Gatekeepers of the Web: Do search engines amplify or suppress LGBTQ+ polarization?

Ronja Rönnback, Chris Emmery, Marie Šafář, Filip Milde, Jan Charvat, and Henry Brighton

European MEDIA AND INFORMATION Fund

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Tilburg Algorithm Observatory (TAO)

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Ronja Rönnback



Chris Emmery



Marie Šafář-Postma



Henry Brighton

- Filip Milde, We Are Fair, Czech Republic
- Jan Charvat, Charles University, Czech Republic

Tilburg University

Search engines as gatekeepers

- Widely used and **highly trusted** (Edelman, 2025; Aslett et al., 2023), despite known cases of bias.
- Search engines fundamentally shape our information environments.

Why LGBTQ+?

- Disinformation campaigns (Strand & Svensson, 2022).
- Democratic backsliding (Flores, Carreno & Shaw, 2023).

Two studies, one question

How do search engines shape our information environments about a societally relevant topic?

	Study 1	Study 2
Focus	Polarization in search results	Tone of news coverage in search results
Labels	Political bias and credibility of sources	Tone labels (positive & negative tone, polarization of text)
Countries	UK, FR, DE	8 European countries
Dataset size	~560k search results	1.5M search results

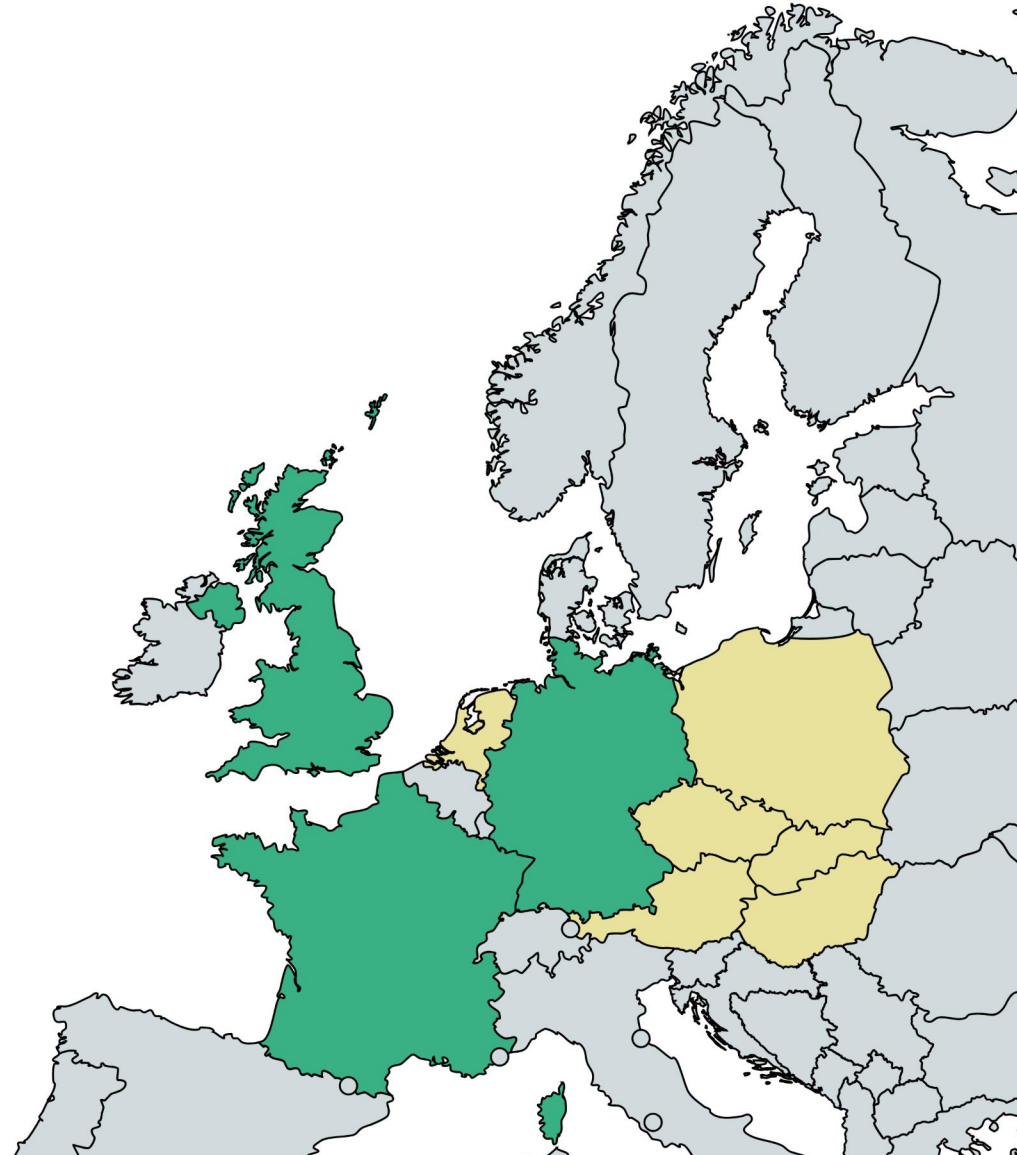
Methods

We monitored:

- Google, Bing, Yandex, Mojeek, Seznam
- 8 European countries
- >3k queries made with experts
  - neutral (“gay rights”)
  - negative (“gay agenda”)

Dataset size:

