



Marburg
University



Introducing openESM

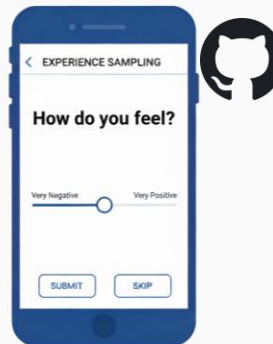
SDMH · April 2026

Björn Siepe, Jonas Haslbeck, Anabel Büchner, Matthias Kloft, Yong Zhang, Eiko Fried, Daniel Heck

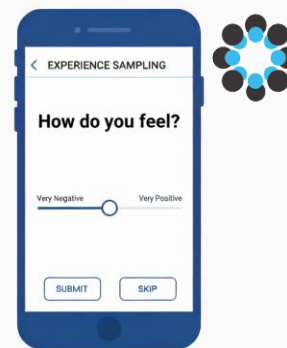
Psychological Methods Lab, Department of Psychology, Marburg University



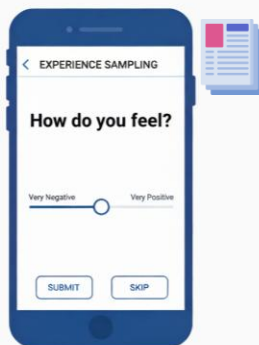
N = 150
Affect



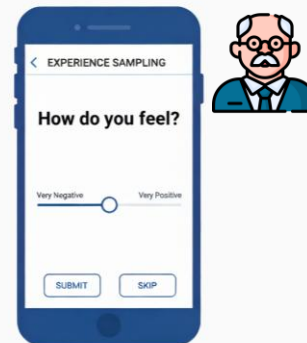
N = 79
Personality



N = 243
Depression



N = 104
Life Events



N = 150
Work Stress



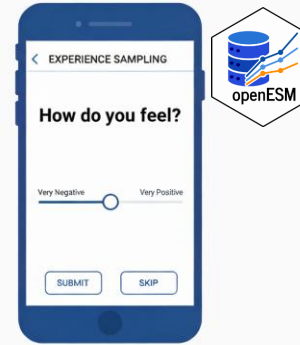
N = 150
Affect



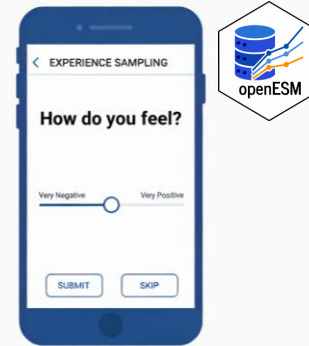
N = 79
Personality



N = 104
Life Events



N = 243
Depression



N = 150
Work Stress

Introducing openESM

DATABASE

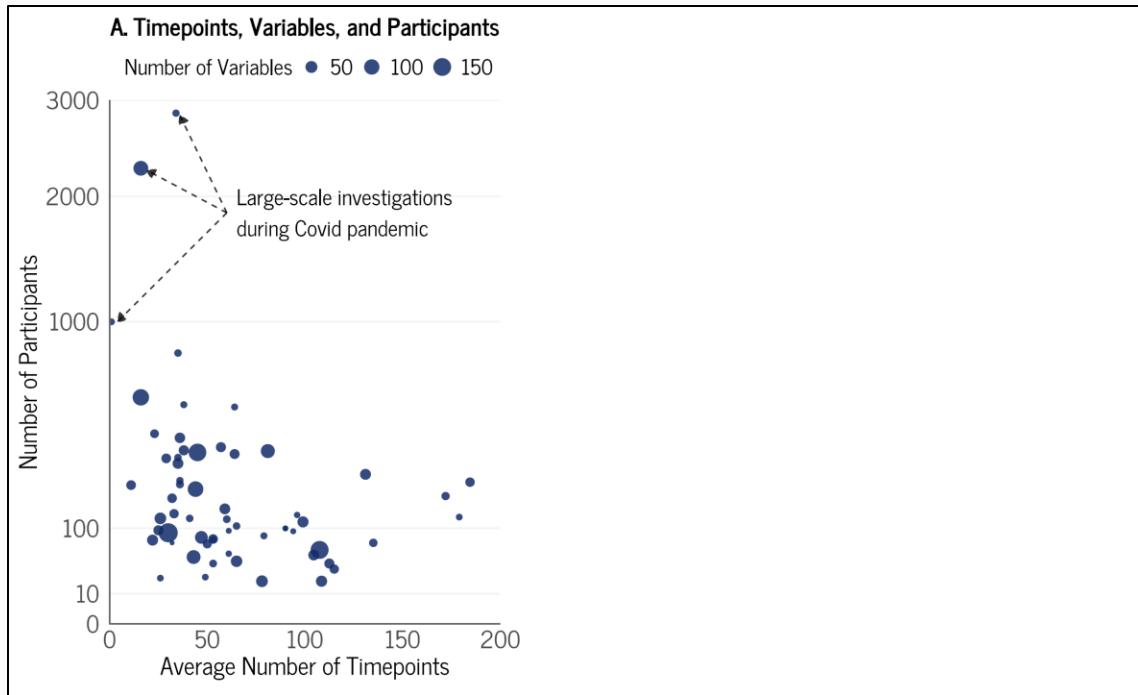
Open-source
Harmonized
Rich metadata

SCALE

60 datasets
>16,000 participants
>740,000 observations

ACCESS

Website with search
R and Python packages



Siepe, B. S., Haslbeck, J. M. B., Kloft, M., Büchner, A., Zhang, Y., Fried, E. I., & Heck, D. W. (2025)



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](#)



60

Datasets

Explore our growing collection of datasets.



16.000+

Individuals

Obtain insights from thousands of participants.



100+

Constructs

Investigate a diverse range of psychological variables.

Dataset Overview

Click any column header to sort · Scroll right to see all columns →

DATASET ID	FIRST AUTHOR	YEAR	TOPICS	PARTICIPANTS	TIME POINTS	DAYS	BEEPS/DAY	VARIABLES
0071_scharbert	Scharbert	2023	affect, well-being, Covi...	2855	140	28	5	1
