results on TPB's explanation of behaviour

- Variance explanation for measures of behaviour around 27% (2)
- Attitude Behaviour Gap: Variance explanation for measures of behaviour around 27% (6)
- Intentions fail to predict environmental behaviour (3, 5)
- On top: only 39% of variance in intention measures are explained by the predictors of the TPB (2)

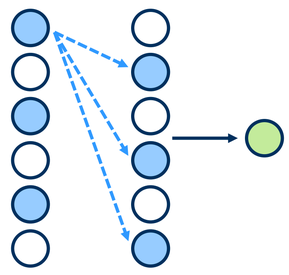
Converging: TPB is not reproducible in our dataset via structural equation modelling (SEM)



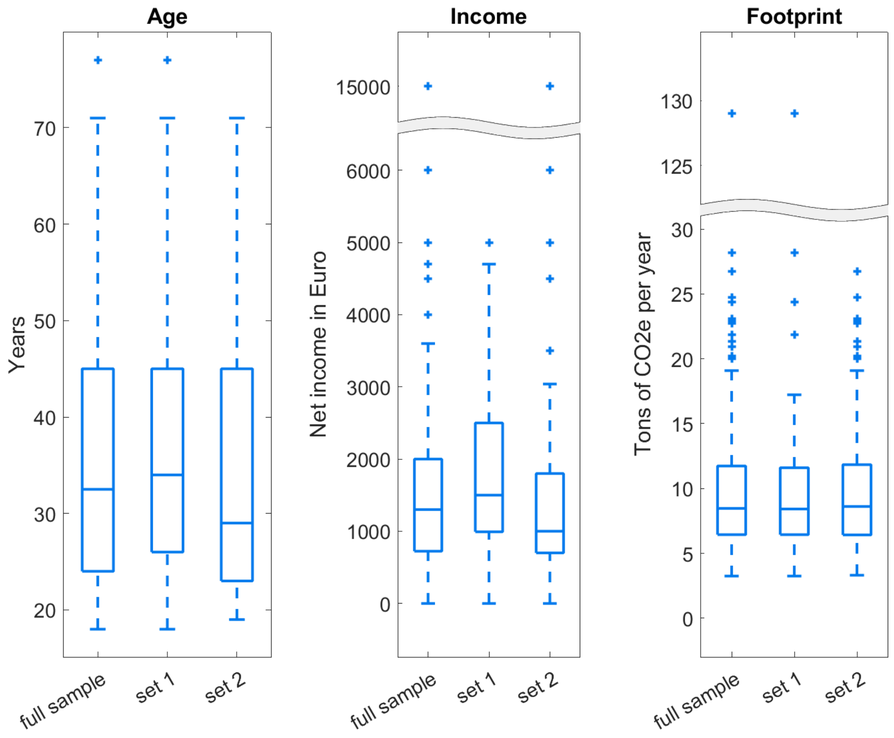
Fit indices: *RMSEA* = 0.035, *SRMR* = 0.044, *CFI* = 0.995, *IFI* = 0.996

New Strategy: Modelling with fewer theoretical assumptions

Steps:
- Split Dataset
- Permute model specifications
- Estimate fit indices of each model specification within the first dataset
- choose model with the best fit & test predictors in the second dataset

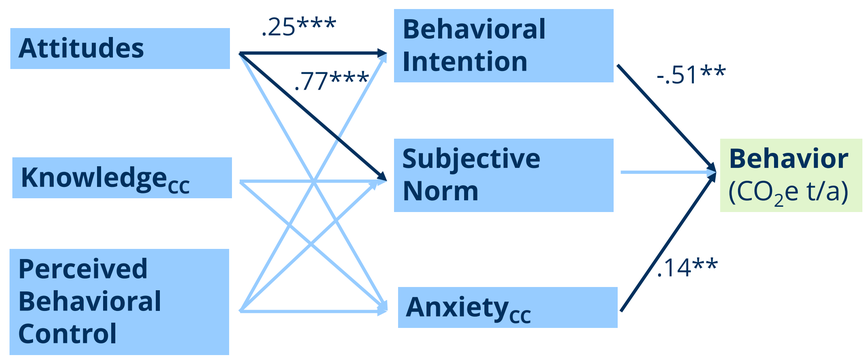


Sample (*N* = 140 in full sample, *N* = 70 per subset)



