

Populism and Policy Issues: Examining Political Communication on Twitter in Italy 2018-2019

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Abstract

This study inductively explores the policy and populism dimensions of Italian political discourse on Twitter. Starting from a corpus of 25,000 tweets posted by a number of Italian political actors throughout a year (March 4, 2018 – March 4, 2019), we apply the Structural Topic Model to uncover the policy content underlying their political communication. Our results suggest that actors representing populist parties (i.e. M5S and *Lega*) were mostly interested in emphasizing the immigration issue, although to a different extent. In particular, the debate on immigration was dominated by the *Lega*, suggesting that the party kept prioritizing the issue that occupied center stage in its electoral campaign. The M5S emphasized infrastructure that had been an essential component of its pro-environment stance, but they also gave room for immigration. Interestingly, our analysis also shows that populist tones are associated with different issues, with topics related to immigration displaying the highest populist tone. On the whole, our results are consistent with previous research showing that some issues such as immigration are closely aligned with populist parties.

1. Introduction

In the last few decades, ‘populism’ has come back on the scene, especially in Europe, as either right- or left-wing political parties labelled as populist have been voted for by an ever-growing number of Europeans: circa one in four (Lewis et al., 2018). Scholars have repeatedly correlated the rise of populist parties to the Great Recession affecting the target countries (Kriesi et al. 2015; Guiso et al. 2017) and to the recent immigration flows towards the Old Continent (Muis and Immerzeel, 2017). The debate about the notion of populism is vast and can only be briefly summarized here. A great deal of discussion revolves around the proper definition or conceptual understanding of populism (see Rooduijn 2018 for a review). Another strand of literature focuses on measurement issues with the purpose of providing populism ‘scores’ through content analysis of the parties’ manifestos or other political documents (Jagers and Walgrave 2007;

Rooduijn and Pauwels 2011; Pauwels 2011). On the explanatory side, political science literature has mainly examined the pre-conditions for the formation of populist parties (Norris 2005; Rydgren 2007; Golder 2016). More recently, attention has shifted to the variables – economic versus cultural – affecting electoral support for populist parties (Norris and Inglehart 2019; Hawkins, Rovira Kaltwasser and Andreadis 2018).

Italy has been regarded as a conspicuous epicentre of populism. The national elections on 4 March 2018 revealed how the campaigns of the *Movimento 5 Stelle* (M5S) and the *Lega* (former *Lega Nord* - Northern League) – run in clear opposition to what they called ‘elitist’ politics both at the national and supranational, i.e. EU level – helped them obtain 50% of vote share (Bobba and Roncarolo 2018). The two parties were able to form a coalition government that took office on 1 June 2018 and lasted about a year.

In this work we focus on Italy to explore the political communication of a number of politicians from different parties who were active on social media in the period 4 March 2018 - 4 March 2019. Such a wide time frame covers the formation of the Conte I government and its first nine months of activity, terminating just before the EP elections that were held on 26 May 2019.¹ Although our study is mainly inductive, we aim to contribute to the literature by highlighting the role played by social media in spreading populist rhetoric, attracting supporters and ultimately increasing the populist parties’ vote share (Ceron, Curini and Iacus 2017; Mazzoleni and Bracciale 2018).

We select Twitter as a main arena of political communication, as various studies have shown the growing impact of the Twitter network not only on the electoral process, but also its influence on news coverage and agenda setting (Vaccari and Valeriani 2015; Ceron 2017; Davis et al. 2017; De Sio et al 2017). We apply the Structural Topic Model (STM) (Roberts et al. 2014) technique to an original dataset of over 25,000 tweets collected over one year to estimate the themes political actors focus on in their communication. The paper is structured as follows: in section 2 we propose a way of categorizing Italian populist parties; in section 3 we describe data and methods used in the empirical analysis of Twitter data; in section 4 we present and discuss our results. Concluding remarks follow.

2. Measuring populism

Prior to the upsurge of populism in Western Europe, the notion was mostly applied to Latin American politics, to identify a set of ‘fiscally irresponsible’ policies implemented by governing leaders or parties (Acemoglu et al. 2013). Although scholars have raised doubts as to whether the term ‘populism’ has any analytical utility, being a ‘zeitgeisty one-word explanation for everything’ (Baker 2019), research on the concept of populism as applied to Western European and US politics has in recent years inspired a fast-growing literature.

Undoubtedly, the predominant framework has been provided by Mudde (2004), who argues that populism is not a fully formed political ideology like socialism or

¹ It is worth mentioning that in the time frame under consideration several local elections were held both at the municipal (in June 2018) and at the regional level (Molise and Friuli Venezia Giulia in April 2018, Valle D’Aosta in May 2018, Trentino Alto Adige in October 2018, Abruzzo and Sardinia in February 2019, Basilicata in March 2019). According to many commentators, these elections contributed to creating a climate of ‘permanent campaign’.

liberalism – it is rather a ‘thin-centred’ ideology, made up of just a few core beliefs. First, the most important division in society is antagonistic between ‘the people’, understood as fundamentally good, and the elite, understood as fundamentally corrupt. Second, populists claim that politics should be an expression of the ‘general will’ – a set of desires presumed to be shared as common sense by all ‘ordinary people’. Mudde’s definition has been widely criticized for its theoretical and methodological inconsistencies. This has led some scholars to assert that if we accept a definition of populism as an ideology, we should grant it full status (Pappas 2013), while leading some others to reject a definition based on ideology. For example, Weyland (2001: 14) defined populism as ‘*a political strategy through which a personalistic leader seeks or exercises government power based on direct, unmediated, uninstitutionalized support from large numbers of mostly unorganized followers*’. Other scholars focusing on the rhetorical component of populism suggested that it has to be interpreted as a ‘discursive frame’ – a mode of talking about politics, rather than an ideology – that frames politics in terms of the ‘supremacy of popular sovereignty’ (Aslanidis 2015). Finally, a number of scholars understand populism as a specific ‘constitutional project’ (see also Blokker 2017) or a set of institutional preferences/choices against those liberal checks and balances that ‘obstruct the expression of a genuine popular will’ (Müller 2014) in a similar way to what others have labelled as ‘extreme majoritarianism’ (Urbiniati 2017). Scholars agree that populism is a multifaceted notion, whereas all the features underlined above may be seen as different, although related components (Graziano 2018).

