

Affective Polarisation: The use of emotional language by Italian news outlets on Twitter*

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Journalism has a conflicting relationship with emotions, and thus scholars are divided in the critique about the nexus between emotions and professional ideals in journalism. While some authors argue that emotions ought to have no place in journalism, as they challenge established notions of objectivity and impartiality, others recognise their value and precise role in calling into question hidden power relations within the classic liberal journalism tradition. Yet the fast-changing digital media environment in which news media organisations must fight for news users' attention on social media has redesigned mainstream news production and distribution, and made some authors proclaim an "emotional turn" in journalism (Wahl-Jorgensen & Pantti, 2021). Studies that link social media, news and emotions mainly focus on the audience-centric perspective, aiming to assess which types of emotions increase the sharing potential of news stories and virality (Al-Rawi, 2019; Hasell, 2021). These studies also focus on the differences between the uses of emotional expression by partisan and non-partisan news media, predominantly in the UK and US contexts. In this paper, we build upon Iyengar et al's (2019) notion of "affective polarisation" to contribute to this discussion by extending the investigation to the Italian news media and Twittersphere. Differently from the liberal journalism tradition, the Italian media system is representative of the Polarised Pluralist Model or Mediterranean that is considered to be strongly politicised and exhibits significant levels of parallelism (Hallin & Mancini, 2004; Papathanassopoulos, Giannouli & Archontaki, 2023). Methodologically, we deploy machine learning techniques for sentiment and emotion analysis to almost half million tweets retrieved from the pages of eight Italian news outlets on Twitter (recently rebranded as 'X'). Namely, Il Fatto Quotidiano, Corriere della Sera, Il Post, Fanpage, La Gazzetta dello Sport, Il Sole 24 Ore, La Repubblica, HuffPost Italia. This aims to address a twofold research question that asks: How do different types of news outlets use emotional valence and language in tweets? Which types of emotions trigger more engagement with news users? We also hypothesise that the more partisan a newspaper is, the more it uses negative valence and language, in addition to speculating about news engagement with negative posts. The findings open up new avenues for further investigations about the interplay between partisan media and emotion, alongside journalists' intentionality and strategies for crafting the affective composition of news content.

Keywords: journalism, emotion, affective polarisation, Italian news media, Italian Twittersphere

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Introduction

Extensive research indicates that emotions play a decisive role in human behaviour and political judgement, emphasising the gap between voters' behaviours and democratic theory (Neuman, Marcus, & MacKuen, 2018). Emotions are associated with unpredictable, impulsive and irrational behaviour that ought to have no place in deliberation and democratic decision-making processes, in contrast to the realm of populism and demagoguery (Vasilopoulos, 2019). A similar critique takes place in journalism studies among scholars who perceive emotions as being at odds with what is considered "quality journalism," because emotions challenge established notions of objectivity and impartiality (Chong, 2019; Pantti, 2010). Others nonetheless disagree and contend that emotions are helpful because they call into question hidden power relations within the classic liberal journalism tradition (Orgeret, 2020). However, changes in the digital media environment have redesigned not only the relations between journalists and news users, but also mainstream news production and distribution (Burgess & Bruns, 2015; Bruns, 2018; Ausserhofer & Maireder, 2013; Östman, 2012). Within this changing digital scenario in which news outlets must fight for news users' attention on social media, Wahl-Jorgensen and Pantti (2021) proclaimed an "emotional turn" in journalism. Arguably, the use of emotional discourses in journalism is not new. Emotional language in news coverage has been documented long before the advent of the internet in various cultural contexts (Pantti, 2010; Peters, 2011).

In this study, we focus on the Italian media system that is thought of being part of the Polarised Pluralist Model or Mediterranean that is strongly politicised and exhibits significant levels of parallelism (Hallin & Mancini, 2004; Papathanassopoulos, Giannouli & Archontaki, 2023). Emotions are not foreign to Italian journalism. Mancini (2013) speaks of the 'dramatisation' of the public sphere, which is driven by political attitudes, deeply rooted in Italian history. Especially since the 1980s, this "dramatization" process has intensified due to the shift to a more commercialised media system model. It is worth noticing that the media system in Italy was television-centric until very recently. The year 2020 marked a turning point in the rise of online news as the main source of information for Italians (Cornia, 2015; Newman, Fletcher, Schulz & Nielsen, 2020, p. 74). Since then, there has been a decline in the consumption of online news, but it remains slightly ahead of television (Newman, Fletcher, Eddy, Robertson, & Nielsen, 2023, p. 85).

