# Immigrant Narratives

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**Motivation**

> **We systematically study narratives about immigrants in a major migrant-receiving country (Germany) in (regional) printed media.**

- Immigration is one of the most polarizing issues in Western countries
- Worries about immigration have fueled the rise of far-right parties across Europe, although *contact* to immigrants may counteract this effect. (Allport (1954), Halla et al. (2017), Edo et al. (2019), Hangartner et al. (2019), Fremerey et al. (2022))
- However, in a refugee crisis the majority of the population comes into 'contact' first through mass media rather than in person.

$\rightarrow$ To understand natives' response to immigration, media is essential: regional outlets provide within-country variation.

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- However, in a refugee crisis the majority of the population comes into 'contact' first through mass media rather than in person.

→ To understand natives' response to immigration, media is essential: regional outlets provide within-country variation.

- Economists usually focus on the labor markets effects of migration, but concerns about deterioration in amenities and cultural concerns may be more important for attitudes towards migration Ottaviano and Peri (2012), Borjas (2003) — Card et al. (2012), Alesina and Tabellini (2022)

→ It is important to study what narratives dominate (themes), what tone (sentiment) these themes carry, and its drivers and effects.

**Prior literature on media and immigration**

**Content of (regional) media coverage:**

- Some groups (male and Afghani) over-represented in newspapers in 2018. Most coverage is about migrants in Germany. Nationals report concerns and political actors, regionals rather about supportive natives. Kelm et al. (2021)
- Cultural concerns most prevalent in few German regional newspapers in 2015, crime and terrorism almost absent. Papers in former GDR write more positively about integration than in former FRG Greck (2018)

**Determinants of (regional) news coverage of immigrants:**

- In the US, proximity to the US-Mexico border and corporate ownership is correlated to negative coverage of immigrants Branton and Dunaway (2009)
- Demand for online immigration-related news in Sweden reduces when the local share of immigrants increases Freddi (2022)

Effects of media coverage of immigrants:

- TV coverage about migration drives short-term polarization in attitudes towards immigration Schneider-Strawczynski and Valette (2022)

**Narrative Economics and Methodology**

Literature:

- Media both reflects and shapes societies, pushing for specific narratives and messages in the modern world, which influence how people think and act. (Adena et al. (2015), Yanagizawa-Drott (2014), Ash et al. (2020), Bursztyn (2020))

- Recent and growing quantitative literature studying the impact of particular narratives on behavior, referred to as **Narrative economics**. (Shiller (2017), Bénabou et al. (2019), Esposito et al. (2021), Michalopoulos and Xue (2021))

Methodology to capture a multitude of contemporaneous narratives:

- Require scalable methods to group narratives into relevant themes and to measure sentiment

- Innovative Text-as-data method on the *sentence* level using NLP-based Python *Spacy* package together with theme-specific dictionaries

- Sample of three national, two weekly and 74 German regional newspapers (67% of German adults reads a local or regional newspaper at least once a week — GLES (2017) ): around 100,000 articles

**Contribution and Preview of findings**

- First systematic analysis on narratives about immigration in (regional) newspaper articles in Germany between 2000 and 2019.
- New dictionaries to measure narratives in 5 main themes + 3 subthemes
- Human validation of method with 16 students on a 1% sample

Findings

- Narratives concerning *Religion* and *Culture* much more prevalent in sentences than about *Economy*. *Anti-immigrant* and *Migrant Criminality* narratives become more salient during the refugee crisis
- Negative sentences become more prevalent; the shift in overall sentiment driven by changes towards more negative themes
- Notable differences between national and regional, Eastern and Western newspapers
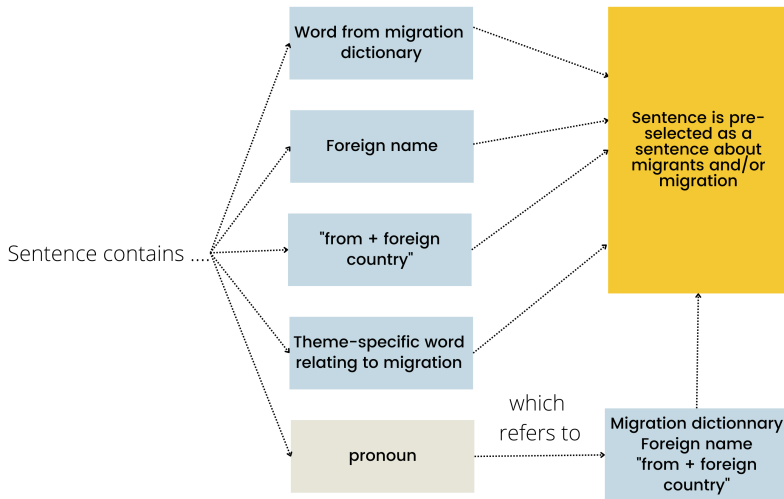
# Method and data