The conceptual debate about populism provides the background for several attempts to measure populism for the empirical purpose of identifying populist parties. This goal has been addressed mainly in two ways. The first is proposed by Inglehart and Norris (2016) who classify a party as populist if it scores more than 80 points on a standardized 100-point scale, built using thirteen selected indicators contained in the Chapel Hill Expert Survey, CHES (Polk et al. 2017). In this survey, experts rate the position of European parties on a range of policies such as support for traditional values, liberal lifestyles and multiculturalism, as well as their economic stance towards market deregulation, state management of the economy, and preferences for either tax cuts or public services. The second approach focuses mainly on the rhetorical component of populism. Relying on Mudde’s definition, scholars have operationalized the core elements of populist language (for example, the dichotomy people vs. elites) and then used dictionaries for content-analysing the parties’ manifestos or other political documents in order to assess the ‘degree of populism’ of political parties or candidates (Rooduijn and Pauwels 2011).²

We contend that the distinction between *policy* and *non-policy* factors grounded in the rational choice approach to party competition (Adams et al 2009) may help capture an important aspect of populism. Rational choice models provide a policy-based account of party competition, assuming that voters evaluate the candidates’/parties’ policy positions over key issue dimensions and select the candidate/party whose policy positions

² Related to this, a growing body of literature in the political communication field investigated the type of language employed in campaign materials such as, for instance, the tone or sentiment in campaign messages (Young and Soroka 2012; Haselmayer and Jenny 2017) or the level of complexity of campaign messages, suggesting that populist parties employ significantly less complex messages than mainstream parties (Bischof and Senninger 2017).

are most similar to their own. However, it has also long been recognized that factors other than policy positions influence the voters' preferences. These factors can be understood as a 'valence' component that has been interpreted both in terms of issues eliciting a broad consensus among voters (Stokes 1963) or in terms of any non-policy advantage a candidate or party might have, including candidate characteristics such as personal integrity or competence (Groseclose 2001). The distinction between policy and non-policy factors may facilitate the task of categorizing populist vs. non populist parties. We argue that differences in policy positions may account for the existence of 'right-wing' and 'left-wing' populist parties. However, we conjecture that non-positional factors such as valence issues (i.e., 'corruption') or character-based valence appeals (i.e., 'honesty' or 'integrity') should play a major role in populist rhetoric. In this study we rely on previous considerations to build a dictionary of populism to content-analyse the manifestos of Italian parties. Although our dictionary does not appear very different from others existing in the literature (e.g., Rooduijn and Pauwels 2011; Decadri and Boussalis 2019), it includes words that seem capable of capturing reference to valence issues or character-based attributes other than considering the basic dichotomy *people vs. elites* upon which there is a general consensus among scholars.

Table 1. Populism Dictionary.

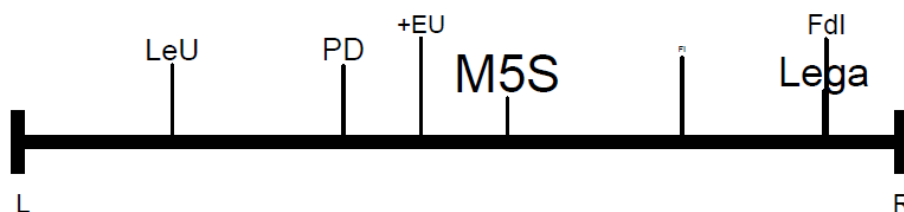
Word	Translation into English
ingann*	deceive*
tradir*	betray*
traditor*	traitor*
promett*	promis*
promess*	promise*
corrott*	corrupt*
corruzione*	corruption
elit*	elit*
casta	caste
popolo	people
legal*	legal*
onest*	honest*
amic*	friend*
privilege*	privilege*
politici	politicians

In what follows we provide a unidimensional map of the Italian political space in 2018 that is based on party positions on the left-right axis taken from Giannetti, Pedrazzani and Pinto (2018). The authors used expert survey data to analyse the structure of the policy space in Italy from 2013 to 2018 and to estimate party positions on a number of policy dimensions.³ We weight parties' labels by their degree of populism as

³ Party positions were estimated by means of an expert survey fielded in March 2018 following the Benoit and Laver (2006) format. Experts were asked to locate Italian parties on the general left-right axis as well as on a set of nine substantive policy issues or dimensions (such as economic policy, immigration,

measured using our dictionary-based approach applied to parties' manifestos (see Appendix for further details).

Figure 1. A unidimensional map of left-right populism in Italy 2018⁴



Source: own elaboration.

Consistently with common understanding, our data assign the M5S and the *Lega* the highest populism scores, as both exceed 50 points on our 0-100 populism scale. Our data do not classify as populist the right-wing parties FdI and FI. On the left side, none of the left-wing parties is classified as populist according to our dictionary-based approach. Our categorization matches only partially similar efforts in the literature. Those efforts are based on expert judgements or, alternatively, rely on content analysis of official documents such as party manifestos. It should be pointed out that there is no agreement in the literature about classifying populist parties. For example, Norris and Inglehart (2019) classify FI as a non-populist party, while other sources do the opposite (Albertazzi and McDonnell (2015), Zulianello (2020), and Popu-list (2019)). As regards FdI, Albertazzi and McDonnell (2015), Zulianello (2020), and Popu-list (2019) identify the party as populist whereas Decadri and Boussalis (2019), who applied a dictionary-based approach to press releases, found that FdI is more similar to mainstream parties in terms of populist word frequencies. As regards left-wing parties, Norris and Inglehart (2019) classify the PD and other left-wing parties as populist but this result, which is the product of the aggregation of different scales measured by the CHES, is in stark contrast to other classifications available in the literature. To conclude on this point, as the Chapel Hill expert survey also provides a measurement of populism based on expert judgements, we performed a correlation among our measures and those based on the CHES scale.⁵ Our scores are moderately correlated ($r = 0.76$), suggesting that we can at least partially rely on the validity of the dictionary we built.

To sum up, our data indicate that the PD and M5S are very close on the left-right continuum but register extremely different degrees of populism. The three parties belonging to the centre-right coalition (*Lega*, FI and FdI) tend to converge on the left-right dimension; however, they show different degrees of populism. The existence of these differences justifies the use of the previous categorization of Italian parties – both in terms of their position on the left-right scale and their populism scores – to analyse the policy content of their communication using Twitter data.

environment, EU authority) using 20-point scales. Experts were also asked to locate parties on the general left-right continuum. See Giannetti, Pedrazzani, and Pinto (2018) for further details.

⁴ The acronyms used in the figure: *Fratelli d'Italia* (FdI), *Forza Italia* (FI), *Lega, Liberi e Uguali* (LEU), *Movimento 5 Stelle* (M5S), *Partito Democratico* (PD) and *PiùEuropa*.

⁵ CHES uses a 0-10-point scale 'people vs. elite', which measures anti-elitist attitudes (Polk et al., 2017).

