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Evolving Conversations and Community Dynamics: An LDA Analysis of Topic Evolution and Community Influence Regarding EU elections

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ABSTRACT

Abstract – This research delves into the discourse surrounding the 2019 and 2024 EU elections on Reddit, a platform known for its distinct community-driven dynamics. Employing descriptive statistics and natural language processing techniques, we analyze posts and comments mentioning these elections to examine subreddit behavior, identify trending topics, and pinpoint the most influential subreddits in shaping these discussions. Our findings reveal a predominantly neutral sentiment on Reddit, contrasting with the affective polarization observed in other social media platforms. Thematic analysis uncovers diverse topics, ranging from domestic politics in France and Germany to Brexit-related discussions in the UK. We observe shifts in influential subreddits over time, reflecting evolving political landscapes and user engagement patterns.

INTRODUCTION

Despite the growing significance of social media in political communication, research exploring European matters through the lens of Reddit data remains notably scarce.

This study aims to fill this gap by pioneering an exploration of Reddit posts and comments mentioning the EU elections of 2019 and 2024. Leveraging descriptive statistics and natural language processing techniques, we address three key research questions: 1) How do subreddits behave towards EU elections posts, and has this behavior changed over time? 2) What are the most discussed topics on relevant subreddits, and have they evolved? 3) Which subreddits contribute most significantly to these topics, and does this influence shift over time?

By answering these questions, we seek to uncover patterns in public discourse, identify emerging trends, and shed light on the distinct role that Reddit plays in shaping and reflecting political sentiment surrounding European elections.

LITERATURE REVIEW

Following the Cambridge Analytica scandal(Schneble et al., 2018; Tarigan, 2019), the significant influence of social media on electoral processes has become indisputable to scholars and users (Afriat et al., 2020; Brown, 2020). Considering the importance of EU elections in composing European Parliament, a legislative body directly elected by European citizens that shapes the European Union's laws, policies, and budget, scholars have indeed dedicated significant effort to studying the impact of social medias on public discourse and sentiment surrounding European elections(Obholzer & Daniel, 2016; Sandberg & Öhberg, 2017; Trenchs et al., 2023).

Reddit's use as a data source, particularly in Big Data research, has grown significantly (Proferes et al., 2021), spanning numerous disciplines, from politics (Massachs et al., 2020; Mills, 2018) to technologies(Ruan & Lv, 2022).

While political communication has been already studied using Twitter (Nulty et al., 2016; Tuñón-Navarro & Bouzas-Blanco, 2023), and others social medias(Gerbaudo et al., 2019), it is undeniable that Reddit may follow a different behavior due to its distinct features.

Firstly, Reddit's structure, centered around topic-specific subreddits, fosters in-depth discussions and community building within niche interest areas. Secondly, the prevalence of anonymity and pseudonymity on Reddit contributes to a distinct communication style characterized by candor and openness, albeit with potential drawbacks related to echo chamber or misinformation, as it is typical in other socials (Shin et al., 2017). Thirdly, Reddit's emphasis on community interaction and discussion, driven by upvotes, downvotes, and extensive comment threads, encourages deeper engagement with content compared to the quick reactions and shorter conversations prevalent on Twitter and Facebook. Fourthly, Reddit's decentralized moderation model, where volunteer moderators set rules within their respective subreddits, differs significantly from the centralized, algorithm-driven approaches employed by Twitter and Facebook(Bene et al., 2022).

Therefore, it might be plausible that the communication style may differ, to have their voice heard, redditors must be less reliant on personal branding and more focused on contributing substantive content that resonates with the specific interests and norms of the community. This emphasis on content quality over personal identity could potentially lead to a more thoughtful and informed discourse, although the risk of groupthink and echo chamber effects remains a concern(Cinelli et al., 2021; Terren & Borge, 2021).

METHODOLOGY

I. Data Collection
PRAW has been used to streamline Reddit API, which serves as the official programmatic gateway for accessing Reddit's vast data repository. Using the "search" endpoints, we queried using the terms 'eu election', 'european parliament election', collecting only posts written in English.

II. Data Processing
To complement Reddit API data, sentiment analysis was performed on each post and comment using TextBlob, a Python library for natural language processing. Sentiment is represented as a floating-point value ranging from -1 (negative) to 1 (positive), reflecting the nuanced nature of emotions expressed in the text.

The raw dataset presents the attributes:

Key	Description	on Reddit
subreddit	Subreddit (community) from which the post originates.	yes
post_id	Unique identifier for the post.	yes
post_title	Title of the post.	yes
post_author	Username of the post creator.	yes
post_text	Main text content of the post (if applicable).	yes
post_sentiment	Numerical sentiment score of the post title and post text.	No
comments_sentiment	List of sentiment scores for each comment.	No
comments_bodies	List of the text content of each comment.	yes
comments_lenght	List of comment lengths (character count).	No
comments_author	List of usernames for each comment author.	yes
comments_num	Total number of comments.	Yes, but manually calculated
comments_sentiment_mean	Average sentiment score across all comments.	No
comments_sentiment_std_dev	Standard deviation of comment sentiments.	No
created_utc	Timestamp (UTC) of post creation.	yes
upvote_score	Number of upvotes the submission received.	yes
upvote_ratio	Percentage of upvotes out of all votes.	yes
url	Direct link to the Reddit post.	yes

However, the dataset was further refined, as the Reddit search algorithm retrieves results containing individual search terms, and then the data was partitioned into 2019 and 2024 datasets, each representing a 5-year window centered 2.5 years before and after the election (Fig.1).
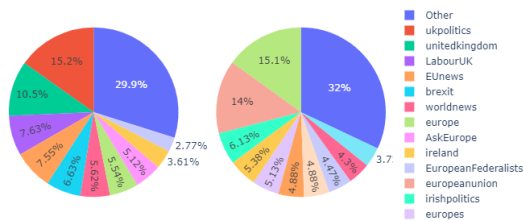

Figure 2- Top10 subreddits Dataset 2019 and Dataset 2024

III. Analytical Strategy

RQ1: 1) How do subreddits behave towards EU elections posts, and has this behavior changed over time?