# From text to data

- We designed an innovative Text-as-Data method to quantify narratives at the sentence level
- Each article is separated into sentences and then processed in 3 major steps (simplified):
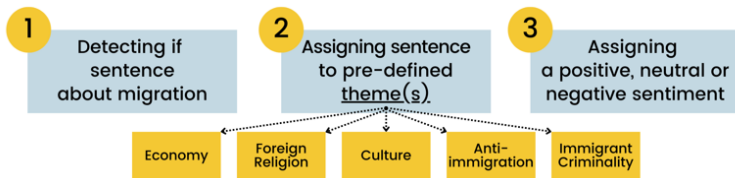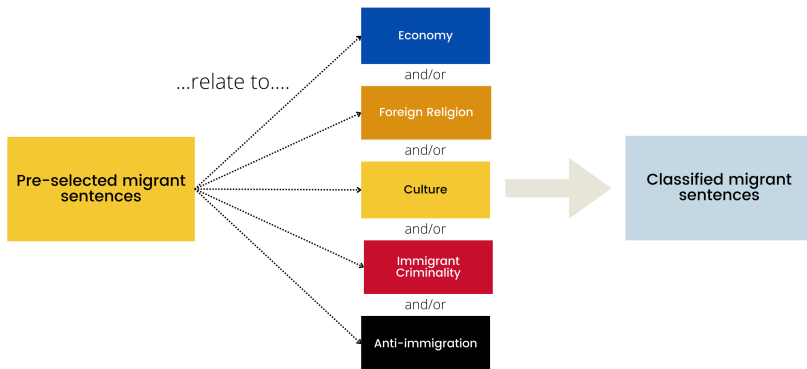


- Each step relies on custom dictionaries and recent development in Text-as-data tools to account for grammatical structure and dependencies among words.
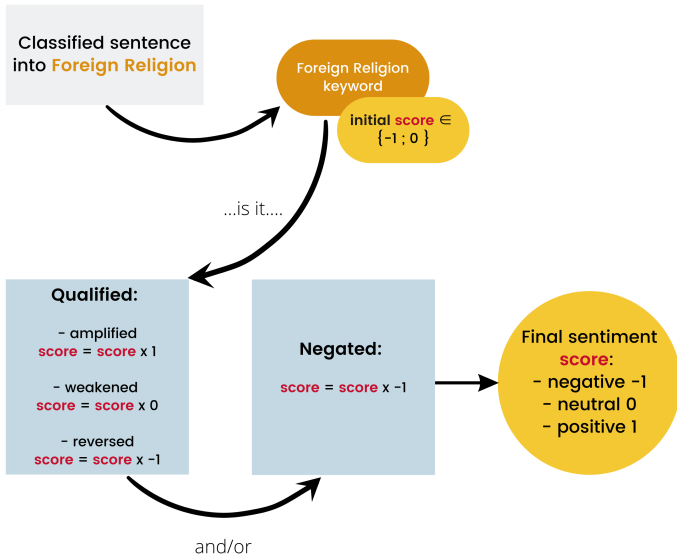
# Step 1 - Pre-selection of migrant sentences



Sentence contains ....

Word from migration dictionary

Foreign name

"from + foreign country"

Theme-specific word relating to migration

pronoun

which refers to

Migration dictionnary
Foreign name
"from + foreign country"

Sentence is pre-selected as a sentence about migrants and/or migration

# Step 2 - Theme assignment



...relate to....

Pre-selected migrant sentences

Economy

and/or

Foreign Religion

and/or

Culture

and/or

Immigrant Criminality

and/or

Anti-immigration

Classified migrant sentences

# Step 3 - Sentiment assignment - Example



Classified sentence into **Foreign Religion**

**Foreign Religion keyword**

initial **score** ∈ {-1 ; 0 }

...is it....

