

# **Social diffusion of xenophobic attacks in Germany**

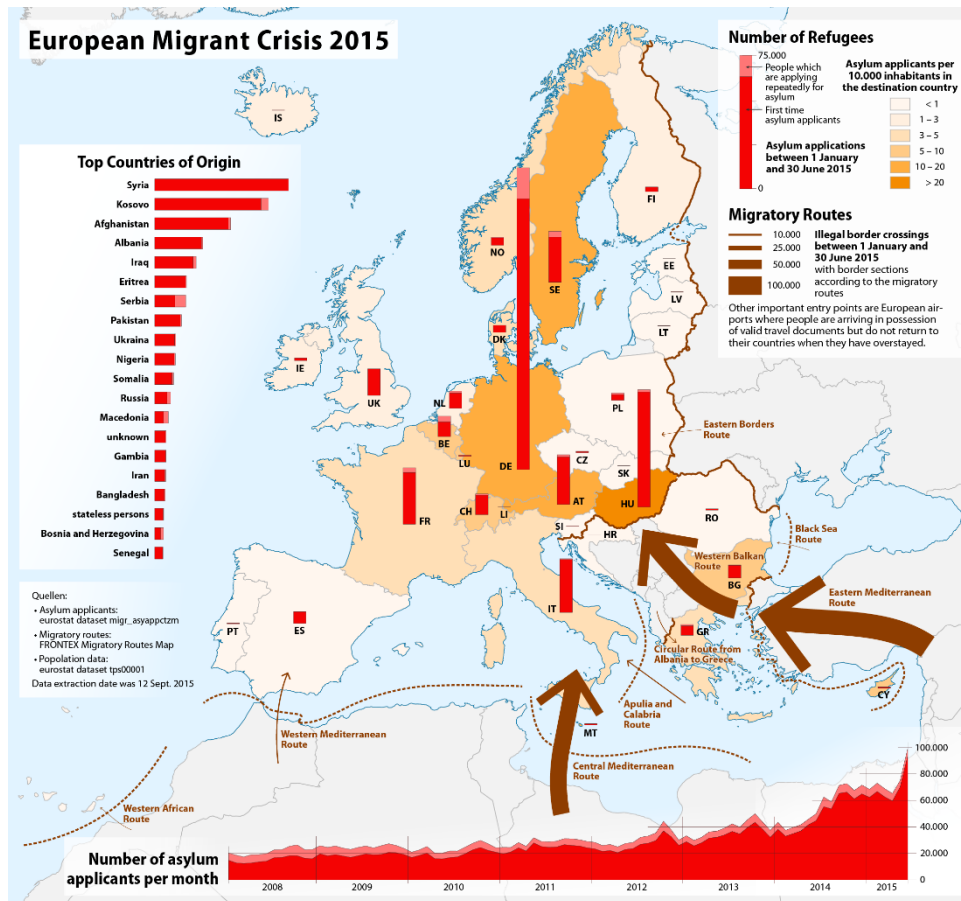
## **An application of web crawling**

**Thomas Hinz, Johannes Laufer, Sandra Walzenbach, and Franziska Weeber**

BigSurv2018: Exploring New Statistical Frontiers at the Intersection of Survey Science and Big Data  
October 25-27 in Barcelona

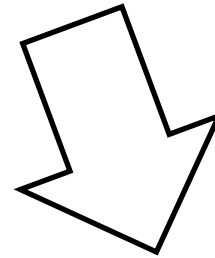
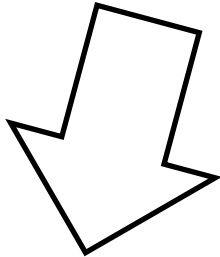
# Background