Table I indicates a diverse range of subreddits, encompassing those focused on European countries, regions, and politics (r/unitedkingdom, r/europeanunion, r/EUnews), others representing various political ideologies (r/Conservative, r/socialism, r/neoliberal), and platforms for news and discussion (r/worldnews, r/ukpolitics, r/irishpolitics). Niche interests are also represented (r/MapPorn, r/PropagandaPosters), while subreddits like r/AskEurope and r/AskBalkans foster interaction among diverse users. The "subscribers" column reveals a wide range in popularity, from millions of subscribers for general news subreddits to fewer than 100 for highly specialized

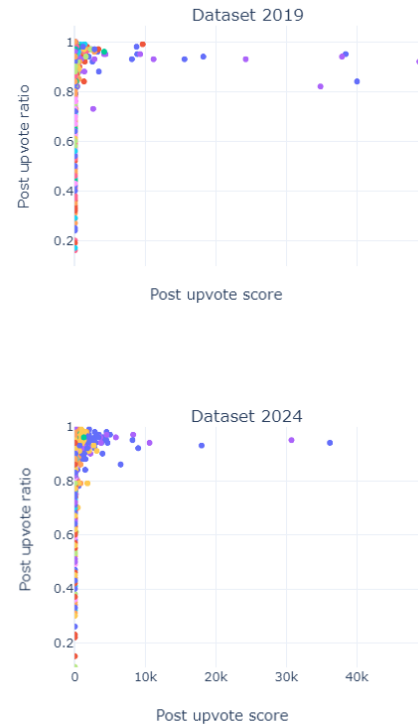ones, suggesting varying levels of activity and community engagement.

Figure 1 - Upvote ratio and Upvote score

Aggregated subreddit statistics (Table II and Table III) show that post volume fluctuates. In 2024, some subreddits were highly active (r/europeanunion, r/europe) compared to others (r/PropagandaPosters, r/Scotland). High engagement, measured by Upvote Ratio, indicates positive feedback and interaction. Comment diversity, quantified by the standard deviation of comment sentiment, also varies. Larger subreddits like r/europeanunion and r/europe exhibit more balanced sentiment distributions for both posts and comments, potentially reflecting broader user bases with diverse perspectives. Smaller, more focused subreddits may display more pronounced sentiment biases in either posts or comments.

Figure 2 shows a clear negative correlation between upvote score (net score of a post or comment, calculated as the number of upvotes minus the number of downvotes) and upvote ratio (proportion of upvotes out of the total number of votes, upvotes plus downvotes). This means that as the number of upvotes on a post increases, the ratio of upvotes to downvotes (or possibly total votes) tends to decrease. In addition, the majority of posts in both datasets have relatively low upvote scores (concentrated below 10,000). In 2024, a higher proportion of posts garnered substantial upvote scores compared to 2019, potentially indicating increased visibility or popularity of certain content. However, the negative correlation between upvote score and upvote ratio persists across both datasets. This suggests that the fundamental relationship between post visibility and the proportion of positive to negative votes remains relatively stable, implying that increased visibility does not necessarily equate to universal acclaim. This shift may be due to the fact that posts with higher visibility (more

upvotes) are more likely to attract downvotes as well, thus lowering the upvote ratio. This could be due to increased exposure to diverse opinions and potential for disagreement, however, this would also confirm that the Reddit does not suffer of an affective polarization, characterized by intense negative feelings between partisan groups(Iyengar et al., 2012), but rather it is rather characterized by a neutral tone, even when it comes to disagreement.

Figure 3 - Active redditors per subreddit (2024)

Figure 4- Active redditors per subreddit (2019)

At the same time Figure 3 and Figure 4 identify active users, defined as subredditors with more than 5 contributions in at least 3 different subreddits. Each line represents an author, and the subreddits they interact with are indicated by the points on the line. The thickness of the line connecting an author to a subreddit represents the frequency of the interaction (e.g., number of comments or posts). It was meant to test the echo chamber effect, however, due to Reddit restrictions (error 403), it was impossible to retrieve additional posts and comments using just the author id. Therefore, it is only noticeable that redditors publish and comment on several subreddits and that in the 2024 dataset most active subreddits have introduce an automatic moderator (*AutoModerator*).

Figure 5 seems to represent a weak correlation between post sentiment and average comment sentiment. While some subreddits show a tendency for positive posts to attract positive comments (and vice versa), this is not consistent across all subreddits. Other factors, such as the subreddit's topic, community culture, and moderation policies, likely play a more significant role in shaping comment sentiment than the sentiment expressed in the original post.

Figure 5 - Mean of comment sentiment and Post sentiment

Posts and comments related to EU elections seems to draw a picture of Reddit as a social media, that keeps a neutral sentiment not falling victim of affective polarization, as many other social media, however, further analysis may be needed taking into consideration a moderation policy that each subreddit may or may not apply (automatic or not). In addition, the echo chamber effect requires further analysis.

RQ2: What are the most discussed topics on relevant subreddits, and have they evolved?

Latent Dirichlet Allocation (LDA)(Blei et al., 2002), a widely recognized topic modelling approach (Gottfried et al., 2021; Nastiti et al., 2021), was employed to uncover thematic structures within a corpus of Reddit text data. LDA was selected due to its ability to identify coherent topics without prior domain knowledge, handle sparse input, and produce interpretable results with fewer topics compared to word-embedding methods(Egger & Yu, 2022), considering that 1) Prior domain knowledge is not necessarily required 2) Finds coherent topics when correct hyperparameter 3) tuning is applicable 4) deal with sparse input, if neede 5) The number of topics is generally smaller than word-embedding based approaches; thus, it is easier to be interpreted 6) One document can contain several different topics (Mixed membership extraction)

Prior to LDA model training, the text data underwent a series of preprocessing steps. Emojis, URLs, punctuation, and underscores (associated with hashtags) were removed to minimize noise and focus on semantically meaningful content. The text was then tokenized into individual words, which were subsequently lowercased. Common English stopwords, as well as Reddit-specific terms and frequent election-related words, were removed to enhance topic clarity and distinctiveness. However, to preserve nuanced meaning and capture multi-word expressions, bigrams and trigrams were retained in the analysis.

Keeping in mind that tuning LDA models can be computationally expensive, we started with a smaller range of parameters and expand as needed. As all the other hyperparameters, they were tuned manually consulting the pyLDAvis, an interactive visualization tool designed to interpret LDA models, instead of using coherence metrics (e.g., C_V, UMass).

The pyLDAvis visualization employs a two-panel layout to facilitate topic model interpretation. The left panel displays topics as circles in a two-dimensional space, their size correlating with prevalence within the corpus. Inter-topic distances reflect semantic similarity, with closer proximity suggesting greater relatedness.