- 1.5 million search results

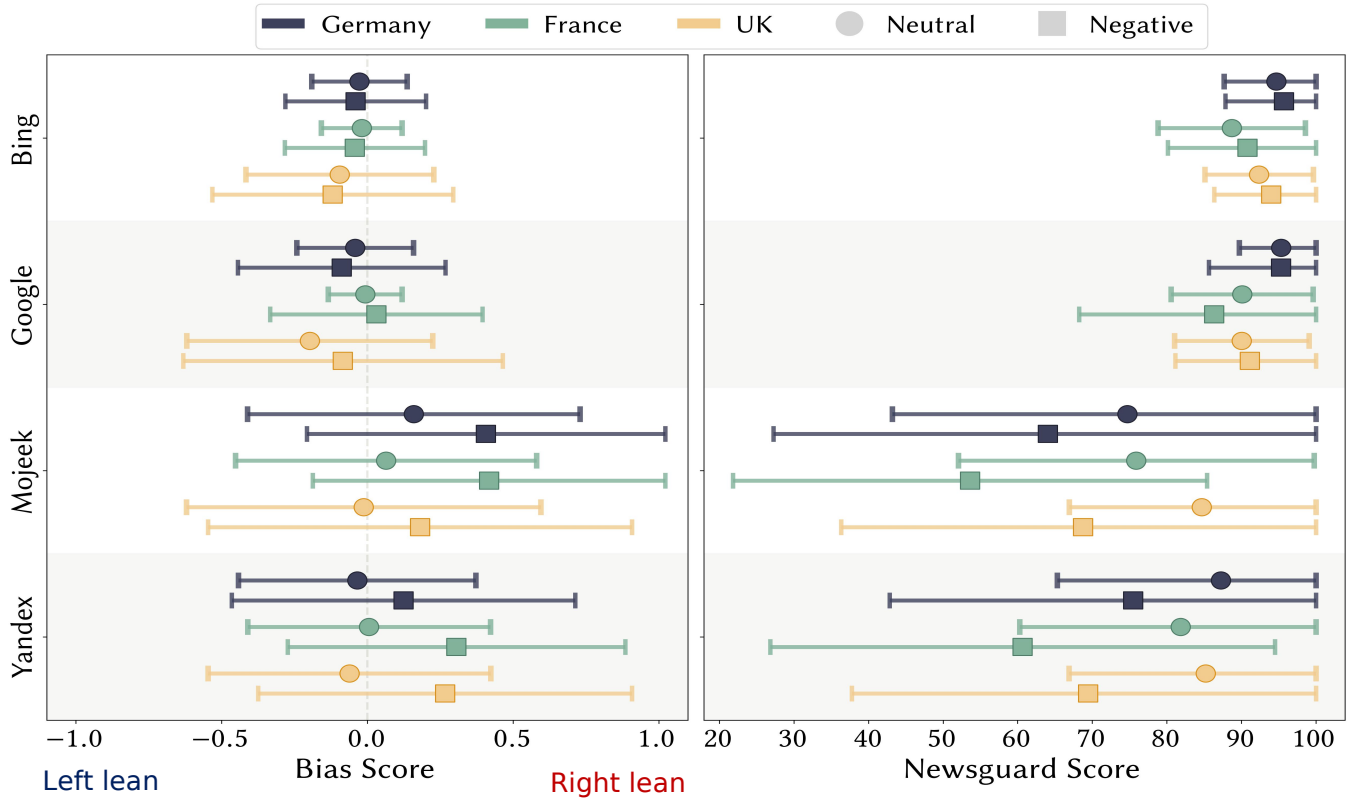


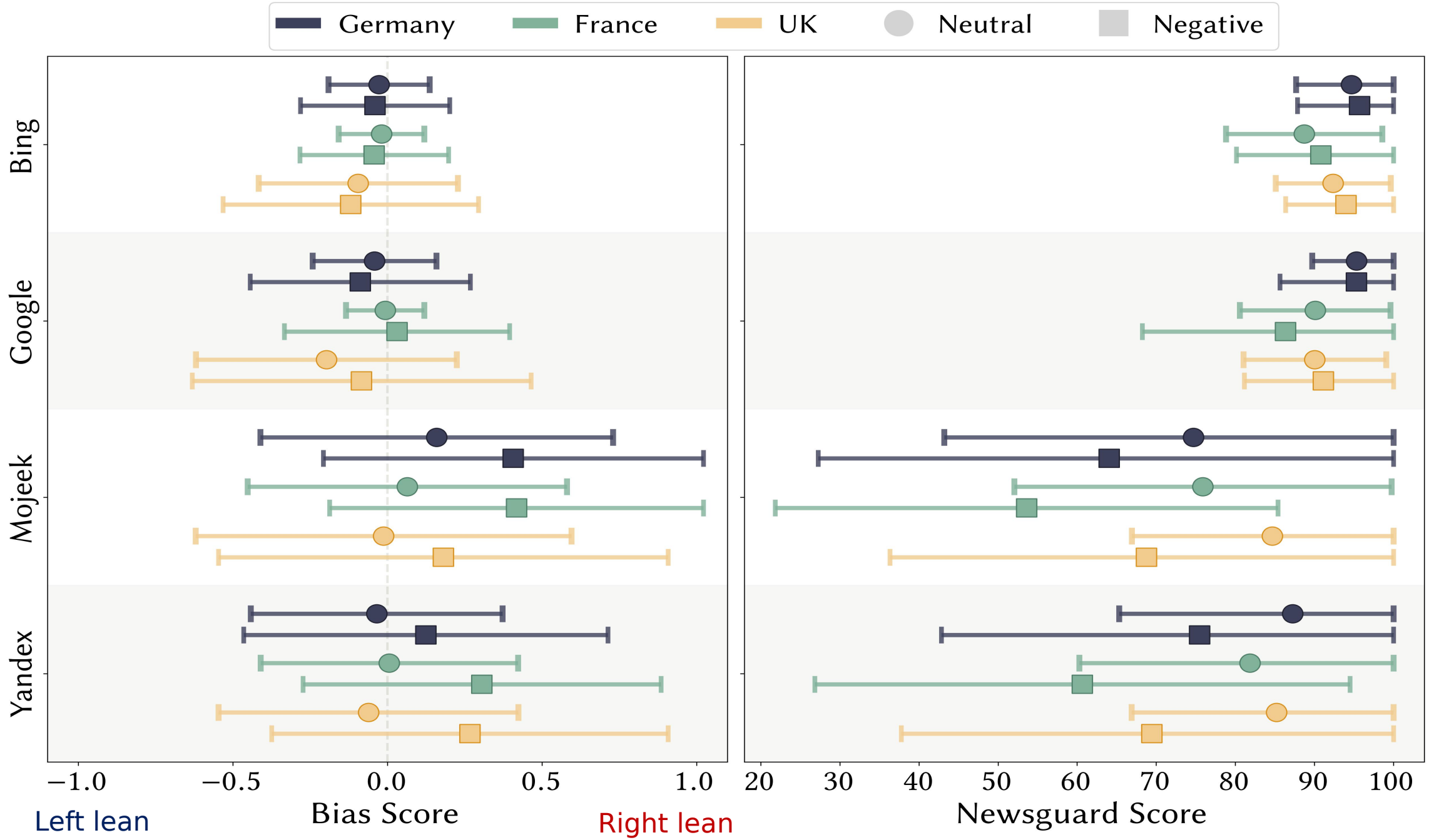
Finding 1: Search engine choice matters

- The choice of search engine has great impact on what type of information you're exposed to:
  - matters more than the query you enter!

Google and Bing surface highly credible, politically balanced content

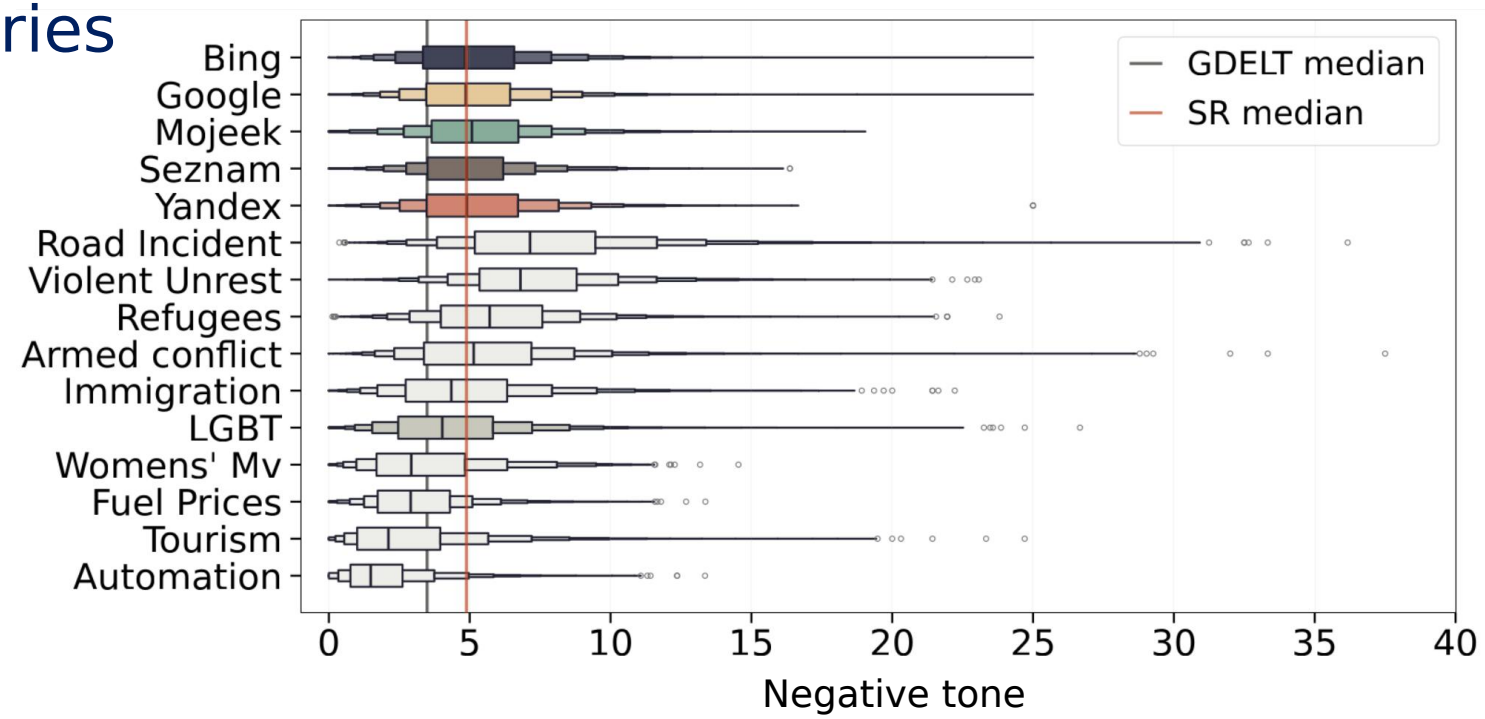
Mojeek and Yandex expose users to more low-credibility and politically biased sources




Germany
France
UK
Neutral
Negative
Bing
Google
Mojeek
Yandex
−1.0
−0.5
0.0
0.5
1.0
Bias Score
Left lean
Right lean
20
30
40
50
60
70
80
90
100
Newsguard Score

Finding 2: Search results are more negative than news generally

- All search engines tend to select more negative and polarized news articles:
  - compared to global, local, and news about LGBTQ+ issues specifically,
  - across country & queries
- Mainstream news?
- Search engines do not simply mirror the news ecosystem



So, what are the implications?

Search engines actively curate information environments

- Through indexing, selection, and ranking, search engines systematically shape what information users encounter.
- Exposure to low-credibility and politically polarized content varies substantially between search engines.
- News results about LGBTQ+ issues contain disproportionately negative and polarized coverage relative to broader news ecosystems.

Users have limited control over their information exposure

- Search engine choice influences exposure more strongly than country, language, or query.
- Negativity bias persist across search engines, countries, languages, and query formulations.

Search engines are powerful curators of public knowledge - *how* they curate remains an important focus of monitoring.

Future research directions

- Large-scale computing of custom metrics at article-level
- Investigating the latest search innovation: AI-generated overviews

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Additional content

Methods - Queries

Queries were either **neutral ...**

trans therapy

Search results

Generic News
https://genericnews.com/today/what_are_people_saying_about_LGBT...
Today's News of LGBTIQ
People say many things about the LGBTIQ+ community. But what are they saying today? Read Generic News for your most up to date generic news, today...

LGBTIQ Information
https://find_lgbt_info.com/definitions/lgbtiq...
LGBTIQ+: What does it stand for?
What does each letter in LGBTIQ+ mean? Read on to find out the history of gay labels and how the acronym was created.

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What does each letter in LGBTIQ+ mean? Read on to find out the history of gay labels and how the acronym was created.

or **negative ...**

transing away the gay

Polarising Opinions
https://polarising_the_world.com/LGBT_is_very_bad...
Don't believe what the crazy gay lobby says...
I have nothing nice to say on this topic, and am very angry about it. Do not believe what the deep state tells you, sheeple, because the lobbyists are coming for your children...

