

EU Permacrisis through National Lenses: A Blended Reading Analysis of Austrian and German Election Manifestos (2002-2025) using BERTopic and LLM

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Abstract

The digital age has produced extensive datasets documenting communication by political actors, the media, and civil society, indicating a shift in political discourse toward digital platforms. Election manifestos, for example, are now primarily distributed online through campaign websites. The accessibility of such data has increased due to advances in algorithm-based methods for collecting, storing, and analysing large volumes of digital empirical data. However, greater data volume brings increased complexity. These trends introduce methodological challenges in collection, pre-processing, and analysis. To address these problems, our paper proposes a human-in-the-loop blended reading workflow combining BERTopic with a large language model (LLM), demonstrated through a case study of German and Austrian national parliamentary election campaigns between 2002 and 2025. During this period, elections took place against the backdrop of multiple crises that threatened the European Union's internal security and democratic foundations. Scholars frequently employ the term permacrisis to characterise this persistent state of crisis and its associated challenges. With our explorative approach, we trace which issues are addressed by the Austrian and German parties in their communication through national election manifestos. This shall further allow us to detect policy fields and to analyse if EU permacrisis events are displayed.

Keywords

blended reading, BERTopic, LLM, election manifestos, permacrisis, European integration

Die EU-Permakrise durch die nationale Brille: Eine Blended-Reading-Analyse österreichischer und deutscher Wahlprogramme (2002-2025) mit BERTopic und LLM

Zusammenfassung

Das digitale Zeitalter hat umfangreiche Datensätze hervorgebracht, die die Kommunikation von politischen Akteuren, Medien und Zivilgesellschaft dokumentieren und auf eine Verlagerung des politischen Diskurses hin zu digitalen Plattformen hindeuten. Wahlprogramme werden beispielsweise in erster Linie online über Wahlkampf-Websites verbreitet. Die Verfügbarkeit solcher Daten hat sich aufgrund der Fortschritte bei algorithmusbasierten Methoden zur Erfassung, Speicherung und Analyse großer Mengen digitaler Daten verbessert. Ein größeres Datenvolumen bringt jedoch auch eine erhöhte Komplexität mit sich. Dies führt zu methodischen Herausforderungen bei der Erfassung, Vorverarbeitung und Analyse. Um diese Probleme anzugehen, schlägt unser Beitrag einen „Human-in-the-Loop“-Blended-Reading-Workflow vor, der BERTopic mit einem Large Language Model (LLM) kombiniert und anhand einer Fallstudie zu den deutschen und österreichischen Parlamentswahlen zwischen 2002 und 2025 demonstriert wird. In diesem Zeitraum fanden Wahlen vor dem Hintergrund mehrerer Krisen statt, welche die innere Sicherheit und die demokratischen Grundlagen der Europäischen Union bedrohten. Der Begriff „Permakrise“ wird in der wissenschaftlichen Debatte verwendet, um diesen anhaltenden Krisenzustand und die damit verbundenen Herausforderungen zu charakterisieren. Mit unserem explorativen Ansatz untersuchen wir, welche Themen von den österreichischen und deutschen Parteien in ihrer Kommunikation durch Wahlprogramme angesprochen werden. Dies ermöglicht uns, Verbindungen zu Ereignissen der EU-Permakrise in den nationalen Parteiprogrammen nachzuzeichnen.

Schlüsselwörter

Blended Reading, BERTopic, LLM, Wahlkampfanalyse, EU-Permakrise, Europäische Integration

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1. Introduction

The digital age offers a variety of data sets documenting communication by political actors, the media or civil society, and revealing a shift of political discourse into digital arenas. Common examples are election manifestos which are mainly distributed online via campaign websites (Dolezal et al. 2012, 882). Researchers can easily access this data thanks to a significant increase in algorithm-based methods used for collecting, storing, and analysing this continuously growing digital empirical data (Jungherr et al. 2020, 179). As the amount of digitally available text data grows, however, the complexity also intensifies. These developments present methodological challenges related to data collection, storage, pre-processing, and analysis. Numerous studies in political science address these challenges (Haunschild/Jakobi 2018; Jungherr et al. 2020; Karpf 2012; Knecht/Debre 2018; Lemke/Wiedemann 2016; Odrowski 2024; Orellana/Bisgin 2023; Schnapp/Blätte 2018; Stulpe/Lemke 2016; Schaal et al. 2018; Strohmaier/Zens 2014). Text mining methods are commonly used for data analysis. Algorithm-based, they enable automated identification of semantic relationships between words or sentences of a large volume of texts without quantitative restrictions (Ertel et al. 2023, 607; Göler/Reiter 2021, 213; Heyer et al. 2006, 3). Furthermore, “the larger the amount of text, the broader and more reliable the empirical basis for general statements about structures and recurring patterns” (Stulpe/Lemke 2016, 18 [translated from German]). Although text mining is beneficial for processing large text datasets, research on its application in political science emerged within the last decade. It is even less discussed in European integration research, which mostly relies on qualitative methods of text analysis. Therefore, several methodological discussions in political science suggest that no single ideal text mining workflow has yet been established for analysing large text corpora (Blätte 2018, 160; Odrowski 2024, 16; Lemke/Wiedemann 2016, 3). In addition, the algorithm-based approach changes the relationship between the text data and the researchers who analyse it. This needs to be considered when applying text mining (Stulpe/Lemke 2016, 40f). An algorithm can perform complex calculations, but it cannot contextualise the interpretation. This remains a task of human interpretation – even against the backdrop of the rapid development of artificial intelligence (AI).

With this paper, we address these problems and follow a primarily methodological research interest to develop a best practice human-in-the-loop workflow for analysing large amounts of text by using text mining methods. We therefore apply blended reading. Proposed by Stulpe and Lemke (2016), blended reading combines the advantages of algorithm-based data anal-

ysis and manual text analysis. It therefore merges text mining to structure textual data with manual analysis methods such as content analysis (Ertel 2025, 161; Reiter 2022, 842; Stulpe/Lemke 2016, 43). The term *blended reading* was developed based on the distinction between close and distant reading, which goes back to Moretti (2000, 56f). However, blended reading does not consider both as opposing methods but as complementary forms of analysis, representing an ideal combination of text mining (distant reading) and human text reading (close reading). In our paper, we propose an explorative multi-step blended reading workflow combining BERTopic with a large language model (LLM). Our workflow enables access to the text data material for close reading at every point of distant reading, preventing the so-called black box effect of text mining (Ertel et al. 2023; Ertel 2025; Reiter 2022). BERTopic is a topic modelling technique that detects semantic clusters in the text data corpus and automatically groups these documents into topics (Grootendorst 2022). This method facilitates our exploratory analytical approach. Llama 3.1 (Grattafiori et al., 2024) is applied to further interpret the topics by adding methodological value beyond standard BERTopic labelling. Our work steps are structured to align distant reading processes with close reading. The exploratory nature of our data analysis is a key focus. Therefore, on a methodological level, the paper contributes to elaborating how blended reading can be used as a best practice for analysing large amounts of text data in European integration research.

For developing the blended reading workflow, we provide a case study on Austrian and German national election campaigns between 2002 and 2025, by analysing election manifestos. In the last two decades, national parliamentary elections in Europe have been held against numerous crises, causing challenges confronting both internal security and democratic pillars of the European Union (EU) and its member states. Research generally refers to developments since the Eurozone crisis in this context (Katsikas et al. 2025; Ladi/Polverari 2024; Nicoli/Zeitlin 2024). The overlapping financial crisis and Eurozone crisis (2008-2017), terrorist attacks in Europe (2015), Brexit (2016-2020), and unprecedented refugee flows (2015-2016) have been followed by the Covid-19 pandemic (2019-2023) and the Russian war against Ukraine (since 2022). Nicoli and Zeitlin (2024, 3012) state that the latter two provoked the EU’s “worst recession, its worst health crisis, its worst energy crisis, and its worst security crisis since the end of the Second World War”. At the same time, the climate crisis constantly intensifies. The term *permacrisis* is commonly used by scholars in the academic debate to describe this permanent state of crisis and challenges. It is referred to as an “extended period of instability and insecurity, especially one resulting from a series of catastroph-

ic events” (Katsikas et al. 2025, 1). In our case study, we want to trace which issues are addressed by the parties in Austria and Germany in their communication through national election manifestos. This shall further allow us to detect policy fields and to analyse if EU permacrisis events are displayed.

Given that the election manifestos of both countries have already been extensively studied, our choice of data is primarily methodological, aiming to promote blended reading to the research agenda. Focusing on Austria and Germany for the case study allows us to compile a substantial data set in the same language and to analyse differences in party communication within similar political systems. The neighbouring EU member states “share commonalities in institutional characteristics, history, and culture” (Partheymüller/Walter 2023, 538) and a common language. Furthermore, election manifestos represent suitable data material. Firstly, they are subject to numerous political science studies which displays their importance for the research discipline (Eder et al. 2016, 75). Secondly, they are available retrospectively via the *Manifesto Project* database (Lehmann et al. 2024). Thirdly, party manifestos contain most likely an “ideal agenda [...] which represents the parties’ issue preferences” (Ivanusch et al. 2023, 1) of a campaign. In our analysis, we refer only to the ideal agenda, not to the general campaign communication, which can be exposed to short-term adjustments due to unexpected developments. It is crucial to emphasise that the research interest in terms of content only provides a necessary framework for achieving the overarching methodological objective – the development of a blended reading workflow combining BERTopic and LLM. Accordingly, this paper does not claim to provide complete and comprehensive answers in terms of content, as the analysis primarily aims to test the opportunities and challenges of blended reading with BERTopic and LLM on a large election manifesto corpus. We will, therefore, first describe the context of our case study which is necessary to set up the blended reading workflow. Next, we provide our methodological considerations on using BERTopic and LLM to perform blended reading. Thereafter, we describe and discuss the results of our analysis before concluding.

2. Case Study: National Elections in Austria and Germany

Choosing Austria and Germany as case study countries for our blended reading analysis of election manifestos offers two advantages. First, it allows for the creation of a corpus in a single language, which minimises potential errors arising from language differences. Second, both EU member states have similar political systems, providing an ideal context for comparative analysis.

Heidebrecht and Schoeller (2022, 242) state, both “parliamentary democracies share key ingredients, such as proportional representation, federalism, a key role of political parties (‘party democracies’), and similarities in the party systems”. The similarities are reflected in the parliamentary representation of the centre-right and conservative parties Österreichische Volkspartei (ÖVP) and Christlich Demokratische Union Deutschlands/Christlich-Soziale Union in Bayern (CDU/CSU), the social democratic Sozialdemokratische Partei Österreichs (SPÖ) and Sozialdemokratische Partei Deutschlands (SPD), the liberal parties Das Neue Österreich und Liberales Forum (NEOS) and Freie Demokratische Partei (FDP), as well as the green parties, Die Grünen – Die Grüne Alternative (*Grüne*) and Bündnis 90/Die Grünen (*Die Grünen*), the radical right parties Freiheitliche Partei Österreichs (FPÖ) and Alternative für Deutschland (AfD), and the communist/left parties Kommunistische Partei Österreichs (KPÖ) and *Die Linke* (Heidebrecht/Schoeller 2022, 242).

To interpret the blended reading results, the paper draws on the integration theory perspective of postfunctionalism which examines the increasing politicisation of European integration (Hooghe/Marks 2009; Kuhn 2019; Schimmelfennig 2014). The growing divide between pro-European and anti-European political camps reflects this issue. According to Hooghe and Marks’ GAL/TAN thesis, parties can be categorised into green, alternative, libertarian (GAL) and generally pro-European parties, versus traditionalist, authoritarian, nationalist (TAN) and Eurosceptic parties (Hooghe/Marks 2009, 16f). Contrary to the traditional left-right divide between parties, this reflects a socio-cultural dimension of conflict that is reinforced by globalisation and europeisation. Attitudes towards the EU are thus becoming a significant structural dividing line (Anders et al. 2018; Ertel 2025; Hooghe/Marks 2009; Kriesi et al. 2012; Schön-Quinlivan 2017). However, positions on European integration vary within the GAL/TAN poles. Euroscepticism among far-right TAN parties is expressed through the defence of national sovereignty, which they argue is threatened by the EU and its supranational elements. National identities are at the forefront of this debate. For parties on the extreme left of the GAL spectrum, their anti-integration stance is an expression of their rejection of capitalism, which is reflected in the debate on the distribution of wealth (Hooghe/Marks 2009, 21).

Regarding the classification of parties along the GAL/TAN poles, Austria and Germany show similarities. Therefore, we consider *Die Grünen*, *Die Linke*, FDP, SPD, *Grüne*, KPÖ, NEOS, and SPÖ as GAL-parties and AfD, CDU/CSU, FPÖ and ÖVP as TAN-parties. Nevertheless, the pro-European-orientated FDP tends towards the right-wing TAN pole regarding economic positions (Häsing/Buzogány 2018, 331; Wallaschek et al. 2024,

816). Furthermore, positions to European integration vary inside the poles. Hooghe and Marks (2018) identify a strong correlation between TAN parties and Euroscepticism. Both AfD and FPÖ support sovereigntist positions and are anti-EU (Braun/Reinl 2023, 504; Hooghe/Marks 2009, 17; Knelangen 2024, 239). Within the conservative CDU, defending German sovereignty competes with EU-orientated neoliberalism. Nevertheless, it is traditionally considered a conservative pro-EU party, while the CSU has always been Eurosceptic. Left GAL parties like *Die Linke* and KPÖ see the EU as problematic because of its market liberalism (Hooghe/Marks 2018, 17; Hooghe et al. 2002, 974). The ÖVP, originally very pro-EU, has been pursuing a more EU-sceptical path in recent years (Miklin et al. 2024, 19). *Die Linke* has always been more Eurosceptic but is moving towards a more pro-EU perspective. The SPÖ holds a generally pro-European position, which is often combined with EU-critical positions (Ennser-Jedenastik 2023, 89–90).

3. Methodological Considerations

Our study develops a blended reading human-in-the-loop workflow, employing BERTopic and LLMs. Given a collection of political texts, the goal of our workflow is to link each subsection of each text to a specific domain. We develop our method on the example of election manifestos from Austrian and German national elections between 2002 and 2025, obtained in PDF format from the *Manifesto Project* (Lehmann et al., 2024). This helps to minimise technical challenges in data collection and pre-processing and to focus on the methodological research interest. In doing so, we draw on previous text mining analyses of election manifestos (see also Barzallo et al. 2024; Cossu 2024; Orellana/Bisgin 2023; Jentsch et al. 2021). Using the *Manifesto Project* database (Lehmann et al. 2024), we contribute to the methodological debate which the *Manifesto Project* has fuelled by providing data to researchers (see also Eder et al. 2016, 75). However, not only data availability but also its core nature qualify election manifestos for our corpus. In addition to the “ideal agenda” (Ivanusch et al. 2023, 1) of party preferences that manifestos represent, political parties invest considerable resources in their development (Dolezal et al. 2012, 892). Therefore, manifestos play an important role in election campaigns by providing information for candidates and serving as a reference for policy when addressing voters and interest groups. While manifestos may not directly feature in media outreach, their content significantly influences communication, with a notable overlap between issues in manifestos and party leader statements in the press (Dolezal et al. 2012, 892; Eder et al. 2016, 75). Therefore, content analysis of party manifestos is one of the most prevalent approaches for posi-

tioning political parties in a comparative framework – in addition to expert surveys (Ecker et al. 2021, 529).