The right panel presents a bar chart illustrating the most salient terms for selected topics. Bar length denotes term relevance, with blue bars representing corpus-wide frequency and red segments indicating topic-specific significance. The λ slider adjusts term relevance calculation: lower values prioritize topic uniqueness, while higher values emphasize general frequency.

Figures 6 and 7 depict a model tuned on the 2024 dataset, excluding lemmatization and stemming, which although recommended by scholars were producing less accurate topic clustering. A no_below=10 parameter ensured only terms appearing in at least ten documents were considered, while no_above=0.5 filtered out overly common terms exceeding 50% document prevalence.

Topic 4 within the LDA model distinctly centres on French politics, particularly from a conservative or right-wing perspective. The prominence of ideological terms ("right," "left," "far-right") alongside references to France and President Macron indicates a focus on domestic political issues. Emotionally charged language and references to contentious topics like immigration suggest discussions characterized by strong opinions and potential for disagreement. The topic's relative isolation within the Intertopic Distance Map emphasizes its unique thematic focus, while the circle size underscores the prevalence of French political discourse within the analyzed Reddit corpus.
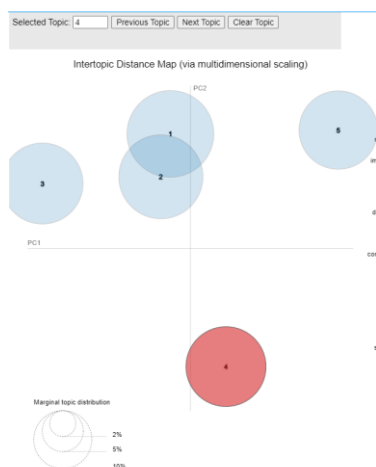

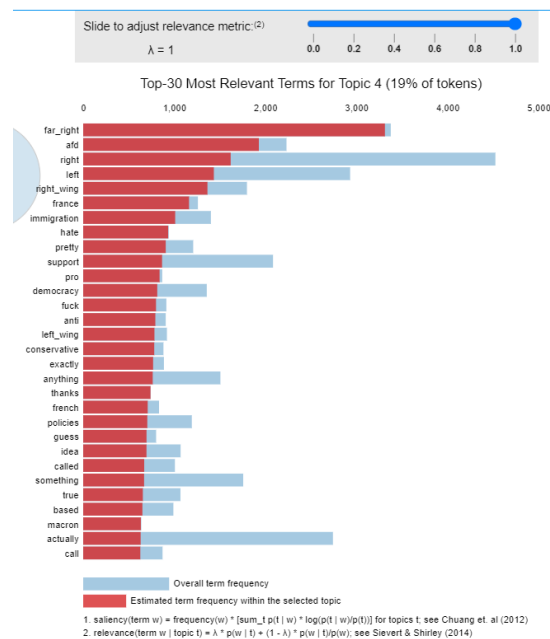*Figure 6 - Intertopic Distance Map (Dataset 2024)*

Figure 7- Top-30 Most Relevant Terms for Topic 4 (Dataset 2024)

In Figure 8, the analysis of relevant terms ("germany," "still," "vote," "left," "many") suggests that Topic 5 pertains to German politics, potentially centering around the European Union (EU) elections or a similar political event in Germany. The terms indicate discussions about voting, political parties, and election outcomes. The prominence of the term "left" and the mention of "greens" could indicate a focus on left-leaning parties, particularly the German Green Party, and their performance in the elections.

Considering the Greens' significant representation in the Greens/European Free Alliance (EFA) group after the 2019 EU elections, Topic 5 might be exploring the party's evolving political landscape. The shift in political discourse, prioritizing social security over climate change due to the Ukraine war, could be a central theme within this topic. This change may have sparked internal debates within the party and influenced voter perceptions, potentially impacting their performance in subsequent elections.

In order to maintain consistency in model tuning, Figures 9 and 10 present a model trained on the 2019 dataset using the same hyperparameters as the 2024 model: excluding lemmatization and stemming, with no_below=10 and no_above=0.5. Notably, the Intertopic Distance Map for the 2019 dataset revealed a reduction in distinct topics to only four. However, tuning manually the model, consulting the interptopic distance map, topics were reduce to 4.
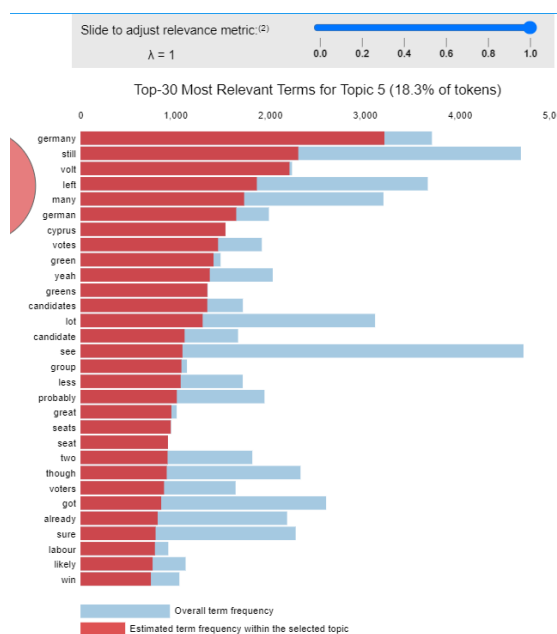
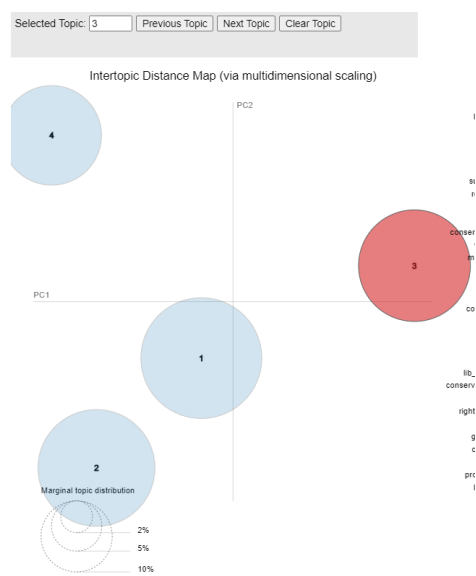*Figure 8 - Top-30 Most Relevant Terms for Topic 5*

