



Marburg
University

Introducing openESM

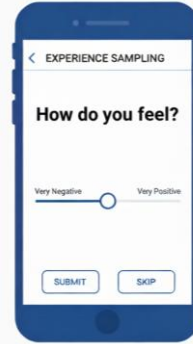
SAA · August 2026

Björn Siepe
Department of Psychology, Marburg University





N = 150
Affect



N = 79
Personality



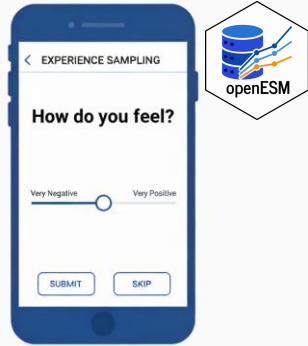
N = 243
Depression



N = 104
Life Events



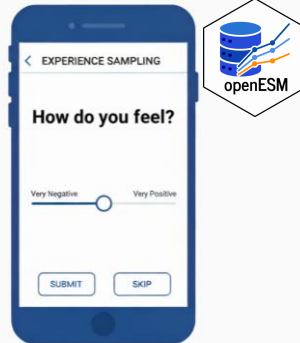
N = 150
Work Stress



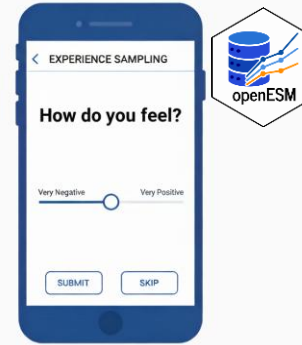
N = 150
Affect



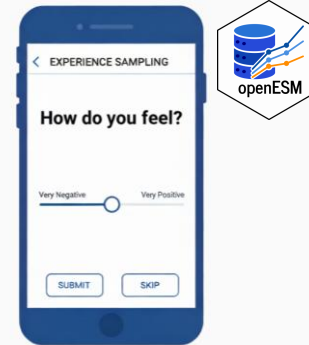
N = 79
Personality



N = 104
Life Events



N = 243
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Introducing openESM



Database

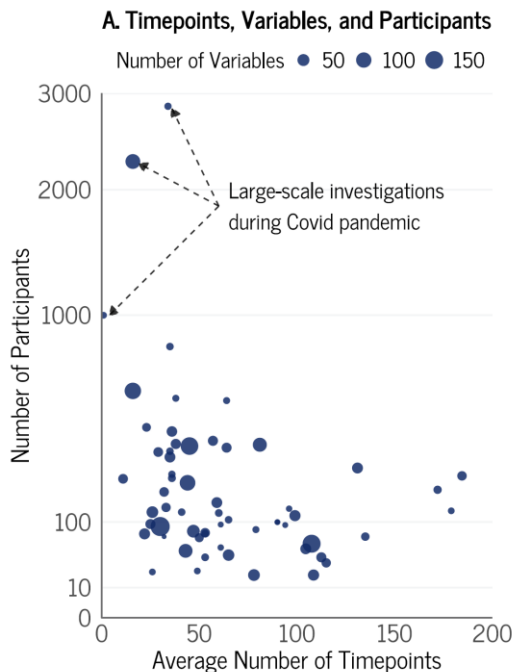
- Open-source
- Harmonized
- Rich metadata