3. Data and methods

Besides information dissemination and networking functions, Twitter may reveal the users' opinions and attitudes on various topics (Ceron 2017). In fact, this micro-blogging platform has become one of the main tools of communication worldwide, including in Italy. For this reason, Twitter has been recently regarded as an opportunity for political leaders to reinforce individualized communication with potential voters and to achieve visibility. De Sio *et al.* (2017:11) stress the fact that, regardless of how unrepresentative the Twitter audience might be in a given country, political actors use Twitter to communicate their desired messages to the media, just like in a *press release*. In other words, the literature highlights the increasing importance of both the direct as well as the indirect effects of Twitter messages in the wider environment of political communication.⁶

The use of Twitter as a primary source of textual data in corpus-based analyses of political communication is advantageous as Twitter's Standard Search API gives the possibility to collect large quantities of data in an effortless way (Barberá *et al.* 2015). Although tweets have been widely employed to analyse political discourse, we recognize the limitations of such data: the language of Twitter is simple, concise, and often informal, traits that altogether could affect the results of large-scale analyses using unsupervised techniques (Combei and Giannetti 2020).

Keeping in mind the nature of Twitter and its shortfalls in this study, we select several Italian political actors from *Fratelli d'Italia* (FdI), *Forza Italia* (FI), *Lega*, *Liberi e Uguali* (LEU), *Movimento 5 Stelle* (M5S), *Partito Democratico* (PD), and *PiùEuropa*. The selection of these politicians was based on their role in their party and their activity on Twitter (i.e. the most active users for each party were preferred).⁷ While we are aware of the fact that other political actors might have been included as well, the choice of those listed in Table 2 was determined mainly by quantitative considerations, corpus balance requirements, representativity, as well as by data availability (e.g. Silvio Berlusconi did not have a Twitter account in the time frame taken into account in this study; Matteo Renzi was not particularly active on the political scene the year after the 2018 general elections; etc.).

Our corpus consists of tweets collected from 4 March 2018 (the elections day) to 4 March 2019. Prior to the topic modelling, tweets are processed as follows: functional words (i.e., articles, prepositions, determiners), numbers and one-character tokens were removed. We chose not to stem the words in our corpus, since stemming does not perform particularly well on highly inflected languages like Italian with the tools at hand (Saharia *et al.*, 2013; Singh and Gupta, 2016).⁸ After textual processing and cleaning, the final dataset contained 13,522 original tweets.

⁶ De Sio *et al.* (2017) use manual coding to analyse the policy content of Twitter messages in the framework of the issue-yield theory developed by the author.

⁷ Since Matteo Salvini was by far the most active Italian politician on Twitter, the *Lega* is represented in our corpus by him alone; FdI, LEU and *PiùEuropa* are represented by two leaders each, FI and PD by three leaders, while M5S by three MPs and by Giuseppe Conte who was indicated as Prime Minister by the M5S.

⁸ We are aware that pre-processing decisions can influence final results (Denny and Spirling 2018). It should be noted, however, that we follow standard practices in text analysis in order to process our data (Grimmer and Stewart 2013).

Table 2. Selected politicians.

Politician	Party	Office
Ignazio La Russa	FdI	Senate
Giorgia Meloni	FdI	Chamber of Deputies
Anna Maria Bernini	FI	Senate
Maria Rosaria Carfagna	FI	Chamber of Deputies
Antonio Tajani	FI	Presidency of the European Parliament Vice-presidency of FI
Matteo Salvini	Lega	Senate
Laura Boldrini	LEU	Chamber of Deputies
Pietro Grasso	LEU	Senate
Giuseppe Conte	M5S	Head of the Council of Ministers
Roberto Fico	M5S	Chamber of Deputies
Luigi Di Maio	M5S	Chamber of Deputies
Danilo Toninelli	M5S	Senate
Roberto Giachetti	PD	Chamber of Deputies
Maurizio Martina	PD	Chamber of Deputies
Nicola Zingaretti	PD	Secretary of PD
Emma Bonino	PiùEuropa	Senate
Bruno Tabacci	PiùEuropa	Chamber of Deputies

To explore the content of Italian political communication on Twitter during our one-year timeframe, we opt for a topic model approach instead of manual coding, as the former is effortless, and less time-consuming and more unbiased than the latter. In particular, in this work, we employ the Structural Topic Model (STM) (Roberts et al. 2014; Roberts et al., 2016) to inductively identify the content of the selected political actor's communication. STM is a generative model of word counts and it is part of the unsupervised learning methods that use modelling assumptions and text properties to estimate general semantic themes (i.e., topics) within a corpus, and to simultaneously organize texts on the basis of word co-occurrences. Unlike other methods for topic modelling such as the Latent Dirichlet Allocation (Blei et al. 2003) and Correlated Topic Model (Blei and Lafferty, 2007), in the STM, the prior distribution of topics may be varied as a function of covariates (Roberts et al. 2014). This feature enables the examination of relationships among variables in a regression-like scheme, to uncover covariation with respect to topical prevalence. In this study we use the STM approach on single words to examine whether the content of political communication on Twitter varies as a function of the ideology and populism scores introduced in the previous section. For this reason, we use as covariates in our model some party-based variables, namely left-right positions, 'populism in manifestos' scores, a measure of the anti-establishment attitude and the party dummy. We also add the temporal metadatum of tweets (more precisely, the week). As a result, we model how the party structure impacts on the occurrence of topics over time. In order to establish the ideal number of topics, we perform several tests, such as held-

out likelihood, semantic coherence and residual analysis. Accordingly, we select the 20 topics-model, which has high held-out likelihood and semantic coherence as well as low residual deviance. Finally, after topic extraction, we apply a fractional logit model to explore the populist tone of political communication by examining the language through which the various issues are debated on Twitter.

4. Results

In this section we first present the topics identified by means of the STM, then we analyse the covariance structure of topical prevalence, and finally, we show which topics seem to display populist tones. Figure 2 shows the 20 topics of the STM analysis together with the labels we assigned them based on our examination of the first 10 words that characterize each topic and our reading of the most exemplary documents, for example, tweet chunks that have the highest proportion of words associated with each topic (see Appendix B for examples).