The latest version of the *Manifesto Project* corpus was released in 2024 and contains approximately 3000 machine-readable electoral programmes in 40 languages from around 60 countries (Lehmann et al. 2024). Data for the Austrian elections in 2024 and the German elections in 2025 were collected manually via the campaign websites. Our dataset includes the CDU’s and CSU’s joint election programmes and excludes the so-called Bavarian agenda (comparable to the *Manifesto Project* Data from 2002 to 2021).

We subdivide each election manifesto into smaller units of text, then assign each subsection to one of the policy fields of the EU. The results thus obtained allow us to show, for example, which EU policy fields are displayed in the manifestos and if they display permacrisis events, and to trace differences in manifestos between parties and elections in both case study countries. Our approach consists of several steps: corpus building through text preprocessing and subdividing text into smaller units, i.e. documents; labelling each document with country, year and party; extracting topics from documents using BERTopic; assigning documents to EU policy fields based on topics.

3.1 Corpus Description

Our corpus comprises election manifestos in PDF format from national elections in Austria (*Nationalratswahlen*) and Germany (*Bundestagswahlen*) between 2002 and 2025. PDF documents can be complex in structure, containing images, figures, tabular data, etc. and extracting this information programmatically, through so-called document conversion, is challenging. Recent developments in document conversion, such as IBM’s Docling (Livathinos et al. 2025), are making use of AI models and, thus, are resource intensive. Since we are interested in extracting text only from the PDF documents, we chose a tool which is not using AI models and which can run on a CPU alone, namely PyMuPDF (Github 2025a, surveyed in Adhikari/Agarwal 2025). We gathered 82 election manifestos: 40 from Austria (2002 – 2024) and 42 from Germany (2002 – 2025). The manifestos come from 20 parties, 10 Austrian, 10 German and not all parties were participating in every election. We use Python to implement the workflow and begin by converting the PDF manifestos to text format applying PyMuPDF (see Appendix 12 for details on the text files extracted from election manifestos). In the next step, text preprocessing, we normalise text by undoing word breaks, removing line breaks and non-printable characters, etc. We then subdivide each manifesto into smaller units of text, using the Bling Fire tokenizer (Github 2025b). Choosing the length of a text unit requires a trade-off between

context and unambiguousness: increasing the length of each unit provides more context, while potentially raising ambiguousness in terms of topics contained within the same unit. We chose to split texts into documents at the sentence level, to avoid creating documents containing multiple topics. Each document gets then tagged with country, party and year of election, to show the following structure:

$$\text{document} = \{\text{election, country, party, year, text}\}$$

Here, “election” is always “national”, country is either “at” for Austria or “de” for Germany, “party” is the abbreviated party name, “year” is the year when the election took place, and “text” is the sentence extracted from the respective party manifesto. From here on, we refer to a sentence originating from a party manifesto, augmented with meta information, as a document. We use pandas (The pandas development team, 2020) as a container for maintaining and manipulating data, and persist each such container in Feather format (Apache Arrow 2025). Our corpus consists of 114,560 documents. Appendix 1 and Appendix 2 provide details on the number of documents extracted per country, year and party. In Appendix 3 and Appendix 4 we show the share of documents contributed by each party by year.

3.2 BERTopic: Topic Modelling

We load the corpus created as described above and proceed to extract topics from the documents using BERTopic. BERTopic can be used out-of-the-box, but the results generated can be controlled and improved by tuning the parameters (see Appendix 13 for details on the implementation and specific parameters we used to control the number of topics extracted). After removing outliers, BERTopic has assigned each document to one of 140 topics; for comparison, an unmanageable 800 topics had been identified before parameter tuning. Next, the documents are enriched with the results generated by BERTopic. In particular, we add an ID and name of each topic identified to each document, extending the structure of a document to

$$\text{document} = \{\text{election, country, party, year, text, topic_id, topic_name}\}$$

We conclude with the updated corpus containing topics for each document. In Appendix 9-11 we show statistics on the assignment of documents to topics, separately for Austria and Germany (AT+DE), for Austria only (AT), and for Germany (DE) only. We show the absolute number of documents assigned to each topic, the share of documents assigned to each topic, as well as cumulated sums for absolute and relative numbers. The result is

presented in a csv (comma separated vector) file containing all BERTopics, the most frequent topic words and all associated documents per party and country (see figure 1). This allows to carry manual checks at this point in the analysis by close reading as envisaged by our human-in-the-loop blended reading workflow.

3.3 Tools for Blended Reading

Throughout our programmatic analysis, we maintain documents tagged with meta information as rows in a Pandas data frame. By doing so, we gain the ability to inspect the data at the highest level of detail at any step of the process. In other words, we perform blended reading by easily switching between and combining both distant reading and close reading. In practical terms, we simply export the data frame generated by distant reading to csv for close reading in a spreadsheet tool. Spreadsheets are well-established and offer excellent functionality needed for analysis, e.g. filtering, transforming, counting of rows, etc. We deliberately chose a pragmatic approach for close reading, relying on existing, well-established technology, instead of putting time and effort into developing custom UIs and tools.

3.4 Mapping Topics to EU Policy Fields

At this stage, all documents have been assigned to a topic. By matching each topic with the best matching EU policy field, we then effectively also assign each document to the same policy field. A classification based on EU policy areas is appropriate in this context, as both countries of the case study are EU member states and the analysis aims to detect policy fields and trace links to EU permacrisis events. Policy fields are provided in the EU Commission’s list of EU topics (European Commission 2025a). Instead of manually matching topics with EU policy fields, we assign an LLM (Llama 3.1, Grattafiori et al. 2024) to the task. For each of the 140 topics identified by BERTopic, we ask the LLM to pick the EU policy field closest matching the topic (see Appendix 14). The mapping generated by the LLM then undergoes manual correction. In Appendix 5-8, we show the numbers and shares of documents assigned to each policy field, separately for Austria and Germany. We can thus complete our workflow by assigning each subsection of each text to a specific domain, as proposed above.

Figure 1: Spreadsheet containing documents after BERTopic modelling. Each row represents a document, tagged with file, election, country, year, the document text, as well as the topic. By maintaining data in Pandas data frames, intermediate results can be extracted into csv for close reading at any stage of the process.

Index	file	election	country	party	year	doc	topic	Top_n_words
0	199_national_at_fpo_2002_national	at	fpo	2002	SOZIAL GERECHT LEBENSWEIT LEISTBA	7.7	siehe_ff_90_buendnis	siehe - ff - 90 - buendnis - bundesdelegierten
1	198_national_at_fpo_2002_national	at	fpo	2002	Es führte nicht selten zu Nachteilen für Arbeit	27.27	arbeitslosigkeit_arbeitslos_arbeitsmarkt_arbeitslosigkeit	arbeitslos - arbeitsmarkt - ar
2	198_national_at_fpo_2002_national	at	fpo	2002	So wirkte insbesondere der Verlust des Abfahr	27.27	arbeitslosigkeit_arbeitslos_arbeitsmarkt_arbeitslosigkeit	arbeitslos - arbeitsmarkt - ar
3	198_national_at_fpo_2002_national	at	fpo	2002	Darüber hinaus kamen über das gesamte Ervr	27.27	arbeitslosigkeit_arbeitslos_arbeitsmarkt_arbeitslosigkeit	arbeitslos - arbeitsmarkt - ar
4	198_national_at_fpo_2002_national	at	fpo	2002	Mittelständische Unternehmer konnten durch e	42.42	banken_finanzmaerkte_franzsektor_sparke	banken - finanzmaerkte - finanzsektor - sparka
5	198_national_at_fpo_2002_national	at	fpo	2002	1992 dieser Situation waren SPÖ und ÖVP die	16.16	wenig_kosten_privatisierung_oft	wenig - kosten - privatisierung - oft - kaum - b
6	198_national_at_fpo_2002_national	at	fpo	2002	UNSER ZIEL: Die FPÖ hat sich bereits im Jahr	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
7	198_national_at_fpo_2002_national	at	fpo	2002	Denn nur dadurch kann sichergestellt werden f	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
8	198_national_at_fpo_2002_national	at	fpo	2002	UNSERE HANDSCHRIFT Durch die Schaffung	7.7	siehe_ff_90_buendnis	siehe - ff - 90 - buendnis - bundesdelegierten
9	198_national_at_fpo_2002_national	at	fpo	2002	1.002002 wurden die freihetlichen Forderung	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
10	198_national_at_fpo_2002_national	at	fpo	2002	Der Anspruch des Arbeitnehmers auf eine Abfr	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
11	198_national_at_fpo_2002_national	at	fpo	2002	An Stelle des bisherigen leistungsorientiert	92.92	investitionen_private_kapital_wagniskapital	investitionen - private - kapital - wagniskapital
12	198_national_at_fpo_2002_national	at	fpo	2002	Im Zuge der Neugestaltung des Abfertigungs	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
13	198_national_at_fpo_2002_national	at	fpo	2002	Der Beginn der Beitragszahlung durch den Arb	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
14	198_national_at_fpo_2002_national	at	fpo	2002	Für entgeltzahlungsfreie Zeiten im aufrecht	65.65	arbeitszeit_stunden_arbeitszeiten_teizeit	arbeitszeit - stunden - arbeitszeiten - teilzeit
15	198_national_at_fpo_2002_national	at	fpo	2002	Für Zeiten des 8 Fräsenz und Ausbildungsje	13.13	rente_rentenversicherung_altersvorsorge	rente - rentenversicherung - altersvorsorge - i
16	198_national_at_fpo_2002_national	at	fpo	2002	UNSER ERFOLG Mit der Einführung der Abfer	63.63	gleiche_gleichstellung_gleichberechtigung	gleiche - gleichstellung - gleichberechtigung - i
17	198_national_at_fpo_2002_national	at	fpo	2002	In Hinblick haben alle in einem privatrechtliche	29.29	justiz_gerichte_strafverfahren_strafaten	justiz - gerichte - strafverfahren - strafaten - s
18	198_national_at_fpo_2002_national	at	fpo	2002	Auch Beschäftigte in Saisonberufen und rund	21.21	arbeitsmarkt_arbeit_arbeitsmarktpolitik	arbeitsmarkt - arbeit - arbeitsmarktpolitik - bei
19	198_national_at_fpo_2002_national	at	fpo	2002	Auch im Falle einer Selbstkündigung oder im P	29.29	justiz_gerichte_strafverfahren_strafaten	justiz - gerichte - strafverfahren - strafaten - s
20	198_national_at_fpo_2002_national	at	fpo	2002	Ein Anspruch auf Abfertigung besteht dem Gr	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
21	198_national_at_fpo_2002_national	at	fpo	2002	Ein Anspruch auf Auszahlung der Abfertigung	64.64	schuldenbremse_schulden_neuerschuldur	schuldenbremse - schulden - neuerschuldur - schulden - neuerschuldur
22	198_national_at_fpo_2002_national	at	fpo	2002	Die Höhe des Abfertigungsanspruches ergibt	42.42	banken_finanzmaerkte_franzsektor_sparke	banken - finanzmaerkte - finanzsektor - sparka
23	198_national_at_fpo_2002_national	at	fpo	2002	Bei Tod des Arbeitnehmers fällt die Abfertigung	27.27	arbeitslosigkeit_arbeitslos_arbeitsmarkt_arbeitslosigkeit	arbeitslos - arbeitsmarkt - ar
24	198_national_at_fpo_2002_national	at	fpo	2002	Der Arbeitsgeber hat bei Beendigung des Arb	13.13	rente_rentenversicherung_altersvorsorge	rente - rentenversicherung - altersvorsorge - i
25	198_national_at_fpo_2002_national	at	fpo	2002	Bei Pensionierung kann der Arbeitnehmer die	13.13	rente_rentenversicherung_altersvorsorge	rente - rentenversicherung - altersvorsorge - i
26	198_national_at_fpo_2002_national	at	fpo	2002	In die Neuregelung werden nur nach dem Ink	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
27	198_national_at_fpo_2002_national	at	fpo	2002	Im Rahmen einer Einzelvereinbarung zwische	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
28	198_national_at_fpo_2002_national	at	fpo	2002	Übertragung von bisher erworbenen Abfertige	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
29	198_national_at_fpo_2002_national	at	fpo	2002	Günstigere kollektivvertragliche Abfertigungs	34.34	gewerkschaften_beschaeftigten_tarifvertraeg	gewerkschaften - beschaeftigten - tarifvertraege
30	198_national_at_fpo_2002_national	at	fpo	2002	WIR GESTALTEN DIE ZUKUNFT Ziel der Fre	13.13	rente_rentenversicherung_altersvorsorge	rente - rentenversicherung - altersvorsorge - i

4. Results and Discussion

On a mainly methodological level, our paper contributes to the elaboration of how blended reading can be used as a best practice for analysing large amounts of text data in European integration research. For developing a human-in-the-loop blended reading workflow, we provide a case study on Austrian and German *Nationalratswahlen* and *Bundestagswahlen* campaigns between 2002 and 2025 by analysing election manifestos. In our case study, we aim to identify the issues addressed by the parties in Austria and Germany through their communication in national election manifestos. This will further enable us to detect policy fields and analyse if EU permacrisis events are displayed. The following presents the results of this study, exemplifying the potential of our workflow and evaluating it from a methodological perspective. As described above, we do not claim to provide complete and comprehensive answers in terms of content.

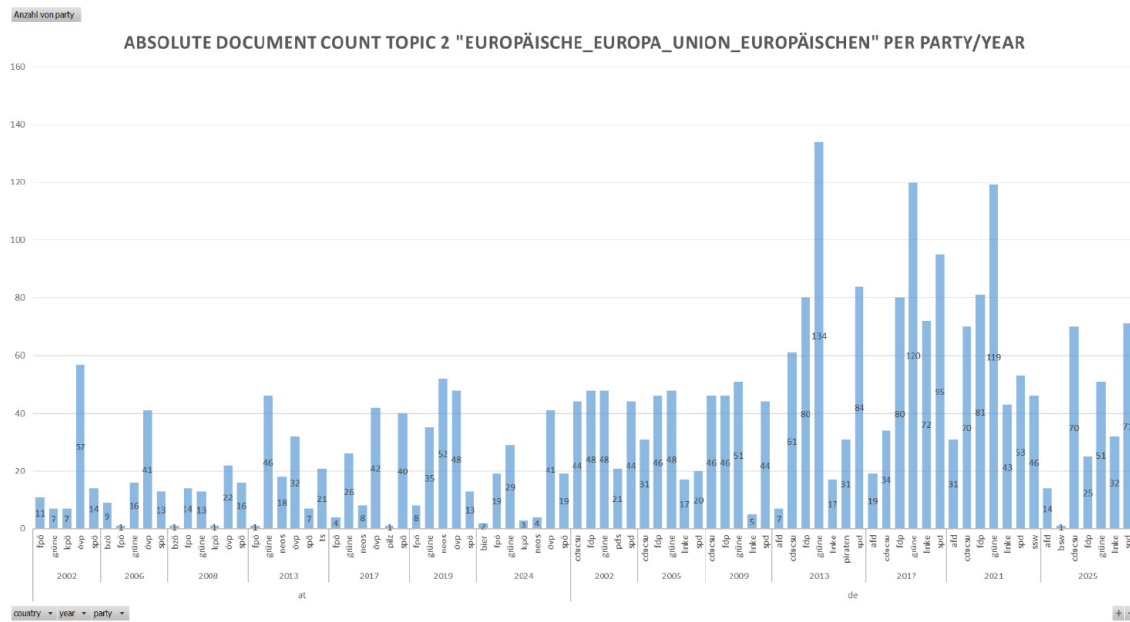
4.1 Pre-structuring data with BERTopic

In the first analytical step of our blended reading human-in-the-loop workflow, we pre-structure our party manifesto data from Austrian *Nationalrat* election campaigns between 2002 and 2024 and German *Bundestag* election campaigns between 2002 and 2025 by distant reading. Regarding the data, we identified that the length of election manifestos increased in the analysis period, both for Austrian and German parties (see precise numbers in Appendices 1 and 2). We split the manifestos at the sentence level, as described above, to ob-

tain a corpus consisting of 114,560 documents (each is a single sentence from a manifesto) in total. Whereas data from the Austrian election in 2002 makes up a total of 3,209 documents, this number nearly tripled for the 2024 election to 9,167. Data from the German election manifestos display an increase from 6,656 documents in 2002 to 10,292 in 2025. This trend had already been identified in previous analyses of Austrian documents (Dolezal et al. 2012, 882). The increasing volume of election manifesto data highlights the need for our proposed human-in-the-loop blended reading workflow. This approach is essential for managing the growing amount of data through text mining techniques, while also recognising the evolving relationship between text data and the researchers analysing it. Distant reading can perform complex calculations, but it cannot provide the contextual interpretations that close reading can offer. Therefore, it is vital to ensure that researchers have access to the corpus through close reading at every stage of distant reading. This practice helps prevent the so-called black box effect associated with text mining.