Studies that link social media, news and emotions mainly focus on the audience-centric perspective to assess which types of emotions increase the sharing potential of news stories and virality (Al-Rawi, 2019; Hasell, 2021), paying also attention to the differences between the uses of emotional language by partisan and non-partisan news media predominantly in the UK and US contexts. In this paper, we aim to contribute to this discussion by extending the investigation to the Italian news media and Twittersphere. Unlike the United States where seven-in-ten journalists (69 percent) use Twitter (recently rebranded as 'X') for journalistic-related activities,¹ in Italy this is still a minor phenomenon. "Italian leading news media rarely use social media as a tool to strengthen audience participation" (Padovani et al., 2021, p. 359). Moreover, 11 percent of US news users turn to Twitter for news, in contrast

to eight percent of the Italian counterparts (Newman, Fletcher, Robertson, Eddy, & Nielsen, 2022). Notwithstanding, Twitter is still of relevance in the Italian news ecosystem as the platform functions as a polarised arena for various groups, such as professional journalists, political leaders as well as users, to express their views about political and societal issues (de Rosa, Bocci, Bonito & Salvati, 2021).

In this paper, we build upon the notion of “affective polarisation” (Iyengar, Lelkes, Levendusky, Malhotra & Westwood, 2019) to explore the interplay between partisanship pertaining to Italian news outlets and their use of emotional valence and language. Namely, positive and negative valence and emotions, such as joy, anger, sadness and fear. Also, we assess Twitter users’ reactions to news posts and reflect on the role of partisanship in news engagement. To this end, we deploy machine learning techniques to almost half million tweets retrieved from the pages of eight major Italian news outlets on Twitter. Specifically, *Il Fatto Quotidiano*, *La Repubblica*, *Corriere della Sera*, *HuffPost Italia*, *Il Post*, *Fanpage*, *Il Sole 24 Ore* and *La Gazzetta dello Sport*. The questions and hypotheses addressed in this study are, as follows:

- RQ 1: How do different types of news outlets use emotional valence and language in tweets?
- RQ 2: Which types of emotions trigger more engagement with news users?
- H 1: The more partisan a newspaper is, the more it uses negative valence and emotions in tweets to garner more engagement.
- H 2: Negative news posts are expected to garner more engagement, which might denote increased polarisation of news contents.

In the following section, we introduce the notion of “affective polarisation” because this concept helps us to explore the interplay between partisanship and the use of emotional language by Italian news outlets, alongside news users’ reactions to news posts on Twitter. Subsequently, we provide a critical overview of relevant scholarly literature pertaining to the nexus of journalism, emotion and social media, before presenting the methodological design of the study. Finally, we discuss our findings that point out the need to assess other factors beyond partisanship to better understand the increased polarisation of news audiences in online platforms. This study opens up new avenues for further investigations on the nexus of partisan media and emotion, as well as journalists’ intentionality and strategies for crafting the affective composition of news content.

Affective polarisation in the Italian news media

The term “affective polarization” was coined by Iyengar, Lelkes, Levendusky, Malhotra and Westwood (2019) to describe the animosity that exists between Republicans and Democrats in the United States. Partisanship in that particular context means identifying with one political party or another. Identity and affect form the basis of the authors’ argument, in contrast to a long tradition in political science that associates polarisation with political ideology. The authors draw from a substantial body of literature in social psychology to

discuss in-group and out-group distinctions, emphasising the role of positive and negative feelings, respectively, in in- and out-group dynamics. They also contend that “[t]he more salient the group to the sense of personal identity, the stronger these intergroup divisions” (Iyengar et al., 2019, p. 130). Similarly, Sunstein (2002) argues that after discussions among like-minded people, their positions in relation to “predeliberation judgments” intensify, triggering negative group’s emotions that might increase polarisation. In media studies, Levendusky (2013), by conducting original experiments with research subjects, shows convincing evidence that partisan media make already polarised audiences more extreme, but not moderate news users. He defines partisan media as “opinionated media: media that not only report the news but offer a distinct point of view on it as well” (p. 612).