Scale

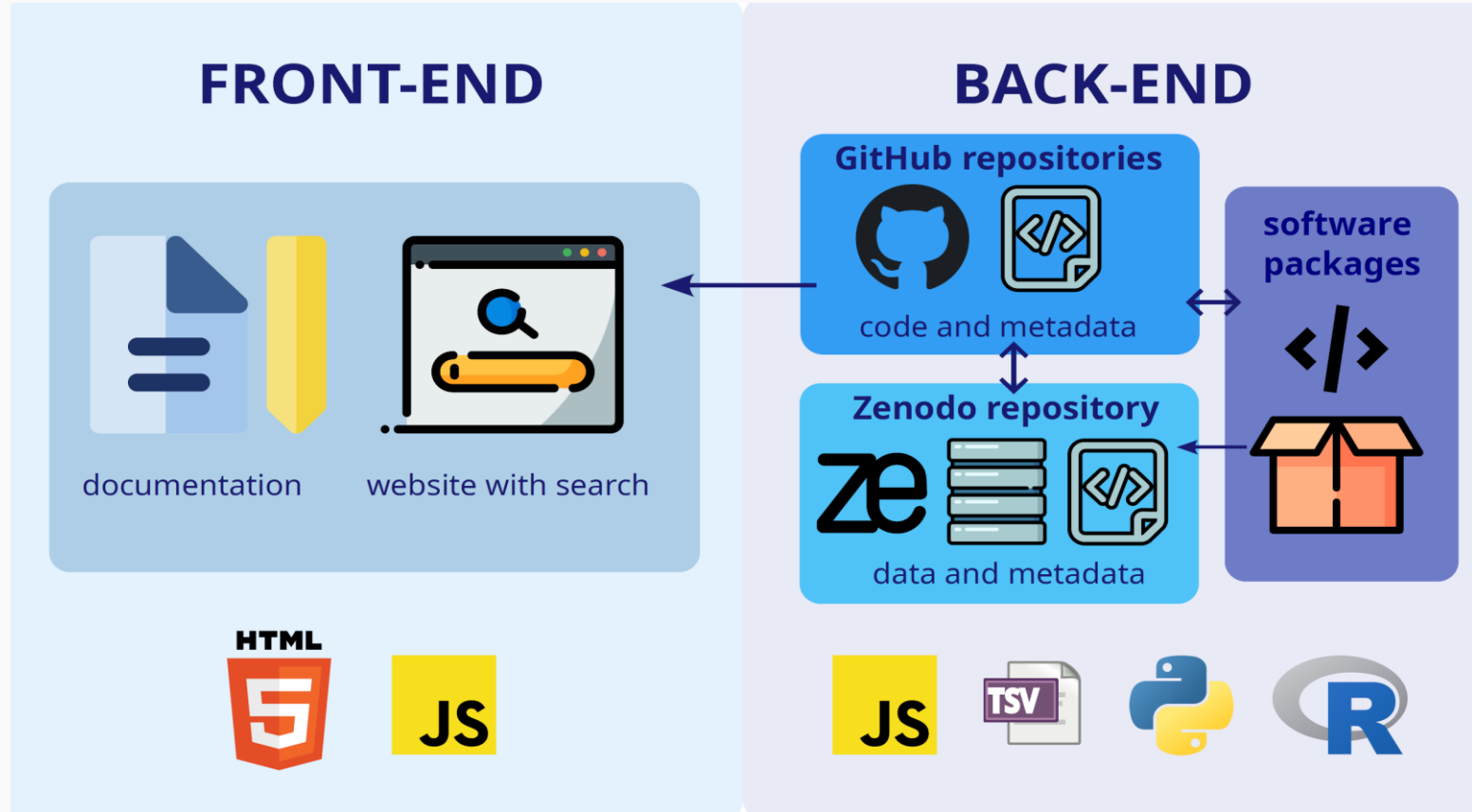
- **62** datasets
- **>17,000** participants
- **>900,000** observations

Access

- Website with search
-  and  packages

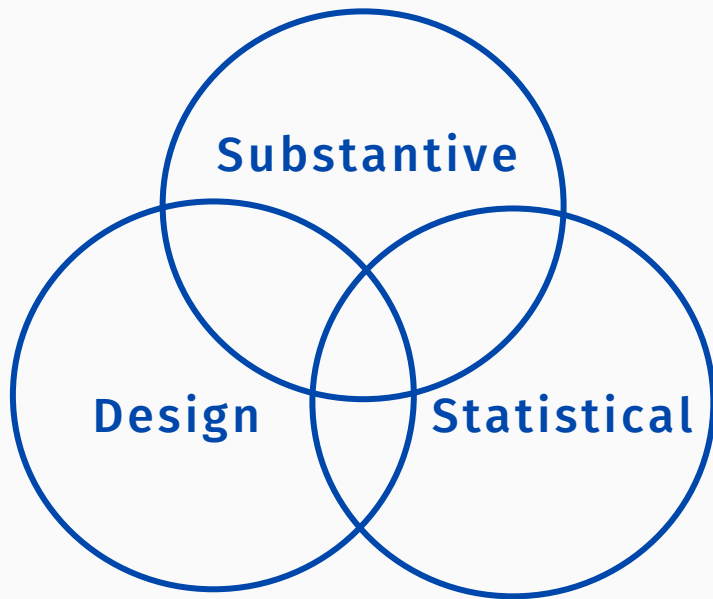


Architecture



Example Analysis

Does high positive affect co-occur with low negative affect within persons?