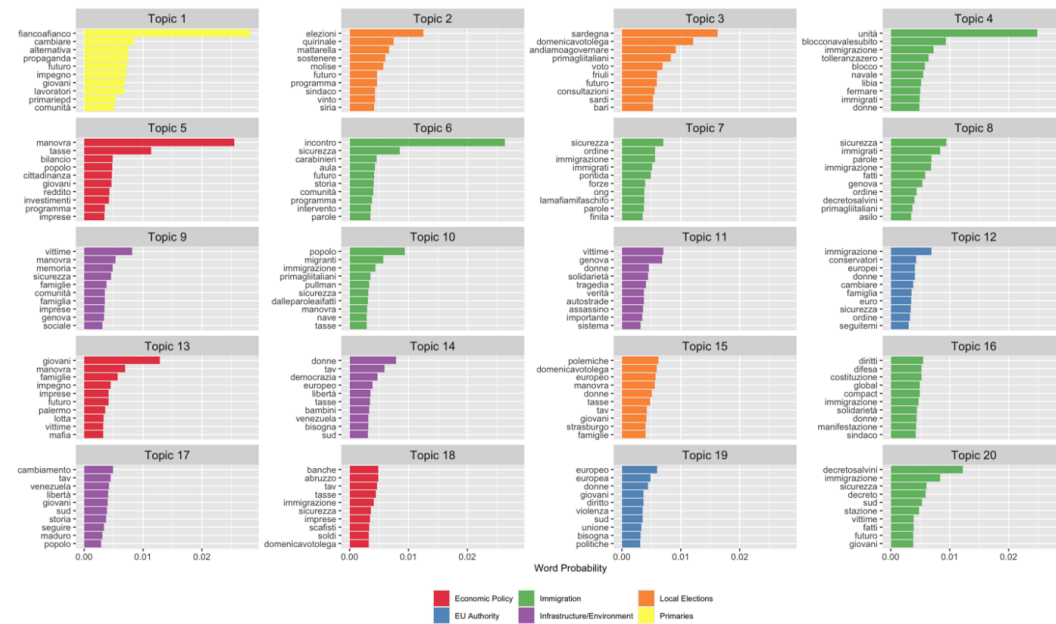
Based on our reading, we were able to cluster topics into four main issues or policy areas: economic policies, immigration, infrastructure/environment and the EU. This implies that political communications display policy content. By examining the topics regarding the economic policies, the content of Topics 5 (see Tajani's tweet in Appendix B) and 13 (see Giachetti's tweet in Appendix B) is associated with the 2018 annual budget bill ('*manovra*'), a key measure where the government agreed on plans to increase spending, in an unprecedented move against the EU. Moreover, the immigration issue is heavily present in our data (Topics 4, 6, 7, 8, 10, 16, 20). A closer look at most of these topics shows that the word 'immigration' is strongly associated with terms such as 'security' (see Salvini's tweet for Topic 8 in Appendix B) and 'border controls' (see Meloni's tweet for Topic 6 in Appendix B). Consistently with other evidence from the literature (Urso 2018), this suggests that the immigration issue was framed mostly in securitarian terms. Topics 9, 11, 14 and 17 refer to environmental policy, mentioning the most debated infrastructure measure, namely the TAV project (see Fico's tweet for Topic 11 and Di Maio's tweet for Topic 17 in Appendix B). The dispute over the EU, which permeated the public debate over the time period under consideration, is only slightly reflected in Topics 12 (see Di Maio's tweet in Appendix B) and 19 (see Bernini's tweet in Appendix B). Other topics do not refer to policy issues, being related to intra-party dynamics within the PD (Topic 1 refers to PD's primaries, see Giachetti's tweet in Appendix B) and in an explicit way to the local elections, such as Topics 2 (see Meloni's tweet in Appendix B), 3 and 15 (see Salvini's tweets in Appendix B). However, topics related to the immigration issue are the most prevalent, as they show an overall estimated topic proportion larger than 0.35.

The STM also manages to grasp the variation in the attention to the issues that occupied the centre stage in the public debate over the year taken into consideration in this study.⁹ Topics related to immigration prevail throughout the year, but several significant peaks are reported, for instance, at the end of April 2018 when Italy, Cyprus, Greece and Malta sent a document to the European Commission against the EU reform on the

⁹ We do not report a graph about temporal distribution of topics for the sake of brevity. See Combei and Giannetti (2020) for further details.

reception of asylum seekers by the landing countries; and in February 2019 when the Interior Minister Salvini refused to allow the asylum seekers on two rescue boats in the Malta Sea to dock at Italian ports. Topics concerning infrastructure (Topic 9, see Di Maio’s tweet in Appendix B) are mostly debated in mid-August 2018, when the Morandi Bridge collapsed, killing 43 people. Also, in the first months of 2019 the discussion regarding the Turin–Lyon high-speed railway (TAV) was intense, and this peak was mainly reflected in Topics 14 and 17. The debate on economic policy remains constant throughout the year, with an increase in attention prior to the approval of the annual budget bill for 2019. The STM also captured variations in the attention devoted to local elections when the time of their occurrence approached (Topic 2, 3 and 15). The topic descriptions as well as their temporal distributions highlight the fact that tweets posted by Italian political actors tended to reflect everyday politics (e.g., local elections) and real-time events (e.g. the collapse of the Morandi Bridge). This notwithstanding, policy issues emerge as the main content of public communication, providing evidence that political actors use Twitter to address policy demands.

Figure 2. Distribution of topics.



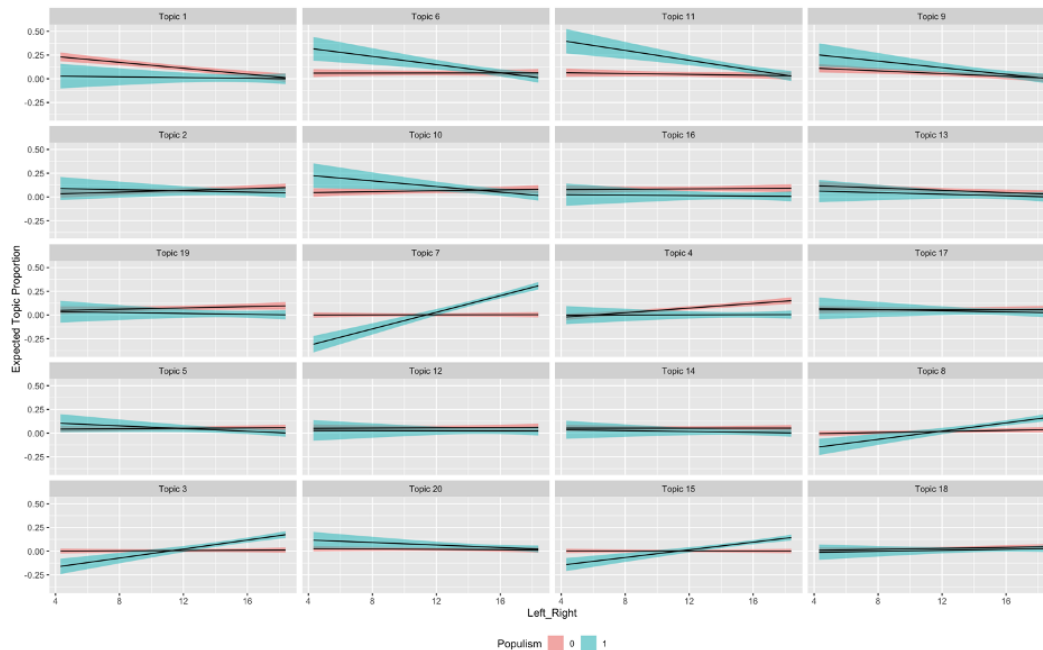
Source: own elaboration.