- In 2015, Germany experienced a massive migration of refugees: ~ 800.000 people



# Background

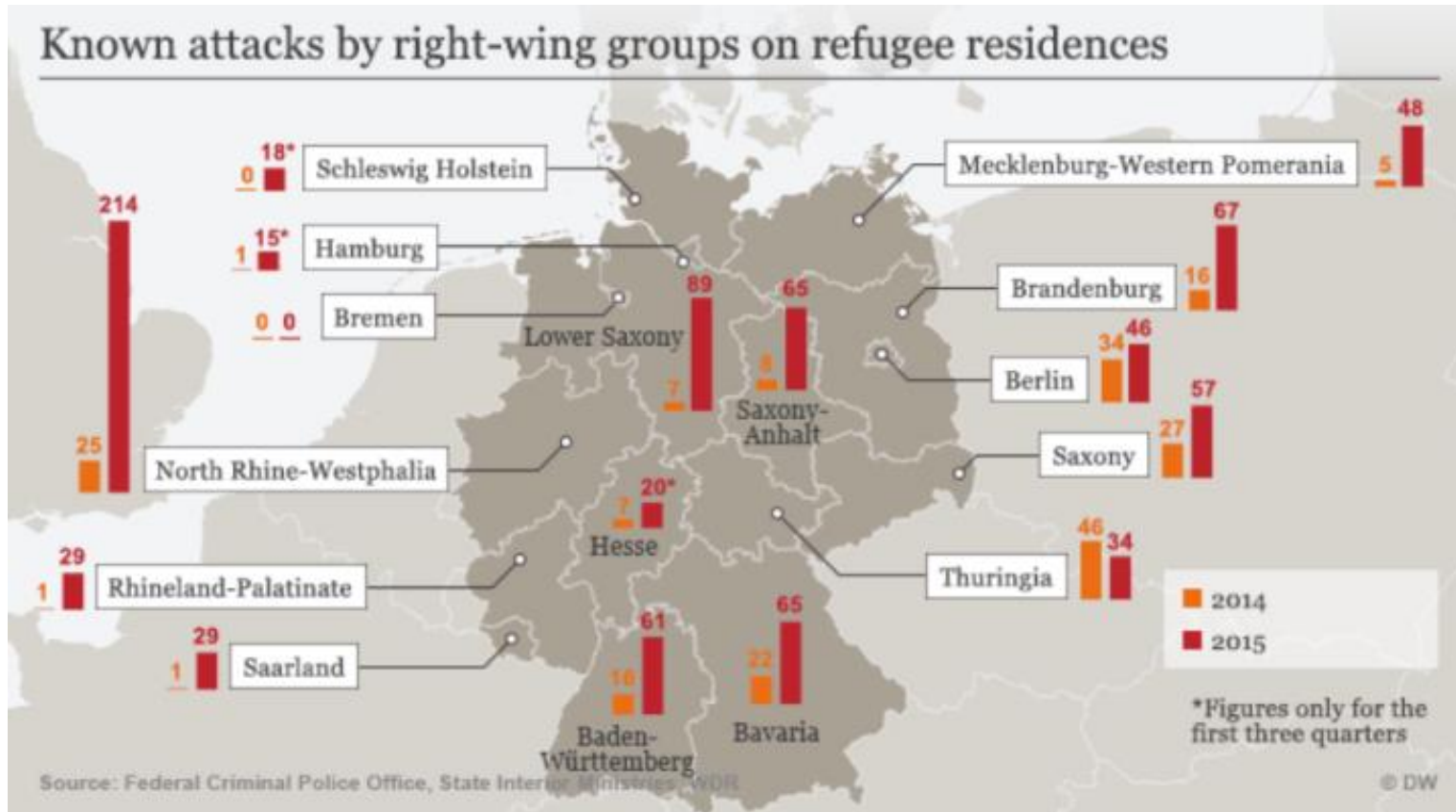
- German media talked about a “*refugee crisis*”
- Migration process was accompanied by a contested political debate



drastically growing number of xenophobic attacks

widespread willingness to voluntarily help arriving refugees

# Background



→ We will focus on arson attacks on accommodations or other facilities for refugees (inhabited or under construction)

# Research Question(s)

- How do arson attacks against collective accommodation facilities spread?
- Do previous attacks increase the probability of further attacks?
- Is there a socio-geographic pattern?
- Is violence a reaction to perceived economic threats?
- Which role does the media play?