The notion of ‘affective polarisation’ is relevant for this study, specifically because of the development of the Italian news media system and the precise role of partisanship and polarisation alongside its history. Furthermore, we build upon the above-mentioned works to explore the nexus between partisanship and emotion, and speculate about the reasons for engagement with news eliciting negative emotions, which might lead to increased polarisation in the Italian Twittersphere.

Mancini (2013) uses the term “dramatised polarization” to explain how symbolic polarisation cannot only be traced back in Italian history, but can also be observed in the present through ‘economic and social cleavages.’ These cleavages are manifested through “a difficult transformation from agricultural to industrial society that has caused social imbalances, dramatic differences between north and south, a diffuse distrust in state institutions, etc” (p. 336). This context has fostered a polarised political and cultural environment in which partisanship means being a fascist or anti-fascist, communist or anti-communist and, more recently, communist or christian-democrat.

According to Mancini (2013), the late shift to a market-driven mass media in Italy did not lay the basis for a profit-based media system. Therefore, the media sector became economically dependent on and property of the State, political parties, and businesses. The media’s lack of sufficient autonomy is seen through its instrumentalisation by political leaders, parties, and businesses, to leverage their influence and interfere into decision-making process. The significant transformation in the media landscape observed in several European democracies during the 1980s was also experienced in Italy, but in a very particular fashion. The commercialisation of mass media was intertwined with the pre-existing tradition of partisanship. Thus, strong public and political interventions through the instrumentalisation of the media has been documented, as well as the presence of strong ties between journalists and politicians (Cornia, 2015; Hallin and Mancini, 2004). Likewise, Papathanassopoulos et al. (2023) emphasise that the print media in Southern European countries focus more on commentary, and newspapers as well as their readership have differing political attitudes.

Schudson (2019) discusses Hallin and Mancini’s (2004) three models of journalism by highlighting the features of these differing journalism styles. As for the polarised pluralist model or Mediterranean in which the Italian system is included, Schudson (2019) stresses low levels of newspaper penetration, a print media oriented to the elites, low levels of commercialisation, and a highly politicised journalism leaning towards an advocacy model.

The symbiosis between the Mediterranean style of journalism and the use of emotional language in Italian news reporting is therefore unsurprising. Mancini (2013) and Rizzuto (2019) argue that this emotional trend intensified in the 1980s, with the shift to a more commercialised media system and, more recently, with the digital transformation of journalism. Regarding the latter, De Blasio, Rossella and Valente (2022) contend that the phenomenon of platformisation of the news has made even worse the already politically polarised journalistic contents, “exacerbated in Italy by the high level of partisanship that traditionally characterizes the national media” (p. 74).

The literature indicates that the Italian news media system, as well as its audiences, has been historically characterised as partisan. A feature that has more recently been reinforced by the integration between Italian journalism and platforms. Studies measuring different levels of partisanship in Italian news media organisations are lacking, therefore we cannot test H1. Yet we can use it to reflect further on RQ1 and speculate about the complex interplay between the use of emotional language by news outlets and partisanship (H1), and assess how different types of news outlets perform in relation to this entanglement.

(News) media, emotions and social media

The Routledge Handbook of Emotions and Mass Media (Döveling, von Scheve, & Konijn, 2010) explores, amongst other things, media’s potentiality in shaping and arousing audience’s emotions in national and international contexts. By employing an interdisciplinary approach, from evolutionary psychology to cultural studies to sociology, and other related disciplines, various authors investigated the media’s influence on individual and collective behaviour, as well as public life. The rationale behind these studies is that mass media not only produces and disseminates information and knowledge but, most importantly, it mediates the ways in which audiences experience, feel and make sense of the world they live in through the emotional messages conveyed by the media. According to the editors, research on emotion started to receive copious scholarly attention in the 1980s, especially in the field of psychology. Afterwards, the interest has increased gradually over related disciplines, such as political science, sociology, communication, cultural studies, etc.