Figure 9- Intertopic Distance Map (Dataset 2019)

Topic 3, as revealed through the topic modeling visualization, centres on the political discourse surrounding the United Kingdom's withdrawal from the European Union (Brexit). This interpretation is substantiated by the prevalence of salient terms intrinsically linked to the Brexit process. References to the "Labour" and "Conservative" parties, the primary political factions involved in the Brexit debate, underscore the partisan nature of the discourse. The inclusion of terms like "votes," "party," "government," and "mps" further emphasizes the centrality of political processes and institutions in shaping the Brexit trajectory. The term "deal" likely alludes to the protracted negotiations surrounding the withdrawal agreement between the UK and the EU, a focal point of political contention. The presence of the terms "remain" and "leave," representing the two opposing camps in the referendum, highlights the fundamental question at the heart of the Brexit debate. The mention of "EU" reinforces the pivotal role of the European Union in this discourse.
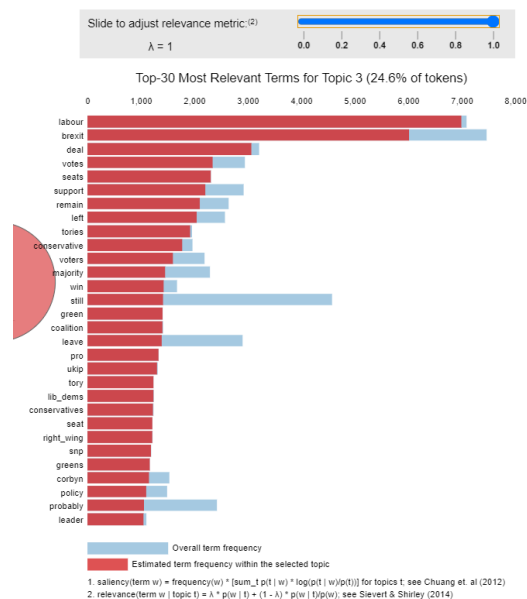

Figure 10 - Top-30 Most Relevant Terms for Topic 3

The most relevant topics regards Germany and France and UK, this is probably due to a repetition effect, the most common discussions regards the most powerful and influencing countries in the EU that are the one that have more media coverage also in other countries, the one that covered or covers the larger number of seats
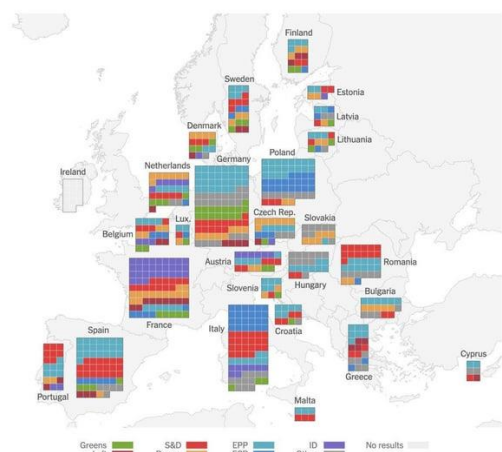

Figure 11 - 2024 EU Election seats

RQ3: Which subreddits contribute most significantly to these topics, and does this influence shift over time?

To identify the most influential subreddits in shaping specific topical discussions, a network graph visualization was utilized (Figure 12). This approach represents topics as colored circular nodes, with edges connecting them to either rectangular nodes (indicating subreddits) or gray circular nodes (representing the top five words extracted per topic using Latent Dirichlet Allocation (LDA)).

Figure 12 – Topic Graph (Dataset 2019)

Figure 12, analyzing data from 2019, reveals that the primary contributors across all identified topics were predominantly the subreddits r/unitedkingdom, r/EUnews, r/ukpolitics, and r/LabourUK.

In Figure 13, which examines the 2024 dataset, r/europe emerges as the most significant contributor to at least three out of the four LDA-extracted topics. Another major contributor is r/europeanunion. Notably, r/irishpolitics contributed to topic 4, while r/EUnews exhibited a reduced contribution compared to 2019. Additionally, r/worldnews, r/EuropeanParliament, and r/EuropeanFederalists contributed equally across the various topics.

Figure 13 - Topic Graph (Dataset 2024)

Based on the analysis presented in Figures 12 and 13, we can definitively conclude that the contribution of subreddits to shaping discussions on specific topics is not uniform across time. This non-uniformity is evident in both the prominence of different subreddits across different years (e.g., the increased significance of r/europe in 2024) and the varying levels of participation within the same subreddits across different topics within a given year.

For a more detailed visualization of these findings, we recommend consulting the graph folder within the accompanying GitHub repository.

CONCLUSIONS

This finding suggests a dynamic landscape of online discourse, where the influence of different communities waxes and wanes depending on the specific issues being discussed and the broader socio-political context. Further investigation into the factors driving these fluctuations could provide valuable insights into the evolution of online communities and their role in shaping public opinion.

This study on Reddit discourse surrounding EU elections in 2019 and 2024 has revealed several key findings, including a predominantly neutral sentiment and diverse key topics. However, limitations exist, such as the exclusion of non-English posts and emojis, asymmetrical data between the two elections, and the need for more nuanced topic modeling per subreddit.

Future research should address these limitations by incorporating multilingual analysis, investigating the role of emojis, utilizing a more balanced dataset, and conducting longitudinal analyses. Additionally, studying the impact of automated moderation and the potential for echo chambers, as well as exploring Reddit's influence on real-world political outcomes, would further enhance our understanding of the platform's role in political discourse.

Despite these limitations, this research offers valuable insights into the unique characteristics of Reddit as a platform for political communication, emphasizing its potential for understanding nuanced public opinion and the evolving political landscape.