Distant reading with BERTopic identified 140 topics in the corpus. Applying this exploratory approach to the data corpus, we observe that the first ten largest ($N=10$) BERTopic clusters contain between 22% and 25% of all documents, for both Austrian and German party documents (AT+DE) combined, as well as data from both countries (AT, DE) counted separately. Furthermore, the bottom ten ($N=10$) smallest topic clusters comprise fewer than 2% of all documents. The distribution of documents within BERTopic clusters is skewed, indicating that the most significant clusters contain most information extracted from the election manifestos (see

Figure 2: Absolute document count for topic 2 EU/Europe per party/year.



Appendices 9, 10, and 11). The first ten largest BERTopics address issues such as education, the EU, renewable energy, pensions, justice and law, housing and migration and asylum. Many of these topics are expected to be discussed in national election campaigns. The significant number of 2,862 documents (2,5%) related to the EU and encompassing all parties (see figure 2) as checked via close reading in the csv result spreadsheet (figure 1) file at this step of the workflow, indicates that European issues are an important factor in national election campaigns. Previous analyses show consistent negative politization of EU issues by radical right TAN parties (Nicoli/Zeitlin 2024, 3011). In contrast, pro-European GAL parties advocate the principles of liberal democracy and an open world view – for example, on migration or gender issues (Hooghe/Marks 2009, 5). The results of our first blended reading step indicate that attitudes towards the EU have become a central dividing line between political parties as discussed from postfunctionalist perspectives in European integration research (Anders et al. 2018; Ertel 2025; Hooghe/Marks 2009; Kriesi et al. 2012; Schön-Quinlivan 2017). Furthermore, they align with previous studies on Austrian national elections, which indicate that the European dimension and EU issues are mentioned in the election manifestos of all parties (Meyer/Rosenberger 2008, 311).

4.2 Mapping Topics to EU Policy Fields

In our second analytical step, we applied a LLM to categorise the BERTopics into 40 EU policy fields, as provided in the EU Commission’s list of EU topics (European Commission 2025a). This enabled us to structure the

data further and to interpret the topics by adding methodological value beyond standard BERTopic labelling. We manually verified the LLM’s automatic topic assignments to policy fields and calculated F scores (see Appendix 15). The F1-macro score is 0.57. Overall, for 13.6 %, no topic assignment to policy fields was possible as their representative topic words addressed cross-policy issues. Tables 1 and 2 show the absolute figures for the number of documents assigned to the EU policy fields for Austria and Germany. For both data sets, the top 15 of the 40 EU policy fields count over 75% (78.97 % AT; 75.74% DE) of the total amount of assigned documents.

The top 15 EU policy fields in terms of absolute numbers of assigned documents detected in the Austrian election manifestos are “education and training”, “justice and fundamental rights”, “employment”, “institutional affairs”, “health”, “better regulation”, “business and industry”, “environment”, “social affairs”, “energy”, “taxation”, “transport”, “migration and asylum”, “economy, finance and the euro”, and “research and innovation” (see table 1).

The top 15 EU policy fields detected in the German election manifestos are nearly the same, but in a slightly different order, not containing “economy, finance and the euro” but “culture and media” (see table 2). The rankings are confirmed by the share of documents assigned to each EU policy field (relative numbers, see Appendix 7 and 8).

Looking at the relative figures, we observe how certain policy fields became more prominent in election manifestos throughout the years. For example, in Germany (Appendix 7), “digital economy and society” has steadily increased its share from 0.95% in 2002, to 2.38% in 2025, peaking at 3.23% in 2021. The allocated topics encompass digitisation, digital infrastructure as well as digital administration and digital teaching, and are thus directly related to advancing digitisation and the resulting challenges at the societal and political level. On the other hand, “employment and training”, covering topics like the education system and schooling, higher education and language courses has almost halved, from 9.63% in 2002 to 5.82% in 2025. In Austria (Appendix 8), while still underrepresented, we observed that “climate action” has doubled from 1% in 2002 to 2.01% in 2024, peaking at 3.65% in 2019 (see table 3).

and Germany. This is underscored by the high number of documents allocated to the policy fields “institutional affairs” and “better regulation”. To verify these assumptions, our human-in-the-loop blended reading workflow allows us to go deeper into the data by close reading in the csv result spreadsheet. To evaluate our workflow from a methodological perspective (without claiming to provide complete and comprehensive answers in terms of content), we select the policy areas that suggest links to permacrisis events within these for close reading. Seven areas out of these can be related to EU permacrisis events. They encompass *justice and fundamental rights, employment, health, environment and climate action, energy, social affairs* and *migration and asylum*. Each policy field can be linked to various permacrisis events, such as the rise of anti-democratic and Eurosceptic parties and the COVID-19 pandemic.

Table 3: Policy field “climate action”, document distribution per party/election campaign relative to size of party’s respective manifesto.

EU Policy Field “Climate Action”																				
Percentage of docs per year per party, relative to size of the party’s respective manifesto Germany and Austria, 2002 – 2025																				
	Germany										Austria									
	AfD	BSW	CC	FDP	G	L	PDS	P	SPD	SSW	BP	BZÖ	FPÖ	G	KPÖ	NEOS	Plz	SPÖ	Str	ÖVP
2002	-	-	0.34	0.49	6.00	-	0.27	-	0.29	-	-	-	0.00	7.18	0.00	-	-	0.36	-	0.24
2005	-	-	1.12	0.44	2.41	0.35	-	-	0.00	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00	18.23	-	-	-	0.32	-	0.28
2008	-	-	-	-	-	-	-	-	-	-	-	1.50	0.31	4.41	0.00	-	-	0.41	-	0.25
2009	-	-	1.09	0.54	7.59	1.49	-	-	0.66	-	-	-	-	-	-	-	-	-	-	-
2013	0.00	-	0.63	0.53	3.58	0.26	-	0.30	0.45	-	-	-	0.00	2.81	-	0.41	-	0.00	-	0.33
2017	0.67	-	0.82	0.72	3.14	0.56	-	-	0.69	-	-	-	0.00	4.84	-	0.00	-	0.16	-	0.56
2019	-	-	-	-	-	-	-	-	-	-	-	-	2.70	6.95	-	1.36	-	2.39	-	0.60
2021	0.98	-	1.46	0.79	2.93	2.09	-	-	2.05	1.33	-	-	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-	-	-	0.37	-	0.67	3.68	3.07	0.00	-	1.89	-	1.12
2025	1.28	-	1.08	0.79	3.54	1.64	-	-	1.91	-	-	-	-	-	-	-	-	-	-	-

Str: Team Stronach, G: Grüne, Plz: Liste Plz, BP: Bierpartei, CC: CDU/CSU, P: Piraten, L: Die Linke, G: Grüne, DP: Die Partei, TSP: Tierschutzpartei, R: Die Republikaner, Fam: Familienpartei, G: Grüne

The findings, which identify the issues addressed by parties in Austria and Germany through their communication in national election manifestos, support previous research indicating that social policy and welfare state issues significantly influence party communication in election manifestos, regardless of political orientation (Abou-Chadi/Immergut 2019, 697). Furthermore, the top 15 ranking of the documents allocated to the policy fields indicate initial signs of alignment of prominently addressed policy fields with social and economic insecurity resulting from EU permacrisis events like the Eurozone crisis (2008-2017), the so-called migration crisis (2015-2016), the Covid-19 pandemic (2019-2023), and the energy crisis caused by the Russian war against Ukraine (since 2022). Furthermore, we observe that parties address institutional or regulatory questions in the communication through election manifestos in Austria

The policy field “justice and fundamental rights” occurs most frequently in the corpus, with 11.15% of the documents. A close reading of the BERTTopics allocated to this field shows that it directly refers to fundamental rights and European values like respect for human dignity, freedom, democracy, equality, the rule of law, and respect for human rights, including minorities (Charter of Fundamental Rights of the European Union 2016; Treaty of Lisbon 2007, Art. 6/Art. 2) Other topics address the general judiciary. Table 4 shows the distribution of documents, including the topics allocated per election campaign and party. Our results indicate that whereas green GAL parties are more likely to address liberal democracy principles, radical right TAN parties also tend to address these topics. The highest relative numbers of documents in each country are both by the radical right TAN parties AfD and FPÖ as well as the GAL

Table 4: Policy field “Justice and Fundamental Rights”, document distribution per party/election campaign relative to size of party’s respective manifesto.

EU Policy Field "Justice and Fundamental Rights"																				
Percentage of docs per year per party, relative to size of the party's respective manifesto Germany and Austria, 2002 – 2025																				
	Germany										Austria									
	AfD	BSW	CC	FDP	G	L	PDS	P	SPD	SSW	BP	BZÖ	FPÖ	G	KPÖ	NEOS	Plz	SPÖ	Str	ÖVP
2002	-	-	9.88	11.26	9.06	-	14.29	-	9.61	-	-	-	13.31	12.50	9.52	-	-	8.26	-	8.74
2005	-	-	4.89	13.20	12.41	10.26	-	-	8.49	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	14.14	11.36	10.53	-	-	-	8.04	-	6.03
2008	-	-	-	-	-	-	-	-	-	-	-	10.53	14.55	7.89	7.41	-	-	9.84	-	12.09
2009	-	-	10.97	13.79	11.15	18.54	-	-	12.87	-	-	-	-	-	-	-	-	-	-	-
2013	12.68	-	8.24	12.71	11.56	11.27	-	20.41	9.60	-	-	-	19.67	15.00	-	8.07	-	7.40	7.21	8.95
2017	12.87	-	7.71	11.40	13.43	12.77	-	-	11.44	-	-	-	18.57	11.90	-	18.75	9.68	5.22	-	9.12
2019	-	-	-	-	-	-	-	-	-	-	-	-	10.81	9.97	-	7.77	-	7.46	-	15.71
2021	13.36	-	9.66	11.91	10.46	13.58	-	-	12.18	11.83	-	-	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-	-	-	7.12	-	19.27	10.71	6.60	13.07	-	8.90	-	9.92
2025	13.33	3.61	11.42	11.84	13.23	11.19	-	-	11.19	-	-	-	-	-	-	-	-	-	-	-

Str: Team Stronach, G: Grüne, Plz: Liste Pliz, BP: Bierpartei, CC: CDU/CSU, P: Piraten, L: Die Linke, G: Grüne, DP: Die Partei, TSP: Tierschutzpartei, R: Die Republikaner, Fam: Familienpartei, G: Grüne

Table 5: Policy field “employment”, document distribution per party/election campaign relative to size of party’s respective manifesto.

EU Policy Field "Employment"																				
Percentage of docs per year per party, relative to size of the party's respective manifesto Germany and Austria, 2002 – 2025																				
	Germany										Austria									
	AfD	BSW	CC	FDP	G	L	PDS	P	SPD	SSW	BP	BZÖ	FPÖ	G	KPÖ	NEOS	Plz	SPÖ	Str	ÖVP
2002	-	-	11.66	9.78	8.93	-	15.92	-	9.40	-	-	-	16.58	14.63	7.94	-	-	16.88	-	10.36
2005	-	-	17.18	10.55	9.68	17.57	-	-	15.09	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	8.08	6.96	9.21	-	-	-	15.11	-	8.52
2008	-	-	-	-	-	-	-	-	-	-	-	9.40	13.62	7.66	9.88	-	-	12.16	-	12.09
2009	-	-	6.61	6.62	8.77	14.61	-	-	12.56	-	-	-	-	-	-	-	-	-	-	-
2013	2.82	-	6.15	6.64	8.17	15.80	-	7.80	12.36	-	-	-	14.75	7.67	-	6.33	-	12.94	5.51	7.53
2017	7.77	-	8.70	8.26	7.77	13.40	-	-	12.25	-	-	-	5.21	8.12	-	6.25	3.23	13.67	-	7.54
2019	-	-	-	-	-	-	-	-	-	-	-	-	4.32	8.12	-	8.67	-	14.02	-	6.59
2021	7.69	-	5.36	6.52	6.34	12.57	-	-	10.79	7.61	-	-	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-	-	-	3.00	-	6.17	6.62	9.20	6.54	-	9.14	-	6.78
2025	6.03	7.73	5.69	7.87	6.64	10.77	-	-	8.97	-	-	-	-	-	-	-	-	-	-	-

Str: Team Stronach, G: Grüne, Plz: Liste Pliz, BP: Bierpartei, CC: CDU/CSU, P: Piraten, L: Die Linke, G: Grüne, DP: Die Partei, TSP: Tierschutzpartei, R: Die Republikaner, Fam: Familienpartei, G: Grüne

parties Grüne and Die Grünen. Engler et al. (2023) state that the politization between these two poles differs. Populist and authoritarian ideology drive radical right TAN parties to demand their interpretation of direct democracy by the so-called absolute power of the people. These demands are opposed by liberals. Therefore, if GAL parties address “liberal principles in current-day politics, this is in reaction to and in defense of these very principles” (Engler et al. 2023, 1963). The findings display differences along the GAL/TAN cleavage regarding fundamental rights and EU values, especially democracy and the rule of law. The distribution over time and between parties displays the Eurosceptic anti-democratic tendencies that permacrisis events have fuelled.