# Methods

## Statistical Modelling

*Aust. N. Z. J. Stat.* 53(1), 2011, 1–26

doi: 10.1111/j.1467-842X.2011.00604.x

### Invited Paper with Discussion

#### MULTILEVEL DISCRETE-TIME EVENT HISTORY MODELS WITH APPLICATIONS TO THE ANALYSIS OF RECURRENT EMPLOYMENT TRANSITIONS

FIONA STEELE

*University of Bristol*

- Discrete event analysis  
(Steele 2011)

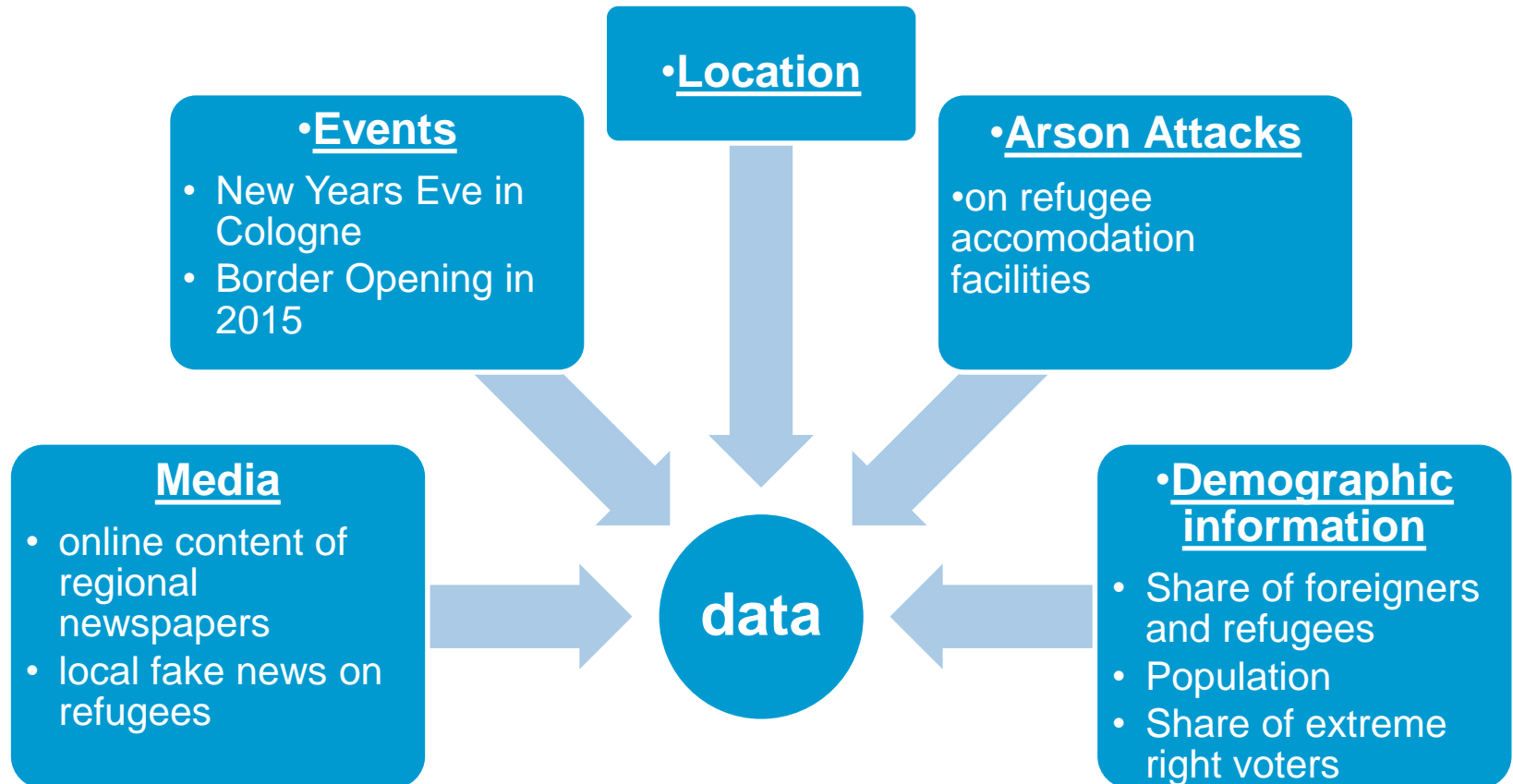
→ event data set including 227 arson attacks on refugee homes\*  
(from the first quarter of 2015 to the first quarter of 2017)