Within the advent and development of tech giants, such as Facebook and Twitter, scholars turned their attention to the relations among journalism, emotion and social media. According to Beckett (2015), “journalism is now distributed not by transmitters or newsagents but by social media. Getting people to share your content is vital and emotion is critical to making that happen.” The co-edition of a special issue in Journalism by Wahl-Jorgensen and Pantti in 2021 responded to these new developments. The editors argued that the increasingly complex interplay between journalism and emotion, witnessed over the past decade at the time, called for a novel area of inquiry. Thus, they proclaimed an “emotional turn” in journalism. Consequently, the uses and implications of the affective affordances of social media by news outlets to expand their presence and visibility in online environments, as well as their engagement with audiences have become a subject of

investigation (Sturm Wilkerson, Riedl, and Whipple, 2021; Hasell, 2021; Wahl-Jorgensen, 2020; Wahl-Jorgensen & Pantti, 2021; Orgeret, 2020).

Despite the fascination with and use of emotional expression in what is called infotainment via reality TV shows and tabloid magazines, Pantti (2010, p. 221) argues that journalism has a 'complex relation' with emotion. The use of emotional expression tends to be associated with sensationalism and bad quality journalism because it challenges a key journalistic professional principle, namely objectivity. However, there is no consensus among scholars about what constitutes quality journalism, as Sirén-Heikel, Kjellman and Lindén (2023) remind us. Pantti also disagrees with the general assumption that Western news media saw the increase in the use of emotionally-charged content in journalism in the 1990s, particularly with the coverage of the death of Princess Diana in 1997. She debunks this assumption by showing convincing evidence of the use of emotional discourses in British disaster news coverage between 1930 and 1999. The deployment of emotional expression in journalism is not new, the novelty lies in the question of the use of emotion in journalism as a subject of inquiry. Similarly, Peters (2011) contends that it is not that journalism has become emotional in the past decades. Rather, there has been greater diversity of journalistic emotional styles and higher acceptability of journalism involvement; be it in the process of news production or the engagement with news audiences. Yet he points out that the relations between emotion and journalism have been dismissed and under theorised.

While discussing the Italian version of infotainment and the use of emotionally-charged language in crime reporting to trigger emotional arousal from audiences, Rizzuto (2019) highlights the difficulties in drawing the line between journalism and entertainment. For him, this is borne out in the unresolved question of journalism professional identity and values, and how these professional ideals differ across various cultures (Mellado, 2017). Rizzuto argues that infotainment within Italian journalism, whose advocacy model dominates, alongside the digital transformation of journalism, made even worse the already fragile role of journalism in democracy. He thus contends that the 'reality show logic' undermines audiences' ability to distinguish between news reporting and entertainment, leading to unforeseen political consequences.

As for the linkage between the use of emotion in journalism and news audiences, Neuman, Marcus and MacKuen (2018) explored news users' emotional response to political news. By combining Shoemaker's concept of "Hardwired for News" (Shoemaker, 1996; Shoemaker & Cohen, 2012) with affective intelligence theory (AIT), they examined news stories and the ways in which research participants scored them in relation to affects. Methodologically, they created a sample of carefully selected 50 news stories for the period between 2007 and 2010 to represent a "typical news day." Then, they commissioned a research firm in 2011 to select the research participants and develop a questionnaire that assessed how participants rated the stories in relation to AIT's affect terms. Namely, "1) anxiety, assessed by 'scared', 'afraid', and 'worried'; 2) enthusiasm, reflected by 'proud', 'hopeful', and 'enthusiastic'; and 3) anger/aversion, was gauged by 'hateful', 'bitter', 'angry', and 'resentful'" (Neuman et al., 2018, p. 620). Although the authors recognise the complexity of assessing emotional responses to real world events, their findings align with Shoemaker's

and similar studies. They demonstrate that negative emotions, especially anger and frustration, garner more audience engagement than positive affects like enthusiasm and anxiety, which exhibit considerable variation in participants' emotional responses.