The policy field “employment” (see table 5) consists of 9.29% of the documents in the corpus. The relative number of documents assigned to it shows that these topics are more likely to be addressed by *Die Linke* in Germany as well as SPD, both GAL parties. A similar picture is displayed in Austria with SPÖ and KPÖ. Except for CDU/CSU in the elections 2002 and 2005 as well as ÖVP in 2002 and 2008 the relative counts of documents addressing the policy area stay on a similar level in the analysis period. The outliers for the centre-right and conservative parties offer entry points for close reading. The allocated documents show that both conservative parties primarily address pensions, gender equality, labour market policy, minimum wage, and unemploy-

ment during these election campaigns in their manifestos. The fact that conservative parties increasingly addressed employment issues may be attributed to the general economic situation in both countries in the early 2000s, when the economy was significantly weakened – not least by the war in Iraq, which led to an increase in the price of crude oil and sharp declines in financial markets. In Austria, this period was furthermore marked by extensive labour disputes and the crisis of the FPÖ-ÖVP government which led to the 2002 snap elections (Nierhaus 2003; Kuntze 2004). Closely related to these issues is the policy field “social affairs” (see table 6). The relative numbers show, that especially the communist party KPÖ and the left party *Die Linke* as well

as the populist extreme left BSW refer to social issues in their election manifestos. The numbers of the other parties are more moderate.

The policy field “environment” covers 3.44% of the documents. In addition, the policy field “climate action” covers 1.83% (see tables 1 and 2). During the analysis period, the European Green Deal was developed in 2019 at the European level with the ambitious goal of “striving to be the first climate-neutral continent” (European Commission 2025c). It provides a basis for national action to adapt to advancing climate change (Republik Österreich 2024; Die Bundesregierung 2024). This policy field relates to one of the significant challenges of the permacrisis.

Table 6: Policy field “social affairs”, document distribution per party/election campaign relative to size of party's respective manifesto.

EU Policy Field "Social Affairs"																				
Percentage of docs per year per party, relative to size of the party's respective manifesto Germany and Austria, 2002 – 2025																				
	Germany										Austria									
	AfD	BSW	CC	FDP	G	L	PDS	P	SPD	SSW	BP	BZÖ	FPÖ	G	KPÖ	NEOS	Plz	SPÖ	Str	ÖVP
2002	-	-	2.62	1.64	1.96	-	1.90	-	2.55	-	-	-	1.54	3.46	0.00	-	-	1.97	-	2.51
2005	-	-	1.26	1.70	2.02	2.26	-	-	1.53	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	1.01	1.10	1.88	-	-	-	5.14	-	2.70
2008	-	-	-	-	-	-	-	-	-	-	-	2.26	1.55	3.94	7.41	-	-	3.69	-	3.02
2009	-	-	1.49	1.68	2.43	4.33	-	-	2.38	-	-	-	-	-	-	-	-	-	-	-
2013	0.00	-	3.64	2.46	2.19	5.12	-	2.74	2.39	-	-	-	1.64	2.89	-	3.06	-	3.27	1.61	4.52
2017	1.74	-	3.28	2.36	2.55	6.30	-	-	2.78	-	-	-	5.21	3.09	-	0.89	3.23	3.27	-	1.86
2019	-	-	-	-	-	-	-	-	-	-	-	-	5.95	2.71	-	2.98	-	4.93	-	3.36
2021	2.73	-	2.71	1.48	2.31	4.83	-	-	2.32	2.37	-	-	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-	-	-	5.99	-	3.42	2.66	17.22	1.96	-	3.66	-	2.81
2025	2.44	8.76	2.02	2.62	3.98	6.51	-	-	3.61	-	-	-	-	-	-	-	-	-	-	-

Str: Team Stronach, G: Grüne, Plz: Liste Pilz, BP: Bierpartei, CC: CDU/CSU, P: Piraten, L: Die Linke, G: Grüne, DP: Die Partei, TSP: Tierschutzpartei, R: Die Republikaner, Fam: Familienpartei, G: Grüne

Table 7: Policy field “environment”, document distribution per party/election campaign relative to size of party's respective manifesto.

EU Policy Field "Environment"																				
Percentage of docs per year per party, relative to size of the party's respective manifesto Germany and Austria, 2002 – 2025																				
	Germany										Austria									
	AfD	BSW	CC	FDP	G	L	PDS	P	SPD	SSW	BP	BZÖ	FPÖ	G	KPÖ	NEOS	Plz	SPÖ	Str	ÖVP
2002	-	-	2.79	1.69	6.45	-	1.77	-	1.89	-	-	-	0.92	4.26	0.00	-	-	1.80	-	2.35
2005	-	-	1.40	2.80	4.16	3.48	-	-	2.12	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	1.52	10.62	2.63	-	-	-	2.89	-	2.01
2008	-	-	-	-	-	-	-	-	-	-	-	0.00	1.55	3.25	0.00	-	-	1.78	-	1.26
2009	-	-	3.39	4.99	4.69	2.84	-	-	3.50	-	-	-	-	-	-	-	-	-	-	-
2013	0.00	-	2.85	2.86	4.10	3.42	-	1.52	2.51	-	-	-	0.00	4.53	-	5.52	-	0.71	1.44	1.34
2017	1.07	-	1.56	1.90	6.05	2.65	-	-	1.89	-	-	-	0.65	6.29	-	0.00	-	1.18	-	1.12
2019	-	-	-	-	-	-	-	-	-	-	-	-	3.78	8.21	-	3.07	-	3.25	-	2.28
2021	2.73	-	4.10	4.10	5.75	4.29	-	-	3.18	4.58	-	-	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-	-	-	0.75	-	1.58	9.48	4.25	1.31	-	2.80	-	2.25
2025	5.00	1.55	2.96	2.78	5.20	4.68	-	-	1.11	-	-	-	-	-	-	-	-	-	-	-

Str: Team Stronach, G: Grüne, Plz: Liste Pilz, BP: Bierpartei, CC: CDU/CSU, P: Piraten, L: Die Linke, G: Grüne, DP: Die Partei, TSP: Tierschutzpartei, R: Die Republikaner, Fam: Familienpartei, G: Grüne

Table 7 shows the relative document distribution for the policy field “environment”. Most related documents in German manifestos are by GAL parties *Die Grünen* and *Die Linke*. We observe an increase regarding the documents by AfD. Especially regarding absolute numbers, document counts have improved since 2009. In Austrian manifestos, we also see the highest absolute document count by *Grüne*, followed by SPÖ and ÖVP. Regarding relative numbers, FPÖ in 2006 and KPÖ in 2024 address the topic prominently in their respective election manifesto whereas numbers of SPÖ and ÖVP are more moderate. *Grüne* dedicate nearly 9.5% of their manifesto to the issue. Similar results are shown regarding the document count of the policy field “climate action”. Our close reading via csv file revealed that positions regarding the climate crisis are divided enormously between GAL and TAN. The topics mainly refer to climate crisis, climate problem, climate catastrophe, or climate protection strategies. The results clearly show that GAL parties predominantly address environmental issues, particularly climate protection. In contrast, TAN parties are less vocal on the subject or trivialise the problem.

Closely related is the policy field “energy” (see table 8) which shows peaks in the relative numbers in 2013 in both countries and in 2024 (in Austria) and 2025 (in Germany). The latter may be closely linked to Russia’s war of aggression against Ukraine, which has led to massive instability in fossil fuel and gas prices. Overall, we identified a strong connection to renewable energy but also to the debate on nuclear energy via close reading. Similar to the policy field “environment”, *Die Grünen* and *Grüne* show very high relative numbers. So do both the extreme left parties *Die Linke* and KPÖ in the elections 2025 and 2024. We therefore state similarities between party

families. The same results can be seen for the liberal GAL parties FDP and NEOS as well as the conservative CDU/CSU and ÖVP and the social democrats SPD and SPÖ.

The policy field “migration and asylum” (2.3% of the documents in our corpus) covers one of the most politicised EU issues during the last decade of the permacrisis. In 2024, the Pact on Migration and Asylum was adopted (European Commission 2024). The Asylum and Migration Management Regulation (AMMR) replaces the Dublin III Regulation. It aims “to ensure a fair sharing of responsibility, solidarity as enshrined in Article 80 TFEU and a balance of effort between Member States” (Regulation (EU) 2024/1315). The debate on this topic has been very polarised in European election campaigns and reveals a clear societal divide (Hutter/Kriesi 2021). While parties on the GAL spectrum focus on the humane treatment of asylum seekers and have similar positions, parties on the TAN spectrum oppose them and use nationalist and racist narratives. As Hooghe and Marks (2018, 128) state: “TAN parties and GAL parties take distinct positions that place them at the polar extremes”. Table 9 displays this assumption: On the one hand, the AfD in Germany and the FPÖ in Austria, which achieved massive increases in votes since the 2017 elections, have the highest relative document counts with a peak in 2013 (AfD) and 2008 (FPÖ). On the other hand, we identified very high document counts by *Die Grünen* and NEOS especially in 2017 after the so-called refugee crisis. Both GAL parties are positioned on opposite poles from the extreme right TAN parties. Furthermore, the 2025 Bundestag election marks a peak for all parties (except *Die Grünen*) addressing the topic relatively to the length of their election manifestos, the populist parties AfD and BSW with the highest results, followed by the

Table 8: Policy field “energy”, document distribution per party/election campaign relative to size of party’s respective manifesto.

EU Policy Field "Energy"																				
Percentage of docs per year per party, relative to size of the party's respective manifesto Germany and Austria, 2002 – 2025																				
	Germany										Austria									
	AfD	BSW	CC	FDP	G	L	PDS	P	SPD	SSW	BP	BZÖ	FPÖ	G	KPÖ	NEOS	Plz	SPÖ	Str	ÖVP
2002	-	-	2.28	1.15	3.13	-	0.68	-	1.46	-	-	-	1.94	2.39	0.00	-	-	1.08	-	1.29
2005	-	-	2.65	1.77	2.95	2.09	-	-	3.18	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	1.01	2.56	4.14	-	-	-	1.29	-	3.33
2008	-	-	-	-	-	-	-	-	-	-	-	4.89	2.17	4.18	2.47	-	-	1.64	-	0.00
2009	-	-	3.62	3.66	3.76	2.84	-	-	3.14	-	-	-	-	-	-	-	-	-	-	-
2013	7.04	-	2.85	3.52	4.47	2.31	-	3.05	3.79	-	-	-	0.00	3.06	-	4.09	-	1.00	1.10	4.18
2017	2.01	-	1.97	2.00	3.55	2.28	-	-	1.84	-	-	-	1.63	2.61	-	0.00	-	2.08	-	1.40
2019	-	-	-	-	-	-	-	-	-	-	-	-	0.54	3.83	-	0.90	-	1.10	-	0.48
2021	2.45	-	2.58	2.42	3.47	2.65	-	-	2.32	2.88	-	-	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-	-	-	0.37	-	1.58	5.35	4.95	1.31	-	1.89	-	2.43
2025	2.44	2.58	2.46	1.99	3.71	4.03	-	-	2.12	-	-	-	-	-	-	-	-	-	-	-

Str: Team Stronach, G: Grüne, Plz: Liste Pliz, BP: Bierpartei, CC: CDU/CSU, P: Piraten, L: Die Linke, G: Grüne, DP: Die Partei, TSP: Tierschutzpartei, R: Die Republikaner, Fam: Familienpartei, G: Grüne

Table 9: Policy field “migration and asylum”, document distribution per party/election campaign relative to size of party’s respective manifesto.

EU Policy Field "Migration and Asylum"																				
Percentage of docs per year per party, relative to size of the party's respective manifesto Germany and Austria, 2002 – 2025																				
	Germany										Austria									
	AfD	BSW	CC	FDP	G	L	PDS	P	SPD	SSW	BP	BZÖ	FPÖ	G	KPÖ	NEOS	Plz	SPÖ	Str	ÖVP
2002	-	-	3.72	1.64	1.69	-	2.04	-	1.97	-	-	-	1.43	0.27	1.59	-	-	2.33	-	2.67
2005	-	-	1.26	1.25	1.53	2.09	-	-	1.65	-	-	-	-	-	-	-	-	-	-	
2006	-	-	-	-	-	-	-	-	-	-	-	5.56	8.06	1.88	-	-	-	3.22	-	1.18
2008	-	-	-	-	-	-	-	-	-	-	-	1.88	2.48	2.32	1.23	-	-	1.23	-	2.77
2009	-	-	2.07	0.84	1.48	2.71	-	-	1.72	-	-	-	-	-	-	-	-	-	-	
2013	12.68	-	1.63	1.89	1.82	2.05	-	3.41	1.57	-	-	-	3.28	1.84	-	1.94	-	0.57	0.76	0.59
2017	7.37	-	2.71	2.57	4.61	3.10	-	-	2.87	-	-	-	2.93	1.06	-	6.25	-	1.57	-	2.21
2019	-	-	-	-	-	-	-	-	-	-	-	-	7.57	2.03	-	3.34	-	0.91	-	2.52
2021	6.22	-	2.71	1.98	2.74	1.78	-	-	1.59	2.59	-	-	-	-	-	-	-	-	-	
2024	-	-	-	-	-	-	-	-	-	-	2.62	-	6.51	1.43	0.47	0.65	-	1.38	-	2.53
2025	6.41	6.70	3.00	2.46	2.16	2.48	-	-	2.12	-	-	-	-	-	-	-	-	-	-	

Str: Team Stronach, G: Grüne, Plz: Liste Pliz, BP: Bierpartei, CC: CDU/CSU, P: Piraten, L: Die Linke, G: Grüne, DP: Die Partei, TSP: Tierschutzpartei, R: Die Republikaner, Fam: Familienpartei, G: Grüne

conservative CDU/CSU, leaving GAL parties behind. The result of our close reading mirrors the massive politization of migration issues in Germany during the 2025 election campaign – not only by the extreme right AfD but also by the conservative CDU/CSU.

5. Conclusion

We provided a human-in-the-loop blended reading workflow combining BERTopic and LLM. We illustrated the mainly methodological focus with a case study on German and Austrian national parliamentary election campaigns. Our investigation period encompasses 24 years, which were marked by permacrisis events challenging the EU and its member states. In contrast to close reading analysis, like content analysis based on a theory-based codebook, we focussed on an explorative approach. We therefore traced the occurrence of EU policy fields in national party manifestos and analysed if EU permacrisis events are referenced. We used party manifestos to build our corpus due to their accessibility and the ideal agenda of party preferences they represent (Ivanusch et al. 2023, 1). We therefore excluded short-term adjustments to the campaign communication. Our human-in-the-loop blended reading workflow allowed us to investigate large party manifesto corpora exploratively. We presented exemplary results to illustrate our workflow and evaluate it from a methodological perspective. As previously stated, this paper does not aim to provide complete and comprehensive answers in terms of content. However, our results support previous research indicating that social policy and welfare state issues play a significant role in party communication during elections, irrespective of the parties’ political

orientation (Abou-Chadi/Immergut 2019, 697). Additionally, the rankings of the top 15 policy fields by documents allocated show signs of alignment with permacrisis events, e.g., social and economic insecurity stemming from the Eurozone crisis (2008–2017), the politization of the so-called migration crisis (2015–2016), the Covid-19 pandemic (2019–2023), and the energy crisis triggered by the Russian war against Ukraine (since 2022). Furthermore, there is noticeable communication regarding institutional or regulatory issues within the party manifestos in Austria and Germany, particularly in the areas of “institutional affairs” and “better regulation,” as demonstrated by the high frequency of these topics. In addition, our results indicate notable differences in party communication across the GAL/TAN spectrum, consistent with previous research. First, the findings confirm earlier studies that identify increased demands by TAN parties for national control, sovereigntist positions, and anti-EU narratives during elections held in the Eurozone crisis, the so-called migration crisis, and the Covid-19 pandemic. Second, green GAL parties are more likely to emphasise principles of liberal democracy, while radical right TAN parties address these issues to advocate for their particular interpretation of direct democracy as the so-called absolute power of the people. Third, GAL parties primarily focus on environmental issues, particularly those related to the climate crisis, whereas TAN parties are less vocal on these topics or tend to trivialise the problem.