0057_ryvkina	Ryvkina	2023	COVID, personality, e...	2272	84	14	6	9
0018_bailon	Bailon	2020	COVID, affect, pandem...	999	444	86	6	10
0049_pronizius	Pronizius	2024	helping, mood, prosoc...	803	35	7	5	14
0072_neubauer	Neubauer	2020	COVID, schooling, adol...	562	21	21	1	12
0046_ringwald	Ringwald	2024	empathy, affect, interp...	526	145	15	event-contingent	1
0039_kuczynski	Kuczynski	2021	loneliness, depression,...	515	75	75	1	13
0044_mostajabi	Mostajabi	2024	personality, affect, per...	396	42	7	6	2
0058_gainey	Gainey	2023	awareness, mindfulness...	356	42	7	6	3
0042_mostajabi	Mostajabi	2024	personality, affect, per...	342	70	10	7	3
0043_mostajabi	Mostajabi	2024	personality, affect, per...	330	50	10	5	3
0056_ryvkina	Ryvkina	2023	COVID, personality, e...	327	84	14	6	7
0062_neubauer	Neubauer	2024	timescales, COVID, aca...	321	84	14	6	14
0024_hasselhorn	Hasselhorn	2021	sampling frequency, af...	313	84	14	3 or 9	3
0050_pronizius	Pronizius	2024	helping, mood, prosoc...	303	35	7	5	14
0019_soederberg	Söderberg	2024	schooling, relationship...	302	40	10	4	2
0025_hasselhorn	Hasselhorn	2021	questionnaire length, ...	282	42	14	3	3
0026_fernandez	Fernández	2025	well-being, smartphon...	225	50	10	5	1
0064_wright	Wright	2017	affect, interpersonal di...	222	344	21	event-contingent	3
0040_nepal	Nepal	2024	mental health, resilien...	218	441	441	1	2

Variables

Some variable names are links — click them to explore item-level distributional statistics on the [Descriptives](#) page.