In a similar fashion, Bellovary, Young and Goldenberg (2021) departed from the premise that negativity has historically been prominent in news content to examine how news organisations use positive and negative language on Twitter. They also compared how and whether left- and right-leaning news outlets use positive and negative language differently, and explored whether different affects lead to variations in engagement levels. They found that news organisations, regardless of political orientation, follow the same negative pattern on Twitter. Also, negative affects predict more engagement than the positive counterparts. The authors speculate that the phenomenon of 'negative bias' (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Vaish, Grossmann, & Woodward, 2008), which states that "negative information is more impactful on attention and behavior than positive information" (Bellovary et al., 2021, p. 394), might explain their findings.

Likewise, Hasell (2021) explored the shareability of tweets by partisan and non-partisan news media on Twitter. She hypothesised that partisan news media produce more emotional content and therefore are more influential on the platform. She analysed more than 300,000 tweets and retweets from 22 news organisations in the United States, and examined the types of political news that was most shared, as well as how the emotional content influenced users' sharing behaviour. The results confirmed her hypothesis, emphasising the role of emotional language in political news sharing and amplification on social media.

By focusing on viral news, Al-Rawi (2019) examined consumption and sharing behaviour related to the top 50 news stories from the Guardian, The New York Times, Washington Post and The Wall Street Journal. Unlike the above-mentioned studies, the author explored the most viewed stories on YouTube channels and the most retweeted news stories. In clear contrast to Bellovary et al.'s results (2021), Al-Rawi found that positive news stories were the most viewed and retweeted. He commented on the Twitter result by saying "This finding is interesting because journalists and editors mostly believe that bad news is more appealing to readers, yet there is a clear preference by Twitter news readers to view and share positive news" (Al-Rawi, 2019, p.72).

Speaking from a southern European perspective, Salgado and Bobba (2019) combined qualitative content analysis with regression analysis to explore Facebook users' reactions to news stories on politics and current affairs in four different countries: Portugal, Italy, Spain and France. Then they examined the nature of selected events, features of news posts, as well as how Facebook users engage with those posts, through liking, sharing and commenting. They found that likes, shares, and comments do not always adhere to the same patterns. Consequently, the findings do not provide conclusive insight into the potential reasons for news users' engagement beforehand. However, the authors propose that the nature of events elicits more engagement than the specific characteristics of news stories.

Differently from their study, we are not doing qualitative analysis of news articles, nor are we selecting specific events, to assess what drives news users' engagement. Rather, we focus on how different types of Italian news outlets use emotional expression in tweets by

deploying sentiment and emotional analysis, and assess which affects trigger more news engagement.

Methodology

In this Section, we describe the methodological design and techniques employed in this work. In ‘Data’ and ‘Sentiment and Emotion Analysis’ sections, we introduce our data collection and provide an overview of the Machine Learning (ML) model adopted. The retrieval of data and analysis for this paper happened during a timeframe between Elon Musk’s acquisition of Twitter (December 2022) and the social media platform rebranding as ‘X.’ Moreover, we finished the retrieval of the dataset just before the closure of Twitter’s API by Musk’s new Twitter account policy in February 2023. We downloaded tweets backwards in time until it reached 50k for each news outlet. This process was necessary due to variations in the volume of tweets posted by each news outlet over time. Otherwise, we may not have reached the 50.000 tweet quota for every news outlet under study during the same time period.

Three categories of news outlets

We classify the newspapers in three categories, such as 1) leading newspapers, 2) digital born news aggregators and commentary news outlets, and 3) specialised newspapers, by building upon the works (Padovani et al., 2021; Bentivegna et al., 2022; Cornia, 2015; Newman et al, 2023; Mancini, 2013). This categorisation aimed to assess Twitter users’ reactions to posts coming from various types of news organisations. Furthermore, we assume that all news outlets under study are partisan, based on the development of the Italian media system, and the works of Radicioni, Squartini, Pavan and Saracco (2021), Mancini (2013) and Cornia (2015). This decision allows us to focus on how different categories of news organisations perform in relation to their use of emotional language to inquire into the nexus of emotion and partisanship, alongside the role of negative news in garnering more engagement on Twitter.