From a methodological perspective, we gain detailed insight in the text data and corpus composition, e.g. the number of documents extracted from party manifestos; per party and year (see Appendices 1 to 4) to avoid measurement errors. We identified an increasing volume of election manifesto data over time. This underlines that

approaches like our human-in-the-loop blended reading are essential for managing the growing amount of data through text mining techniques. While distant reading can perform complex calculations, it cannot provide the contextual interpretations that close reading can offer. Therefore, it is vital to ensure that researchers have access to the corpus through close reading at every stage of distant reading. Using BERTopic and Llama 3.1 allowed us to structure our analytical steps to align distant reading processes with close reading. Both methods operate fast and deliver well-structured results and enable the exploratory analysis of quantitatively unlimited text data corpora. The distant reading results are provided in absolute and relative figures to avoid interpreting party communication only by counting documents (sentences) but by putting them in relation to the overall election manifesto lengths.

Automatic coding using LLM delivers results quickly, which can assist researchers in interpreting BERTopics. However, like any other AI-based application, LLM should not replace human interpretation. As this paper shows by assigning the BERTopics to EU policy fields, manual review and content validation of AI results is essential. Whereas in previous blended reading analyses (Göler/Reiter 2021; Reiter 2022; Ertel et al. 2024; Ertel 2025), the distant reading part was still a black box, we made sure in the design of this blended reading that it is also possible to check the results manually at any time in the distant reading step in the csv result file containing all BERTopics, the most frequent topic words and all associated documents per party and country. This allowed us to supplement the interpretation from the distant reading with important findings that a purely quantitative analysis cannot provide. An example is that the same high count of documents per party from the GAL and TAN spectrum addressing the policy field “justice and fundamental rights” does not mean that the parties share the same understanding, the same values or aim for the same goals. The results indicate that our paper advances the development of a best practice human-in-the-loop workflow for blended reading. Consequently, future research, whether exploratory as in our analysis or involving further methodological development with supervised topic modelling, in which topic labels are specified directly using a seed list, may increasingly emphasise content-related knowledge interests. To facilitate such research, all algorithm-based methods used in this study are open source.

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Appendix

Document Statistics

Appendix 1: Number of documents extracted from party manifestos; per party, for each year where a national election took place, Germany. N=76,573. A value of “-” indicates, that a party did not run for election during that year.

	2002	2005	2009	2013	2017	2021	2025
afd	-	-	-	71	746	1,430	780
bsw	-	-	-	-	-	-	194
cducsu	1,184	716	1,741	2,390	1,219	1,512	2,232
fdp	1,830	1,356	2,023	2,274	1,948	2,024	1,258
grüne	1,534	1,829	3,454	5,396	3,887	3,720	1,807
linke	-	575	739	1,171	3,775	3,541	2,136
pds	735	-	-	-	-	-	-
piraten	-	-	-	1,641	-	-	-
spd	1,373	848	1,974	2,427	2,334	1,511	1,885
ssw	-	-	-	-	-	1,353	-
Σ	6,656	5,324	9,931	15,370	13,909	15,091	10,292

Appendix 2: Number of documents extracted from party manifestos; per party, for each year where a national election took place, Austria. N=37,987. A value of “-” indicates, that a party did not run for election during that year.

	2002	2006	2008	2013	2017	2019	2024
bier	-	-	-	-	-	-	267
bzö	-	396	266	-	-	-	-
fpö	977	273	323	61	307	185	1,199
grüne	376	532	431	2,386	1,034	2,217	2,447
kpö	63	-	81	-	-	-	424
neos	-	-	-	979	112	1,107	153
pilz	-	-	-	-	62	-	-
spö	557	311	732	703	3,123	2,090	2,539
ts	-	-	-	1,179	-	-	-
övp	1,236	1,443	397	1,195	2,852	834	2,138
Σ	3,209	2,955	2,230	6,503	7,490	6,433	9,167

Appendix 3: Share of documents from manifestos; per party, for each year where a national election took place, Austria. A value of "-" indicates, that a party did not run for election during that year.

	2002	2006	2008	2013	2017	2019	2024
bier	-	-	-	-	-	-	2.91%
bzö	-	13.40%	11.93%	-	-	-	-
fpö	30.45%	9.24%	14.48%	0.94%	4.10%	2.88%	13.08%
grüne	11.72%	18.00%	19.33%	36.69%	13.81%	34.46%	26.69%
kpö	1.96%	-	3.63%	-	-	-	4.63%
neos	-	-	-	15.05%	1.50%	17.21%	1.67%
pilz	-	-	-	-	0.83%	-	-
spö	17.36%	10.52%	32.83%	10.81%	41.70%	32.49%	27.70%
ts	-	-	-	18.13%	-	-	-
övp	38.52%	48.83%	17.80%	18.38%	38.08%	12.96%	23.32%
Σ	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Appendix 4: Share of documents extracted from manifestos; per party, for each year where a national election took place, Germany. A value of "-" indicates, that a party did not run for election during that year.

	2002	2005	2009	2013	2017	2021	2025
afd	-	-	-	-	5.36%	9.48%	7.58%
bsw	-	-	-	-	-	-	1.88%
cducsu	17.79%	13.45%	17.53%	15.55%	8.76%	10.02%	21.69%
fdp	27.49%	25.47%	20.37%	14.80%	14.01%	13.41%	12.22%
grüne	23.05%	34.35%	34.78%	35.11%	27.95%	24.65%	17.56%
linke	-	10.80%	7.44%	7.62%	27.14%	23.46%	20.75%
pds	11.04%	-	-	-	-	-	-
piraten	-	-	-	10.68%	-	-	-
spd	20.63%	15.93%	19.88%	15.79%	16.78%	10.01%	18.32%
ssw	-	-	-	-	-	8.97%	-
Σ	100.00%	100.00%	100.00%	100.01%	100.00%	100.00%	100.00%

EU Policy Field Statistics

Appendix 5: Number of documents assigned to each EU policy field, per year, Germany. The rightmost columns shows the overall number of documents assigned to a policy field. The last row shows the total number of documents per year. N=76,573.

	2002	2005	2009	2013	2017	2021	2025	Σ
Agriculture and rural development	111	64	125	180	169	203	135	987
Animal welfare	17	10	30	90	82	99	62	390
Artificial intelligence	1	1	0	2	13	39	53	109
Banking and financial services	38	25	173	310	166	172	117	1,001
Better Regulation	240	170	279	556	432	468	404	2,549
Borders and security	10	4	9	32	51	70	63	239
Business and industry	256	200	334	428	423	418	279	2,338
Climate action	111	60	316	239	188	284	179	1,377
Competition	83	50	78	92	75	90	74	542
Competitiveness	47	52	70	143	72	44	49	477
Consumers	56	33	90	151	86	56	31	503
Culture and media	146	95	247	478	305	321	183	1,775
Defence	108	78	163	200	215	245	171	1,180
Digital economy and society	63	31	83	258	350	488	245	1,518
EU enlargement	5	16	8	14	52	42	10	147
Economy, finance and the euro	15	36	47	84	60	59	65	366
Education and training	641	398	787	1,072	927	950	599	5,374
Employment	700	672	908	1,354	1,419	1,270	807	7,130
Energy	121	136	350	563	345	420	297	2,232
Environment	202	162	412	480	443	660	358	2,717
Fiscal policy	44	40	50	104	73	72	53	436
Food safety	49	51	76	121	96	107	68	568
Fraud prevention	26	9	27	61	38	56	22	239
Health	241	184	341	630	617	783	497	3,293
Home affairs	77	39	107	149	170	191	177	910
Humanitarian aid and civil protection	90	64	125	209	136	182	139	945
Institutional affairs	398	316	461	879	701	822	507	4,084
International partnerships	76	42	76	107	119	85	69	574
Justice and fundamental rights	699	572	1246	1819	1683	1792	1204	9015
Maritime affairs and fisheries	13	2	33	38	41	79	46	252
Migration and asylum	142	80	158	307	501	394	293	1,875
Public health	1	5	25	13	7	162	20	233
Regional policy	147	81	179	372	267	297	183	1,526
Research and innovation	188	116	228	336	246	276	219	1,609
Single market	57	61	68	168	103	146	93	696
Social affairs	140	95	223	424	501	434	393	2,210
Taxation	166	197	195	308	293	319	277	1,755
Trade	78	32	67	87	117	111	56	548
Transport	176	98	229	395	420	471	334	2,123
Ukraine	14	8	18	19	44	57	117	277
no category	863	939	1,490	2,098	1,863	1,857	1,344	10,454
Σ	6,656	5,324	9,931	15,370	13,909	15,091	10,292	7,6573

Appendix 6: Number of documents assigned to each EU policy field, per year, Austria. The right-most columns shows the overall number of documents assigned to a policy field. The last row shows the total number of documents per year. N=37987.

	2002	2006	2008	2013	2017	2019	2024	Σ
Agriculture and rural development	37	50	27	94	69	116	142	535
Animal welfare	11	22	14	48	24	41	61	221
Artificial intelligence	0	1	0	1	3	14	59	78
Banking and financial services	11	4	8	135	48	29	53	288
Better Regulation	110	74	54	249	306	210	320	1,323
Borders and security	5	0	1	7	18	18	34	83
Business and industry	101	51	55	240	320	204	268	1,239
Climate action	32	102	28	75	71	229	184	721
Competition	15	10	11	29	33	20	41	159
Competitiveness	17	22	12	53	58	26	44	232
Consumers	13	11	8	29	19	18	28	126
Culture and media	55	44	30	137	114	156	180	716
Defence	24	23	13	40	29	44	72	245
Digital economy and society	40	44	10	59	196	152	193	694
EU enlargement	0	4	9	2	11	7	1	34
Economy, finance and the euro	80	16	40	161	217	113	116	743
Education and training	307	353	254	716	800	653	776	3,859
Employment	444	270	247	500	751	632	670	3,514
Energy	50	85	52	183	137	123	274	904
Environment	64	87	37	200	136	310	392	1,226
Fiscal policy	38	15	5	38	53	15	37	201
Food safety	30	31	28	66	37	58	84	334
Fraud prevention	1	1	10	47	22	25	28	134
Health	161	150	99	333	297	340	582	1,962
Home affairs	44	43	29	74	107	67	158	522
Humanitarian aid and civil protection	25	19	9	47	47	38	35	220
Institutional affairs	229	150	152	425	408	346	402	2,112
International partnerships	6	5	2	9	16	11	44	93
Justice and fundamental rights	337	255	235	693	630	614	998	3,762
Maritime affairs and fisheries	1	0	0	1	4	11	7	24
Migration and asylum	62	81	44	85	139	136	212	759
Public health	6	0	1	4	1	9	23	44
Regional policy	25	16	10	65	64	87	125	392
Research and innovation	81	67	35	142	169	95	137	726
Single market	33	60	17	88	85	59	60	402
Social affairs	70	72	73	196	206	235	351	1,203
Taxation	67	69	98	157	247	119	128	885
Trade	7	11	5	16	28	36	29	132
Transport	81	80	57	144	126	152	234	874
Ukraine	0	0	1	2	6	5	38	52
no category	489	557	410	913	1,438	860	1,547	6,214
Σ	3,209	2,955	2,230	6,503	7,490	6,433	9,167	37,987

Topic Statistics

Appendix 9: Topic statistics for Germany and Austria, ordered by number of documents contributed to topic. The columns show unique topic ID (t_id), absolute and relative number of documents contributed to topic (n_a, n_r), cumulative absolute and relative number of documents contributed to topic (n_a_c, n_r_c) and name of topic. Number of documents N=114560.

t_id	n_a	n_r	n_a_c	n_r_c	topic
0	5897	5.15%	5,897	5.15%	eltern kinder schulen schule
2	2862	2.50%	8,759	7.65%	europäische europa union europäischen
1	2640	2.30%	11,399	9.95%	steuern steuer besteuern einkommensteuer
6	2073	1.81%	13,472	11.76%	deutschland deutschland's deutsche deutschen
16	2046	1.79%	15,518	13.55%	wenig kosten privatisierung oft
8	2000	1.75%	17,518	15.29%	energien erneuerbaren strom erneuerbare
13	1880	1.64%	19,398	16.93%	rente rentenversicherung altersvorsorge pensionen
30	1868	1.63%	21,266	18.56%	gesetze überprüfen überprüft regeln
4	1829	1.60%	23,095	20.16%	wohnungen wohnraum mieten mieter
5	1740	1.52%	24,835	21.68%	asyl asylverfahren flüchtlinge migration
21	1718	1.50%	26,553	23.18%	arbeitsmarkt arbeit arbeitsmarktpolitik beschäftigung
7	1685	1.47%	28,238	24.65%	siehe ff bündnis
3	1666	1.45%	29,904	26.10%	bahn schiene mobilität verkehr
9	1509	1.32%	31,413	27.42%	forschung wissenschaft hochschulen forschungseinrichtungen
19	1339	1.17%	32,752	28.59%	bürokratie vereinfachen vereinfacht reduzieren
17	1265	1.10%	34,017	29.69%	klimaschutz klimakrise klimawandel klima
49	1260	1.10%	35,277	30.79%	abgeschafft abschaffen abschaffung beenden
12	1246	1.09%	36,523	31.88%	daten datenschutz privatsphäre internet
37	1233	1.08%	37,756	32.96%	bundestagswahlprogramm bündnis
18	1194	1.04%	38,950	34.00%	österreich österreichs österreichische österreichischen
14	1192	1.04%	40,142	35.04%	frauen führungspositionen männern männer
34	1170	1.02%	41,312	36.06%	gewerkschaften beschäftigten tarifverträge betriebsräte
31	1165	1.02%	42,477	37.08%	entwicklungszusammenarbeit zusammenarbeit ländern kooperation
35	1164	1.02%	43,641	38.09%	schule studium bildungssystem fehlen
23	1158	1.01%	44,799	39.11%	demokratie demokratische demokratischen sozialdemokratie
11	1153	1.01%	45,952	40.11%	antisemitismus rassismus rechtsextremismus extremismus
22	1135	0.99%	47,087	41.10%	niemand darf kein keine
27	1128	0.98%	48,215	42.09%	arbeitslosigkeit arbeitslos arbeitsmarkt arbeitslose
10	1105	0.96%	49,320	43.05%	kunst kultur kulturelle kulturpolitik
81	1076	0.94%	50,396	43.99%	ändern verändern vieles anders
29	1062	0.93%	51,458	44.92%	justiz gerichte strafverfahren straftaten
66	1011	0.88%	52,469	45.80%	parteien politiker politik politische
63	987	0.86%	53,456	46.66%	gleiche gleichstellung gleichberechtigung gleichen
103	967	0.84%	54,423	47.51%	bund bundes aufgaben bundesländer
54	963	0.84%	55,386	48.35%	pflge angehörige angehörigen pflegende
83	943	0.82%	56,329	49.17%	zusammenhalt solidarität füreinander zusammenleben
57	937	0.82%	57,266	49.99%	kommunen finanzierung bund gemeinden
60	936	0.82%	58,202	50.80%	politik politische politischen politisches
76	933	0.81%	59,135	51.62%	ökologische ökologischen nachhaltigkeit umwelt
61	925	0.81%	60,060	52.43%	sicherheit sicherheitsbehörden bedrohungen innere
41	922	0.80%	60,982	53.23%	mindestlohn mindestlohns lohnnebenkosten mindestlöhne