Data

- 39 datasets
- 8,456 individuals
- ~529K observations

Heterogeneity

- How strongly do participants and datasets differ?

Analysis

- Within-person momentary correlations
- Multi-level meta-analysis
- Sensitivity analyses

Example Analysis

Substantive

Pooled effect:

$r = -0.49$ [95% CI: -0.54, -0.42]

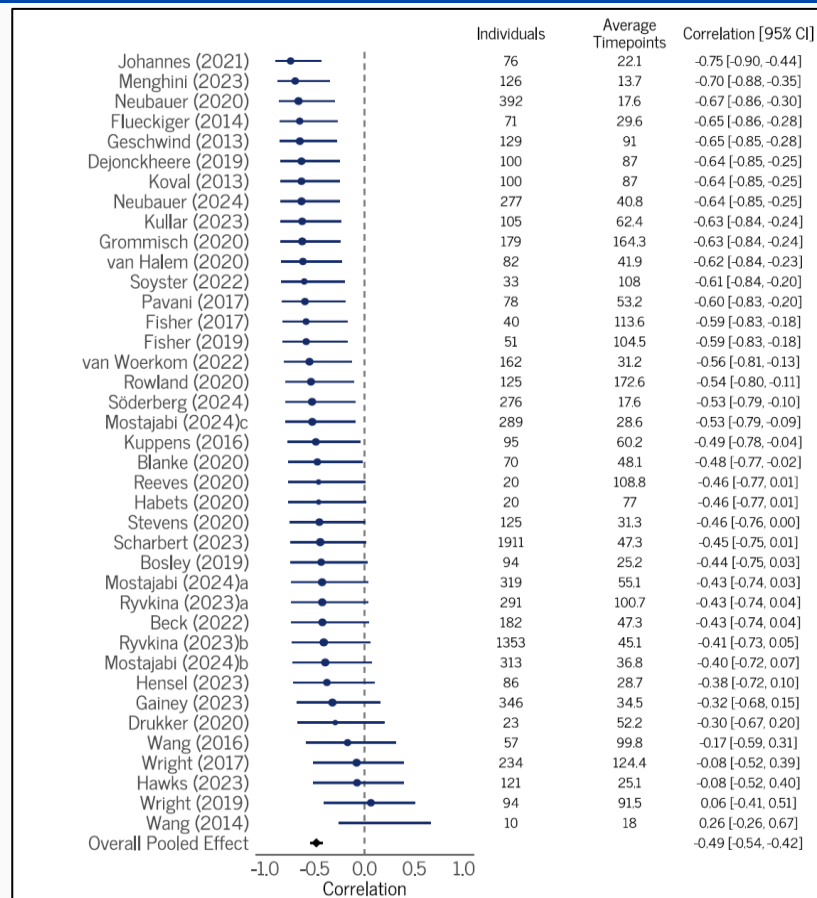
Design

More prompts/day $\rightarrow$ stronger negative correlation:

$\beta = -0.04$ (95% CI: [-0.07, -0.01])

Statistical

Stable across 12 preprocessing and modeling choices



Emotion Regulation Difficulties in Daily Life: Assessment, Dynamics, and Links to Stress-Affective States and Traits

Sicorello, M.^{1,2}, Heyse, W.³, Pruessner, L.³, Elsaesser, M.⁴, Kolar, D. R.⁵

- 214 adults
- 60 time points
- 10 days, 6x/day (semi-randomized prompts)
- Many emotion regulation measures

Open Play: A longitudinal dataset of multi-platform video game digital trace data and psychological measures

AUTHORS

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AFFILIATIONS

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Karolinska Institute
University of Oxford
University of Oxford

- 1,284 adults
- 30 time points
- 30 days daily
- Measures related to gaming, stress, psychological needs
- Lots of additional data (videogame tracing data, time use, ...)