Table 1: Three categories of news outlets

News organisations	Category
Il Fatto Quotidiano (Editoriale Il Fatto S.p.a.)	Leading newspaper
Corriere della Sera (RCS Mediagroup, Cairo Communication)	Leading newspaper
La Repubblica (GEDI Gruppo Editoriale)	Leading newspaper
Il Post (Il Post)	Digital born news aggregators and commentary

News organisations	Category
	news outlets
Fanpage (Ciaopeople S.r.l.)	Digital born news aggregators and commentary news outlets
HuffPost Italia (GEDI Gruppo Editoriale)	Digital born news aggregators and commentary news outlets
La Gazzetta dello Sport (RCS Mediagroup, Cairo Communication)	Specialised newspaper/ professional sports
Il Sole 24 Ore (Gruppo 24 ore)	Specialised newspaper/ economics and finance

Data

In order to study the use of emotional language by news outlets and their interactions with Twitter users, especially using ML, a good amount of data is required. We hence retrieved 50K tweets for each news outlet for a total of 400K, to have statistically relevant results. To select the news outlets, we employed the criteria developed by the Global Media Monitoring Project. The criteria were consistently applied by the Italian team, when selecting Italian news outlets for monitoring. Our sample thus mirrors the carefully chosen outlets of GMMP Italy. Padovani et al's (2021) criteria for selecting Italian new media for monitoring is worth quoting in length:

only national media house Twitter feeds were included; only major media outlets (...) only focused on news; reflect the diversity of the media landscape in terms of both the type of media they are associated with (printed newspapers, television news services, digital native information portals) and in terms of ownership and related interests (all private, but with different political orientations from left to right); publish tweets in Italian (Padovani et al., 2021, p. 18)

We utilised a third-party open-source software called *snsrape* (<https://github.com/JustAnotherArchivist/snsrape>) for the scraping process (i.e., collecting tweets) due to its flexibility and simplicity. The recent Musk's acquisition of Twitter, and subsequent changes in user account policies, rendered this approach no longer feasible. In fact, access to the Twitter API is blocked for the time being.

Sentiment and emotion analysis

For sentiment and emotion analysis, we deployed *umBERTo* (Bianchi, Nozza, & Hovy, 2021), which is a specifically fine-tuned model for Italian language, based on the widely used multi-language BERT, mentioned in various works (Roccabruna, Azzolin, & Riccardi, 2022; Masala, Ruseti, & Dascalu, 2020).

Broadly speaking, the model assigns probabilities to individual tweets based on their content and subsequently categorises each tweet based on the highest probability assigned. It leverages deep learning techniques to analyse the semantic meaning of text, enabling a more nuanced understanding of tweets' context and sentiments. Subsequently, the tweet is categorised by selecting the category with the highest probability, a process facilitated by BERT's ability to extract meaningful features from text data and make accurate predictions based on learned patterns.

The sentiment and emotion analysis aimed, respectively, to determine whether a news outlet uses more negative or positive sentiments in tweet content and the types of emotions - such as joy, anger, sadness and fear - a news outlet uses most frequently in tweets. Subsequently, we counted the number of tweets for each valence and emotion and averaged the number of retweets to assess Twitter users' reactions to those news posts.

Evaluation and results

RQ 1: How do different types of news outlets use emotional valence and language in tweets?

By ranking the news outlets from their use of emotional valence and emotions, from negative to positive, we identify four groups that present similar emotional patterns: 1) Il Fatto Quotidiano and HuffPost Italia; 2) La Repubblica and Corriere della Sera; 3) Il Post, Fanpage and Il Sole 24 Ore; and 4) La Gazzetta dello Sport.