28	850	0.74%	61,832	53.97%	landwirtschaft landwirte bauern landwirtinnen
136	843	0.74%	62,675	54.71%	armut kinderarmut arm hunger
96	837	0.73%	63,512	55.44%	gesundheitssystem gesundheit gesundheitswesen versorgung
53	833	0.73%	64,345	56.17%	grüne grün hilft green
46	826	0.72%	65,171	56.89%	innovationen innovation ideen kreativität
65	823	0.72%	65,994	57.61%	arbeitszeit stunden arbeitszeiten teilzeit
42	799	0.70%	66,793	58.30%	banken finanzmärkte finanzsektor sparkassen
90	797	0.70%	67,590	59.00%	europäische binnenmarkt eu währungsunion
73	797	0.70%	68,387	59.70%	krankenversicherung versicherten pflegeversicherung bürgerversicherung
93	786	0.69%	69,173	60.38%	ich du vorsicht mich
15	777	0.68%	69,950	61.06%	sport spitzensport sports sportstätten
24	756	0.66%	70,706	61.72%	natur naturschutz wälder wald
43	743	0.65%	71,449	62.37%	österreich österreichische österreichischen österreichs
71	741	0.65%	72,190	63.02%	ältere alter älteren senioren
88	738	0.64%	72,928	63.66%	parlament volksbegehren nationalrat volksabstimmung
92	733	0.64%	73,661	64.30%	investitionen private kapital wagniskapital
20	728	0.64%	74,389	64.93%	behinderungen behinderung behinderte behindertenrechtskonvention
126	709	0.62%	75,098	65.55%	wachstum wohlstand wirtschaftswachstum wirtschaft
108	701	0.61%	75,799	66.17%	wettbewerb wettbewerbs wettbewerbsbedingungen wettbewerbsfähigkeit
111	693	0.60%	76,492	66.77%	stand bürgerkonvent mrd lebensjahr
106	692	0.60%	77,184	67.37%	österreich euro milliarden oecd
98	685	0.60%	77,869	67.97%	arbeitsplätze jobs arbeitsplätzen beschäftigung
39	680	0.59%	78,549	68.57%	globalisierung wto handel Freihandelsabkommen
44	678	0.59%	79,227	69.16%	digitalisierung digitalen digitale internet
47	667	0.58%	79,894	69.74%	nationen vereinten vn zivile
68	665	0.58%	80,559	70.32%	transparenz transparent transparente transparenter
59	661	0.58%	81,220	70.90%	co emissionen emissionshandel ausstoß
78	646	0.56%	81,866	71.46%	patienten patientinnen wartezeiten krankenhäuser
64	637	0.56%	82,503	72.02%	schuldenbremse schulden neuverschuldung ausgeglichenen
25	636	0.56%	83,139	72.57%	medien rundfunk öffentlichrechtlichen medienkompetenz
38	629	0.55%	83,768	73.12%	verbraucher verbraucherinnen Verbraucherschutz verbraucherpolitik
120	627	0.55%	84,395	73.67%	verantwortung eigenverantwortung land übernehmen
32	626	0.55%	85,021	74.22%	gewalt frauen opfer sexualisierter
80	625	0.55%	85,646	74.76%	städte stadt städten stadtbau
62	623	0.54%	86,269	75.30%	ehrenamtliche engagement freiwilligen ehrenamtlich
36	621	0.54%	86,890	75.85%	trans sexuellen lesben queere
115	615	0.54%	87,505	76.38%	gehts handeln treten hier
26	611	0.53%	88,116	76.92%	tierschutz tiere tieren tierhaltung
104	608	0.53%	88,724	77.45%	menschenrechte frieden menschenrechten menschenrechtspolitik
72	601	0.52%	89,325	77.97%	versorgung ambulante ärzte niedergelassenen
105	599	0.52%	89,924	78.50%	österreich staatsbürgerschaft österreichische österreichischen
50	598	0.52%	90,522	79.02%	digitale digitalen lernen lehr
128	595	0.52%	91,117	79.54%	kleine mittlere unternehmen mittelständische
40	591	0.52%	91,708	80.05%	lebensmittel lebensmitteln ernährung gesunde
138	589	0.51%	92,297	80.57%	arbeitslosigkeit ostdeutschland deutschland löhne
58	587	0.51%	92,884	81.08%	recycling rohstoffe produkte kreislaufwirtschaft
125	587	0.51%	93,471	81.59%	freiheit frei Herzen Wahlfreiheit
33	582	0.51%	94,053	82.10%	atomkraft atomkraftwerke kernkraftwerke kernenergie

74	572	0.50%	94,625	82.60%	staatsangehörigkeit einwanderungsland deutschland staatsbürgerschaft
55	571	0.50%	95,196	83.10%	universitäten österreich österreichischen österreichweit
69	559	0.49%	95,755	83.59%	autos elektromobilität fahrzeuge lkw
86	554	0.48%	96,309	84.07%	energien energie erneuerbare erneuerbaren
102	537	0.47%	96,846	84.54%	frauen männer männern teilzeit
140	529	0.46%	97,375	85.00%	freiheit freiheitsrechte rechtsstaat sicherheit
85	523	0.46%	97,898	85.46%	digitale digital verwaltung digitalisierung
132	520	0.45%	98,418	85.91%	unterstützen weiter stärken unterstützung
109	516	0.45%	98,934	86.36%	infrastruktur verkehrsinfrastruktur infrastrukturen investitionen
84	514	0.45%	99,448	86.81%	pestiziden pestizide artensterben bienen
51	507	0.44%	99,955	87.25%	polizei polizistinnen polizisten polizist
48	506	0.44%	100,461	87.69%	deutsch sprache erlernen deutschen
139	504	0.44%	100,965	88.13%	jeder mensch leben fähigkeiten
107	502	0.44%	101,467	88.57%	kriminallität organisierte straftaten jugendkriminallität
112	496	0.43%	101,963	89.00%	fortsetzen konsequent bleibt diesen
45	492	0.43%	102,455	89.43%	wasser flüsse trinkwasser hochwasserschutz
79	490	0.43%	102,945	89.86%	ezb zentralbank bundesbank banken
77	472	0.41%	103,417	90.27%	geburt schwangerschaft schwangerschaftsabbruch mutter
130	468	0.41%	103,885	90.68%	mut zuversicht zukunft hoffnung
91	462	0.40%	104,347	91.09%	bundeswehr soldaten soldatinnen nato
127	417	0.36%	104,764	91.45%	schulden verschuldung staatsverschuldung schuldenberg
82	413	0.36%	105,177	91.81%	breitband internet mobilfunk wlan
117	404	0.35%	105,581	92.16%	goethe identität kultur kulturnation
122	373	0.33%	105,954	92.49%	korruption parteifinanzierung geldwäsche spenden
52	373	0.33%	106,327	92.81%	drogen cannabis drogenpolitik alkohol
137	361	0.32%	106,688	93.13%	gerechtigkeit generationengerechtigkeit ungerechtigkeit sinn
124	359	0.31%	107,047	93.44%	gesundheitssystem österreich österreichischer österreichweit
134	356	0.31%	107,403	93.75%	regionale regionalen regionen regionaler
56	353	0.31%	107,756	94.06%	kirchen religionsgemeinschaften religionen religionsfreiheit
75	346	0.30%	108,102	94.36%	urheberrecht urheber urheberrechts werke
89	343	0.30%	108,445	94.66%	medikamente arzneimitteln medikamenten arzneimittel
101	343	0.30%	108,788	94.96%	ländlichen raum ländliche räume
113	341	0.30%	109,129	95.26%	soldaten wehrpflicht soldatinnen miliz
100	341	0.30%	109,470	95.56%	aufarbeitung nationalsozialismus ddr ns
116	335	0.29%	109,805	95.85%	rüstungsexporte waffen rüstungsexporten rüstungsexportpolitik
70	329	0.29%	110,134	96.14%	rusland ukraine russlands russische
99	329	0.29%	110,463	96.42%	agrarpolitik landwirtschaft bauern agrarsubventionen
110	322	0.28%	110,785	96.70%	integration integrationspolitik gelungene inklusion
94	322	0.28%	111,107	96.99%	cyber cybersicherheit cyberkriminallität it
95	318	0.28%	111,425	97.26%	sprachförderung mehrsprachigkeit spracherwerb sprachkurse
87	315	0.27%	111,740	97.54%	zukunft schaffen vision erneuerbar
97	311	0.27%	112,051	97.81%	gentechnik gentechnisch pflanzen gentechnikfreie
67	304	0.27%	112,355	98.08%	csu cdu fdp spd
135	301	0.26%	112,656	98.34%	euro eur verdoppelt jährlich
119	287	0.25%	112,943	98.59%	atomwaffen massenvernichtungswaffen abrüstung nuklearen
131	277	0.24%	113,220	98.83%	corona pandemie coronapandemie coronakrise
129	276	0.24%	113,496	99.07%	fischerei meere ostsee seenotrettung
133	256	0.22%	113,752	99.29%	lärmschutz lärm verkehrslärm fluglärm

121	237	0.21%	113,989	99.50%	telemedizin patientinnen patientenakte elektronische
123	203	0.18%	114,192	99.68%	tourismus tourismuswirtschaft touristische touristischen
118	187	0.16%	114,379	99.84%	ki intelligenz künstliche künstlicher
114	181	0.16%	114,560	100.00%	türkei beitritt beitriffsverhandlungen türkischen

Appendix 10: Topic statistics for Austria, ordered by number of documents contributed to topic. The columns show unique topic ID (t_id), absolute and relative number of documents contributed to topic (n_a, n_r), cumulative absolute and relative number of documents contributed to topic (n_a_c, n_r_c) and name of topic. Number of documents N=37,987.

t_id	n_a	n_r	n_a_c	n_r_c	topic
0	2193	5.77%	2,193	5.77%	eltern kinder schulen schule
18	1189	3.13%	3,382	8.90%	österreich österreichs österreichische österreichischen
1	885	2.33%	4,267	11.23%	steuern steuer besteuern einkommensteuer
2	762	2.01%	5,029	13.24%	europäische europa union europäischen
43	719	1.89%	5,748	15.13%	österreich österreichische österreichischen österreichs
7	716	1.88%	6,464	17.02%	siehe ff bündnis
16	705	1.86%	7,169	18.87%	wenig kosten privatisierung oft
4	661	1.74%	7,830	20.61%	wohnungen wohnraum mieten mieter
13	651	1.71%	8,481	22.33%	rente rentenversicherung altersvorsorge pensionen
30	621	1.63%	9,102	23.96%	gesetze überprüfen überprüft regeln
5	610	1.61%	9,712	25.57%	asyl asylverfahren flüchtlinge migration
106	591	1.56%	10,303	27.12%	österreich euro milliarden oecd
105	589	1.55%	10,892	28.67%	österreich staatsbürgerschaft österreichische österreichischen
8	587	1.55%	11,479	30.22%	energien erneuerbaren strom erneuerbare
35	517	1.36%	11,996	31.58%	schule studium bildungssystem fehlen
21	514	1.35%	12,510	32.93%	arbeitsmarkt arbeit arbeitsmarktpolitik beschäftigung
55	493	1.30%	13,003	34.23%	universitäten österreich österreichischen österreichweit
3	491	1.29%	13,494	35.52%	bahn schiene mobilität verkehr
9	488	1.28%	13,982	36.81%	forschung wissenschaft hochschulen forschungseinrichtungen
19	481	1.27%	14,463	38.07%	bürokratie vereinfachen vereinfacht reduzieren
22	480	1.26%	14,943	39.34%	niemand darf kein keine
66	459	1.21%	15,402	40.55%	parteien politiker politik politische
93	458	1.21%	15,860	41.75%	ich du vorsicht mich
17	451	1.19%	16,311	42.94%	klimaschutz klimakrise klimawandel klima
14	431	1.13%	16,742	44.07%	frauen führungspositionen männern männer
29	418	1.10%	17,160	45.17%	justiz gerichte strafverfahren straftaten
27	400	1.05%	17,560	46.23%	arbeitslosigkeit arbeitslos arbeitsmarkt arbeitslose
81	397	1.05%	17,957	47.27%	ändern verändern vieles anders
15	390	1.03%	18,347	48.30%	sport spitzensport sports sportstätten
111	374	0.98%	18,721	49.28%	stand bürgerkonvent mrd lebensjahr
54	367	0.97%	19,088	50.25%	pflege angehörige angehörigen pflegende
10	347	0.91%	19,435	51.16%	kunst kultur kulturelle kulturpolitik
60	341	0.90%	19,776	52.06%	politik politische politischen politisches
65	332	0.87%	20,108	52.93%	arbeitszeit stunden arbeitszeiten teilzeit
103	331	0.87%	20,439	53.81%	bund bundes aufgaben bundesländer
61	311	0.82%	20,750	54.62%	sicherheit sicherheitsbehörden bedrohungen innere