DATA AVAILABILITY

To ensure reproducibility, the research process, data collection, and analysis scripts are documented in a Jupyter Notebook available on the project's GitHub repository: https://github.com/ailine-luconi/Reddit-dynamics-in-eu-elections

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APPENDIX

TABLE I – Subreddit and their details

subreddit	created_utc	subscribers	description
worldnews	25/01/2008	38268137	A place for major news from around the world, excluding US-internal news.
dataisbeautiful	14/02/2012	20946044	DataIsBeautiful is for visualizations that effectively convey information. Aesthetics are an important part of information visualization, but pretty pictures are not the sole aim of this subreddit.
technology	25/01/2008	16702351	Subreddit dedicated to the news and discussions about the creation and use of technology and its surrounding issues.
politics	06/08/2007	8548384	/r/Politics is for news and discussion about U.S. politics.
europe	25/01/2008	6869690	Europe: 50 (+6) countries, 230 languages, 746M people… 1 subreddit.
MapPorn	21/05/2011	4224681	High quality images of maps.
unitedkingdom	02/04/2008	3400249	For the United Kingdom of Great Britain (England, Scotland, Wales) and Northern Ireland; News, Politics, Economics, Society, Business, Culture, discussion and anything else UK related.
conspiracy	25/01/2008	2116644	This is a forum for free thinking and for discussing issues which have captured your imagination. Please respect other views and opinions, and keep an open mind. Our goal is to create a fairer and more transparent world for a better future.
AskEurope	15/06/2012	1451902	Ask Europeans questions about their countries!
Conservative	25/01/2008	1097094	The largest conservative subreddit. https://discord.gg/conservative
ireland	03/03/2008	934163	An all-island subreddit for discussion of Irish news, politics, culture, history and society.
poland	29/07/2008	872893	The official English language subreddit for Poland and Polish news. Questions get answered, recommendations get recommended, and - you know - things get done.
germany	27/05/2008	849073	English-language discussions related to Germany.
PropagandaPosters	23/03/2010	618502	A subreddit for propaganda collectors, enthusiasts, or all who are fascinated by propaganda as an insight into history, sociology, perspective, and manipulation through art and other mediums
anime_titties	07/05/2020	504473	World Politics and News https://discord.gg/dhMeAnNyzG https://lemmy.world/c/anime_titties
ukpolitics	08/03/2008	492124	Political news and debate concerning the United Kingdom. Rules detailed here: https://www.reddit.com/r/ukpolitics/wiki/rules
hungary	08/06/2009	487067	Tartalom ami Magyarországgal, a magyar kultúrával kapcsolatos, illetve témák amik érdekesek lehetnek a tagok számára.
Scotland	28/07/2008	473774	Scotland - all things Scotland, Scottish and Scot here.
socialism	29/06/2008	458011	An international community for socialists, to discuss current events in our world from our anti-capitalist perspective(s). Certain knowledge of socialism is expected from participants. This is not a space for non-socialists. Please be mindful of our rules before participating, as they are actively enforced. New to socialism? Please visit r/Socialism_101 prior to participating here.
Destiny	27/10/2008	242054	Hub for all things Destiny (the streamer, not the game).
pakistan	26/01/2008	226089	The Front Page of Pakistani Reddit!
2westerneurope4u	09/04/2022	225194	Ironic ultranationalistic memes about Western European countries (Netherlands, Luxembourg, Germany, France, Italy, Spain, Portugal, Greece, UK, Ireland, Denmark (incl. Greenland), Norway, Sweden, Finland, Iceland, Switzerland, Austria, Flanders & Wallonia) You will learn more about European culture here than anywhere else on Reddit.
CanadaPolitics	25/09/2010	223446	Polite discussions about Canadian politics.
YUROP	03/03/2013	174982	YUROP is a shrine to the awesomeness of the continent, islands, regions, member and non-member states of Her Greatest Europa, the progressive Union of Peace, home of the freest health care, the finest food and the diversest and liberalest of them all.
neoliberal	14/04/2011	168589	Trains, free trade, and open borders; trans rights and taco trucks on every corner. Please read the sidebar for more information.
bristol	17/08/2009	152706	Bristol UK
AskBalkans	05/03/2019	140494	Questions about the Balkan states answered! New users check out our Wiki or FAQ page, get to know our community and it's rules.
EnoughTrumpSpam	07/09/2015	99109	Because the amount of Trump spam is *too damn high!* Enough Ð¢Ñ€Ð°Ð¼Ð¿ Spam
AntiTrumpAlliance	02/01/2017	68638	An alliance among all who oppose convicted felon Donald Trump's actions, positions, cabinet, supporters, policies, or motives. This alliance includes anyone from the left or the right; anyone from any religion or lack thereof; anyone from any country or state; any man, woman or child.
LabourUK	13/02/2014	66304	A subreddit for breaking news and discussion concerning the British Labour Party, the broader Labour movement in the UK, and UK politics.The Labour Party is a democratic socialist party led by Keir Starmer, elected leader in 2020. It is the largest party in the UK with around 400,000 members, with a significant presence in the Scottish Parliament and the Senedd.If you're a Liberal Democrat, a Green or even a Conservative, you'll find us a worthwhile community to follow.
europes	05/09/2015	57882	A respectful, cozier space for discussion of and about European issues. Tolerance and civility is the standard we strive for.

