Universität Marburg

Introducing openESM: A database of openly available experience sampling datasets

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October 18th, 2025 – Talk at the Emotional Disorder Genesis and Evolution (EDGE) Lab Meeting

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ESM Research: A Scale Problem

Typical ESM Study:

- 100-200 participants
- 1,000-10,000 observations
- multiple months to collect and clean

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3. Harmonize datasets manually (months)
4. Use openESM (minutes)

Introducing openESM

60 harmonized datasets • 16k+ participants • 740k+ observations

and packages for easy access

[1] R logo: https://www.r-project.org/logo/

[2] Python logo: https://www.python.org/community/logos/

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Test theories across contexts

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Substantive Research
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Design Research
Optimize measurement choices

Statistical Methods
Benchmark and develop methods

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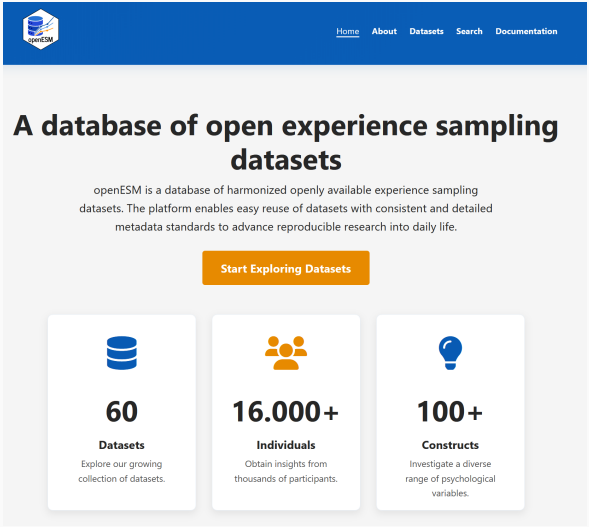
Live Demo


openESM
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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.

Design Process

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1. Cleaning

- Harmonized NAs
- Removed redundant columns
- Standardized ID, beep, day

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3. Annotation

- Hierarchical construct tags
- E.g., “angry” $\rightarrow$ anger $\rightarrow$ negative affect $\rightarrow$ affect

What’s inside

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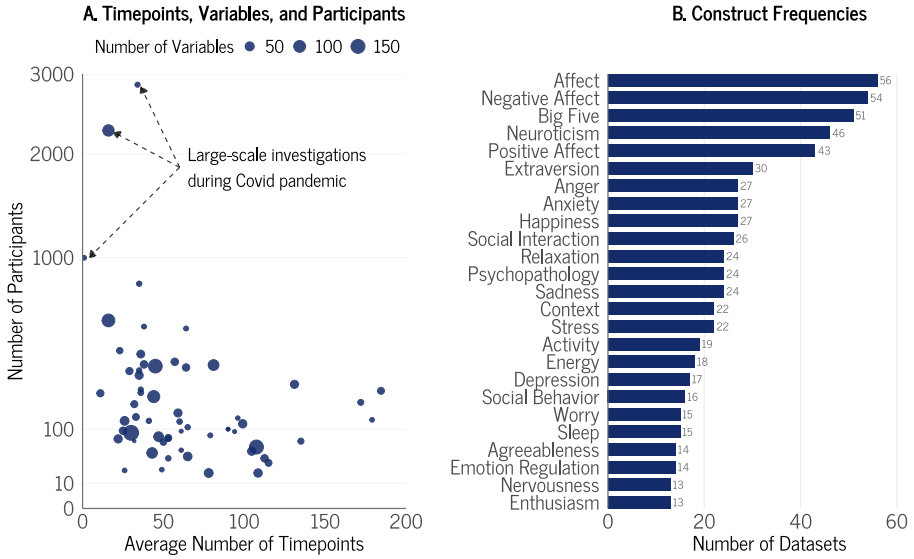
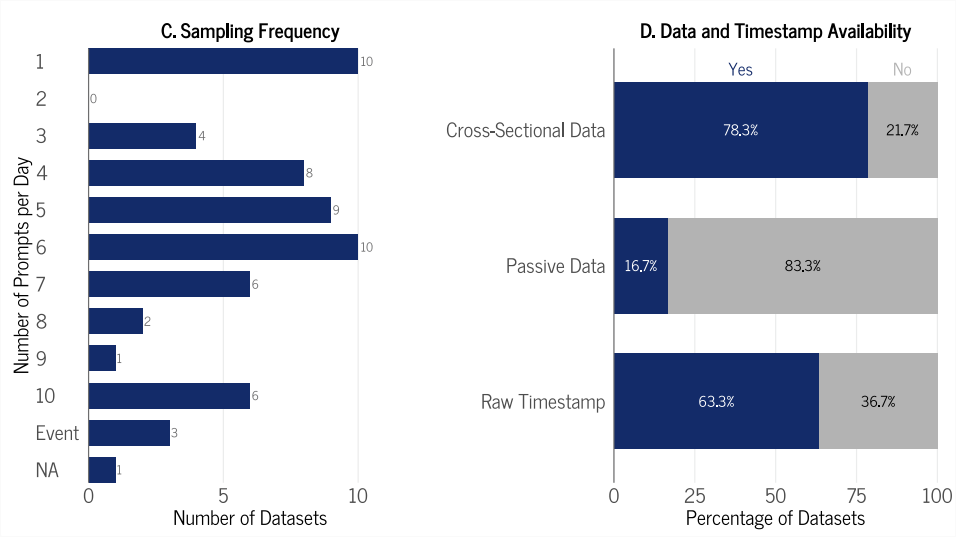