**Qualified:**

- amplified
**score** = **score** x 1

- weakened
**score** = **score** x 0

- reversed
**score** = **score** x -1

**Negated:**

**score** = **score** x -1

**Final sentiment score:**
- negative -1
- neutral 0
- positive 1

and/or

▸▸ Economy   ▸▸ Culture   ▸▸ Immigrant Criminality

## Data Sources

**Factiva**:

- Database of German newspaper articles: 65 regional, 5 national newspapers
- Construct filter to pre-select articles about *Immigrants* in *Germany*
  `▸▸ Factiva filter`
- Obtain 1500 articles per newspaper per 10 year (5 year for national newspapers) interval $\rightarrow$ around 100,000 articles

**IVW** (Informationsgesellschaft zur Feststellung der Verbreitung von Werbeträgern e.V.):

- Newspaper sales per municipality in 2020
- In 2020, 16.5 million newspapers were sold (print and online subscription)

$\rightarrow$ In 2019, we have at least one newspaper in 73% of municipalities and 45% of all regional newspaper sales

# Coverage of regional newspapers



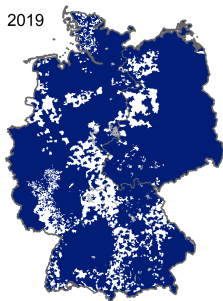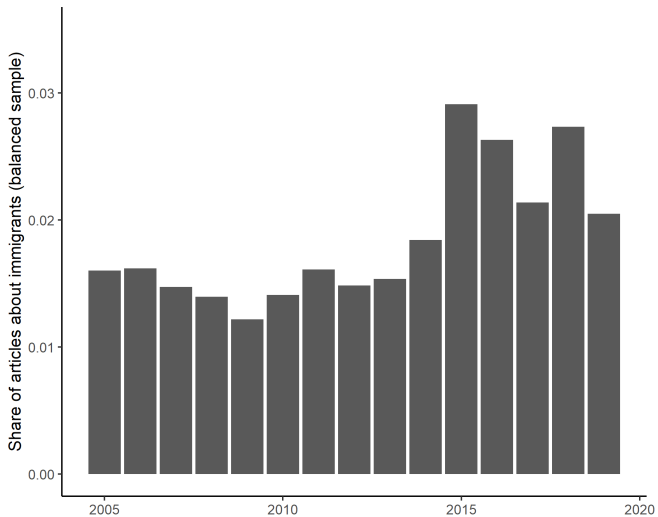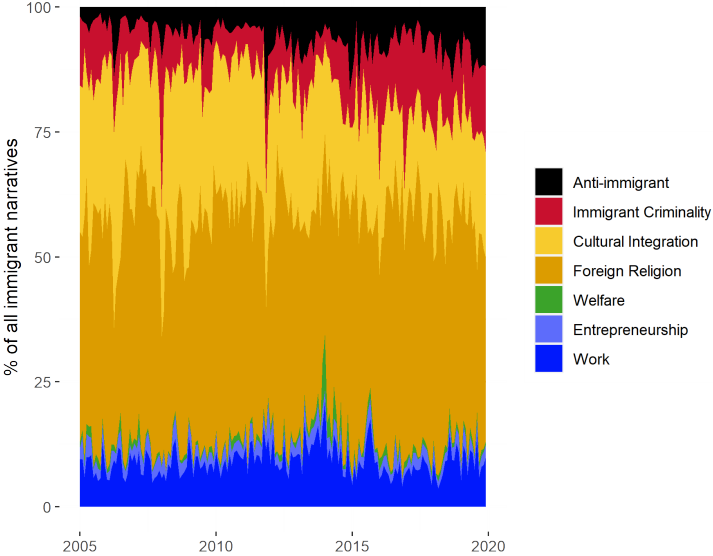2005          2012          2019

- Covered in Factiva
- Not covered in Factiva
- Not in IVW
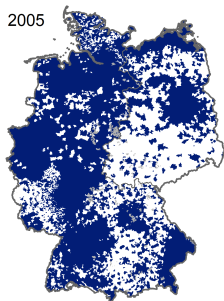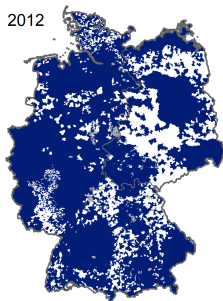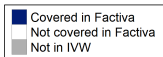
Prevalence, Narrative themes and Sentiments

# Prevalence of articles about immigrants over time

# Relative theme salience over time

# Sentiments by theme



Aggregated Sentiment • Work • Welfare • Entrepreneurship • Foreign Religion • Cultural Integration • Immigrant Criminality • Anti-immigrant
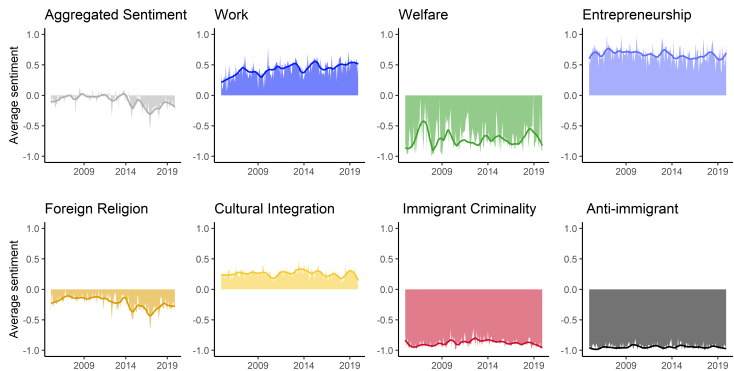
⏩ Three salient events