brexit	19/09/2014	56004	A place to debate and discuss the UK's exit from the European Union. Please debate general UK topics (non-brexit related) elsewhere, such as r/ukpolitics
interactivebrokers	27/08/2014	52739	Unaffiliated subreddit of Interactive Brokers, a popular multinational brokerage firm. It is often best known for its trader workstation, API's, and low margins. It operates the largest electronic trading platform in the U.S. by number of daily average revenue trades. The company brokers stocks, options, futures, EFPs, futures options, forex, bonds, and funds.
armenia	02/11/2008	51169	There is a good sense of community here. It is a place for civil, open-minded and constructive dialogue related to quality links or text posts on topics of interest connected to Armenia. Everyone is welcome to participate.Please remember that this is a sub dedicated to the country of Armenia. Posts containing news or issues related to the diaspora should go on r/Armenian instead.
cyprus	17/05/2009	42121	Welcome to Cyprus, the jewel of the Mediterranean sea.
europeanunion	20/02/2012	41694	The EU's news & official content in one place.
Luxembourg	25/07/2010	39503	Official Subreddit for the Grand Duchy of Luxembourg. Keep it chique, speak your mind and welcome your friends to join the conversation!
EuropeanFederalists	14/12/2013	22614	A multilingual subreddit for those who are dedicated to the establishment of a democratic and federal European Union.
EUnews	31/03/2009	20642	News and discussion about the EU, EU territories, members of the Council of Europe or other European nations
irishpolitics	25/04/2011	19660	r/irishpolitics is a forum dedicated to discussion of Politics in Ireland.
imaginaryelections	07/01/2018	16488	A place to share imaginary elections
centerleftpolitics	17/09/2017	13244	A place for moderately left leaning people to discuss and share ideas about global politics and world news.
tories	07/05/2011	13079	This is a subreddit for British conservatives to talk about the UK Conservative and Unionist party as well as conservatism more generally.
the_schulz	24/11/2016	11749	[Closed for good.](https://www.youtube.com/watch?v=yctDMFMlvHE)
LibDem	15/04/2009	10231	Welcome to the unofficial Liberal Democrat subreddit. This is a subreddit for the UK Liberal Democrats Party. Please feel free to discuss all topics related to the Lib Dems. Please read the rules before you post. Feel free to visit us on our discord at: https://discord.gg/NxYEpGe9He
eu	22/02/2006	6597	For in-depth discussion and analysis of policies and events pertaining to the European Union - EU - Europe
VoltEuropa	27/06/2018	5796	We believe in a united Europe that values its citizens and residents, who are able to fulfill their unique potential and continuously strive to achieve together the highest standards of human, social, environmental, and technical development.
YAPms	21/07/2019	5581	The place to share political maps and join the community. We make memes more than we predict elections to be honest. It's a very serious addiction. We're looking to expand for more bipartisan representation. â€œThe Election Mafiaâ€• -Red Eagle Politics
eulaw	13/04/2014	5294	Subreddit for discussion of European Union law and related topics.
EuropeanArmy	23/11/2018	4883	A multilingual place for anything related to current European national armies, navies, coast guards, police and air forces as well as a future European Army.
MHOC	28/05/2014	4497	Vote. Debate. Legislate.
Disinfo	19/07/2009	3526	Committed to tracking and analyzing disinformation, active measures, propaganda and conspiracy movements.
ukipparty	18/11/2012	3506	This sub reddit is a UKIP forum for supporters or anyone from any end of the political spectrum that wants to know more about the real UKIP and get all the latest news.
UnitedKingdomPolitics	06/01/2018	2712	Political articles and debate concerning the United Kingdom. Robust debate is encouraged, and political views from a wide spectrum are tolerated here. No particular political opinion is favored here and contributions are judged by quality rather than perspective. This subreddit opts-out of r/All.
NordicUnion	30/07/2011	2203	This Subreddit represents the wish for a union between all autonomous Nordic countries under one Nordic parliament that would only have strict enumerated powers in the Nordic constitution. A Nordic Union would most likely be accepted by most of the world's countries and population because the Scandinavian subcontinent has almost always been referred to as a collaboration between the nordic states.
colchester	06/08/2011	1982	The Reddit home of Colchester, Essex, UK
Article13	13/06/2018	1465	A subreddit for discussion of Article 13 of the *Proposal for a Directive of the European Parliament and of the Council on copyright in the Digital Single Market* and how we can protest it.
acteuropa	04/12/2016	1435	ActEuropa is a movement fighting for a strong and sovereign Europe in an uncertain world.
Gotterfunken	19/10/2018	1427	Gotterfunken Federal Council, a European Reddit mods multilingual community.
EuropeanPeoples	18/05/2016	867	Celebrating Europe, and all those people who make it their home
Delete_The_Donald	18/08/2016	622	This sub is dedicated to compiling evidence that /r/The_Donald is consistently breaking the Reddit content policies and Reddiquette. /r/European was quarantined due to its hateful core message and its repeated offenses against Reddit rule.
TwoPresidents	17/04/2018	492	A sub calling for the governments of the world to adopt dual executive leadership.
Crimea	01/03/2014	430	
ModelNZParliament	30/09/2017	397	We are a community of political enthusiasts who have come together to debate and legislate in the setting of the NZ Parliament!
JonathanPie	04/11/2018	312	Jonathan Pie is the comedy sensation who satirises the world of politics and the media. A frustrated news reporter known for venting his spleen in unguarded â€œoff-cameraâ€• rants.
UKPoliticsAMA	21/05/2011	261	/r/UKpoliticsAMA is a directory of AMAs(â€œAsk me Anythingâ€•) from elected officials (MPs, Local Cllrs, Devolved representatives) campaigners, journalists and so on who are based in the UK.

			We used to host our own, but found it much more suitable to direct to where these AMAs are happening in the bigger subs!
modelparliament	13/04/2015	249	~~Reddit Model Parliament of Australia (Old)~~ Archived.
MartinOMalley	21/09/2013	226	A subreddit dedicated to the American politician and social leader Martin O'Malley (D).
ModelAustralia	07/07/2015	207	Reddit's Model Australian Political Simulation!
EYP	20/03/2013	203	This is a subreddit for anyone involved or interested in the European Youth Parliament (EYP) to submit and discuss anything and everything to do with EYP.
TeenagerCity	13/06/2019	117	A subreddit where an actual government of teenagers exists
worldliberalism	10/03/2016	115	An international subreddit for discussion of liberal politics, philosophy, and news from a liberal perspective.
ModelNZMP	23/07/2018	92	
Tigerstaden	02/12/2012	84	Official subreddit of Tigerstaden - town located in -,+ sector on the Civcraft server.
CDU_CSU	10/09/2015	84	Als Union oder Unionsparteien werden in Deutschland die beiden Schwesterparteien CDU und CSU bezeichnet. Im Deutschen Bundestag bilden sie eine gemeinsame Fraktion, die CDU/CSU-Bundestagsfraktion. Ihre Jugendorganisation ist die Junge Union (JU).
meumeta	04/02/2016	64	The meta matters of the Model European Union, part of the Model World
ModelAustraliaHR	07/01/2016	51	The House of Representatives chamber for the Model Parliament of Australia at /r/ModelAustralia
TheWorkersPartyGB	02/05/2024	24	The official page for the Workers Party of Britain. The Workers Party of Britain, also called the Workers Party of Great Britain or Workers Party GB, is a socialist political party in the United Kingdom, formed in December 2019 and led by George Galloway, the Member of Parliament for Rochdale since a 2024 by-election.
MNZElection12	27/12/2019	17	The campaign for the 12th General Election to the Model New Zealand Parliament.