NAME	DESCRIPTION	TYPE	ANSWER CATEGORIES	DETAILS	LABELS	TRANSFORMATION	SOURCE	ASSESSMENT TYPE	CONSTRUCT	COMMENTS
id	Participant ID	categorical						ESM		
day	Day of study	other						ESM		
beep	Beep of the day	other						ESM		
happy	Happy	rating_scale	101		0 (not at all) to 100 (very much)	within-person centered		ESM	happiness, positive affect, affect	"We assessed affect in terms of eight common emotional states (e.g., Kuppens et al. 2010), which were based on the affective circumplex model (Russell 2003)."
excited	Excited	rating_scale	101		0 (not at all) to 100 (very much)	within-person centered		ESM	excitement, positive affect, affect, extraversion, big five	
relaxed	Relaxed	rating_scale	101		0 (not at all) to 100 (very much)	within-person centered		ESM	relaxation, positive affect, affect, neuroticism, big five	
satisfied	Satisfied	rating_scale	101		0 (not at all) to 100 (very much)	within-person centered		ESM	satisfaction, positive affect, affect	
angry	Angry	rating_scale	101		0 (not at all) to 100 (very much)	within-person centered		ESM	anger, negative affect, affect	
anxious	Anxious	rating_scale	101		0 (not at all) to 100 (very much)	within-person centered		ESM	anxiety, negative affect, affect, neuroticism, big five	
depressed	Depressed	rating_scale	101		0 (not at all) to 100 (very much)	within-person centered		ESM	depression, negative affect, affect, neuroticism, big five, psychopathology	
sad	Sad	rating_scale	101		0 (not at all) to 100 (very much)	within-person centered		ESM	sadness, negative affect, affect	

Descriptives

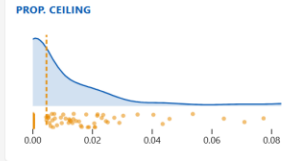
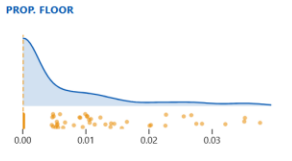
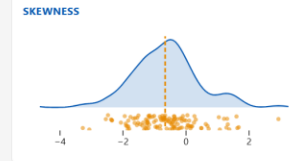
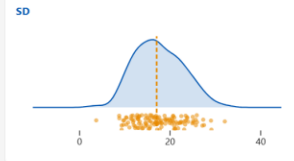
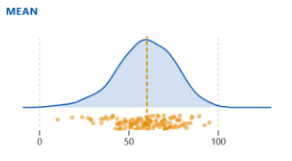
Item-level distributional statistics computed from within-person summaries across openESM datasets. Select a dataset and item to explore the distribution of participant-level statistics.

• Methods note

DATASET: Rowland (2020) ITEM: happy

Descriptives: Rowland (2020) · happy

DATASET	ITEM	N INCLUDED	N EXCLUDED	ICC
Rowland (2020)	happy	125	0	0.430



Per-statistic summary

STATISTIC	MEDIAN	IQR
Mean	60.063	19.879
SD	17.028	7.844
Skewness	-0.662	1.127
Prop. Floor	0.000	0.010
Prop. Ceiling	0.005	0.021

Overview

N included	125
N excluded	none
ICC	0.430
Empirical scale range	0 – 100
Mode counts	2: 1 / 4+: 124

Search Datasets and Variables

Use the search box below to find datasets and variables in the openESM database.

