

The multivariate relationship between sleep quality, mental health, personality, and the brain with emotion regulation

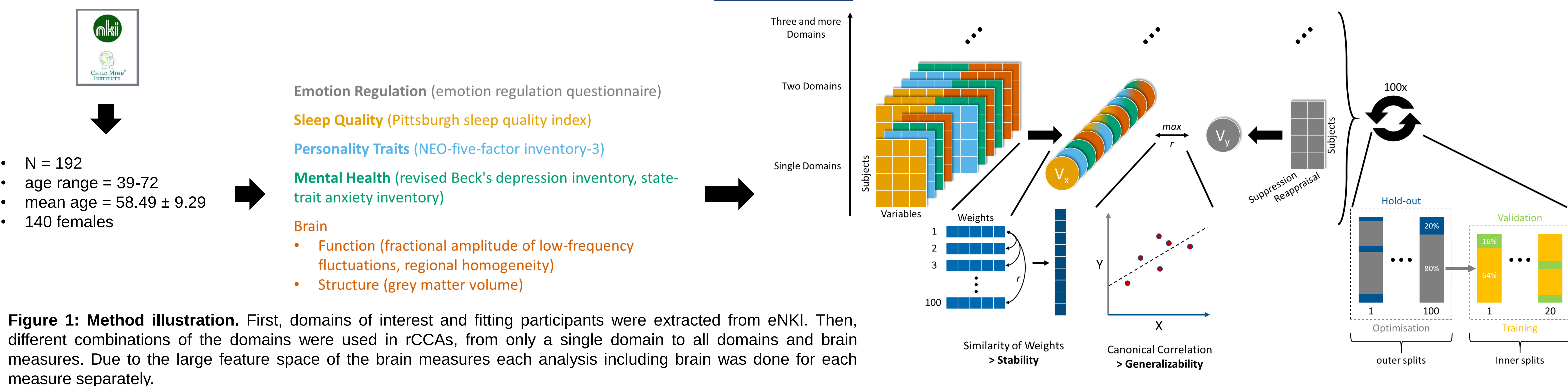
Gerion M. Reimann¹, Vincent Küppers^{1,2}, Felix Hoffstaedter^{1,3}, Robert Langner^{1,3}, Simon B. Eickhoff^{1,3}, Masoud Tahmasian^{1,3}

¹Institute of Neuroscience and Medicine, Brain and Behaviour (INM-7), Research Centre Jülich, Jülich, Germany. ²Department of Nuclear Medicine, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany. ³Institute for Systems Neuroscience, Medical Faculty, Heinrich Heine University Düsseldorf, Düsseldorf, Germany.

INTRODUCTION

- The two most studied emotion regulation (ER) strategies [1]:
 - Suppression** (inhibition of emotion expression) is associated with mental disorders (=maladaptive)
 - Reappraisal** (reinterpretation of emotional stimulus) relates to mental well-being and successful regulation (=adaptive)
- ER utilization is differently associated with various domains such as mental health [2], personality [3], sleep quality [4], as well as brain structure [5] and function [6].
- Previous research mostly isolated and/or in sub-groups or experimental designs like sleep deprivation [4].
- Regularized canonical correlation analysis (rCCA) on the enhanced Nathan Kline institute - Rockland sample (eNKI)
 - Multivariate relationship.
 - In general population.