41	307	0.81%	21,057	55.43%	mindestlohn mindestlohns lohnnebenkosten mindestlöhne
88	304	0.80%	21,361	56.23%	parlament volksbegehren nationalrat volksabstimmung
124	302	0.80%	21,663	57.03%	gesundheitssystem österreich österreicher österreichweit
96	299	0.79%	21,962	57.81%	gesundheitssystem gesundheit gesundheitswesen versorgung
11	289	0.76%	22,251	58.58%	antisemitismus rassismus rechtsextremismus extremismus
49	281	0.74%	22,532	59.32%	abgeschafft abschaffen abschaffung beenden
71	275	0.72%	22,807	60.04%	ältere alter älteren senioren
53	270	0.71%	23,077	60.75%	grüne grün hilft green
28	269	0.71%	23,346	61.46%	landwirtschaft landwirte bauern landwirtinnen
78	268	0.71%	23,614	62.16%	patienten patientinnen wartezeiten krankenhäuser
20	268	0.71%	23,882	62.87%	behinderungen behinderung behinderte behindertenrechtskonvention
34	268	0.71%	24,150	63.57%	gewerkschaften beschäftigten tarifverträge betriebsräte
12	267	0.70%	24,417	64.28%	daten datenschutz privatsphäre internet
136	267	0.70%	24,684	64.98%	armut kinderarmut arm hunger
115	257	0.68%	24,941	65.66%	gehts handeln treten hier
25	252	0.66%	25,193	66.32%	medien rundfunk öffentlichrechtlichen medienkompetenz
83	251	0.66%	25,444	66.98%	zusammenhalt solidarität füreinander zusammenleben
50	248	0.65%	25,692	67.63%	digitale digitalen lernen lehr
102	245	0.64%	25,937	68.28%	frauen männer männern teilzeit
63	242	0.64%	26,179	68.92%	gleiche gleichstellung gleichberechtigung gleichen
46	238	0.63%	26,417	69.54%	innovationen innovation ideen kreativität
23	238	0.63%	26,655	70.17%	demokratie demokratische demokratischen sozialdemokratie
98	235	0.62%	26,890	70.79%	arbeitsplätze jobs arbeitsplätzen beschäftigung
126	232	0.61%	27,122	71.40%	wachstum wohlstand wirtschaftswachstum wirtschaft
120	230	0.61%	27,352	72.00%	verantwortung eigenverantwortung land übernehmen
45	227	0.60%	27,579	72.60%	wasser flüsse trinkwasser hochwasserschutz
128	225	0.59%	27,804	73.19%	kleine mittlere unternehmen mittelständische
76	225	0.59%	28,029	73.79%	ökologische ökologischen nachhaltigkeit umwelt
90	223	0.59%	28,252	74.37%	europäische binnenmarkt eu währungsunion
26	221	0.58%	28,473	74.95%	tierschutz tiere tieren tierhaltung
68	221	0.58%	28,694	75.54%	transparenz transparent transparente transparenter
31	220	0.58%	28,914	76.12%	entwicklungszusammenarbeit zusammenarbeit ländern kooperation
40	218	0.57%	29,132	76.69%	lebensmittel lebensmitteln ernährung gesunde
86	216	0.57%	29,348	77.26%	energien energie erneuerbare erneuerbaren
32	214	0.56%	29,562	77.82%	gewalt frauen opfer sexualisierter
59	212	0.56%	29,774	78.38%	co emissionen emissionshandel ausstoß
51	211	0.56%	29,985	78.93%	polizei polizistinnen polizisten polizist
72	211	0.56%	30,196	79.49%	versorgung ambulante ärzte niedergelassenen
73	206	0.54%	30,402	80.03%	krankenversicherung versicherten pflegeversicherung bürgerversicherung
92	205	0.54%	30,607	80.57%	investitionen private kapital wagniskapital
44	203	0.53%	30,810	81.11%	digitalisierung digitalen digitale internet
84	202	0.53%	31,012	81.64%	pestiziden pestizide artensterben bienen
62	201	0.53%	31,213	82.17%	ehrenamtliche engagement freiwilligen ehrenamtlich
64	201	0.53%	31,414	82.70%	schuldenbremse schulden neuverschuldung ausgeglichenen
57	196	0.52%	31,610	83.21%	kommunen finanzierung bund gemeinden
42	188	0.49%	31,798	83.71%	banken finanzmärkte finanzsektor sparkassen
36	184	0.48%	31,982	84.19%	trans sexuellen lesben queere
58	184	0.48%	32,166	84.68%	recycling rohstoffe produkte kreislaufwirtschaft

135	179	0.47%	32,345	85.15%	euro eur verdoppelt jährlich
24	176	0.46%	32,521	85.61%	natur naturschutz wälder wald
69	173	0.46%	32,694	86.07%	autos elektromobilität fahrzeuge lkw
130	172	0.45%	32,866	86.52%	mut zuversicht zukunft hoffnung
139	164	0.43%	33,030	86.95%	jeder mensch leben fähigkeiten
108	159	0.42%	33,189	87.37%	wettbewerb wettbewerbs wettbewerbsbedingungen wettbewerbsfähigkeit
77	158	0.42%	33,347	87.79%	geburt schwangerschaft schwangerschaftsabbruch mutter
112	154	0.41%	33,501	88.19%	fortsetzen konsequent bleibt diesen
127	152	0.40%	33,653	88.59%	schulden verschuldung staatsverschuldung schuldenberg
109	152	0.40%	33,805	88.99%	infrastruktur verkehrsinfrastruktur infrastrukturen investitionen
125	145	0.38%	33,950	89.37%	freiheit frei Herzen wahlfreiheit
48	145	0.38%	34,095	89.75%	deutsch sprache erlernen deutschen
107	140	0.37%	34,235	90.12%	kriminallität organisierte straftaten jugendkriminallität
37	139	0.37%	34,374	90.49%	bundestagswahlprogramm bündnis
99	135	0.36%	34,509	90.84%	agrarpolitik landwirtschaft bauern agrarsubventionen
122	134	0.35%	34,643	91.20%	korruption parteienfinanzierung geldwäsche spenden
113	133	0.35%	34,776	91.55%	soldaten wehrpflicht soldatinnen miliz
85	132	0.35%	34,908	91.89%	digitale digital verwaltung digitalisierung
39	132	0.35%	35,040	92.24%	globalisierung wto handel Freihandelsabkommen
101	131	0.34%	35,171	92.59%	ländlichen raum ländliche räume
138	131	0.34%	35,302	92.93%	arbeitslosigkeit ostdeutschland deutschland löhne
38	126	0.33%	35,428	93.26%	verbraucher verbraucherinnen Verbraucherschutz verbraucherpolitik
110	124	0.33%	35,552	93.59%	integration integrationspolitik gelungene inklusion
95	121	0.32%	35,673	93.91%	sprachförderung mehrsprachigkeit spracherwerb sprachkurse
80	121	0.32%	35,794	94.23%	städte stadt städten stadumbau
140	120	0.32%	35,914	94.54%	freiheit freiheitsrechte rechtsstaat sicherheit
97	116	0.31%	36,030	94.85%	gentechnik gentechologisch pflanzen gentechnikfreie
132	115	0.30%	36,145	95.15%	unterstützen weiter stärken unterstützung
137	114	0.30%	36,259	95.45%	gerechtigkeit generationengerechtigkeit ungerechtigkeit sinn
82	111	0.29%	36,370	95.74%	breitband internet mobilfunk wlan
123	104	0.27%	36,474	96.02%	tourismus tourismuswirtschaft touristische touristischen
33	101	0.27%	36,575	96.28%	atomkraft atomkraftwerke kernkraftwerke kernenergie
79	100	0.26%	36,675	96.55%	ezb zentralbank bundesbank banken
104	94	0.25%	36,769	96.79%	menschenrechte frieden menschenrechten menschenrechtspolitik
47	93	0.24%	36,862	97.04%	nationen vereinten vn zivile
94	83	0.22%	36,945	97.26%	cyber cybersicherheit cyberkriminallität it
56	80	0.21%	37,025	97.47%	kirchen religionsgemeinschaften religionen religionsfreiheit
118	78	0.21%	37,103	97.67%	ki intelligenz künstliche künstlicher
121	78	0.21%	37,181	97.88%	telemedizin patientinnen patientenakte elektronische
134	75	0.20%	37,256	98.08%	regionale regionalen regionen regionaler
89	73	0.19%	37,329	98.27%	medikamente arzneimitteln medikamenten arzneimittel
52	72	0.19%	37,401	98.46%	drogen cannabis drogenpolitik alkohol
75	59	0.16%	37,460	98.61%	urheberrecht urheber urheberrechts werke
133	58	0.15%	37,518	98.77%	lärmschutz lärm verkehrslärm fluglärm
117	58	0.15%	37,576	98.92%	goethe identität kultur kulturnation
70	52	0.14%	37,628	99.05%	russland ukraine russlands russische
91	48	0.13%	37,676	99.18%	bundeswehr soldaten soldatinnen nato
87	45	0.12%	37,721	99.30%	zukunft schaffen vision erneuerbar

131	44	0.12%	37,765	99.42%	corona pandemie coronapandemie coronakrise
6	37	0.10%	37,802	99.51%	deutschland deutschlands deutsche deutschen
100	37	0.10%	37,839	99.61%	aufarbeitung nationalsozialismus ddr ns
114	34	0.09%	37,873	99.70%	türkei beitritt beitriffsverhandlungen türkischen
116	33	0.09%	37,906	99.79%	rüstungsexporte waffen rüstungsexporten rüstungsexportpolitik
119	31	0.08%	37,937	99.87%	atomwaffen massenvernichtungswaffen abrüstung nuklearen
74	25	0.07%	37,962	99.93%	staatsangehörigkeit einwanderungsland deutschland staatsbürgerschaft
129	24	0.06%	37,986	100.00%	fischerei meere ostsee seenotrettung
67	1	0.00%	37,987	100.00%	csu cdu fdp spd

Appendix II: Topic statistics for Germany, ordered by number of documents assigned to topic. The columns show unique topic ID (t_id), absolute and relative number of documents contributed to topic (n_a, n_r), cumulative absolute and relative number of documents contributed to topic (n_a_c, n_r_c) and name of topic. Number of documents N=76,573.

t_id	n_a	n_r	n_a_c	n_r_c	topic
0	3704	4.84%	3,704	4.84%	eltern kinder schulen schule
2	2100	2.74%	5,804	7.58%	europäische europa union europäischen
6	2036	2.66%	7,840	10.24%	deutschland deutschlands deutsche deutschen
1	1755	2.29%	9,595	12.53%	steuern steuer besteuern einkommensteuer
8	1413	1.85%	11,008	14.38%	energien erneuerbaren strom erneuerbare
16	1341	1.75%	12,349	16.13%	wenig kosten privatisierung oft
30	1247	1.63%	13,596	17.76%	gesetze überprüfen überprüft regeln
13	1229	1.61%	14,825	19.36%	rente rentenversicherung altersvorsorge pensionen
21	1204	1.57%	16,029	20.93%	arbeitsmarkt arbeit arbeitsmarktpolitik beschäftigung
3	1175	1.53%	17,204	22.47%	bahn schiene mobilität verkehr
4	1168	1.53%	18,372	23.99%	wohnungen wohnraum mieten mieter
5	1130	1.48%	19,502	25.47%	asyl asylverfahren flüchtlinge migration
37	1094	1.43%	20,596	26.90%	bundestagswahlprogramm bündnis
9	1021	1.33%	21,617	28.23%	forschung wissenschaft hochschulen forschungseinrichtungen
49	979	1.28%	22,596	29.51%	abgeschafft abschaffen abschaffung beenden
12	979	1.28%	23,575	30.79%	daten datenschutz privatsphäre internet
7	969	1.27%	24,544	32.05%	siehe ff bündnis
31	945	1.23%	25,489	33.29%	entwicklungszusammenarbeit zusammenarbeit ländern kooperation
23	920	1.20%	26,409	34.49%	demokratie demokratische demokratischen sozialdemokratie
34	902	1.18%	27,311	35.67%	gewerkschaften beschäftigten tarifverträge betriebsräte
11	864	1.13%	28,175	36.79%	antisemitismus rassismus rechtsextremismus extremismus
19	858	1.12%	29,033	37.92%	bürokratie vereinfachen vereinfacht reduzieren
17	814	1.06%	29,847	38.98%	klimaschutz klimakrise klimawandel klima
14	761	0.99%	30,608	39.97%	frauen führungspositionen männern männer
10	758	0.99%	31,366	40.96%	kunst kultur kulturelle kulturpolitik
63	745	0.97%	32,111	41.94%	gleiche gleichstellung gleichberechtigung gleichen
57	741	0.97%	32,852	42.90%	kommunen finanzierung bund gemeinden
27	728	0.95%	33,580	43.85%	arbeitslosigkeit arbeitslos arbeitsmarkt arbeitslose
76	708	0.92%	34,288	44.78%	ökologische ökologischen nachhaltigkeit umwelt
83	692	0.90%	34,980	45.68%	zusammenhalt solidarität füreinander zusammenleben
81	679	0.89%	35,659	46.57%	ändern verändern vieles anders
22	655	0.86%	36,314	47.42%	niemand darf kein keine

35	647	0.84%	36,961	48.27%	schule studium bildungssystem fehlen
29	644	0.84%	37,605	49.11%	justiz gerichte strafverfahren straftaten
103	636	0.83%	38,241	49.94%	bund bundes aufgaben bundesländer
41	615	0.80%	38,856	50.74%	mindestlohn mindestlohns lohnnebenkosten mindestlöhne
61	614	0.80%	39,470	51.55%	sicherheit sicherheitsbehörden bedrohungen innere
42	611	0.80%	40,081	52.34%	banken finanzmärkte finanzsektor sparkassen
54	596	0.78%	40,677	53.12%	pflege angehörige angehörigen pflegende
60	595	0.78%	41,272	53.90%	politik politische politischen politisches
73	591	0.77%	41,863	54.67%	krankenversicherung versicherten pflegeversicherung bürgerversicherung
46	588	0.77%	42,451	55.44%	innovationen innovation ideen kreativität
28	581	0.76%	43,032	56.20%	landwirtschaft landwirte bauern landwirtinnen
24	580	0.76%	43,612	56.95%	natur naturschutz wälder wald
136	576	0.75%	44,188	57.71%	armut kinderarmut arm hunger
47	574	0.75%	44,762	58.46%	nationen vereinten vn zivile
90	574	0.75%	45,336	59.21%	europäische binnenmarkt eu währungsunion
53	563	0.74%	45,899	59.94%	grüne grün hilft green
66	552	0.72%	46,451	60.66%	parteien politiker politik politische
39	548	0.72%	46,999	61.38%	globalisierung wto handel Freihandelsabkommen
74	547	0.71%	47,546	62.09%	staatsangehörigkeit einwanderungsland deutschland staatsbürgerschaft
108	542	0.71%	48,088	62.80%	wettbewerb wettbewerbs wettbewerbsbedingungen wettbewerbsfähigkeit
96	538	0.70%	48,626	63.50%	gesundheitsystem gesundheit gesundheitswesen versorgung
92	528	0.69%	49,154	64.19%	investitionen private kapital wagniskapital
104	514	0.67%	49,668	64.86%	menschenrechte frieden menschenrechten menschenrechtspolitik
80	504	0.66%	50,172	65.52%	städte stadt städten stadtbau
38	503	0.66%	50,675	66.18%	verbraucher verbraucherinnen Verbraucherschutz verbraucherpolitik
65	491	0.64%	51,166	66.82%	arbeitszeit stunden arbeitszeiten teilzeit
33	481	0.63%	51,647	67.45%	atomkraft atomkraftwerke kernkraftwerke kernenergie
126	477	0.62%	52,124	68.07%	wachstum wohlstand wirtschaftswachstum wirtschaft
44	475	0.62%	52,599	68.69%	digitalisierung digitalen digitale internet
71	466	0.61%	53,065	69.30%	ältere alter älteren senioren
20	460	0.60%	53,525	69.90%	behinderungen behinderung behinderte behindertenrechtskonvention
138	458	0.60%	53,983	70.50%	arbeitslosigkeit ostdeutschland deutschland löhne
98	450	0.59%	54,433	71.09%	arbeitsplätze jobs arbeitsplätzen beschäftigung
59	449	0.59%	54,882	71.67%	co emissionen emissionshandel ausstoß
68	444	0.58%	55,326	72.25%	transparenz transparent transparente transparenter
125	442	0.58%	55,768	72.83%	freiheit frei herzen wahlfreiheit
36	437	0.57%	56,205	73.40%	trans sexuellen lesben queere
64	436	0.57%	56,641	73.97%	schuldenbremse schulden neuverschuldung ausgeglichenen
88	434	0.57%	57,075	74.54%	parlament volksbegehren nationalrat volksabstimmung
62	422	0.55%	57,497	75.09%	ehrenamtliche engagement freiwilligen ehrenamtlich
91	414	0.54%	57,911	75.63%	bundeswehr soldaten soldatinnen nato
32	412	0.54%	58,323	76.17%	gewalt frauen opfer sexualisierter
140	409	0.53%	58,732	76.70%	freiheit freiheitsrechte rechtsstaat sicherheit
132	405	0.53%	59,137	77.23%	unterstützen weiter stärken unterstützung
58	403	0.53%	59,540	77.76%	recycling rohstoffe produkte kreislaufwirtschaft
120	397	0.52%	59,937	78.27%	verantwortung eigenverantwortung land übernehmen
85	391	0.51%	60,328	78.78%	digitale digital verwaltung digitalisierung
26	390	0.51%	60,718	79.29%	tierschutz tiere tieren tierhaltung

