



INSTITUTE FOR EMPLOYMENT
RESEARCH
The Research Institute of the Federal Employment Agency

PASS-GEO

GENERATING SMALL-SCALE NEIGHBORHOOD INFORMATION FOR A LARGE GERMAN PANEL STUDY

The Power of Where Spatial Insights from Survey Data

Joint Spring Meeting of BBSR, BTU & SOEP RegioHub

Special Session – Data Pitches & Panel Discussion

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THE PASS-GEO-PROJECT

- Idea

Using rich **administrative data** of the Federal Employment Agency to generate information on the **small-scale living environment** of **panel survey-participants**

- Aim

- Generate **spatially** and **temporally comparable** characteristics for panel data analyses
- Generate a **data product** that is potentially available to data users

- Characteristics

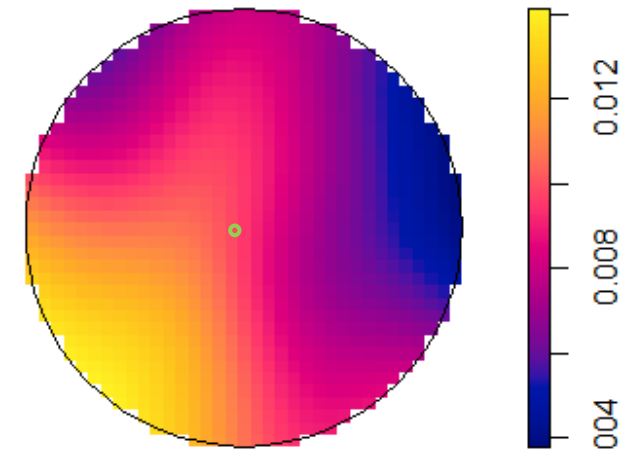
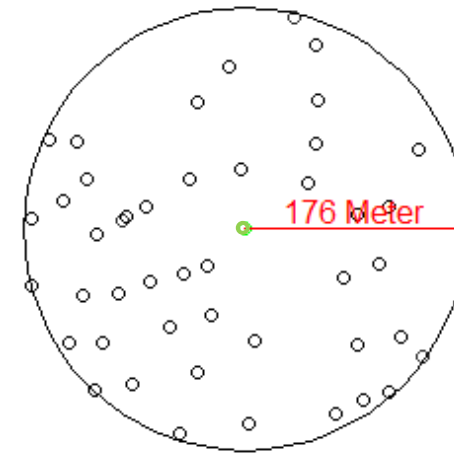
- Small-scale area/neighborhood data for a **nationally representative sample**
- Available for **multiple panel waves**
- Time-constant “**egohoods**” (Hipp & Boessen 2013)
(no administrative unit, centered over the survey household’s address)
- A range of **socioeconomic indicators**: composition with regard to
 - labor market information (wages, hours, employment groups, unemployment, welfare benefits)
 - Sociodemographic (gender, age, coarse nationality, education levels)