- balanced panel
- individual dimension: county identifier
- time dimension: period of 14 days
- additional time-constant and time-variant county-level data, and time-variant nation data

\*Source: “Chronik flüchtlingsfeindlicher Vorfälle” (Amadeu Antonio Foundation and PRO ASYL)

Based on publicly available newspaper reports, press releases of the police as well as reports from local and regional helpdesks for victims of right-wing, racist, and anti-semitic violence.

# (Big) Data



## (Big) Data

Spatial panel data  
on arson attacks  
on refugee  
accommodations  
in Germany  
between 2015  
and 2017

# Data: Explanatory Variables

## time-constant county-level data

- population size 2015<sup>a</sup>
- unemployment rate<sup>a</sup>
- share of foreigners<sup>a</sup>
- share of voters supporting the extreme right party NPD<sup>b</sup>

## time-variant county-level data

- media coverage of xenophobic attacks<sup>c</sup>
- fake news<sup>d</sup>

<sup>a</sup> Source: German Federal Statistical Office

<sup>b</sup> <https://www.bundeswahlleiter.de/>

<sup>c</sup> regional editions of BILD (from DIGAS press database (Axel Springer Syndication))

<sup>d</sup> hoaxmap

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<sup>d</sup> Flüchtling, hoaxmap

# Data: Explanatory Variables

## media coverage of the identified xenophobic attacks



data basis: regional editions of Bild

(from DIGAS press database under the responsibility of the Axel Springer Syndication)

Text corpus was searched for arson attacks on refugee homes in the respective incident locations up to one week after the incident

→ Variable indicating whether an arson attack was reported about or not.

Transferred to panel format, the media coverage variable reflects the number of arson attacks reported about in a specific county-period  $ij$ .

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# Data: Explanatory Variables

## Fake news

data basis: [hoaxmap.org](http://hoaxmap.org)

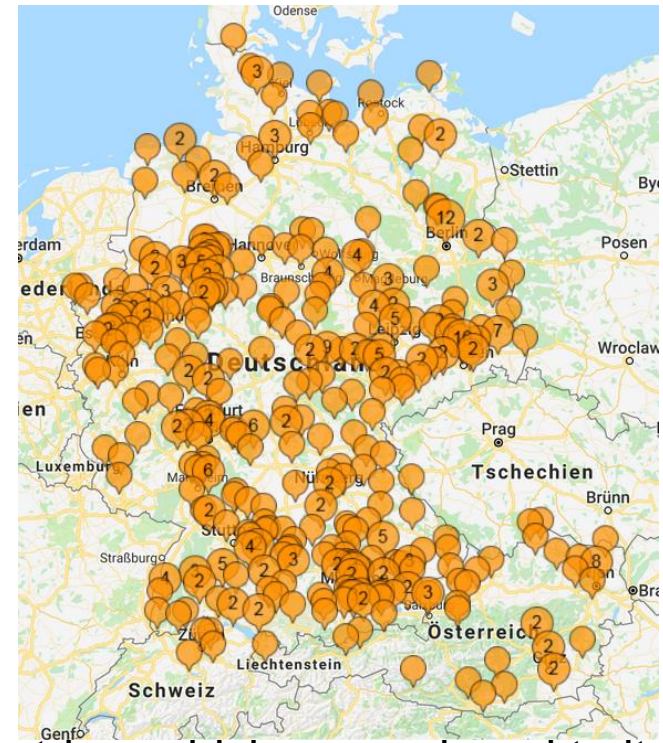
Hoaxmap project lists

discrediting information about refugees

(and people with “Southern outer appearance” or “Non-German accents”)

having been in circulation

which proved to be erroneous.