72	390	0.51%	61,108	79.80%	versorgung ambulante ärzte niedergelassenen
79	390	0.51%	61,498	80.31%	ezb zentralbank bundesbank banken
15	387	0.51%	61,885	80.82%	sport spitzensport sports sportstätten
69	386	0.50%	62,271	81.32%	autos elektromobilität fahrzeuge lkw
25	384	0.50%	62,655	81.82%	medien rundfunk öffentlichrechtlichen medienkompetenz
78	378	0.49%	63,033	82.32%	patienten patientinnen wartezeiten krankenhäuser
40	373	0.49%	63,406	82.80%	lebensmittel lebensmitteln ernährung gesunde
128	370	0.48%	63,776	83.29%	kleine mittlere unternehmen mittelständische
109	364	0.48%	64,140	83.76%	infrastruktur verkehrsinfrastruktur infrastrukturen investitionen
107	362	0.47%	64,502	84.24%	kriminallität organisierte straftaten jugendkriminallität
48	361	0.47%	64,863	84.71%	deutsch sprache erlernen deutschen
115	358	0.47%	65,221	85.17%	gehts handeln treten hier
50	350	0.46%	65,571	85.63%	digitale digitalen lernen lehr
117	346	0.45%	65,917	86.08%	goethe identität kultur kulturnation
112	342	0.45%	66,259	86.53%	fortsetzen konsequent bleibt diesen
139	340	0.44%	66,599	86.97%	jeder mensch leben fähigkeiten
86	338	0.44%	66,937	87.42%	energien energie erneuerbare erneuerbaren
93	328	0.43%	67,265	87.84%	ich du vorsicht mich
111	319	0.42%	67,584	88.26%	stand bürgerkonvent mrd lebensjahr
77	314	0.41%	67,898	88.67%	geburt schwangerschaft schwangerschaftsabbruch mutter
84	312	0.41%	68,210	89.08%	pestiziden pestizide artensterben bienen
100	304	0.40%	68,514	89.48%	aufarbeitung nationalsozialismus ddr ns
67	303	0.40%	68,817	89.87%	csu cdu fdp spd
116	302	0.39%	69,119	90.27%	rüstungsexporte waffen rüstungsexporten rüstungsexportpolitik
82	302	0.39%	69,421	90.66%	breitband internet mobilfunk wlan
52	301	0.39%	69,722	91.05%	drogen cannabis drogenpolitik alkohol
130	296	0.39%	70,018	91.44%	mut zuversicht zukunft hoffnung
51	296	0.39%	70,314	91.83%	polizei polizistinnen polizisten polizist
102	292	0.38%	70,606	92.21%	frauen männer männern teilzeit
75	287	0.37%	70,893	92.58%	urheberrecht urheber urheberrechts werke
134	281	0.37%	71,174	92.95%	regionale regionalen regionen regionaler
70	277	0.36%	71,451	93.31%	rusland ukraine russlands russische
56	273	0.36%	71,724	93.67%	kirchen religionsgemeinschaften religionen religionsfreiheit
87	270	0.35%	71,994	94.02%	zukunft schaffen vision erneuerbar
89	270	0.35%	72,264	94.37%	medikamente arzneimitteln medikamenten arzneimittel
127	265	0.35%	72,529	94.72%	schulden verschuldung staatsverschuldung schuldenberg
45	265	0.35%	72,794	95.06%	wasser flüsse trinkwasser hochwasserschutz
119	256	0.33%	73,050	95.40%	atomwaffen massenvernichtungswaffen abrüstung nuklearen
129	252	0.33%	73,302	95.73%	fischerei meere ostsee seenotrettung
137	247	0.32%	73,549	96.05%	gerechtigkeit generationengerechtigkeit ungerechtigkeit sinn
94	239	0.31%	73,788	96.36%	cyber cybersicherheit cyberkriminallität it
122	239	0.31%	74,027	96.68%	korruption parteienfinanzierung geldwäsche spenden
131	233	0.30%	74,260	96.98%	corona pandemie coronapandemie coronakrise
101	212	0.28%	74,472	97.26%	ländlichen raum ländliche räume
113	208	0.27%	74,680	97.53%	soldaten wehrpflicht soldatinnen miliz
110	198	0.26%	74,878	97.79%	integration integrationspolitik gelungene inklusion
133	198	0.26%	75,076	98.05%	lärmschutz lärm verkehrslärm fluglärm
95	197	0.26%	75,273	98.30%	sprachförderung mehrsprachigkeit spracherwerb sprachkurse

97	195	0.25%	75,468	98.56%	gentechnik gentechnisch pflanzen gentechnikfreie
99	194	0.25%	75,662	98.81%	agrarpolitik landwirtschaft bauern agrarsubventionen
121	159	0.21%	75,821	99.02%	telemedizin patientinnen patientenakte elektronische
114	147	0.19%	75,968	99.21%	türkei beitritt beitragsverhandlungen türkischen
135	122	0.16%	76,090	99.37%	euro eur verdoppelt jährlich
118	109	0.14%	76,199	99.51%	ki intelligenz künstliche künstlicher
106	101	0.13%	76,300	99.64%	österreich euro milliarden oecd
123	99	0.13%	76,399	99.77%	tourismus tourismuswirtschaft touristische touristischen
55	78	0.10%	76,477	99.87%	universitäten österreich österreichischen österreichweit
124	57	0.07%	76,534	99.95%	gesundheitssystem österreich österreichischer österreichweit
43	24	0.03%	76,558	99.98%	österreich österreichische österreichischen österreichs
105	10	0.01%	76,568	99.99%	österreich staatsbürgerschaft österreichische österreichischen
18	5	0.01%	76,573	100.00%	österreich österreichs österreichische österreichischen

Corpus

Appendix 12: The corpus consists of N=82 election manifestos for national elections in Austria (40) and Germany (42), between 2002 and 2025. All manifestos have been converted to ASCII text and saved using the naming scheme ELECTION_COUNTRY_PARTY_YEAR.txt.

national_at_bier_2024.txt national_at_bzö_2006.txt national_at_bzö_2008.txt	national_at_övp_2017.txt national_at_övp_2019.txt	national_de_fdp_2013.txt national_de_fdp_2017.txt
national_at_fpö_2002.txt national_at_fpö_2006.txt national_at_fpö_2008.txt	national_at_övp_2024.txt national_at_piiz_2017.txt national_at_spö_2002.txt	national_de_fdp_2021.txt national_de_fdp_2025.txt national_de_grüne_2002.txt
national_at_fpö_2013.txt national_at_fpö_2017.txt national_at_fpö_2019.txt	national_at_spö_2006.txt national_at_spö_2008.txt national_at_spö_2013.txt	national_de_grüne_2005.txt national_de_grüne_2009.txt national_de_grüne_2013.txt
national_at_fpö_2024.txt national_at_grüne_2002.txt national_at_grüne_2006.txt	national_at_spö_2017.txt national_at_spö_2019.txt national_at_spö_2024.txt	national_de_grüne_2017.txt national_de_grüne_2021.txt national_de_grüne_2025.txt
national_at_grüne_2008.txt national_at_grüne_2013.txt national_at_grüne_2017.txt	national_at_ts_2013.txt national_de_afd_2013.txt national_de_afd_2017.txt	national_de_linke_2005.txt national_de_linke_2009.txt national_de_linke_2013.txt
national_at_grüne_2019.txt national_at_grüne_2024.txt national_at_kpö_2002.txt	national_de_afd_2021.txt national_de_afd_2025.txt national_de_bsw_2025.txt	national_de_linke_2017.txt national_de_linke_2021.txt national_de_linke_2025.txt
national_at_kpö_2008.txt national_at_kpö_2024.txt national_at_neos_2013.txt	national_de_cduscu_2002.txt national_de_cduscu_2005.txt national_de_cduscu_2009.txt	national_de_pds_2002.txt national_de_piraten_2013.txt national_de_spd_2002.txt
national_at_neos_2017.txt national_at_neos_2019.txt national_at_neos_2024.txt	national_de_cduscu_2013.txt national_de_cduscu_2017.txt	national_de_spd_2005.txt national_de_spd_2009.txt national_de_spd_2013.txt
national_at_övp_2002.txt	national_de_cduscu_2021.txt	national_de_spd_2017.txt national_de_spd_2021.txt national_de_spd_2025.txt
national_at_övp_2006.txt national_at_övp_2008.txt	national_de_cduscu_2025.txt national_de_fdp_2002.txt national_de_fdp_2005.txt	national_de_ssw_2021.txt
national_at_övp_2013.txt	national_de_fdp_2009.txt	

BERTopic Parameters

Appendix 13: BERTopic works out-of-the box, requiring minimal configuration. But it allows setting various parameters, many of which have great impact on the results generated. We followed the "Getting Started" and "Best Practices" sections of BERTopic's documentation, and additional recommendations found in BERTopic's Github issue tracker. Here, we present relevant snippets of Python code, containing all parameters used to setup BERTopic and other required components for training.

```
embedding_model= 'sentence-transformers/paraphrase-multilingual-mpnet-base-v2'

umap_model = UMAP(
n_neighbors=15,
n_components=5,
min_dist=0.0,
metric='cosine',
random_state=140292) # fixed random seed allows reproducing results

# Control nr of topics indirectly, by setting min cluster size, as recommended.
# This will train a model with fewer topics from the beginning,
# instead of reducing the number of topics afterwards.
# HDBSCAN: tune to reduce number of topics;
# see https://maartengr.github.io/BERTopic/getting_started/parameter%20tuning/parametertuning.html#low_memory_1
hdbscan_model = HDBSCAN(
min_cluster_size=100,
min_samples=5,
metric='euclidean')

# Remove stopwords by frequency,
# see https://maartengr.github.io/BERTopic/getting_started/tips_and_tricks/tips_and_tricks.html#removing-stop-words
ctfidf_model = ClassTfidfTransformer(reduce_frequent_words=True)

# model used to extract topic keywords
representation_model = KeyBERTInspired()

# load documents from feather file
docs = load_docs()

# train
topic_model = BERTopic(
language="multilingual",
ctfidf_model=ctfidf_model,
umap_model=umap_model,
representation_model=representation_model,
embedding_model=embedding_model,
hdbscan_model=hdbscan_model).fit(docs)

topics, probs = topic_model.transform(docs)

# remove outliers present after training,
# i.e. assign them to one of the topics
topic_model.reduce_outliers(docs, topics, strategy='probabilities', probabilities=probs)

# finally, persist data for further processing, in feather format
document_info = topic_model.get_document_info(docs, df=df, metadata={"topic_distribution": distributions})
document_info.to_feather('out.ftr')
```

LLM

Appendix 14: We use an LLM (Llama3.1) to assign each of the topics extracted by BERTopic to a single EU policy field. To do so, for each topic, we present the LLM with the topic and the complete list of EU policy fields. We use the following prompts.

System prompt:

You are a political scientist and an expert on EU policies.

You are given a string of keywords, and a numbered list of EU policy fields.

Your task is to select the single field of EU policies, which best matches the string of keywords.

You must respond only with the number of the EU policy field selected! Do not print any text! If no good match can be found, respond with -1.

User prompt:

Here is the list of EU policy fields:

LIST-OF-EU-POLICY-FIELDS

Here is the string of keywords:

TOPIC-KEYWORDS

For the complete list of topics extracted, refer to Appendix 9 above. For LIST-OF-EU-POLICY-FIELDS, we supply the following list:

Animal welfare, Artificial intelligence, Banking and financial services, Better Regulation, Borders and security, Budget, Business and industry, Climate action, Competition, Consumers, Culture and media, Customs, Competitiveness, Defence, Digital economy and society, Disinformation, Economy, Finance and the euro, Education and training, Employment, Energy, Environment, EU enlargement, European neighbourhood policy, Fiscal policy, Food safety, Foreign affairs and security policy, Fraud prevention, Health, Home affairs, Humanitarian aid and civil protection, Institutional affairs, International partnerships, Justice and fundamental rights, Maritime affairs and fisheries, Migration and asylum, Public health, Regional policy, Recovery Plan for Europe, Research and innovation, Single market, Space, Statistics, Social affairs, Solidarity with Ukraine, Taxation, Trade, Transport, Ukraine, Youth

Appendix 15: The table below presents the F-Score for each category as assigned by the LLM and subsequently verified through manual review.

CATEGORY POLICY FIELD	FSCORE	TP+FN
Borders and security	0.0	1
Business and industry	0.0	4
Competitiveness	0.0	1
Culture and media	0.0	4
Customs	0.0	0
Economy, finance and the euro	0.0	2
Fraud prevention	0.0	1
Humanitarian aid and civil protection	0.0	1
Institutional affairs	0.0	5
International partnerships	0.0	1
Social affairs	0.0	3
Solidarity with Ukraine	0.0	0
n/a	0.0	0
Better Regulation	0.5	3
EU enlargement	0.5	1
Migration and asylum	0.5	3
no category	0.5714285714285714	19
Food safety	0.5714285714285715	2
Justice and fundamental rights	0.6428571428571429	18
Competition	0.6666666666666666	1
Consumers	0.6666666666666666	1
Education and training	0.6666666666666666	6
Energy	0.6666666666666666	3
Single market	0.6666666666666666	2
Agriculture and rural development	0.7499999999999999	3
Regional policy	0.7499999999999999	3
Defence	0.75	4
Digital economy and society	0.8	4
Environment	0.8	6
Transport	0.8	4
Health	0.823529411764706	9
Employment	0.9473684210526316	10
Animal welfare	1.0	1
Artificial intelligence	1.0	1
Banking and financial services	1.0	2
Climate action	1.0	2
Fiscal policy	1.0	1
Home affairs	1.0	2
Maritime affairs and fisheries	1.0	1
Public health	1.0	1
Research and innovation	1.0	2
Taxation	1.0	1
Trade	1.0	1
Ukraine	1.0	1

Codebook of Political Parties

Appendix 16: The following table maps between abbreviations we used for political parties, throughout the document, and the full name of each party.

bier	Austria	Bierpartei
bzö	Austria	Bündnis Zukunft Österreich
fpö	Austria	Freiheitliche Partei Österreichs
grüne	Austria	Die Grünen – Die Grüne Alternative
kpö	Austria	Kommunistische Partei Österreichs
neos	Austria	NEOS – Das Neue Österreich und Liberales Forum
pilz	Austria	JETZT – Liste Pilz
spö	Austria	Sozialdemokratische Partei Österreichs
ts	Austria	Team Stronach
övp	Austria	Österreichische Volkspartei
afd	Germany	Alternative für Deutschland
bsw	Germany	Bündnis Sahra Wagenknecht
cducsu	Germany	Christlich-Demokratische Union Deutschlands/Christlich-Soziale Union in Bayern
fdp	Germany	Freie Demokratische Partei
grüne	Germany	Bündnis 90/Die Grünen
linke	Germany	Die Linke
pds	Germany	Partei des Demokratischen Sozialismus
piraten	Germany	Piratenpartei Deutschland
spd	Germany	Sozialdemokratische Partei Deutschlands
ssw	Germany	Südschleswigscher Wählerverband