THE DATA

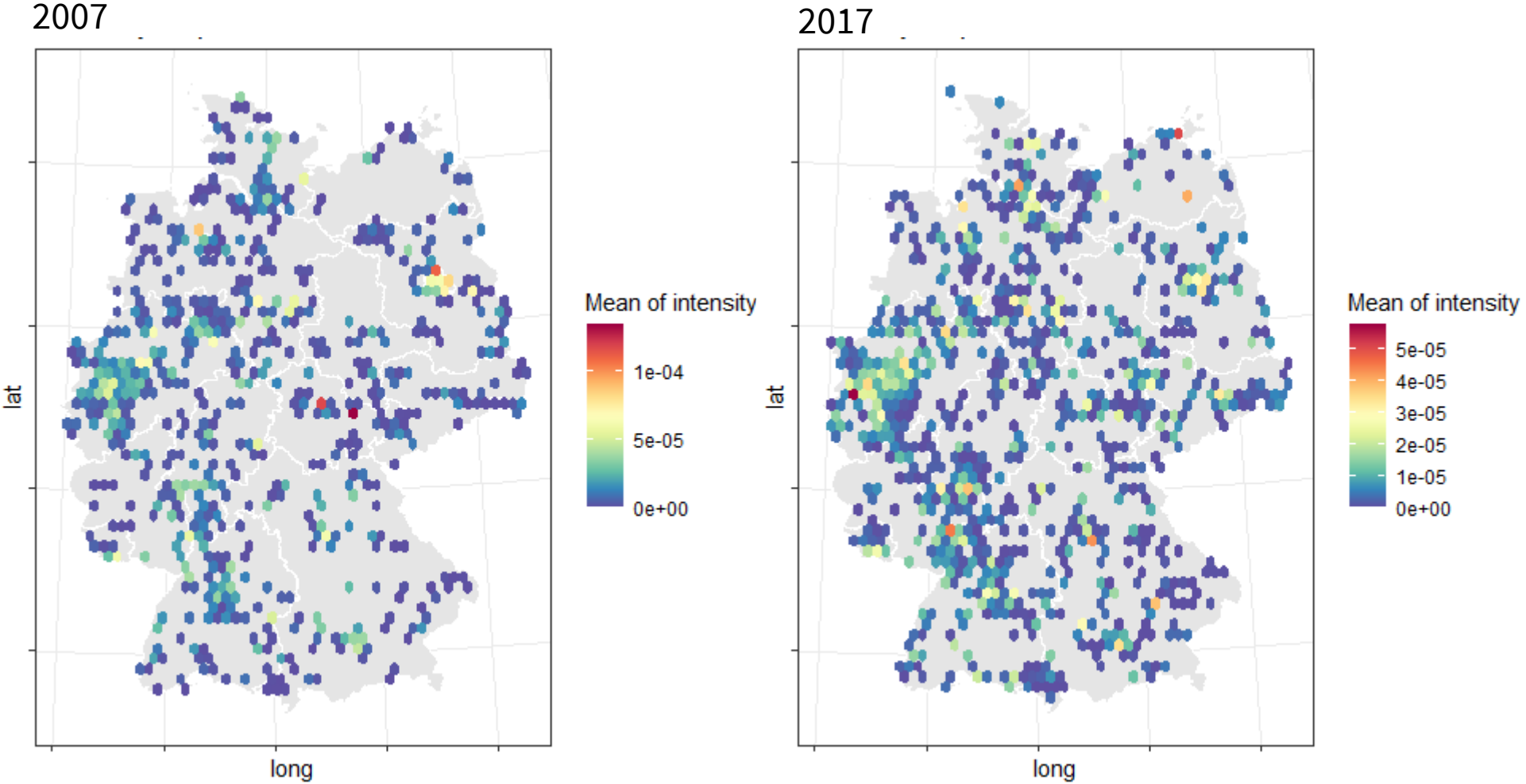
- Panel study “Labour Market and Social Security” (Trappmann et al. 2019)
 - Nationally **representative** German household panel study
 - **Dual sample** (general population and welfare benefit recipients [*ALG-2 / Bürgergeld*])
 - **Topics** include labor market, poverty, health, social integration, wellbeing
 - Currently **16 waves** available, with 5,000 households / 15,000 participants annually
- Egohood characteristics
 - **Spatial kernel density estimation**
 - highly anonymized
 - areas tailored to the living environment of the respondents
 - Adaptive neighborhood size (varying bandwidths according to population density)

APPROACH

- **Select** persons from the administrative data that live within the neighborhoods of PASS participants (2007-2017) and process their corresponding data
- Exclude PASS-households at the center of the buffer (**leave out mean**) (neighborhood information is independent of respondent data)
- Perform **kernel density/intensity** estimations
- **Normalize** and **standardize** the estimates, so they are better comparable across neighborhoods and time
- The resulting estimate closely **resembles a share** [0;1]



UNEMPLOYED WELFARE BENEFIT RECIPIENTS



DISCUSSION AND CONCLUSION

PASS-GEO provides the database for systematic analysis of spatial context effects

- Nation wide study with a large set of variables at great statistical detail
- eleven consecutive PASS panel waves (2007-2017)
- Tailor-made egohoods (no MAUP, centered on the PASS participant)
- Adaptive neighborhood size (urban-rural)
- Ease of interpretation (similar to shares)
- High level of data protection (no spatial properties left)
- Initial Results: Meaningful impact on individual level-outcomes

Proof of concept established, next steps: Evaluate publication of data set for PASS users

CONTACT

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