TABLE II – Aggregated Statistics Dataset 2019

subreddit	post_id_count	post_sentiment_mean	post_sentiment_std	comments_num_sum	comments_num_mean	comments_num_std	post_upvote_score_mean	post_upvote_score_std	post_upvote_ratio_mean	post_upvote_ratio_std	comments_sentiment_std_dev_mean	comments_sentiment_std_dev_std_dev
ukpolitics	181	0.059506	0.189455	26259	145.0773	176.4304	270.8895	828.267	0.77779	0.194235	0.22109	0.049919
united kingdom	125	0.059554	0.194793	9711	77.688	123.291	190.856	425.6416	0.7752	0.197617	0.208916	0.074009
LabourUK	91	0.047062	0.114726	1679	18.45055	24.75985	16.04396	27.5362	0.812088	0.151214	0.198087	0.090416
EUnews	90	-0.01371	0.180891	3	0.033333	0.234641	2.511111	1.781581	0.962444	0.097788	0.176777	
brexit	79	0.048287	0.174092	3348	42.37975	67.40488	49.65823	113.7356	0.778228	0.214899	0.211292	0.068771
worldnews	67	-0.00316	0.211445	6067	90.55224	199.7182	2260.119	8568.982	0.76373	0.146058	0.205705	0.074964
europe	66	0.041358	0.119134	15385	233.1061	217.8098	2522.379	7346.464	0.889848	0.085853	0.223306	0.032572
AskEurope	61	0.072052	0.167193	3307	54.21311	68.76533	36.2623	101.3915	0.80623	0.132252	0.193162	0.047526
ireland	43	0.036848	0.183383	1607	37.37209	54.2007	76.32558	236.5896	0.818372	0.160608	0.227864	0.054271
EuropeanFederalists	33	0.08339	0.143899	621	18.81818	31.94767	32.78788	45.49022	0.922121	0.103494	0.228447	0.084425
neoliberal	32	0.022709	0.0610155	1118	34.9375	69.00955	129.9375	289.2511	0.902813	0.099975	0.201367	0.077701
LibDem	32	0.063316	0.134927	295	9.21875	10.213	31.84375	21.26501	0.911562	0.103926	0.176822	0.080804
Scotland	29	0.006531	0.079868	1119	38.58621	41.41732	117.6897	332.2129	0.838621	0.192608	0.240718	0.069073
MapPorn	26	0.070272	0.184176	703	27.03846	34.27358	72.65385	80.80146	0.885	0.084865	0.22451	0.072306
tories	26	0.054027	0.133273	475	18.26923	24.04089	12.30769	9.548902	0.841154	0.157361	0.206438	0.097504
irishpolitics	20	0.018828	0.08272	140	7	9.442346	13.35	10.77656	0.9065	0.087074	0.206809	0.110229
europeanparliament	18	0.079367	0.128808	68	3.777778	5.578905	18.11111	9.688616	0.878333	0.072619	0.18782	0.082571
YUROP	17	0.102146	0.133874	613	36.05882	67.9057	144.1176	312.6749	0.945882	0.047178	0.212707	0.085591
eu	15	0.025266	0.120802	34	2.266667	3.058166	5.133333	4.189556	0.774666	0.148942	0.122695	0.090786
bristol	13	0.118757	0.296864	140	10.76923	14.42309	21.61538	30.6799	0.745385	0.175291	0.204045	0.12474
germany	13	0.050274	0.078407	711	54.69231	134.3803	334.6154	807.5445	0.733846	0.24727	0.158798	0.072631
poland	11	0.074112	0.147399	434	39.45455	41.90791	37.54545	72.88534	0.712727	0.159003	0.241505	0.048665
Conservative	10	0.066806	0.292824	236	23.6	31.70419	155.6	213.1657	0.775	0.139861	0.226705	0.06082
acteuropa	8	0.076793	0.109134	51	6.375	8.798336	13.25	13.80217	0.90625	0.084674	0.142114	0.099
politics	8	-0.06295	0.184236	167	20.875	26.27567	544.375	737.1939	0.90625	0.098842	0.229242	0.107116
dataisbeautiful	8	0.053333	0.101856	1173	146.625	233.4517	4530.625	8859.694	0.89	0.095319	0.251099	0.092326
imaginaryelections	7	0.033753	0.059383	97	13.85714	9.651055	65.71429	32.25789	0.944286	0.066297	0.232397	0.071338
Destiny	7	0.064081	0.149301	341	48.71429	43.10342	152.1429	242.407	0.92	0.056569	0.22109	0.095011
europes	7	-0.00351	0.096267	20	2.857143	4.336995	13.28571	13.11993	0.907143	0.096214	0.134352	0.087828
centerleftpolitics	6	0.084111	0.096462	30	5	6.752777	21.66667	13.3516	0.943333	0.072296	0.240372	0.13005
socialism	6	0.093452	0.112407	131	21.83333	16.00521	142.6667	190.3656	0.803333	0.312389	0.180917	0.056526
conspiracy	5	0.050969	0.08088	61	12.2	5.585696	16	24.20744	0.596	0.253239	0.161583	0.100741

hungary	4	0.084748	0.084721	37	9.25	2.986079	21.25	20.59733	0.7825	0.138654	0.137979	0.096228
cyprus	4	-0.02297	0.049911	91	22.75	14.17451	11.25	9.069179	0.7925	0.129968	0.23759	0.08499
Propaganda Posters	3	0.05	0.109291	332	110.6667	184.7629	1410.333	2396.011	0.96	0.01	0.162213	0.074781
technology	3	0.015152	0.026243	9	3	1	5	4.582576	0.566667	0.111505	0.401968	0.243592
ukipparty	3	-0.02083	0.036084	23	7.666667	13.27906	10.33333	13.05118	0.686667	0.164418	0.192246	
Article 13	3	-0.05878	0.257657	16	5.333333	3.21455	42	26.62705	0.986667	0.023094	0.146443	0.158867
YAPms	2	0.077136	0.109087	11	5.5	6.363961	10	4.242641	0.915	0.021213	0.2387	
pakistan	2	0	0	26	13	18.38478	24.5	34.64823	0.56	0.325269	0.26001	
Luxembourg	2	0.094363	0.13345	19	9.5	9.192388	21	12.72792	0.88	0.070711	0.176772	0.084502
EnoughTrumpSpam	2	0.0625	0.088388	6	3	4.242641	80	76.36753	0.89	0.070711	0.304564	
armenia	1	0.086907		41	41		22		0.84		0.158039	
VoltEuropa	1	0.097868		2	2		4		0.83		0	
EuropeanArmy	1	0		16	16		93		1		0.173835	
CanadaPolitics	1	0.206265		29	29		7		0.56		0.130127	