Filters

Dataset Size

Participants

Min: 40, Max: ∞

Max. Timepoints

Min: 1, Max: ∞

Days

Min: 1, Max: ∞

Data Types

Passive data

Cross-sectional data

Raw timestamp

Constructs

select: affect

Participants ≥ 40 × Cross-sectional × affect ×

2 datasets selected

Clear Selection

```
R Code
library(openesm)
datasets ← get_dataset(c("0001_fried", "0039_kuczynski"))

Python Code
import openesm
datasets = openesm.get_dataset(["0001_fried", "0039_kuczynski"])
```

32 datasets found

Kuczynski (2021) ✓

Found in: Topics Variables

Topics: loneliness, depression, affect, social interaction

Participants: 515 | **Time points:** 75 | **Days:** 75

Matching Variables

- social_interaction: Social interaction quantity

Fried (2021) ✓

Found in: Topics Variables

Topics: mental health, social contact, COVID

Participants: 80 | **Time points:** 56 | **Days:** 14

Matching Variables

- social_offline: Offline social contacts
- social_online: Online social contacts

Next Steps



Community

Involve researchers,
expand data diversity



Data & Metadata

Extend coverage and
documentation



Software

Add additional tools and
software

Goal:

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

Thank You!



openesmdata.org



bjoernsiepe+openesm@gmail.com

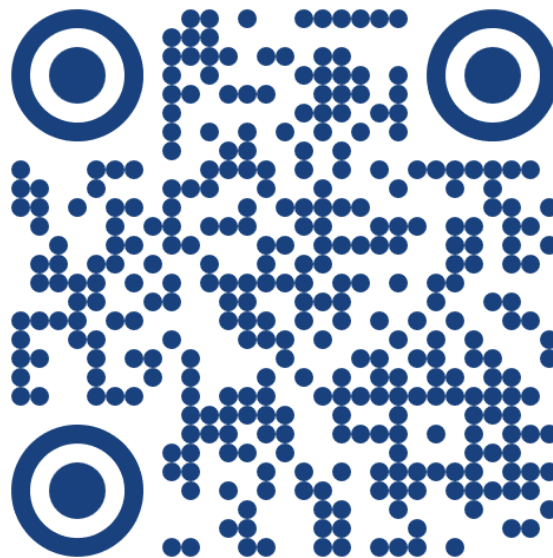


<https://bsiepe.github.io>



bsiepe.bsky.social

Slides & Preprint



References

Efron, B. (2001). Statistical modeling: The two cultures: Comment. *Statistical Science*, 16(3), 218-219.

Robinson, M.D., Vitek, O. (2019). Benchmarking comes of age. *Genome Biol* 20, 205 <https://doi.org/10.1186/s13059-019-1846-5>

Rocca, R., & Yarkoni, T. (2021). Putting Psychology to the Test: Rethinking Model Evaluation Through Benchmarking and Prediction. *Advances in Methods and Practices in Psychological Science*, 4(3), 10.1177/25152459211026864. <https://doi.org/10.1177/25152459211026864>

Siepe, B. S., Haslbeck, J. M. B., Kloft, M., Büchner, A., Zhang, Y., Fried, E. I., & Heck, D. W. (2025). Introducing openESM: A database of openly available experience sampling datasets. https://doi.org/10.31234/osf.io/qfdtb_v1

Resources

- All icons either from PowerPoint or fontawesome
 - <https://fontawesome.com/icons/bluesky>
 - <https://fontawesome.com/icons/glasses>
 - <https://fontawesome.com/icons/code>
 - <https://fontawesome.com/icons/dna>
- Python Software Foundation. (n.d.). *The Python logo*. <https://www.python.org/community/logos/> (PSF Trademark Policy)
- Rob Hyndman - <https://robjhyndman.com/hyndsight/m4comp/>
- Steni Sebastian - <https://medium.com/@ssteni/imagenet-what-why-and-how-e5ebed04abb5>
- R Foundation for Statistical Computing. (2016). *R logo*. <https://www.r-project.org/logo/> (CC-BY SA 4.0)
- James Grellier – Own Work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=10253357>
- Marcin Wichary from San Francisco, U.S.A. - [1]Uploaded by Partyzan_XXI, CC BY 2.0, <https://commons.wikimedia.org/w/index.php?curid=8198235>
- Carbon (<https://carbon.now.sh/>) for pretty code screenshots