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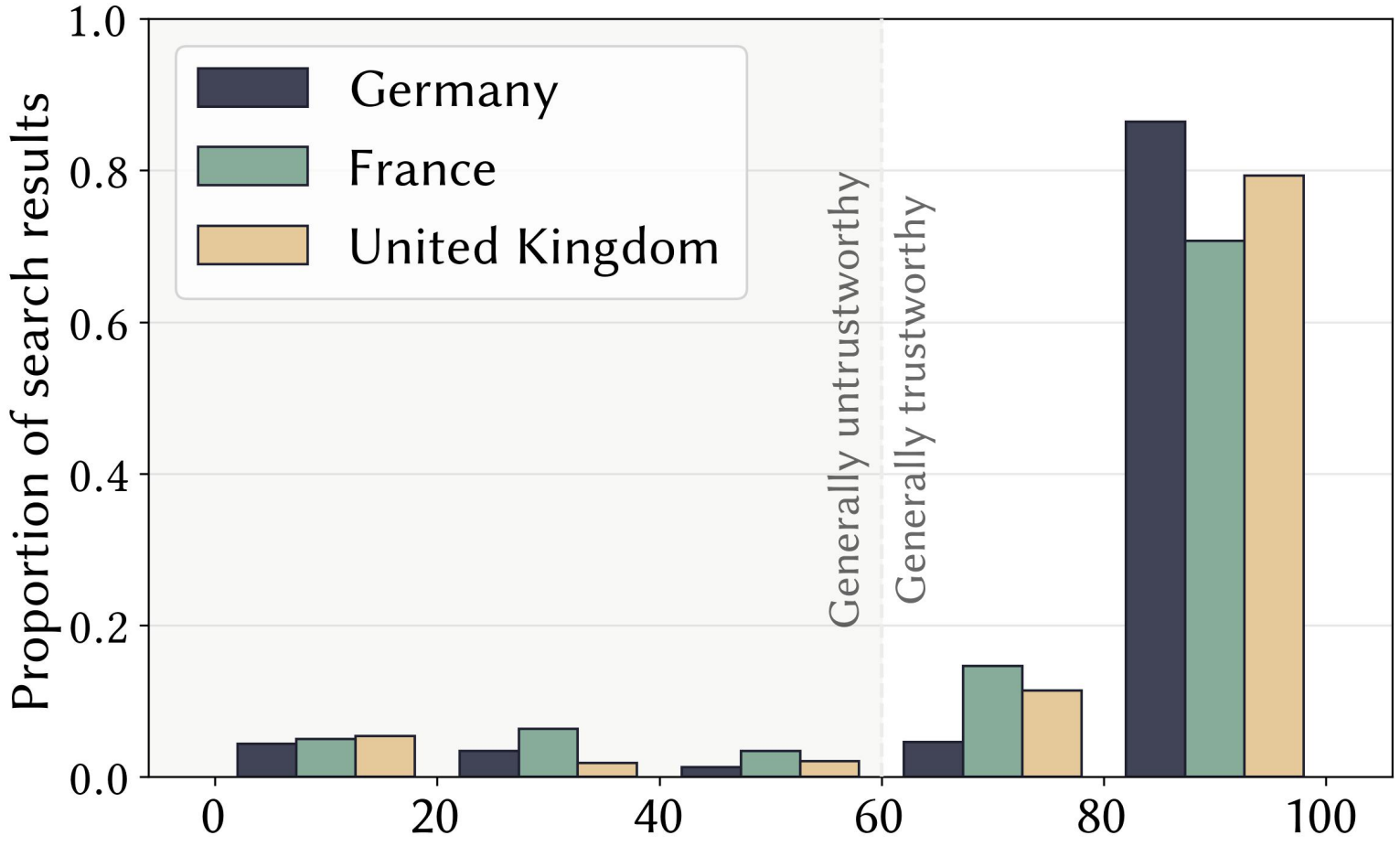
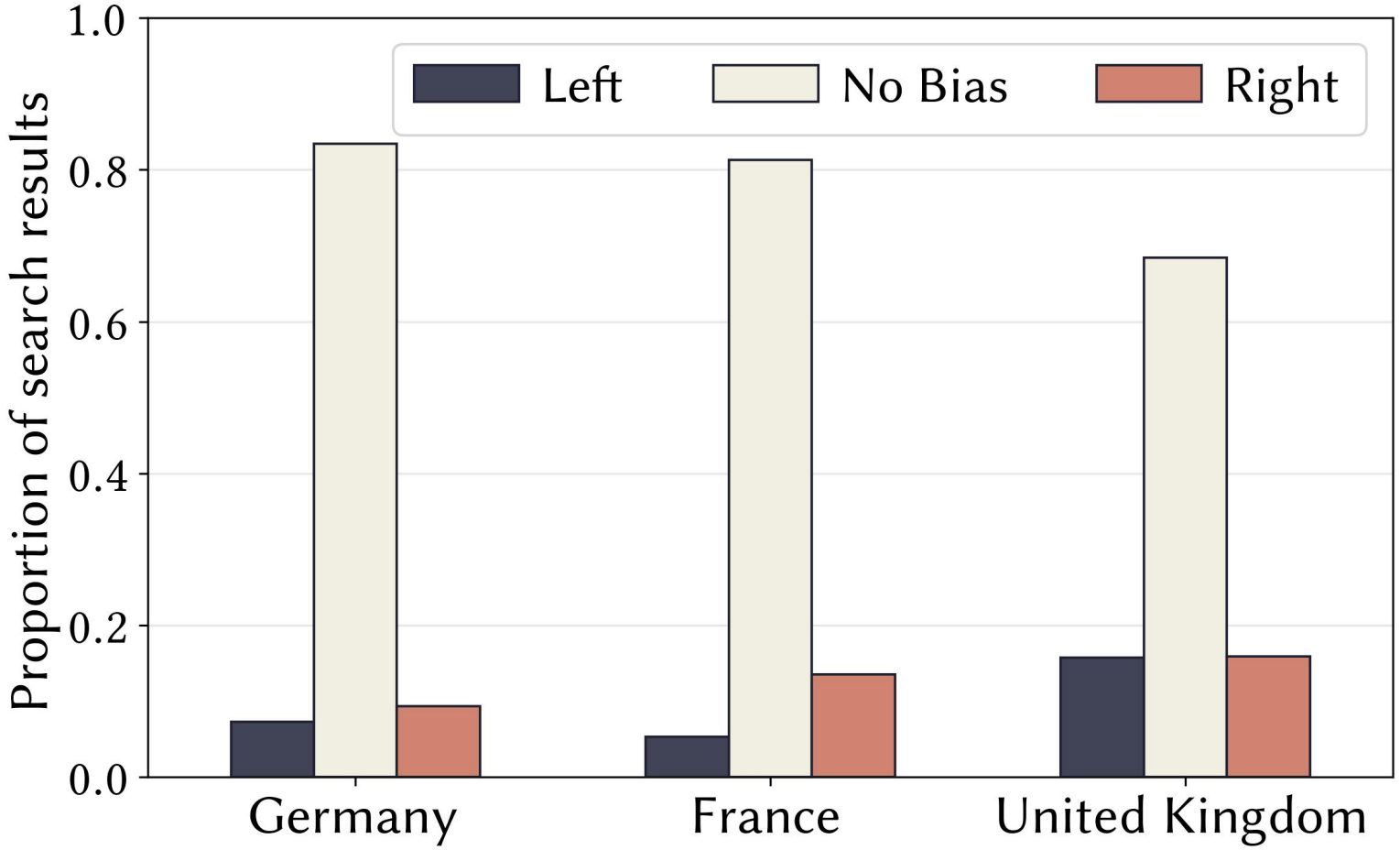
Results - Location and Language