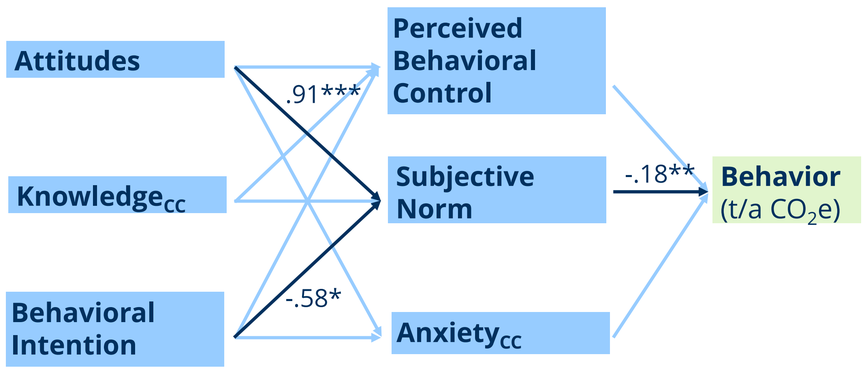
Results: (more than) two possible solutions

1st pick – best fit in 1st dataset:
- best fit within the first dataset (indices below)
- Coefficients calculated with second dataset



	RMSEA	*SRMR*	*CFI*	*IFI*
1st dataset	0.002	0.04	0.999	0.999
2nd dataset	0.12	0.06	0.93	0.94

4th pick – second best variable permutation:
- 4th best fitting model in first dataset
- 2nd and 3rd were slight variations of the 1st pick with different connections



	RMSEA	*SRMR*	*CFI*	*IFI*
1st dataset	0.001	0.05	0.999	0.999
2nd dataset	0.15	0.08	0.88	0.89

Discussion

Outcomes
- Anxiety as significant predictor of behavior alongside intentions and attitudes (indirect)
- Best fitting models show good enough fit in second dataset

Sample & measures
- Small *N* for SEM
- (Online) questionnaire data & partial manual evaluation of questionnaire data
- Low mean anxiety (*M* = 1.93; similar to previous research, e.g. 7, 8)

Approach to explaining (environmental) behavior
- SEM as a method
  - Assumption of relations and hierarchy
  - Fit measures
  - Usefulness of SEMs for application
- Neglect of contextual/systemic factors
- Knowledge and anxiety as (incomplete) representatives for representations of climate change

Open questions
- Post-hoc analysis: Isolate the questions on effectiveness knowledge and use the subscore?
- Can models permutations be analysed on an aggregated level (similar approach as specification curve analysis)?

References

(1) Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2). https://doi.org/10.1016/0749-5978(91)90020-T
(2) Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A meta-analytic review. In *British Journal of Social Psychology* (Vol. 40, p. 471).
(3) ElHaffar, G., Durif, F., & Dubé, L. (2020). Towards closing the attitude-intention-behavior gap in green consumption: A narrative review of the literature and an overview of future research directions. *Journal of Cleaner Production*, *275*, 122556.
(4) Fishbein, M. A., & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*. Addison-Wesley.
(5) Frank, P., & Brock, C. (2018). Bridging the intention–behavior gap among organic grocery customers: The crucial role of point-of-sale information. *Psychology & Marketing*, *35*(8), 586–602.
(6) Kollmuss, A., & Agyeman, J. (2002). Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, *8*(3), 239–260. https://doi.org/10.1080/13504620220145401
(7) Whitmarsh, L., Player, L., Jiongco, A., James, M., Williams, M., Marks, E., & Kennedy-Williams, P. (2022). Climate anxiety: What predicts it and how is it related to climate action? *Journal of Environmental Psychology*, *83*, 101866. https://doi.org/10.1016/j.jenvp.2022.101866
(8) Wullenkord, M. C., Tröger, J., Hamann, K. R. S., Loy, L. S., & Reese, G. (2021). Anxiety and climate change: A validation of the Climate Anxiety Scale in a German-speaking quota sample and an investigation of psychological correlates. *Climatic Change*, *168*(3), 20. https://doi.org/10.1007/s10584-021-03234-6