METHODS



RESULTS

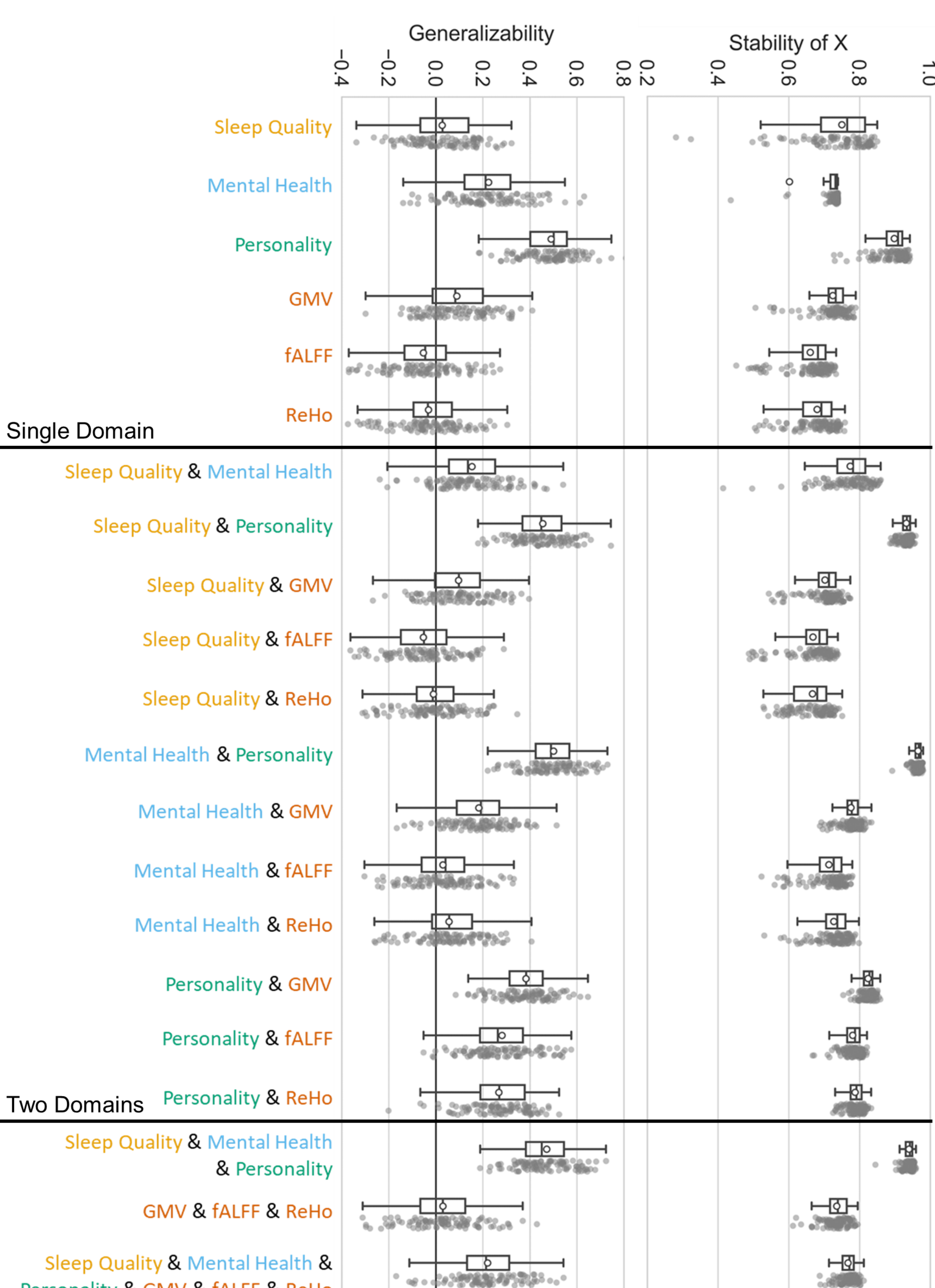


Figure 2: Generalizability and stability of the different rCCA models. Shown are the first associative effects. Abbreviations: fALFF: fractional amplitude of low-frequency fluctuations, GMV: grey matter volume; ReHo: regional homogeneity.