- Credibility per country, across all search engines



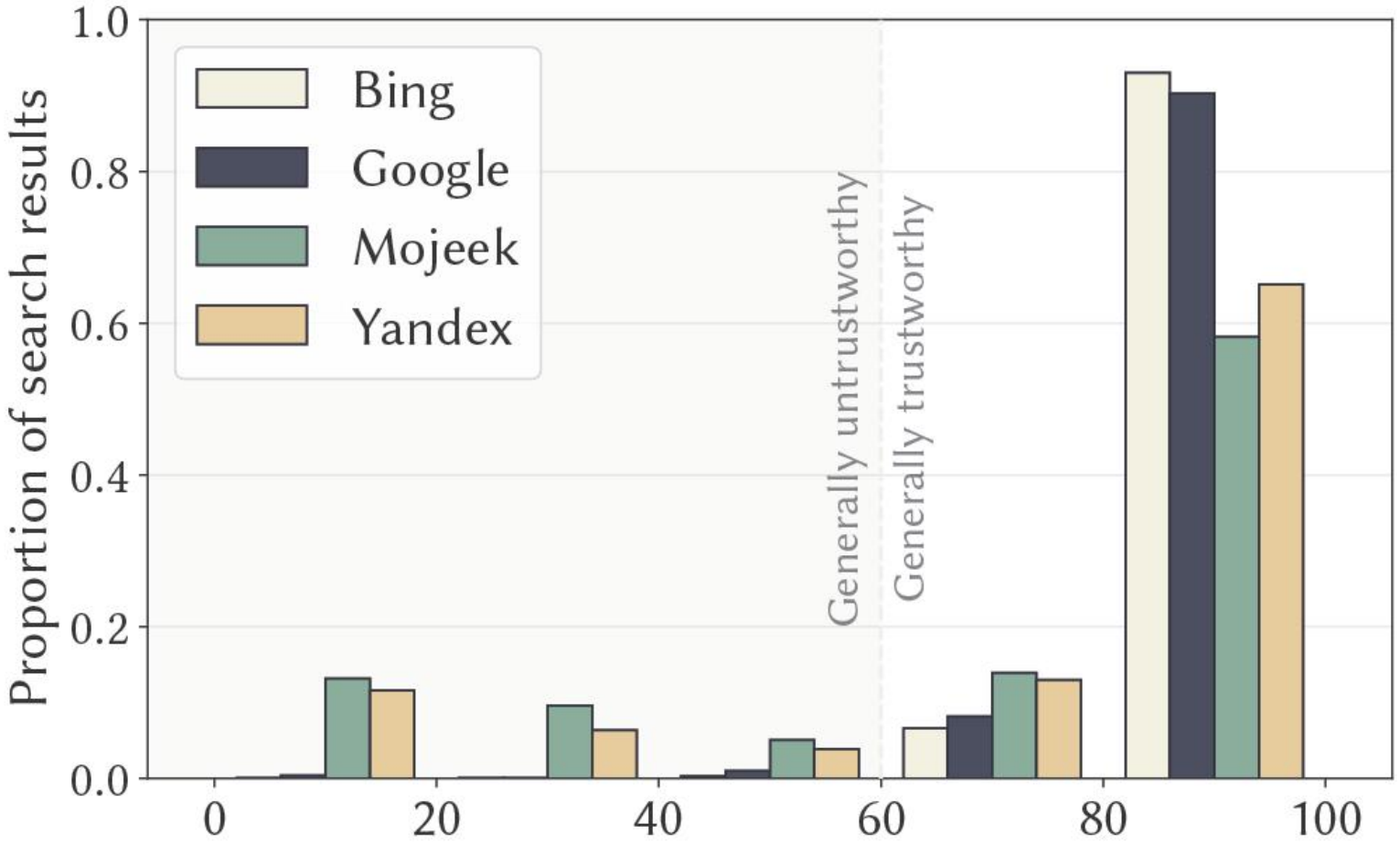
Results - Location and Language

- Political leaning per country, across all search engines



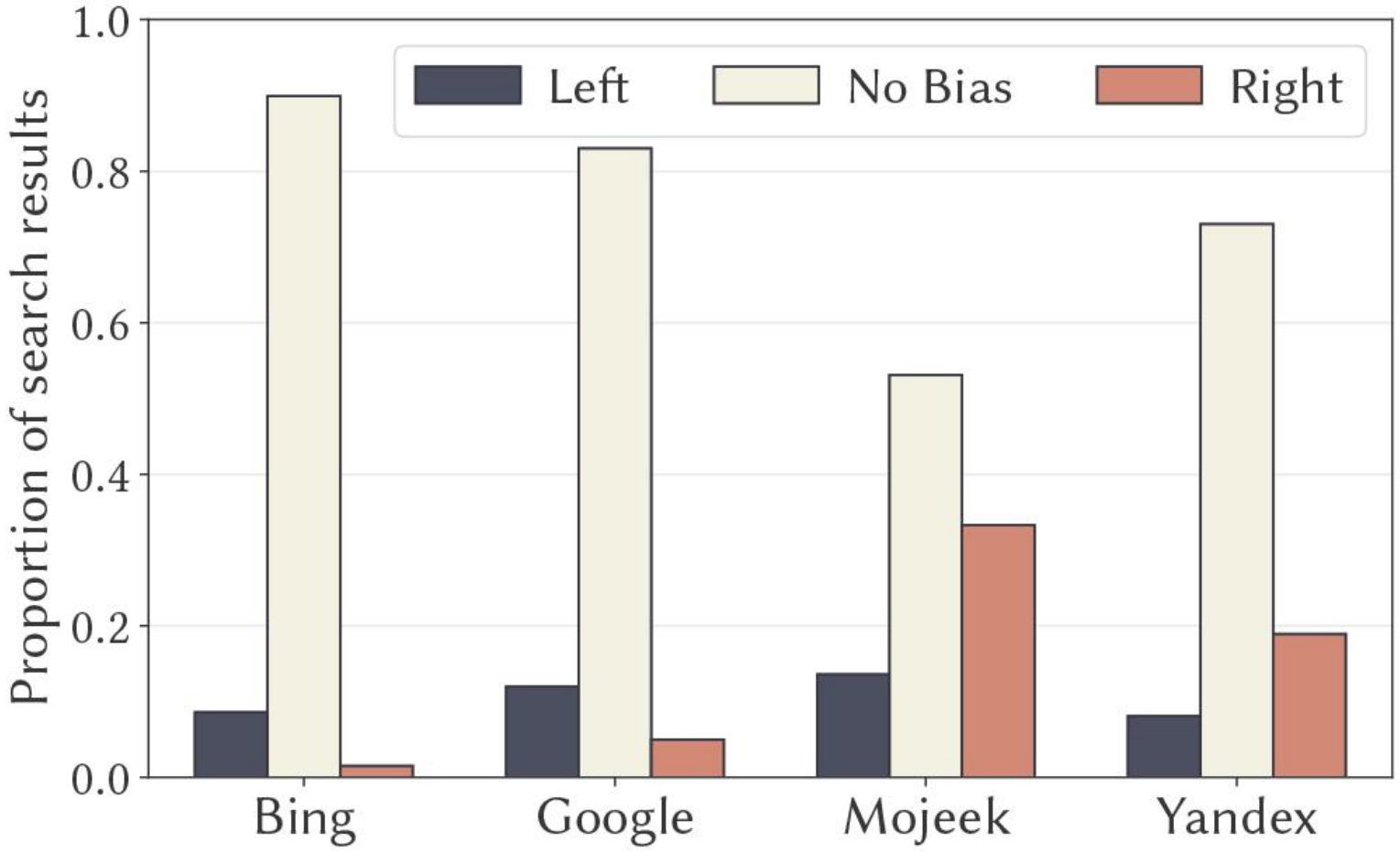
Results - Search engine

- Credibility scores per search engine, across all countries

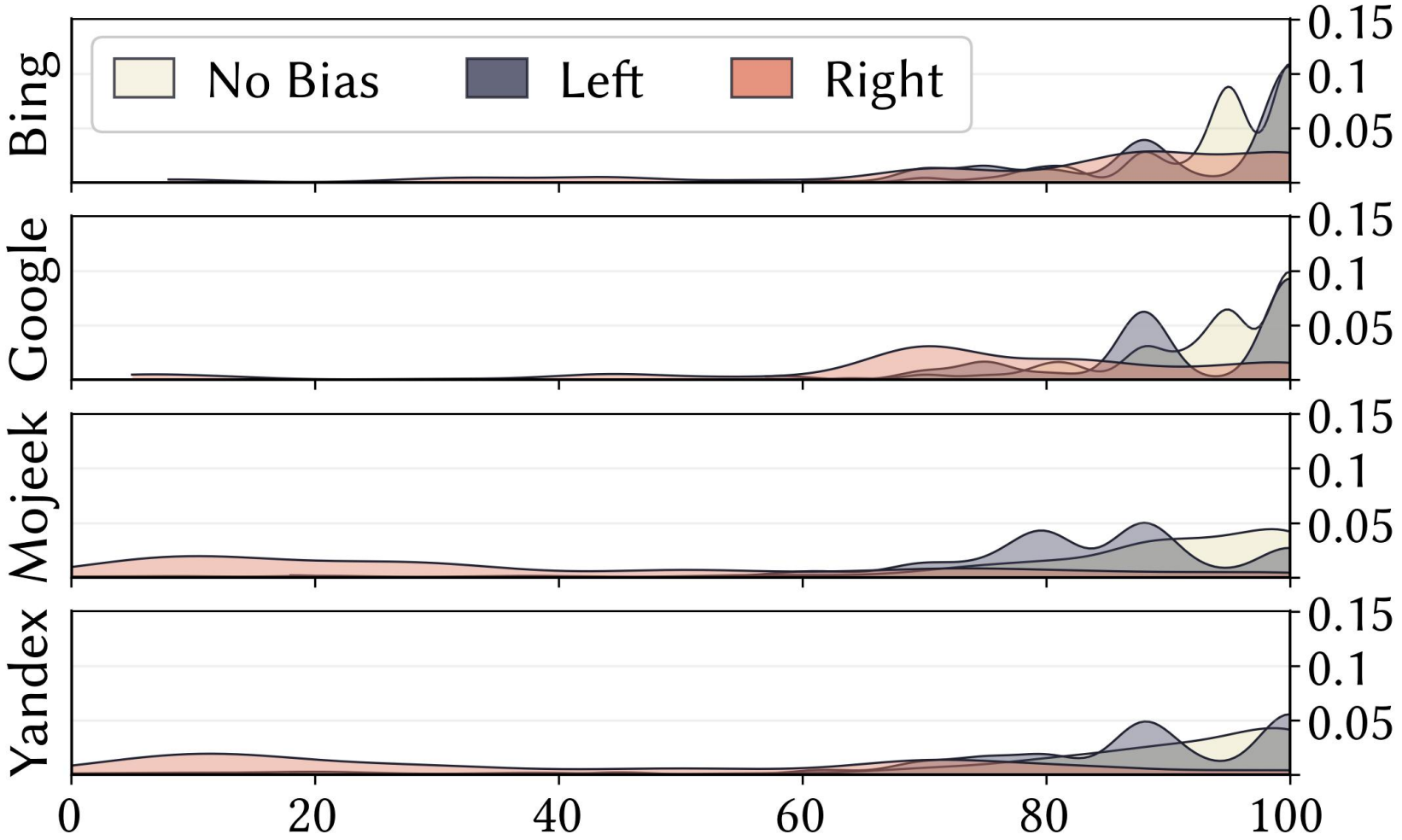


Results - Search engine

- Political leaning per search engine, across all countries



Results - Political lean and credibility

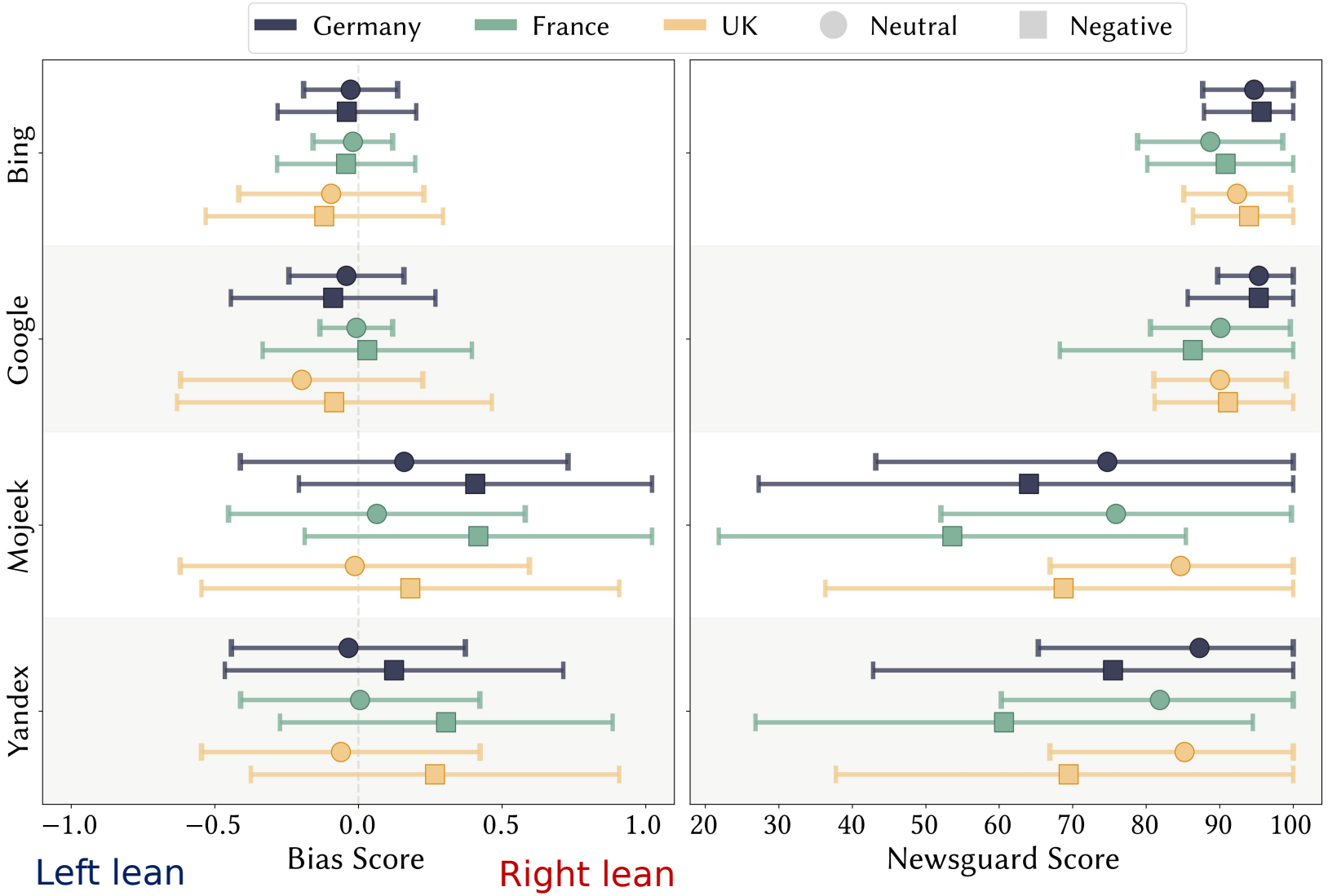


Example: Yandex domains that mainly appear for negative queries

ID	negative	neutral	difference	Wiki Blurb	vsGuard_Sc	guard_Orier
reddit.com	1272	254	1018	Reddit () is an American social news aggregation, content rating, and forum social network.		
youtube.com	5181	4180	1001	YouTube is an American online video sharing platform owned by Google.		
thepinknews.com	1247	460	787	PinkNews is a UK-based online newspaper marketed to the lesbian, gay, bisexual, transgender, queer, and questioning community (LGBTQ+) in the UK and worldwide.		