TABLE III – Aggregated Statistics Dataset 2024

subreddit	post_id_count	post_sentiment_mean	post_sentiment_std	comments_num_sum	comments_num_mean	comments_num_std	post_upvote_score_mean	post_upvote_score_std	post_upvote_ratio_mean	post_upvote_ratio_std	comments_sentiment_std_dev_mean	comments_sentiment_std_dev_std_dev
europe	182	0.043633	0.168467	23004	126.3956	201.7343	850.8297	2929.586	0.815495	0.150559	0.220479	0.094947
europeanunion	169	0.038634	0.181778	291	1.721893	5.272305	9.621302	11.73816	0.900533	0.118835	0.224429	0.110672
irishpolitics	74	0.052879	0.104853	1765	23.85135	33.0341	17.02703	19.05865	0.788645	0.186733	0.210609	0.072689
ireland	65	0.034129	0.116284	10745	165.3077	163.5534	203.0308	352.4876	0.752	0.186934	0.235178	0.049871
europes	62	0.030503	0.143156	124	2	3.9959	5.774194	5.732906	0.86629	0.122959	0.150749	0.122148
europeanparliament	59	0.071825	0.17631	89	1.508475	3.081496	12.05085	11.13928	0.931695	0.086526	0.244308	0.167482
EUnews	59	0.067423	0.156118	19	0.322034	0.600019	7.813559	4.462389	0.954237	0.0646	0.016211	0.016441
EuropeanFederalists	54	0.044433	0.104012	651	12.05556	18.60251	49.55556	82.21111	0.929074	0.099152	0.174865	0.086882
worldnews	52	0.03288	0.151822	4383	84.28846	174.2033	1521.788	4647.023	0.849038	0.101465	0.190774	0.086851
YUROP	45	0.084316	0.171155	1787	39.71111	82.3089	432.3111	706.4551	0.920889	0.086388	0.218158	0.117075
2westerneurope4u	39	0.066577	0.195678	4899	125.6154	148.135	405.5641	496.5937	0.847179	0.164891	0.237618	0.076195
anime_titties	36	0.016479	0.100134	778	21.61111	39.80041	56.52778	129.8578	0.762222	0.124719	0.237125	0.044737
neoliberal	30	0.058251	0.148185	2069	68.96667	198.6868	71.73333	128.4389	0.948667	0.041749	0.180503	0.114649
VoltEuropa	30	0.024754	0.128383	312	10.4	14.30602	61.26667	64.37816	0.939333	0.132663	0.306233	0.220784
MapPorn	27	0.079373	0.134049	5850	216.6667	235.8622	2078.815	3675.936	0.906667	0.108592	0.231062	0.031564
cyprus	27	0.068137	0.108531	1300	48.14815	46.04655	36.33333	35.93905	0.762222	0.132848	0.188808	0.055306
AskEurope	25	0.125328	0.200106	1772	70.88	110.6019	30.44	41.85797	0.704	0.220907	0.182676	0.055557
imaginaryelections	18	0.013461	0.115465	182	10.11111	11.6966	102.8333	152.7517	0.963333	0.038654	0.212036	0.11963
Luxembourg	14	0.048491	0.118363	523	37.35714	53.23331	12.78571	15.24254	0.755714	0.212158	0.212801	0.072426
germany	14	0.111079	0.182913	513	36.64286	89.00528	62.21429	185.3335	0.640714	0.230233	0.178905	0.061598
eu	11	0.045428	0.163571	16	1.454545	2.733629	4.272727	4.051936	0.77	0.198444	0.224532	0.145442
socialism	10	0.103117	0.188494	99	9.9	12.71438	72	152.7394	0.885	0.12304	0.171926	0.085341
technology	10	0.021023	0.063837	60	6	6.831301	45.1	57.1945	0.758	0.144898	0.163787	0.051823
dataisbeautiful	9	0	0	397	44.11111	76.87887	171.5556	316.8754	0.758889	0.134112	0.21582	0.050151
Conservative	9	-0.01815	0.168105	75	8.333333	11.85327	32.22222	41.33938	0.636667	0.118533	0.331066	0.112036
ukpolitics	9	0.000549	0.096182	4122	458	361.6836	75.77778	153.2969	0.806667	0.196023	0.196358	0.063421
AskBalkans	8	0.032996	0.083677	392	49	41.94214	42.5	64.39388	0.86875	0.089831	0.226054	0.061124
Gotterfunken	8	0.107197	0.060539	2	0.25	0.707107	4.5	2.507133	0.9025	0.189868	0.293786	
conspiracy	7	0.123739	0.188664	586	83.71429	148.7814	131	167.3788	0.661429	0.149156	0.154296	0.051299
YAPms	6	-0.08333	0.204124	72	12	13.71131	19.16667	22.08544	0.896667	0.096056	0.279368	0.070298
Destiny	6	0.028367	0.087647	401	66.83333	46.90167	77.66667	64.48152	0.831667	0.205467	0.232196	0.037598

hungary	5	0.072231	0.11077	97	19.4	18.42011	14.4	12.34099	0.786	0.14775	0.199257	0.052442
LabourUK	5	0.196357	0.245084	308	61.6	58.60717	44.8	39.27085	0.81	0.089722	0.215408	0.018353
armenia	4	0.152573	0.165814	85	21.25	19.85573	26.5	21.6256	0.825	0.125033	0.244585	0.055147
Scotland	4	0.079708	0.073415	117	29.25	9.394147	8	14.69694	0.5425	0.245815	0.222538	0.04407
EuropeanArmy	3	0.047475	0.096335	0	0	0	10	4.358899	0.913333	0.046188		
Disinfo	3	0.027778	0.078764	7	2.333333	4.041452	20	14.42221	1	0	0.120793	
LibDem	2	0.075495	0.024032	48	24	22.62742	16.5	6.36396	0.965	0.049497	0.304223	0.029622
united kingdom	2	0.15	0.141421	296	148	178.1909	849	1159.655	0.965	0.021213	0.184935	0.090166
CanadaPolitics	1	-0.25		51	51		67		0.88		0.179055	
politics	1	-0.25		122	122		1489		0.97		0.277683	
bristol	1	0.116667		91	91		56		0.91		0.224107	
tories	1	-0.25408		29	29		11		0.68		0.067038	
Propaganda Posters	1	0.125		176	176		1284		0.96		0.258254	
brexit	1	0.3		77	77		348		0.98		0.2036	