To explore explicitly the impact of populist attitudes on the political debate, we build another STM model where we test the interaction effect of the variables related to ideology and populism on topic distribution and topical prevalence.¹⁰ The two covariates are the left-right continuum and a dummy variable that assigns 0 to non-populist parties (i.e., FdI, FI, LeU, PD, *PiùEuropa*) and 1 to populist parties (i.e., *Lega* and M5S). We opted

¹⁰ We also run different model specifications without including the interaction. Since the results do not change significantly across the different specifications, and since the maximum of the lower bound on the marginal likelihood of the observed data occurs with our original model (Grimmer 2011), the latter is the one that we present here.

for using a dummy variable coding the parties with a populism score higher than 50 as populist, and those with a score lower than 50 as not populist. Despite the fact that our categorization is based on a continuous variable, the previous choice aims to make it easier to interpret the data. The topics remain mostly the same as those in Figure 2, apart from Topic 15, which in this new model is related to immigration. Figure 3 suggests that a right-wing populist party – such as the *Lega* – was mainly concerned with the immigration issue (e.g., in Topics 7, 8, 15) and with local elections (e.g., Topic 3). A left-wing populist party such as the M5S focuses on infrastructure/environment (e.g., Topics 9 and 11) but also on immigration (e.g. Topics 6 and 10). The configuration of Topics 4 and 16 shows that more traditional right-wing parties such as FdI also focus on the immigration issue (see Meloni’s tweets in Appendix B). In general, the left-right positioning of parties and their populist attitude seem to interact differently depending on the topic. This control works as an implicit validation of the first STM output.

Figure 3. Topic distribution as a function of ideology and populism.



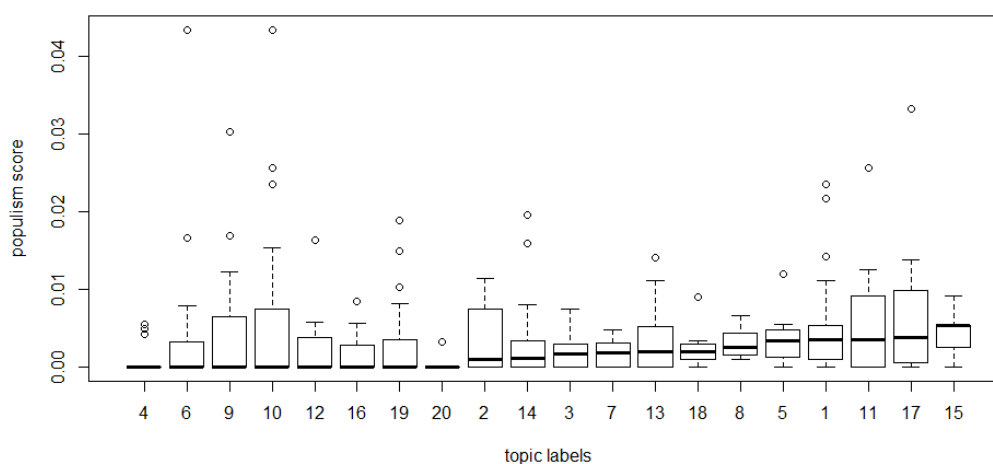
Source: own elaboration.

On the whole, these results highlight that high populism scores lead to high expected topic proportions on issues concerning immigration and, less often, infrastructure/environment. In our corpus, economic issues and the EU were mostly discussed by the representatives of non-populist parties.

The analysis carried out so far deals with the content of political communication, i.e., topical prevalence as a function of ideology and populism. In what follows we shift our focus to the tone of political communication, exploring the extent to which different topics displayed a populist character. We estimated a fractional logit model (Papke and Woolridge, 1996) where the average populism score of any single topic is related to the

average populism score in the entire corpus of tweets.¹¹ The populism scores in topics are obtained by applying our dictionary to the tweets pertaining to each topic. Figure 4 reports the conditional boxplot of populism scores by topic prevalence. Topics 11 and 17, related to infrastructures, present the highest medians, while topics 6 and 10, related to immigration, show the most prominent positive outliers. Below, we report the fractional logit model results, which are intended to test the significance of the different populism score levels across topics. Topics 10 and 17 present on average the highest populism score compared to all the other topics, with a p-value of 0.0201 and 0.0377 respectively (see Di Maio's tweet in Appendix B). Topics 4 and 16 show the lowest ones, with a p-value of 0.0905 and 0.0781 respectively. Predictably, topic 10 mainly deals with immigration from the viewpoint of populist parties, while topic 17 deals with infrastructures from the viewpoint of M5S. Topics 4 and 16 also deal with the immigration issue but from the much more traditional stance of Giorgia Meloni, the leader of FdI (see Meloni's tweets in Appendix B).

Figure 4. Conditional boxplot of populism score by topic prevalence.



Source: own elaboration.

In order to detect the most significant pairwise differentials among topics in terms of populism score, we then re-estimated four times the same fractional logit model. In particular, we set the expected populism score of each of the four mentioned outstanding topics as a reference level. As a result, we can derive the following ranking among significant and positive populism score differentials: 1) Topic 17 (infrastructure in the M5S view) and Topic 16 (immigration in the FdI view); 2) Topic 10 (immigration in the M5S and Lega view) and Topic 16; 3) Topic 17 and Topic 4 (immigration in the FdI view); 4) Topic 10 and Topic 4; 5) Topic 11 (infrastructure in the M5S view) and Topic 16; 6) Topic 1 (PD primary elections) and Topic 16; 7) Topic 11 and Topic 4; 8) Topic 1 and Topic 4.

The differentials listed above can be interpreted as maximal polarities in terms of populist language. For example, the infrastructure issue is mostly permeated by populist

¹¹ The estimation is performed via the `glm()` function in the R Studio environment and relies on the work on quasi maximum likelihood by Gourieroux, Monfort and Trognon (1984).

tones in Topic 17 in comparison to Topic 16 or Topic 4. Also, regarding the immigration issue, populist tones are more prevalent in Topic 10 as compared to Topic 4. To sum up, the described ranking of topics in terms of populist tone seems to reflect the different language of political parties associated with some crucial issues. Our analysis shows, in fact, that the most populist tweets are written by M5S on infrastructure and by the *Lega* on immigration, while the least populist tweets (for different reasons) are written by FdI and PD on immigration.