lifesitenews.com	333	22	311	No wiki found.		
advocate.com	468	172	296	The Advocate is an American LGBT magazine, printed bi-monthly and available by subscription.		
naturalnews.com	323	35	288	Natural News (formerly NewsTarget, which is now a separate sister site) is a fa…		
dailymail.co.uk	748	476	272	MailOnline (also known as dailymail.co.uk and dailymail.com outside the UK) is …		
thefederalist.com	254	46	208	The Federalist is an American conservative online magazine and podcast that covers politics, policy, culture, and religion, and publishes a newsletter.	12	Right
dailykos.com	293	87	206	Daily Kos (KOHZ) is a group blog and internet forum focused on the U.S. Democratic Party and progressive liberal American politics.	45	Left
breitbart.com	264	62	202	Breitbart News Network (; known commonly as Breitbart News, Breitbart, or Breit…	50	Right

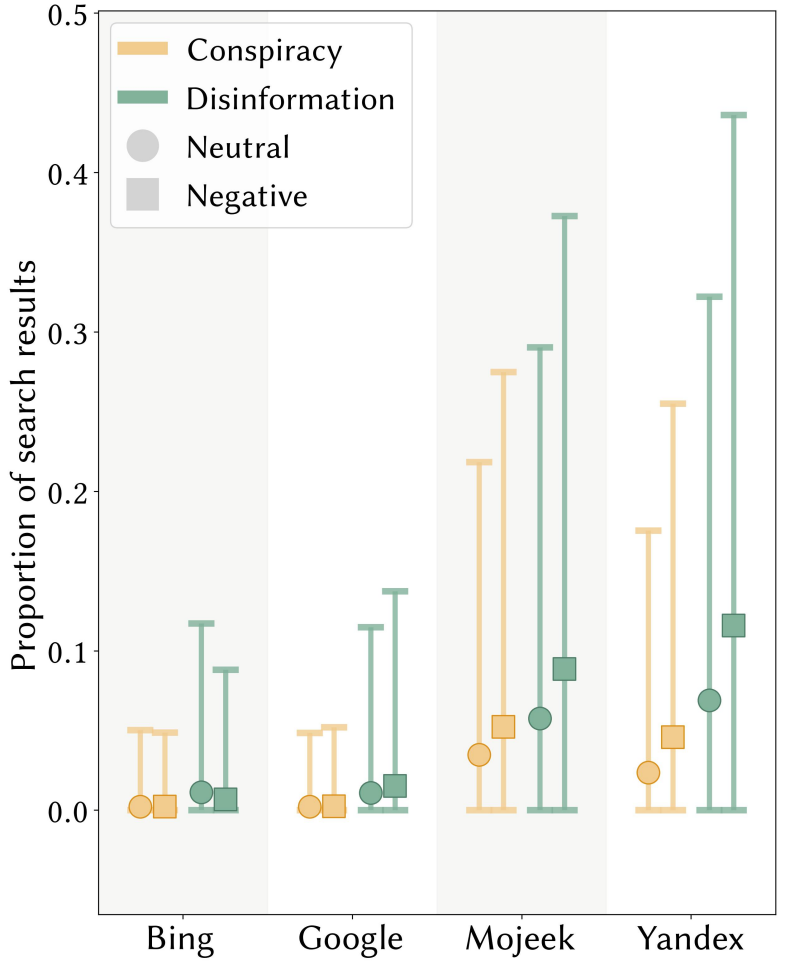
We can only show 3 examples of NewsGuard Scores