# Human Validation

# Human validation

- Recruited 16 students to hand-code over 90,000 sentences
- Each sentence coded by 4 human coders
- Substantial disagreement among humans
- Assessment of algorithm's performance to other alternative simpler methods using human coding as a benchmark
- Algorithm performs significantly better than alternative methods
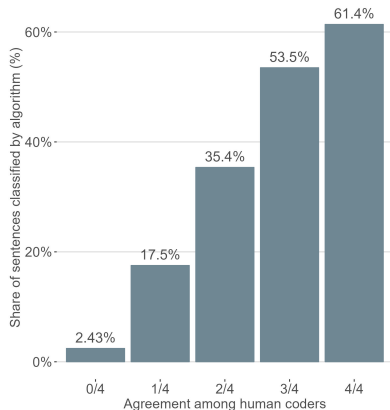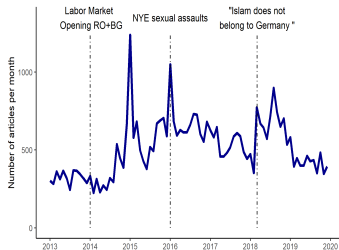


Classification validation   Sentiment validation
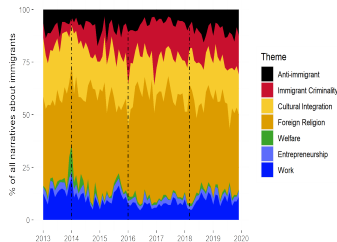
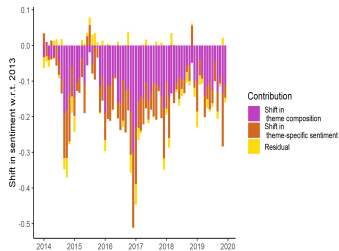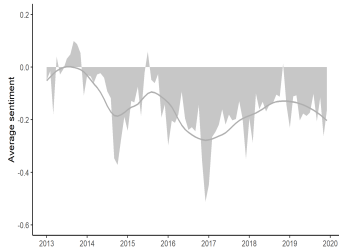# Human validation - Comparison with simpler alternative
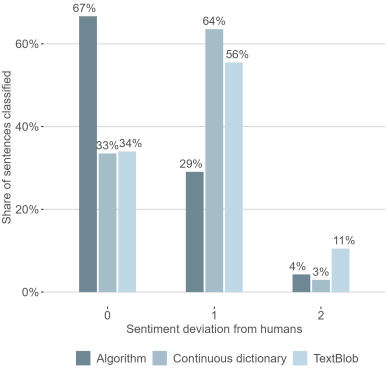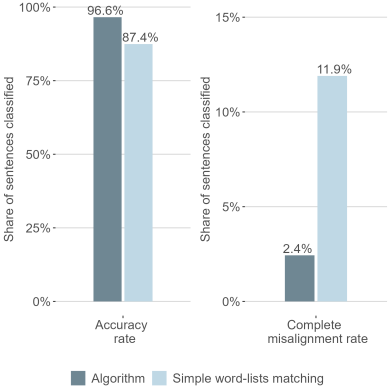
Further results

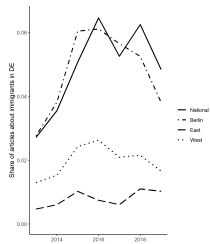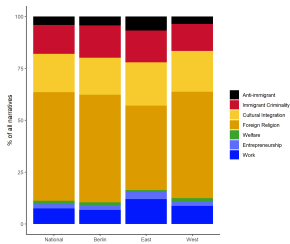# Weekly balanced panel of 46 newspapers between 2013 and 2019



(a)