5. Conclusions

In this study we performed an inductive study of the political discourse on Twitter with the purpose of examining the policy and populism dimensions of political communication. We collected an original data set of about 25,000 tweets posted by a number of Italian politicians from different parties over a year, starting from the day of the 2018 general elections in Italy. We applied the STM technique to capture the policy content of the debate on the Twitter public forum in the period under consideration. We categorized Italian political parties using estimates of their policy positions on the left-right and the populism dimensions. To assign populism scores we used an *ad hoc* dictionary through which we content-analysed party manifestos. The ideological position and populism scores were instrumental in explaining the covariation of topic prevalence.

Our results suggest that actors from populist parties were mostly interested in emphasizing the immigration issue, although to a different extent. The debate on immigration was dominated by the *Lega*, suggesting that the party kept prioritizing the issue that occupied centre stage in its electoral campaign. It is remarkable that also the M5S was active, although to a lesser extent, on the issue of immigration. Moreover, the M5S emphasized infrastructure that had been an essential component of its pro-environment stance. The immigration issue was also emphasized by FdI which, according to our data, belongs to the more traditional right-wing party families. Our analysis also shows that populist tones were associated with different issues, with topics related to immigration displaying the highest populist tone. Overall, these results are consistent with previous research showing that some issues such as immigration are closely aligned with populist parties.

We are aware that our analysis suffers many limitations typical of the unsupervised approaches to text mining. To overcome these issues, we plan to enhance our work by applying supervised methods of Natural Language Processing and content analysis. This would facilitate a further exploration of the relationship between policy and non-policy factors in different communication settings and on different data.

References

- Acemoglu, D., Egorov, G., and Sonin, K. (2013). A Political Theory of Populism. *Quarterly Journal of Economics*, 128(2), 771-805.
- Adams J. F., Merrill S. III and Grofman B. (2009). *Toward a Unified Theory of Party Competition*. Cambridge: Cambridge University Press.
- Albertazzi D. and McDonnell D. (2015) *Populists in Power*, London, Routledge.

- Aslanidis, P. (2015). Is Populism an Ideology? A Refutation and a New Perspective. *Political Studies*, 64(1_suppl), 88-104.
- Baker, P. C. (2019). 'We the people': the battle to define populism. *The Guardian*, 20 November 2018. Retrieved from <https://www.theguardian.com/news/2019/jan/10/we-the-people-the-battle-to-define-populism> (accessed 2 May 2019).
- Barberá, P., Jost, J. T., Nagler, J., Tucker, J. A., and Bonneau, R. (2015). Tweeting From Left to Right. *Psychological Science*, 26(10), 1531-1542.
- Bischof, D., and Senninger, R. (2017). Simple politics for the people? Complexity in campaign messages and political knowledge. *European Journal of Political Research*, 57(2), 473-495.
- Blei, D.M. and Lafferty, J.D. (2007). A Correlated Topic Model of Science. *The Annals of Applied Statistics*, 1(1), 17-35.
- Blei, D.M., Ng, A.Y. and Jordan, M.I. (2003). Latent Dirichlet Allocation. *Journal of Machine Learning Research*, 3 (1), 993-1022.
- Blokker, P., (2017). Populism As a Constitutional Project (8 November 2017). *International Journal of Constitutional Law*, 17(2), 1-22.
- Bobba, G. and Roncarolo, F. (2018). The likeability of populism on social media in the 2018 Italian general election. *Italian Political Science*, 13(1), 51-62.
- Ceron A. (2017). *Social Media and Political Accountability. Bridging the Gap between Citizens and Politicians*, Palgrave Macmillan.
- Ceron, A., Curini, L. and Iacus, S. (2017). *Politics and Big Data: Nowcasting and Forecasting Elections with Social Media*. London: Routledge.
- Combei, C. R. and Giannetti, D. (2020). The Immigration Issue on Twitter Political Communication. Italy 2018-2019. *Comunicazione Politica*, 21(2), 231-263.
- Davis, R., Holtz-Bacha, C. and Just, M.R. (eds.) (2017). *Twitter and Elections around the World: Campaigning in 140 Characters or Less*. London: Routledge.
- Decadri, S. and Boussalis, C. (2019). Populism, Party Membership, and Language Complexity in the Italian Chamber of Deputies. *Journal of Elections, Public Opinion and Parties*.
- Denny, M. J. and Spirling, A. (2018). Text Preprocessing For Unsupervised Learning: Why It Matters, When It Misleads, And What To Do About It. *Political Analysis*, 26(2), 168-189.
- De Sio, L., De Angelis, A., and Emanuele, V. (2018). Issue Yield and Party Strategy in Multi-party Competition. *Comparative Political Studies*, 51(9), 1208-1238.
- Giannetti, D., Pedrazzani, A., and Pinto, L. (2018). The rising importance of non-economic policy dimensions and the formation of the Conte government in Italy. *Italian Political Science*, 13, 27-44.
- Golder, M. (2016). Far Right Parties in Europe. *Annual Review of Political Science*, 19(1), 477-497.
- Gourieroux, C., Monfort, A., and Trognon, A. (1984). Pseudo Maximum Likelihood Methods: Theory. *Econometrica*, 52(3), 681-700.
- Graziano P. (2018). *Neopopulismi. Perché sono destinati a durare*. Bologna: Il Mulino.
- Grimmer, J. (2011). An introduction to Bayesian inference via variational approximations. *Political Analysis*, 19, 32-47.
- Grimmer, J. and Stewart, B. M. (2013). Text as data: The promise and pitfalls of automatic content analysis methods for political texts. *Political Analysis*, 21(3), 267-297.
- Groseclose, T. (2001). A Model of Candidate Location When One Candidate Has a Valence Advantage. *American Journal of Political Science*, 45(4), 862.