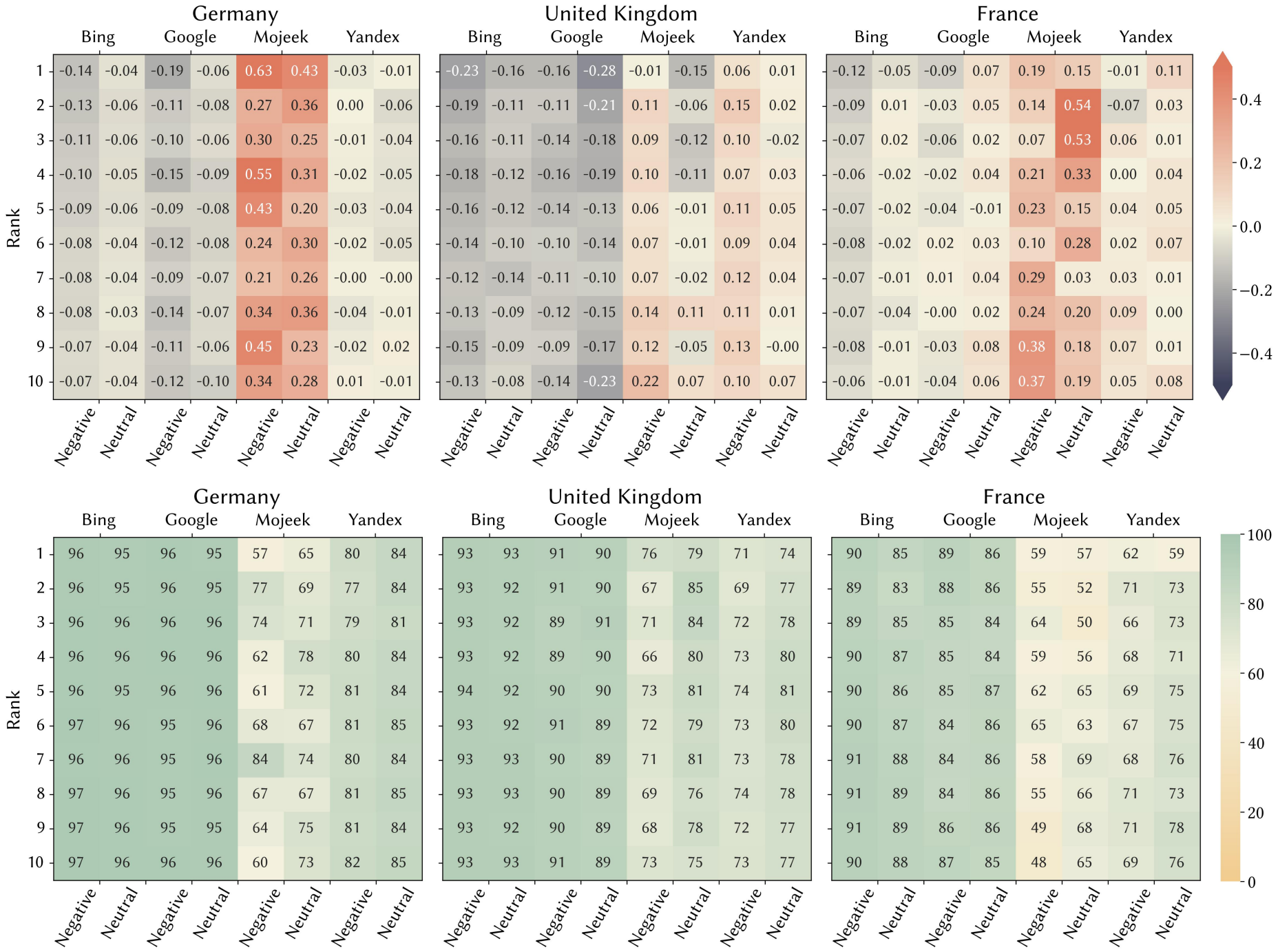
Results - User input



Left lean

Right lean




Germany
United Kingdom
France
Bing
Google
Mojeek
Yandex
Rank
1 -0.14 -0.04 -0.19 -0.06 0.63 0.43 -0.03 -0.01
2 -0.13 -0.06 -0.11 -0.08 0.27 0.36 0.00 -0.06
3 -0.11 -0.06 -0.10 -0.06 0.30 0.25 -0.01 -0.04
4 -0.10 -0.05 -0.15 -0.09 0.55 0.31 -0.02 -0.05
5 -0.09 -0.06 -0.09 -0.08 0.43 0.20 -0.03 -0.04
6 -0.08 -0.04 -0.12 -0.08 0.24 0.30 -0.02 -0.05
7 -0.08 -0.04 -0.09 -0.07 0.21 0.26 -0.00 -0.00
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6 -0.08 -0.02 0.02 0.03 0.10 0.28 0.02 0.07
7 -0.07 -0.01 0.01 0.04 0.29 0.03 0.03 0.01
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10 -0.06 -0.01 -0.04 0.06 0.37 0.19 0.05 0.08
0.4
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Negative
Neutral
Germany
United Kingdom
France
Bing
Google
Mojeek
Yandex
Rank
1 96 95 96 95 57 65 80 84
2 96 95 96 95 77 69 77 84
3 96 96 96 96 74 71 79 81
4 96 96 96 96 62 78 80 84
5 96 95 96 96 61 72 81 84
6 97 96 95 96 68 67 81 85
7 96 96 95 96 84 74 80 84
8 97 96 95 96 67 67 81 85
9 97 96 95 95 64 75 81 84
10 97 96 96 96 60 73 82 85
1 93 93 91 90 76 79 71 74
2 93 92 91 90 67 85 69 77
3 93 92 89 91 71 84 72 78
4 93 92 89 90 66 80 73 80
5 94 92 90 90 73 81 74 81
6 93 92 91 89 72 79 73 80
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9 93 92 90 89 68 78 72 77
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2 89 83 88 86 55 52 71 73
3 89 85 85 84 64 50 66 73
4 90 87 85 84 59 56 68 71
5 90 86 85 87 62 65 69 75
6 90 87 84 86 65 63 67 75
7 91 88 84 86 58 69 68 76
8 91 89 84 86 55 66 71 73
9 91 89 86 86 49 68 71 78
10 90 88 87 85 48 65 69 76
100
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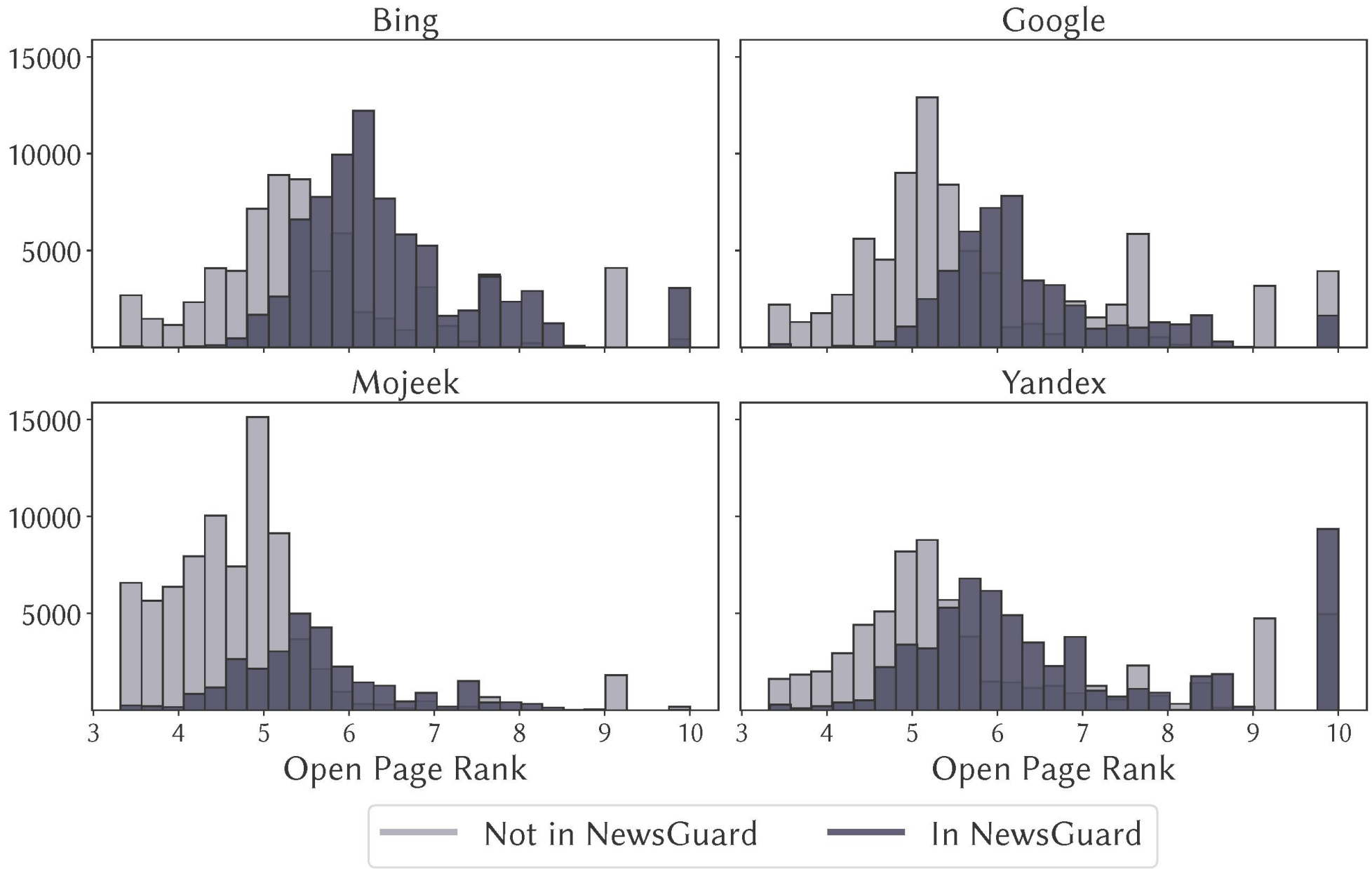
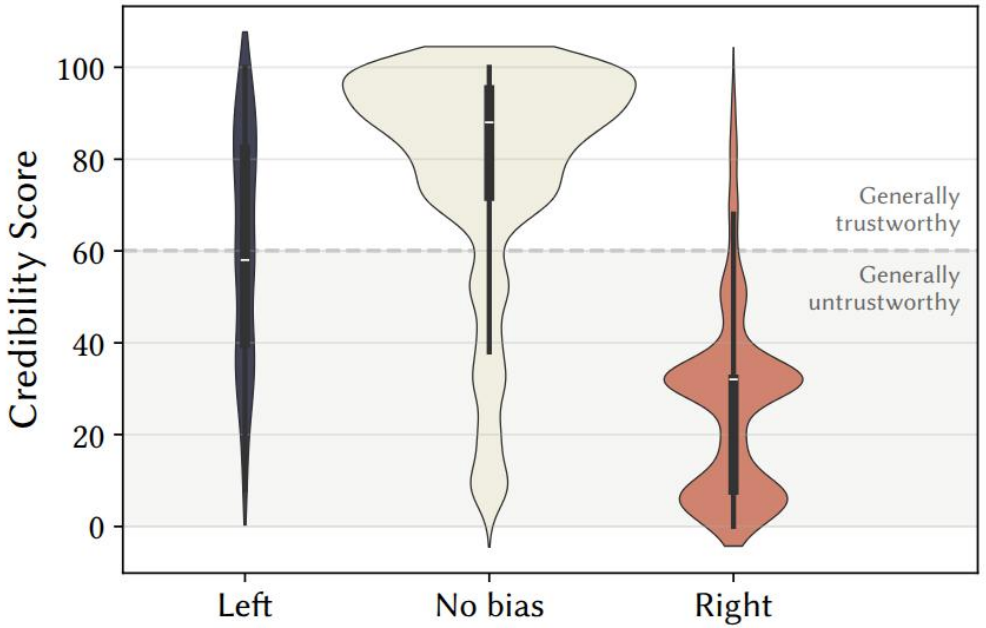
Negative
Neutral