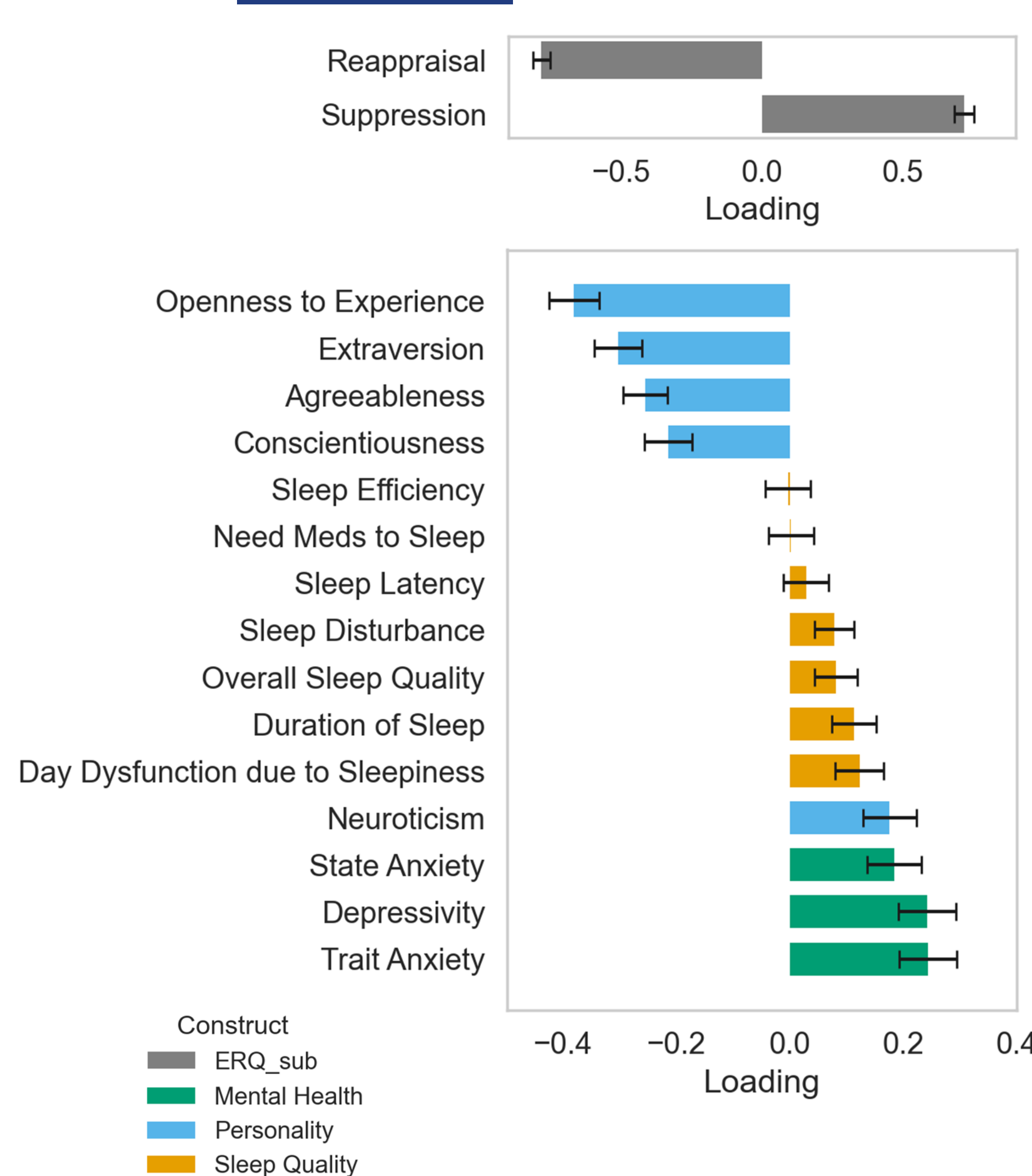


Figure 3: Behavioral loadings. Loadings of the first associative effect of the model including all domains and brain measures. Shown are the first associative effects.

- Generalizability is low for sleep quality and brain single domain models.
- Adding brain measures to the behavioral models with good performance decrease their generalizability and stability.
- Anxiety and depressive symptoms as well as neuroticism are correlated with suppression and anticorrelated with reappraisal, while other personality traits show the opposite directionality.

CONCLUSION

- Mental health and personality traits are more strongly associated with the utilization of suppression and reappraisal, rather than sleep quality and brain features.
- The association follows a dimensionality in which the negative expression of a variable is correlated with suppression and anticorrelated with reappraisal supporting the classification as maladaptive and adaptive.

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CONTACT

m.tahmasian@fz.juelich.de
gerionreimann@gmail.com