Next Steps

Data & Metadata

- Add new datasets
- Expand metadata
- Annotate cross-sectional data

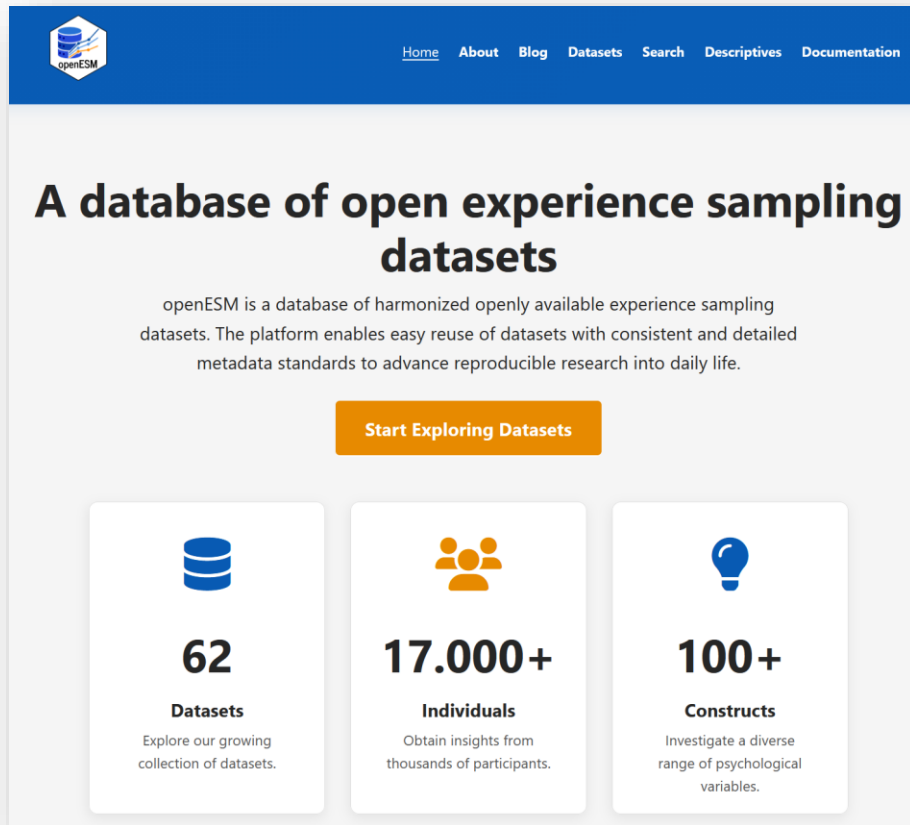
Software & Projects

- Simplify data submission process
- DFG Grant:
Empirical Benchmarking of Time Series Models in Psychology: Building a Foundation for Personalized Prediction



Goal:

Turn openESM into a continuously evolving community resource for cumulative ESM research



The screenshot shows the homepage of the openESM website. At the top is a blue navigation bar with the openESM logo on the left and a menu of links (Home, About, Blog, Datasets, Search, Descriptives, Documentation) on the right. The main content area has a large heading 'A database of open experience sampling datasets'. Below this is a paragraph describing openESM as a database of harmonized, openly available experience sampling datasets that enable easy reuse with consistent metadata standards. A prominent orange button labeled 'Start Exploring Datasets' is centered below the text. At the bottom, there are three white cards with rounded corners, each featuring an icon, a large number, a category name, and a brief description. The first card shows a database icon, the number '62', the category 'Datasets', and the text 'Explore our growing collection of datasets.' The second card shows a group of people icon, the number '17.000+', the category 'Individuals', and the text 'Obtain insights from thousands of participants.' The third card shows a lightbulb icon, the number '100+', the category 'Constructs', and the text 'Investigate a diverse range of psychological variables.'

 [Home](#) [About](#) [Blog](#) [Datasets](#) [Search](#) [Descriptives](#) [Documentation](#)

A database of open experience sampling datasets

openESM is a database of harmonized openly available experience sampling datasets. The platform enables easy reuse of datasets with consistent and detailed metadata standards to advance reproducible research into daily life.

[Start Exploring Datasets](#)

Icon	Count	Category	Description
	62	Datasets	Explore our growing collection of datasets.
	17.000+	Individuals	Obtain insights from thousands of participants.
	100+	Constructs	Investigate a diverse range of psychological variables.

Collaborators



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Thank You!



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<https://bsiepe.github.io>



bsiepe.bsky.social

Slides & Paper



Resources

- All icons either from PowerPoint or fontawesome
 - <https://fontawesome.com/icons/bluesky>
- Python Software Foundation. (n.d.). *The Python logo*. <https://www.python.org/community/logos/> (PSF Trademark Policy)
- R Foundation for Statistical Computing. (2016). *R logo*. <https://www.r-project.org/logo/> (CC-BY SA 4.0)