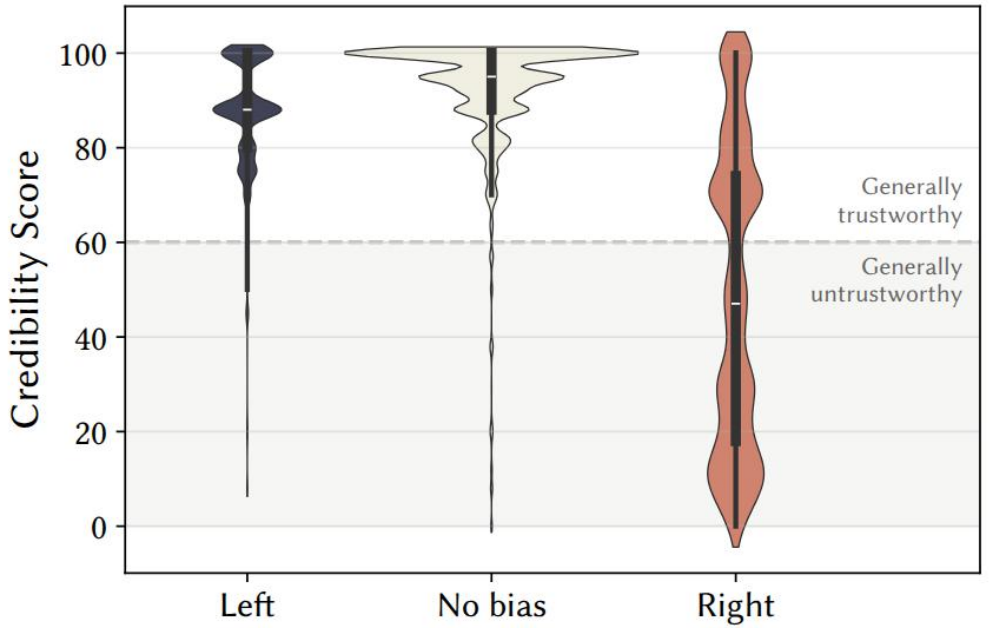
Open Page Rank of search results in our dataset



NewsGuard's label distribution



(a) Credibility per political orientation label in NewsGuard.



(b) Credibility per political orientation label in search results.

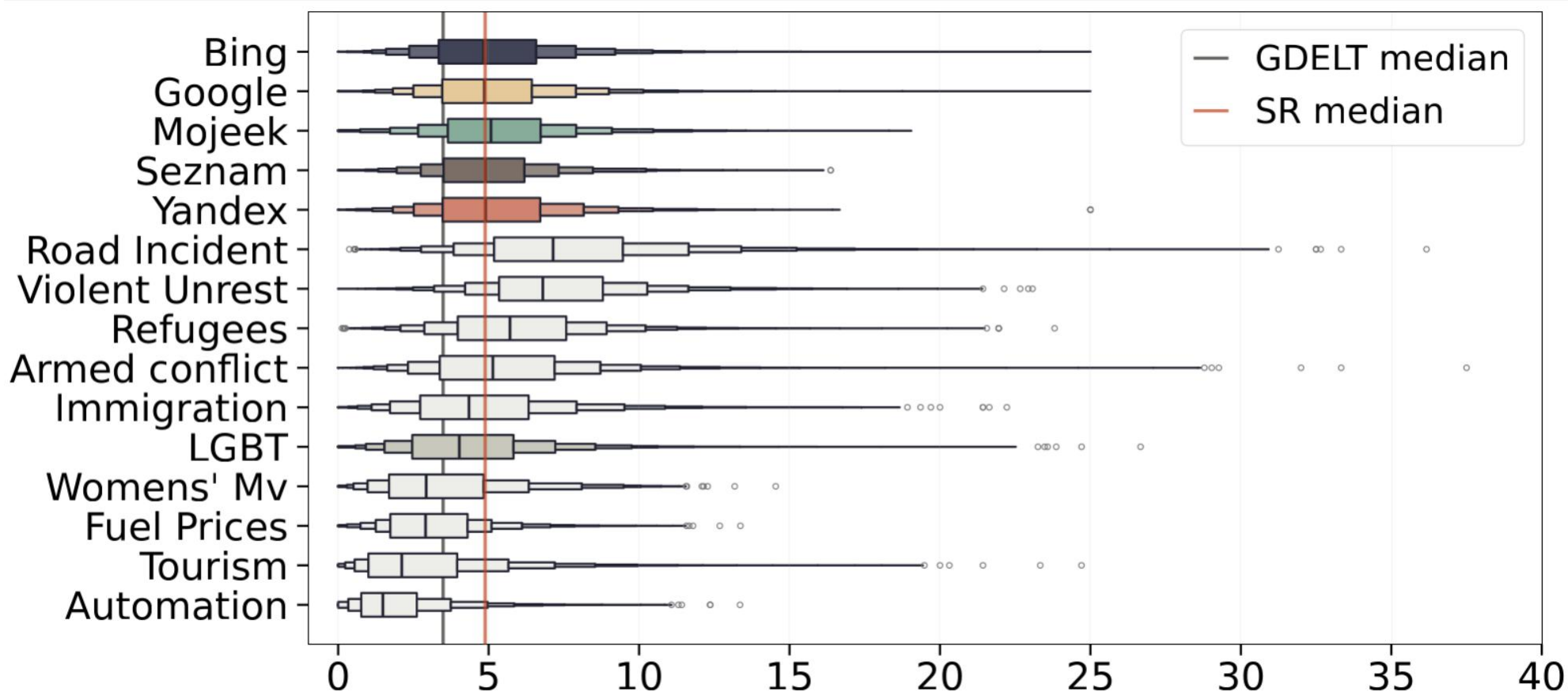
Fig. 13. Shows the distribution of credibility scores per political orientation label in (a) NewsGuard and (b) our search result data set (across all countries, search engines, and query polarities). All labels are determined by NewsGuard. For left-leaning sources, search results cluster content at high credibility scores, while the scores are evenly spread in NewsGuard's labels. For sources with no bias, the vast majority is situated between a score of 80 to 100. There are some sources under the threshold however. Regarding the right-leaning sources, there is an even spread of content across the whole range of credibility scores in search results, but scores are concentrated beneath NewsGuard's trustworthiness threshold in NewsGuard's distribution. All search engines display more high-credibility content for all political leanings compared to the base distribution of NewsGuard.