→ For each hoax, the database contains a location string, which we assigned to its county with the help of Google’s geocoding API.

# Data: Explanatory Variables

## Neighbour data

Based on county-level data of Germany provided by the Federal Agency for Cartography and Geodesy (territorial state: 01.01.2016).

For each county, we identified all counties that have a common border with the county by means of the R-package spdep.

Then, we computed the sum of arson attacks, the sum of arson attacks covered by Bild, and the sum of hoaxes assigned to the neighboring counties for a county-period.

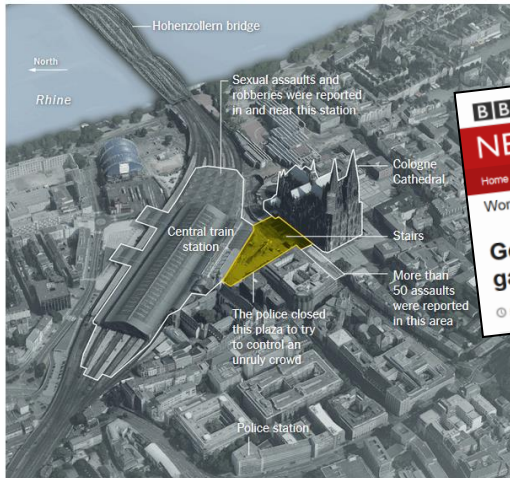
# Explanatory Variables

## Events

- Merkel's border opening (September 5th, 2015)
- New Year's Eve (January 1st, 2016)