Table 2: Sentiment and emotion analysis for the selected Italian news outlets

Media	Sentiment		Emotion			
	negative	positive	joy	sadness	anger	fear
La Repubblica	38408	11593	12137	8128	20604	9132
Huffpost Italia	41587	8414	8390	8605	24847	8159
Il Post	32312	17689	16436	10331	12552	10682
Corriere della Sera	36429	13572	14024	9590	17771	8616
Il Fatto Quotidiano	42866	7135	7711	8562	25775	7953
Fanpage	35883	14118	14708	14071	11908	9314
La Gazzetta	17337	32664	34142	7782	5339	2738
Il Sole 24 Ore	35822	14179	13396	5886	17803	12916

As we can see from Table 2, Il Fatto Quotidiano stands in the first place by showing the highest level of negative valence: around 42.866 out of 50k tweets are negative. Anger (25.775) is the most prevalent affect in tweet contents, followed by sadness (8.562), fear (7.953) and joy (7.711), which is the least appreciated emotion by the newspaper. HuffPost

Italia comes second, having very similar patterns to the former. 41.587 out of 50k of its tweets have a negative valence, but HuffPost presents a slightly lower number of angry (24.847) and higher number of joyful (8.390) tweets. Nevertheless, the differences in the use of emotional language by these two outlets can be considered insignificant, despite HuffPost Italia giving a bit more emphasis to joyful posts in comparison to Il Fatto Quotidiano. In the second group, we can see La Repubblica and Corriere della Sera that present a very similar way of using emotional language, being the former slightly more negative and angry. La Repubblica gives more emphasis to anger (20.604), joy (12.137), fear (9.132) and sadness (8.128), while Corriere to anger (17.771), joy (14.024), sadness (9.590) and fear (8.616).

In the third group, we can see Il Post, Fanpage and Il Sole 24 Ore. The last two present almost the same number of negative tweets (around 35.8 out of 50k), while Il Post is less negative (32.312). Il Sole 24 Ore is the news outlet in our sample that uses fear (12.916) most frequently, but its majority of tweets still gives more emphasis to anger (17.803), followed by joy (13.396), fear (12.916) and sadness (5.886). Il Post and Fanpage emphasise joy (16.436; 14.708), but then the former gives more emphasis to anger (12.552), fear (10.682) and sadness (10.331), while the latter to sadness (14.071), anger (11.908) and fear (9.314).

Finally, we have La Gazzetta dello Sport standing alone on the opposite side of the emotional spectrum, having the highest number of positive tweets in the sample (32.664 out of 50k). Most of its tweets are joyful (34.142) followed by sad (7.782), angry (5.339) and fearful contents (2.738).

'Anger' is the most prominent emotion amongst the negative affects used by news outlets in our sample. Besides the already mentioned use of 'anger' by Il Fatto Quotidiano and HuffPost Italia, Il Sole has almost the same number of angry tweets as Corriere della Sera (17.803; 17.771), and uses other affects in a similar fashion to Corriere and La Repubblica, despite giving more emphasis to 'fear.' By contrast, digital-born outlets, such as Il Post and Fanpage, present a much lower number of angry tweets (12.552; 11.908).

RQ 2: Which types of emotions trigger more engagement with news users?

As we can see from Table 3, negative valence and emotions, especially 'anger,' elicit by far the most user reactions. Retweets mainly follow the sharing pattern of anger, sadness, fear and joy, from a descending order. HuffPost Italia's followers retweet slightly more fearful contents, instead of sad posts, having the affective pattern, anger, fear, sadness and joy. Joyful posts are the least retweeted in the sample, even though Fanpage and La Gazzetta's followers react slightly more to joyful than fearful contents. Interestingly, even La Gazzetta, whose majority of tweets is positive and joyful, has an average of 4.41 retweets for angry tweets against 3.00 for joyful tweet messages. In the case of Il Fatto Quotidiano, this pattern is even more evident: angry tweets are retweeted more than double the number of joyful tweets.