What's inside



Architecture Behind It

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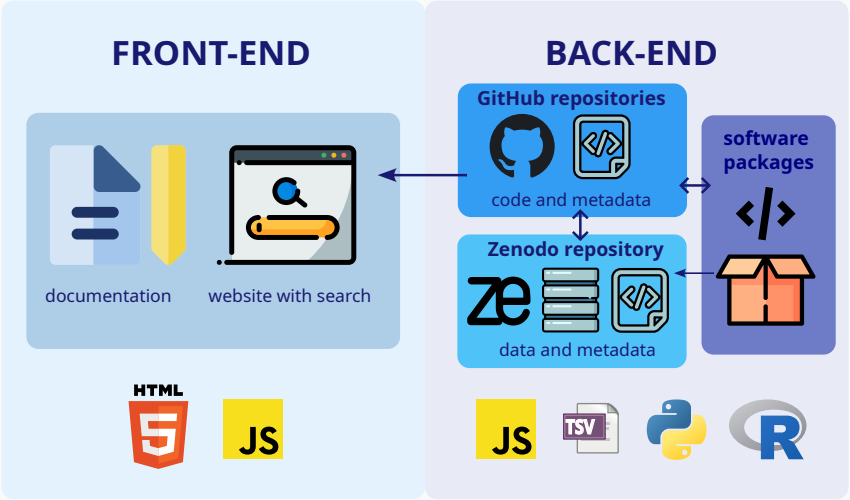

Example Analysis

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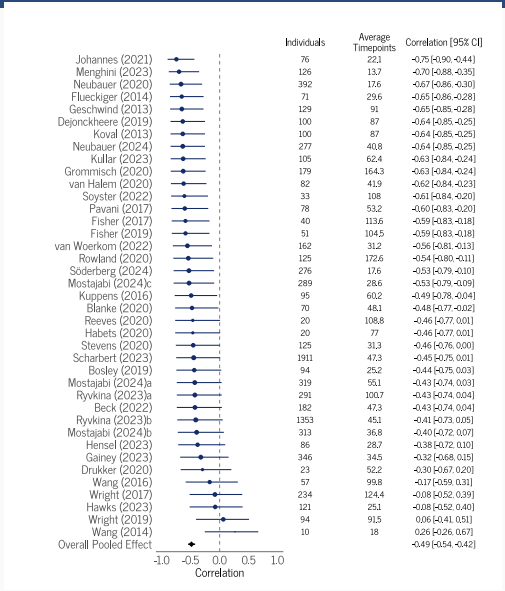

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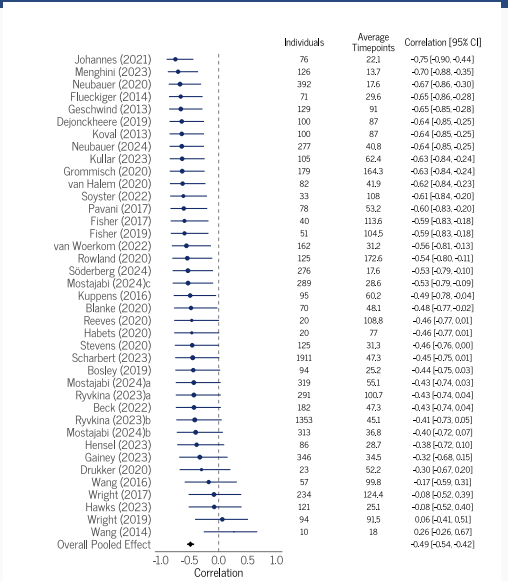

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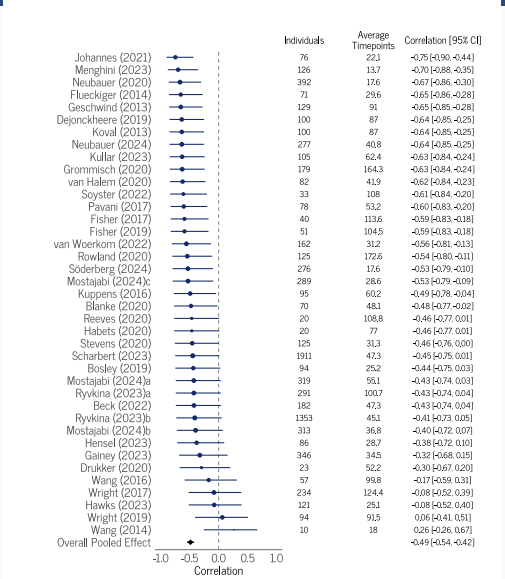
- **Design insight:** More prompts/day → stronger negative correlation
- **Robustness:** Stable across 12 preprocessing/modeling choices



Next Steps

- Community Involvement: Get people to help with data, more non-WEIRD experience sampling data
- Extending Database: Data and Metadata
- Extending Software: Benchmarking, more filtering options

Goal: turn openESM into a continuously evolving community resource for cumulative experience sampling research

Get In Touch

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- https://bsiepe.github.io/

Paper & Slides

References i