The Main Area of the Attacks in Cologne

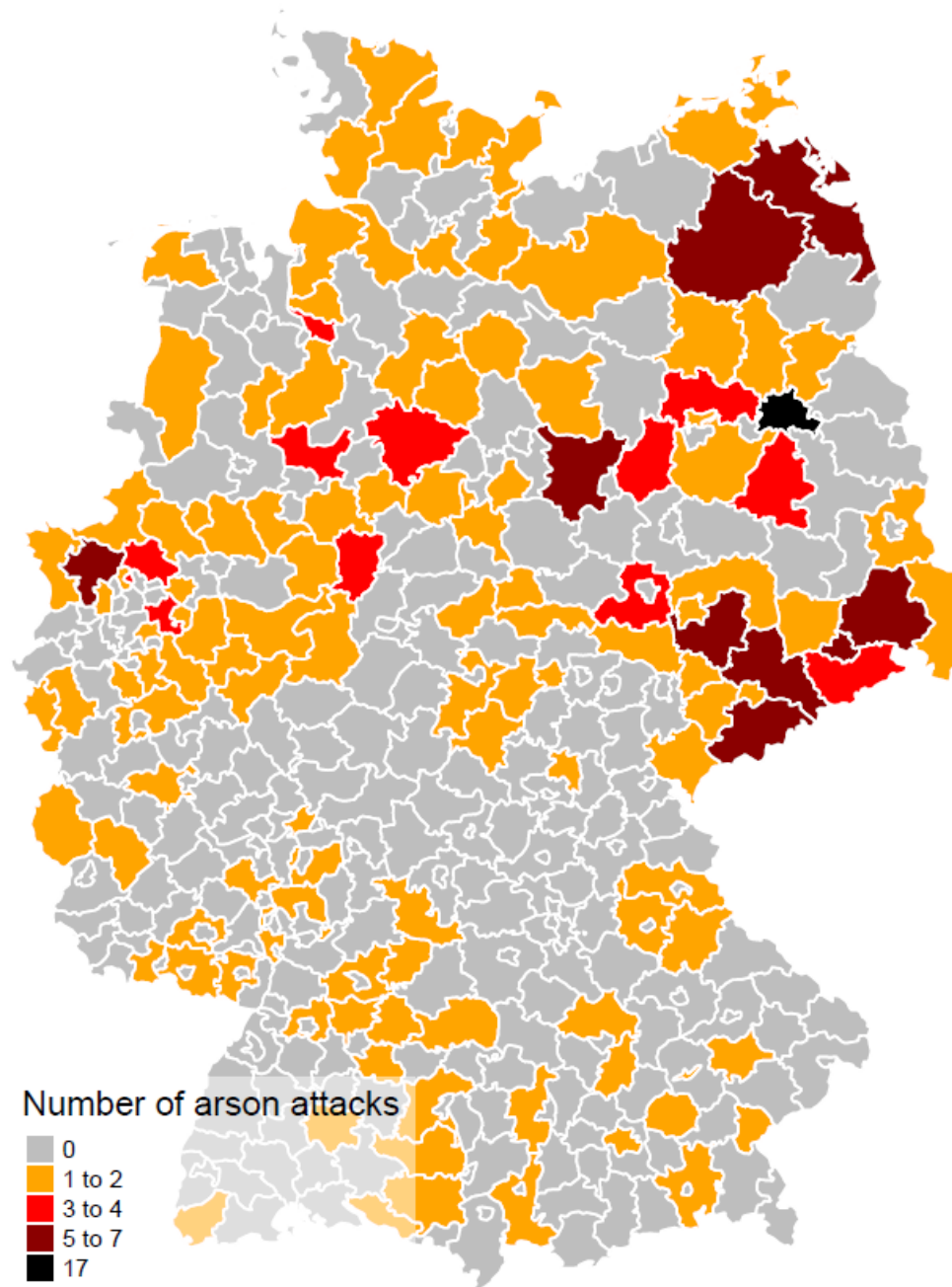


The New York Times

*As Germany Welcomes Migrants, Sexual Attacks in Cologne Point to a New Reality*

→ indicator variables that mark the subsequent six time periods after the period of the respective key event

# Results



Spatial patterns indeed drive the diffusion process of violence as well as the potential of support for a right-wing party.

# Results

## Logistic Regression

Dependent variable: Logged Chances for an Arson attack (logits)

Logistic Regression on Arsen Attacks	
# Attacks (lag)	0.253 (2.26)*
# Media Coverage (lag)	-0.304 (0.71)
# Fake News (lag)	0.054 (0.78)
Inhabitants 2015	0.183 (6.69)**
% NPD voters	0.232 (2.09)*
% Foreigners	-0.099 (3.79)**
% Unemployment	-0.008 (0.23)
New Year's Eve	0.338 (1.16)
Border Opening	1.936 (7.57)**
_cons	-5.426 (15.25)**
Insig2u	-0.467 (1.59)
N	23,316