- Guiso, L., Herrera, H., Morelli, M., and Sonno, T. (2017). Demand And Supply Of Populism. *EIEF Working Papers Series 1703*, Einaudi Institute for Economics and Finance (EIEF), 1703. doi:10.14612/guiso_herrera_morelli_sonno_1-2_2017.
- Haselmayer, M., and M. Jenny. (2017). Sentiment Analysis of Political Communication: Combining a Dictionary Approach with Crowdcoding. *Quality and Quantity*, 51(6): 2623–2646.
- Hawkins, K., Rovira Kaltwasser, C., and Andreadis, I. (2018). The Activation of Populist Attitudes. *Government and Opposition*, 55(2), 283-307.
- Jagers, J., and Walgrave, S. (2007). Populism as political communication style: An empirical study of political parties discourse in Belgium. *European Journal of Political Research*, 46(3), 319-345.
- Kriesi, H., Pappas, T. S., Aslanidis, P., Bernhard, L., and Betz, H. (2015). *European populism in the shadow of the great recession*. Colchester: ECPR Press.
- Lewis, P., Clarke, S., Holder, J., Kommenda, N. (2018). Revealed: one in four Europeans vote populist. *The Guardian*, 20 November 2018. Retrieved from <https://www.theguardian.com/world/ng-interactive/2018/nov/20/revealed-one-in-four-europeans-vote-populist> (accessed 2 May 2020).
- Mazzoleni, G., and Bracciale, R. (2018). Socially mediated populism: The communicative strategies of political leaders on Facebook. *Palgrave Communications*, 4(1).
- Mudde, C. (2004). The Populist Zeitgeist. *Government and Opposition*, 39(4), 541-563.
- Mudde, C. (2007). *Populist Radical Right Parties in Europe*. Cambridge: Cambridge University Press.
- Muis, J., and Immerzeel, T. (2017). Causes and consequences of the rise of populist radical right parties and movements in Europe. *Current Sociology*, 65(6), 909-930.
- Müller, J. W. (2014). ‘The People Must Be Extracted from Within the People’: Reflections on Populism. *Constellations*, 21(4), 483-493.
- Norris, P. and Inglehart, R. (2019) *Cultural backlash: Trump, Brexit, and authoritarian populism*, Cambridge: Cambridge University Press.
- Pappas, T. S. (2013). Populist Democracies: Post-Authoritarian Greece and Post-Communist Hungary. *Government and Opposition*, 49(1), 1-23.
- Papke, L. E., and Woolridge, J. M. (1996). Econometric methods for fractional response variables with an application to 401(k) plan participation rates. *Journal of Applied Econometrics*, 11(6), 619-632.
- Pauwels, T. (2011). Measuring Populism: A Quantitative Text Analysis of Party Literature in Belgium. *Journal of Elections, Public Opinion and Parties*, 21(1), 97-119.
- Pauwels, T. (2014). *Populism in Western Europe: Comparing Belgium, Germany and The Netherlands*. Abingdon/London: Routledge.
- Polk, J., Rovny, J., Bakker, R., Edwards, E., Hooghe, L., Jolly, S. and Zilovic, M. (2017). Explaining The Salience of Anti-elitism and Reducing Political Corruption for Political Parties in Europe with the 2014 Chapel Hill Expert Survey Data. *Research & Politics*, 4(1), 1-9.
- Popu-List. (2020). The PopuList. Retrieved from <https://popu-list.org/> (accessed 30 November 2020)
- Roberts, M. E., Stewart, B. M., Tingley, D., Lucas, C., Leder-Luis, J., Gadarian, S. K., Rand, D. G. (2014). Structural Topic Models for Open-Ended Survey Responses. *American Journal of Political Science*, 58(4), 1064-1082.

- Roberts, Margaret E., Stewart, Brandon M., and Tingley, Dustin. (2016). Navigating the Local Modes of Big Data: The Case of Topic Models. In R. Michael Alvarez (editor), *Computational Social Science: Discovery and Prediction (Analytical Methods for Social Research)*, 51–97. Cambridge University Press; Cambridge.
- Rooduijn, M. (2018). State of the field: How to study populism and adjacent topics? A plea for both more and less focus. *European Journal of Political Research*, 58(1), 362-372.
- Rooduijn, M., and Pauwels, T. (2011). Measuring Populism: Comparing Two Methods of Content Analysis. *West European Politics*, 34(6), 1272-1283.
- Rydgren, J. (2007). The Sociology of the Radical Right. *Annual Review of Sociology*, 33(1), 241-262.
- Saharia, N., Konwar, K.M., Sharma, U. and Kalita, J.K. (2013). An Improved Stemming Approach Using HMM for a Highly Inflectional Language. In A. Gelbukh (ed.) *Computational Linguistics and Intelligent Text Processing* (vol. 7816, pp. 164- 173). Springer, Berlin-Heidelberg.
- Singh, J. and Gupta, V. (2016). Text Stemming. *ACM Computing Surveys*, 49(3), 1-46.
- Stokes, D. E. (1963). Spatial Models of Party Competition. *American Political Science Review*, 57(2), 368-377.
- Urbinati, N. (2017). Populism and the Principle of Majority. In C. Rovira Kaltwasser, P. Taggart, P. Ochoa Espejo, and P. Ostiguy (Eds.), *The Oxford Handbook of Populism* (pp. 1-21). Oxford: Oxford University Press.
- Urso O. (2018). The politicization of immigration in Italy. Who frames the issue, when and how. *Italian Political Science Review/Rivista Italiana di Scienza Politica*, 48(3), 365-381.
- Vaccari, C. and Valeriani, A. (2015). Follow the Leader! Direct and Indirect Flows of Political Communication during the 2013 General Election Campaign. *New Media & Society*, 17(7), 1025-1042.
- Zulianello M. (2019) *Anti-system parties: from parliamentary breakthrough to government* London, Routledge,
- Weyland, K. (2001). Clarifying a Contested Concept: Populism in the Study of Latin American Politics. *Comparative Politics*, 34(1), 1

Appendix A

The populism dictionary was applied to the scaled and normalized texts of the party manifestos of each of the parties considered in this study. Before this, we validated the dictionary on the M5S and PD platforms issued for the 2018 general elections (see Table 1 below). Even if party manifestos are generally used to estimate policy positions, the two documents were judged to be different also in terms of populist rhetoric on the basis of *a priori* knowledge. To test the accuracy of the populism dictionary, we used normalized frequencies (per million) for each of the stemmed words of the dictionary (see Table 1, in section 2) and we compared their values between the two parties. Our assumption seems to be justified, as words such as ‘*popolo*’, ‘*corruz**’, ‘*elite*’, ‘*cast**’, ‘*onest**’ are more frequent for M5S than for PD (see the validation table below). It is also confirmed by the results of a Chi-square test showing statistical significance in terms of the differences between the frequencies obtained for M5S and PD (Chi-squared = 1072.6, df = 20, p-value < 2.1e-16).

Table A1. Validation of the populist dictionary – descriptive statistics.