Table 8. Coverage of NewsGuard per Country

	Search results with metadata	Search results without metadata	Percentage of search results with metadata	Unique domains with metadata	Unique domains without metadata	Percentage of domains with metadata
DE	82732	137352	37.6%	692	6299	9.9%
FR	43608	77298	36.1%	539	4422	10.9%
UK	88345	131982	40.1%	949	7094	11.8%

Table 9. Coverage of NewsGuard per Search Engine

	Search results with metadata	Search results without metadata	Percentage of search results with metadata	Unique domains with metadata	Unique domains without metadata	Percentage of domains with metadata
Bing	77290	75698	50.5%	761	3901	16.3%
Google	47333	88174	34.9%	697	4714	12.9%
Mojeek	29440	107922	21.4%	691	7107	8.9%
Yandex	60622	74838	44.8%	1013	5153	16.4%


Bing
Google
Mojeek
Seznam
Yandex
Road Incident
Violent Unrest
Refugees
Armed conflict
Immigration
LGBT
Womens' Mv
Fuel Prices
Tourism
Automation
GDELT median
SR median
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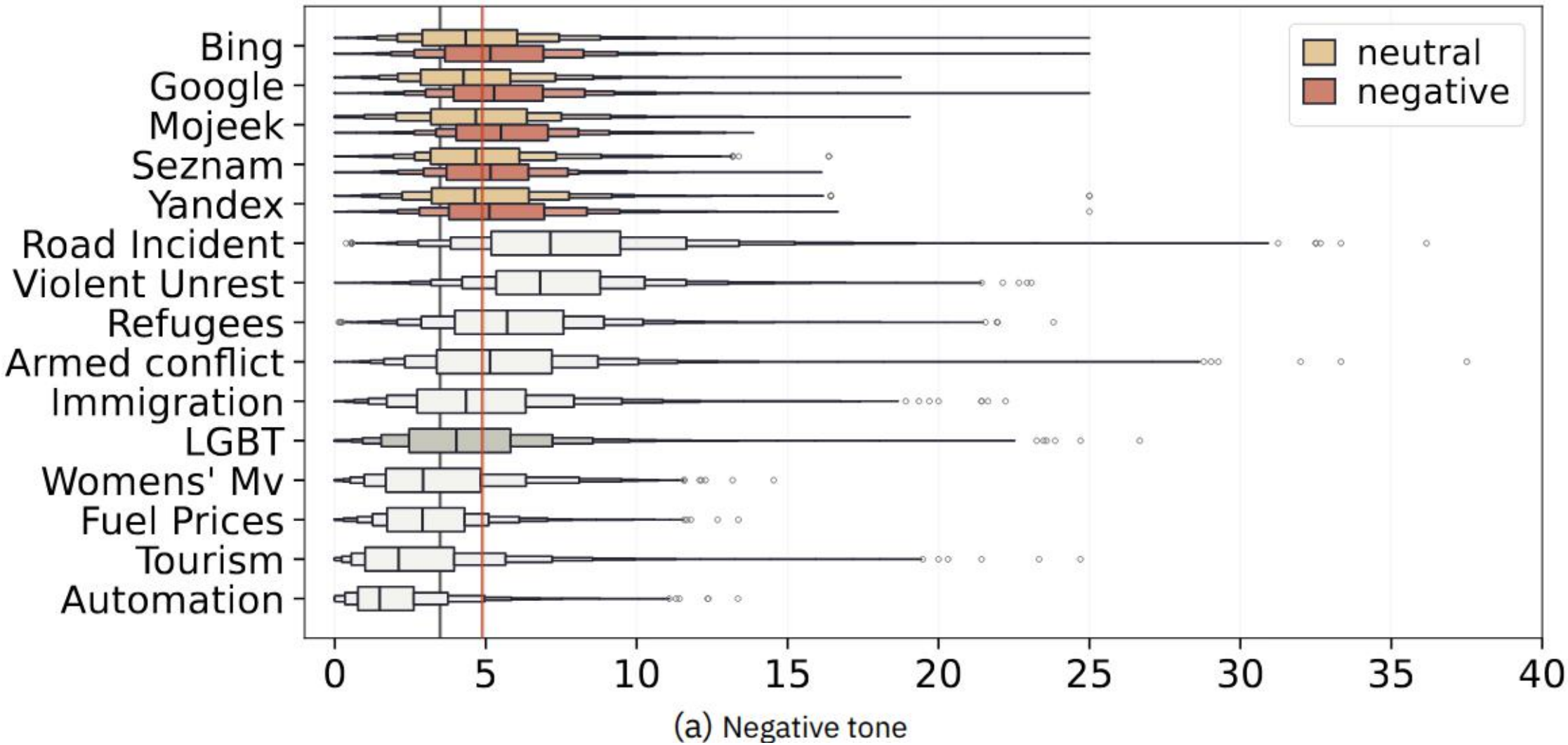
35
40



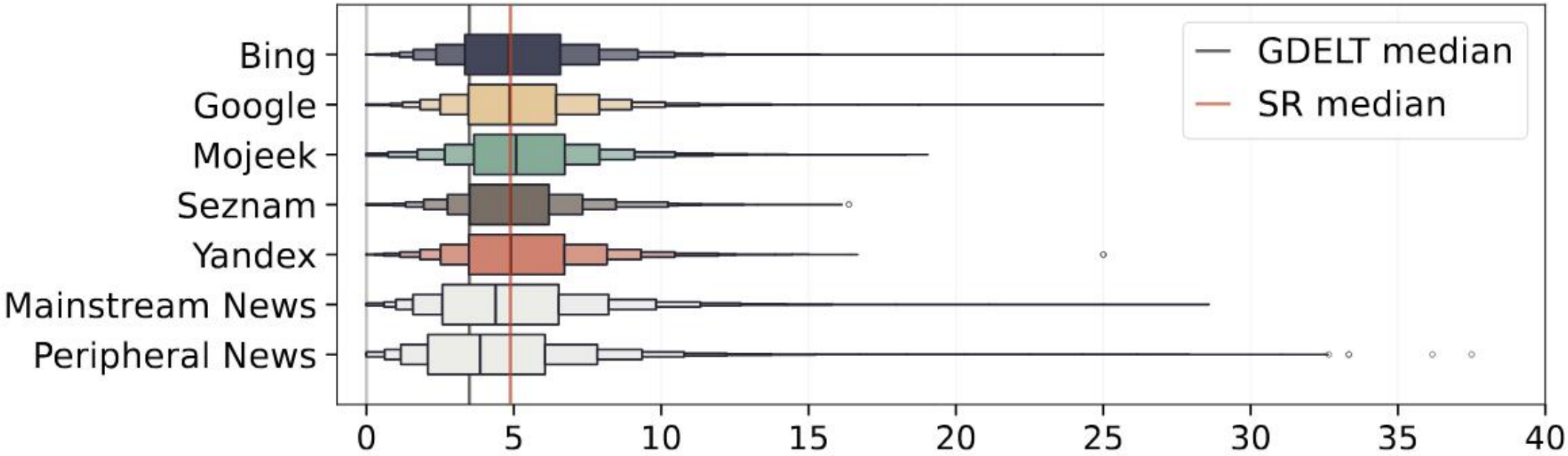
(a) Negative tone



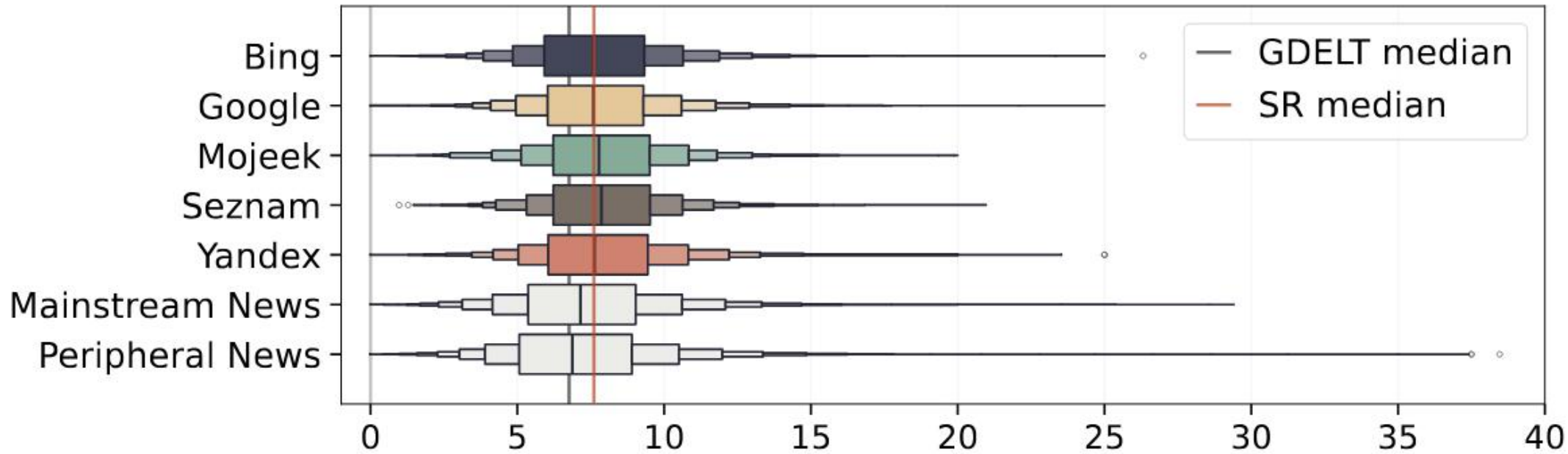
(a) Negative tone



(b) Polarization



(a) Negative tone



(b) Polarization

Table 4: Percentage of search results from mainstream or peripheral sources, for each search engine, as well as the total number of search results. This data is a subset of search results with corresponding GDELT data.

	Mainstream (%)	Peripheral (%)	Total
Bing	0.36	0.64	58,189
Google	0.33	0.67	33,411
Mojeek	0.12	0.88	11,480
Seznam	0.36	0.64	5,447
Yandex	0.20	0.80	25,572