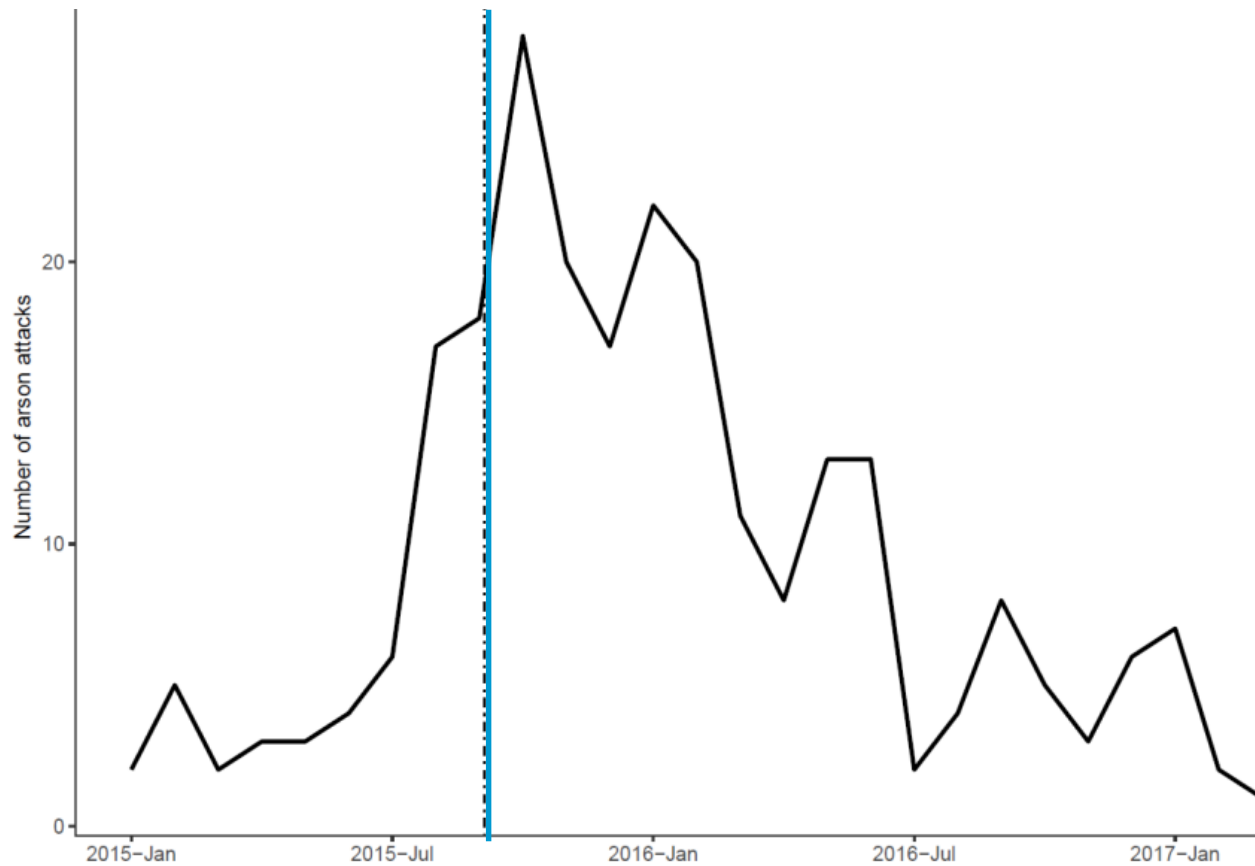
# Results

## Robustness Check: Different model specifications

- Spatial panel regression with inverse distance neighbor definition
- Different combinations of neighbor- and time-definitions
  - First- and second order neighbors
  - One- and two-period time lag
- Most results hold, the only exception are the media variables
  - Media coverage does have a significant influence in most other models, fake news in some

# Results

Border opening  
in September 2015



# Results

Arson Attacks are more likely...

- in bigger cities with small numbers of foreigners
- in xenophobic environments (high share of NPD voters)
- after the border opening in 2015
- (little) spatial contagion effect

No effect of:

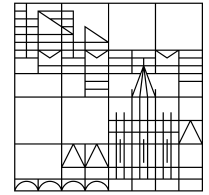
- unemployment rate
- local media coverage (?)
- fake news (?)
- New Year's Eve in Cologne

# Results

## Big Data...

- was useful for analysis of spatial and temporal diffusion processes
- can be used to combine interesting sources of information
- a valuable alternative to data collection through the statistical offices of the German states

Universität  
Konstanz



**Thank you  
for listening!**

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# Appendix

## Distribution of refugees:

- „Königsteiner Schlüssel“:  
distribution among states according  
to population and tax revenue
- Distribution among counties can  
differ
- Percentage of refugees biased by  
large facilities for the first  
registration in some counties  
(„Erstaufnahmeeinrichtung“)
- Extremely high values in 2015
- No influence on arson attacks!