(b)
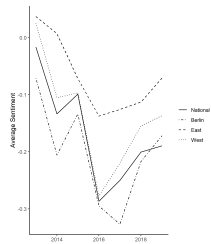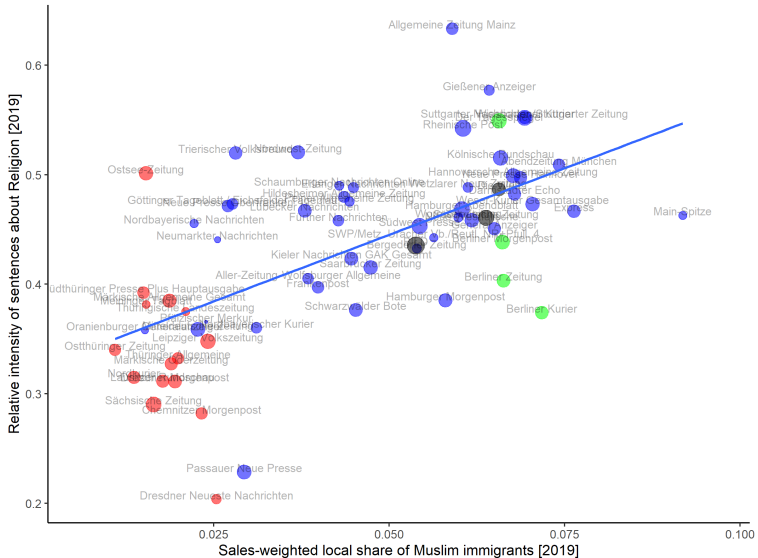
# Variation in newspaper coverage



(a)

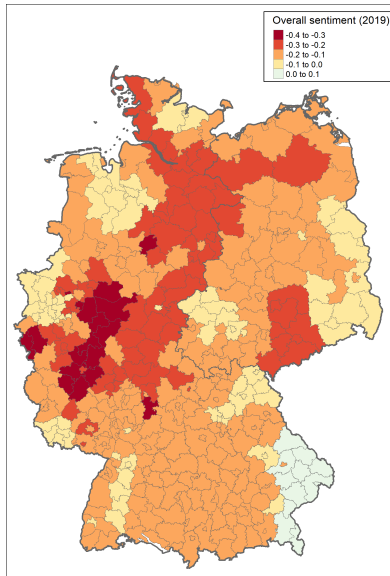(b)

(c)

# The relative prevalence of religion across newspapers



Scatter plot. X-axis: "Sales-weighted local share of Muslim immigrants [2019]" ranging from 0.025 to 0.100. Y-axis: "Relative intensity of sentences about Religion [2019]" ranging from 0.2 to 0.6. Labeled newspaper data points include: Allgemeine Zeitung Mainz, Gießener Anzeiger, Stuttgarter Nachrichten, Frankfurter Zeitung, Rheinische Post, Kölnische Rundschau, Abendzeitung München, Trierischer Volksfreund, Nordwest-Zeitung, Ostsee-Zeitung, Schaumburger Nachrichten Online, Harzer Echo, Göttinger Tageblatt, Hildesheimer Allgemeine Zeitung, Nordbayerische Nachrichten, Fürther Nachrichten, SWP/Metzinger, Neumarkter Nachrichten, Kieler Nachrichten, Südwest Presse, Bergedorfer Zeitung, Saarbrücker Zeitung, Kölner Stadt-Anzeiger, GAK Gesamt, Main-Spitze, Aller-Zeitung/Wolfsburger Allgemeine, Berliner Zeitung, Südthüringer Presse Plus Hauptausgabe, Münchner Merkur, Thüringische Landeszeitung, Frankenpost, Hamburger Morgenpost, Berliner Kurier, Oranienburger/Gransee/Veltener, Schwarzwälder Bote, Sächsischer Kurier, Leipziger Volkszeitung, Ostthüringer Zeitung, Märkische Allgemeine, Thüringer Allgemeine, Nordkurier/Anklam, Lausitzer Rundschau, Sächsische Zeitung, Chemnitzer Morgenpost, Passauer Neue Presse, Dresdner Neueste Nachrichten.

[ ↦ Opposite pattern for economy ]

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# Average sentiment by Landkreis



Overall sentiment (2019)
- -0.4 to -0.3
- -0.3 to -0.2
- -0.2 to -0.1
- -0.1 to 0.0
- 0.0 to 0.1

**Conclusion**

- Extend study of narratives beyond individual story or event
- Application to 70 German newspapers and over 100,000 articles + human coders validation: method outperforms simpler methods
- Religion and Culture themes dominate Economy themes, local conditions matter
- Surprisingly, newspapers from former East write less and more positively during 2015/2016

Outlook:

- Studying the dispersion of various salient events (Sexual assaults during NYE 2016, terrorist attacks, opening of labor markets)
- Geocoding the subject of articles: does coverage differ based on local/nonlocal events
- Does newspaper coverage affect attitudes concerning migration? (border designs, press agency articles)

**Outline**

Appendix