Frequency per million in M5S party platform		Frequency per million in PD party platform	
Mean	83.66	Mean	33.86
Standard Error	38.59	Standard Error	15.87
Standard Deviation	144.40	Standard Deviation	59.40
Confidence Level (95.0%)	83.37	Confidence Level (95.0%)	34.30

Appendix B

Exemplar documents – examples of tweets pertaining to each topic

- Topic 1:** “Ho appena chiamato Nicola Zingaretti, che sarà il prossimo segretario del PD per complimentarmi per il suo risultato ed anche per il risultato della partecipazione alla quale abbiamo contribuito tutti #altrochemacerie” (Roberto Giachetti @bobogiac on Twitter, 3 March 2019)
- Topic 2:** “#Molise complimenti e buon lavoro a #Toma. Questa vittoria ottenuta col fondamentale contributo di #FdI, unico partito che cresce rispetto alle politiche, è un'altra indicazione per #Matarella: gli italiani vogliono un governo e un programma di centrodestra ST.” (Giorgia Meloni @GiorgiaMeloni on Twitter, 23 April 2018)
- Topic 3:** “GRAZIE! Dalle elezioni politiche a oggi se c'è una cosa certa è che su sei consultazioni elettorali, la Lega vince 6 a 0 sul Pd. E come in Abruzzo anche in #Sardegna è la prima volta che ci presentiamo alle Regionali. Grazie per la fiducia, Amici! 🙌😊 #ElezioniRegionaliSardegna” (Matteo Salvini @matteosalvinimi on Twitter, 25 February 2019)
- Topic 4:** “PAZZESCO! 41 migranti della #Diciotti chiedono il ‘risarcimento danni’ al governo. Ecco a voi la gratitudine per averli salvati e accolti...” (Giorgia Meloni @GiorgiaMeloni on Twitter, 21 February 2019)
- Topic 5:** “I cittadini sono preoccupati per i loro risparmi, per il lavoro e per il futuro dei figli. Il governo deve fare marcia indietro. #manovra” (Antonio Tajani @Antonio_Tajani on Twitter 2 December 2018)
- Topic 6:** “Servono centri di protezione europei nei paesi di origine e di transito per accelerare identificazione e richieste di asilo dei migranti. È una delle soluzioni che proponiamo per arginare traffici di esseri umani e rispettare i diritti umani.” (Giuseppe Conte @GiuseppeConteIT on Twitter, 15 June 2018)
- Topic 7:** “Uomo avvisato, mezzo salvato: stamattina mi hanno informato che c'è una nave di una Ong tedesca in arrivo verso la Libia: sappiano che con il loro carico di immigrati clandestini questi signori non arriveranno mai.” (Matteo Salvini @matteosalvinimi on Twitter, 19 February 2019)
- Topic 8:** “STRONCATO ‘TOUR OPERATOR’ DI CLANDESTINI
25 indagati (quasi tutti somali), 11 arrestati e 5 ricercati. La centrale operativa era l'ex Moi di Torino, occupato da immigrati dal 2015, che abbiamo iniziato a

SGOMBERARE. #dalleparoleaifatti!” (Matteo Salvini @matteosalvinimi on Twitter, 16 February 2019)

- Topic 9:** “Se chi ha fatto la concessione regalo ad Autostrade e chi non l’ha annullata ha causato un danno alle casse dello Stato sarà denunciato alla Corte dei conti per danno erariale! È ora che i ministri che hanno autorizzato tale follia paghino di tasca propria.” (Luigi Di Maio @luigidimaio on Twitter, 28 August 2018)
- Topic 10:** “Queste sono le parole che ha pronunciato Macron. Sono offensive e fuori luogo. La vera lebbra è l’ipocrisia di chi respinge gli immigrati a Ventimiglia e vuole farci la morale sul diritto sacrosanto di chiedere una equa ripartizione dei migranti. La solidarietà o è europea o non è.” (Luigi Di Maio @luigidimaio on Twitter, 21 June 2018)
- Topic 11:** “La mia lettera a @LaStampa sulle grandi opere: la battaglia #noTav è una battaglia ambientale, sociale e di visione del mondo diversa.” (Roberto Fico @Roberto_Fico on Twitter, 12 December 2018)
- Topic 12:** “I mercati vi insegneranno a votare’. Le parole del Commissario europeo #Oettinger sono assurde. Questa gente tratta l’Italia come una colonia estiva dove venire a passare le vacanze. Ma tra pochi mesi nascerà un governo del cambiamento e in Europa ci faremo finalmente rispettare.” (Luigi Di Maio @luigidimaio on Twitter, 29 May 2018)
- Topic 13:** “In Parlamento ci siamo opposti all’assurda Manovra di Lega e M5s. L’hanno approvata lo stesso, in barba a tutte le regole democratiche e al buonsenso. Oggi siamo in piazza per discuterne con i cittadini. È il Governo delle tasse e delle bugie. #promessemancate #cambiodirotta” (Roberto Giachetti @bobogiac on Twitter, 12 January 2019)
- Topic 14:** “La revisione della relazione costi benefici sulla #Tav per adattarla a quello che hanno deciso di fare è incredibile. #Toninelli se ne deve andare a casa perché è un ministro totalmente inadeguato. Giusta la mozione di sfiducia.” (Maurizio Martina @maumartina on Twitter, 1 March 2019)
- Topic 15:** “Amici abruzzesi, domani torno da voi e trascorro la mia domenica in provincia di #Chieti! Vi aspetto in tantissimi a #Vasto alle 16 e a #Lanciano alle 18. Alle elezioni del 10 febbraio, se siamo in tanti, mandiamo a casa il PD anche da voi! Passaparola. #10febbraiovotoLega” (Matteo Salvini @matteosalvinimi on Twitter, 19 January 2019)
- Topic 16:** “#SeaWatch, lo ripeto per la milionesima volta, esiste una terza via tra accogliere tutti e la chiusura dei porti: è il blocco navale. L’unica soluzione seria per fermare le partenze, le ONG e gli scafisti e impedire così le morti in mare e tutelare la salute dei migranti.” (Giorgia Meloni @GiorgiaMeloni on Twitter, 25 January 2019)

- Topic 17:** “Bene la votazione del Consiglio comunale di Torino sul Tav! Presto io e @Danilo-Toninelli incontreremo @c_appendino per continuare a dare attuazione al contratto di Governo” (Luigi Di Maio @luigidimaio on Twitter, 29 October 2018)
- Topic 18:** “Manovra approvata, più di 20 miliardi restituiti ai cittadini. Gli Italiani non hanno nostalgia di Monti, Renzi e Fornero. Avanti tutta! Live” (Matteo Salvini @matteosalvinimi on Twitter, 30 December 2018)
- Topic 19:** “@OttoemezzoTW - Non c’è un’ #Europa buona e una cattiva. L’Europa è uno straordinario strumento e non ci sta certamente ricattando. Spesso gli diamo responsabilità che sono legate a nostre incapacità, come ad esempio quelle di utilizzare al meglio i fondi comunitari. #ottoemezzo” (Anna Maria Bernini @BerniniAM on Twitter, 15 May 2018)
- Topic 20:** “Sull’immigrazione è arrivato il momento di cambiare pagina: chi mette piede in Italia, mette piede in Europa. E nessuno, in Europa, può pensare di restare estraneo e lavarsi le mani rispetto a questo problema.” (Giuseppe Conte @GiuseppeConteIT on Twitter, 15 June 2018)