Table 3: Average retweet number for each tweet classification

Media	joy (avg)	anger (avg)	sadness (avg)	fear (avg)	negative (avg)	positive (avg)
La Repubblica	3,47	6,11	5,26	4,53	5,49	3,58
HuffPost Italia	5,28	10,36	7,25	8,13	9,25	5,42
Il Post	4,55	9,27	7,83	5,26	7,73	4,42
Corriere della Sera	3,52	6,20	5,42	5,20	5,71	3,55
Il Fatto Quotidiano	10,43	21,58	13,19	11,80	17,99	10,12
Fanpage	5,73	8,81	6,29	4,99	6,82	5,62
La Gazzetta	3,00	4,41	3,23	2,97	3,69	2,92
Il Sole 24 Ore	1,68	2,07	2,49	1,82	2,12	1,52

According to the premise of hypothesis 1 that states, ‘the more partisan a newspaper is, the more it uses negative valence and emotions in tweets to garner more engagement,’ the news outlets under study are classified as follows: Il Fatto Quotidiano, HuffPost Italia, La Repubblica, Corriere della Sera, Fanpage, Il Sole 24 Ore, Il Post, and La Gazzetta dello Sport that presents a very distinct pattern. We cannot confirm this hypothesis because we did not find previous studies measuring different levels of partisanship in Italian news organisations. But our findings invite further studies to develop criteria to measure partisanship in our sample of news outlets and consequently test our results. By contrast, our findings confirm hypothesis 2 that states that ‘negative news posts are expected to garner more engagement, which might denote increased polarisation of news contents.’ Our data do not allow us to advance understanding of the precise role of negative contents in strengthening polarisation both in news contents and audiences. However, our results make us speculate that the more negative news posts are, the more likely to make already polarised audiences extreme, which is in line with Levendusky’s results (2013). Again, we stress the need for further research that assesses not only Twitter/ X posts, but also news stories and audiences’ perceptions and reactions to those stories.

Discussion

Aiming to assess how different types of news outlets use emotional valence and language in tweets, as well as the types of emotions that elicit more engagement, we deployed the umBERTo model for sentiment and emotion analysis. Theoretically, we built upon Iyengar et al’s (2019) notion of “affective polarisation” to assess the nexus of partisanship and news outlets’ use of emotional language. Although we mainly focus on the emotional patterns of news organisations, we also looked at Twitter users’ reactions to news posts.

By cross-examining the classification of news outlets with results of sentiment and emotion analysis, we can see that for the category of ‘leading newspapers,’ La Repubblica and Corriere perform in a very similar fashion, alongside Il Sole 24 Ore. Although the latter

was categorised as ‘specialised newspaper,’ it is undoubtedly a leading news outlet, too. As for *Il Fatto Quotidiano* and *HuffPost Italia*, our findings indicate a stronger use of negative emotions, ‘anger’ in particular, which suggest an increased polarisation of news posts on Twitter, retaking the argument by De Blasio et al. (2022). *HuffPost* belongs to the same editorial group as *La Repubblica*, thus it is unsurprising to see a similar use of affects between the two. Regarding other digital-born outlets, such as *Fanpage* and *Il Post*, they also present a similar pattern in using affects as they kind of balance positive and negative posts. The former uses ‘joy’ and ‘sadness,’ and the latter ‘joy’ and ‘anger,’ more frequently. Last but not least, we have *La Gazzetta dello Sport* marking its joyful presence on Twitter. These results shed light on the imbalance between positive and negative affects in our measurement. We have only one positive affect against three negative, which makes the results of *La Gazzetta* even more significant, but it also makes us wonder about a more balanced criteria to measure positive and negative valence.

As for Twitter users’ reactions to posts, we cannot say that the results are unexpected, but this does not mean they are not intriguing. Regardless of news outlets’ differing uses of affects, Twitter users are wired for negative tweet content. The results indicate a retweet affective pattern of ‘anger,’ ‘sadness,’ ‘fear,’ and ‘joy.’ We saw the comparison between *La Gazzetta* and *Il Fatto Quotidiano*, which appeared as an emblematic case to show that even when a news outlet adopts a positive and joyful approach to language, negative affects still garner more audience’s response and interest. This finding is in line with previous studies (Bellovary et al., 2021; Hasell, 2021; Neuman et al., 2018) and in sharp contrast to Al-Rawi’s (2019) results. Apart from *La Gazzetta*’s case, ‘anger’ is the most used emotion by far, and proved to be effective in engaging users due to anger-based tweets being the most retweeted posts.

A sole correlation between affects and retweets is not sufficient to understand what makes news users interact with news posts; even though our findings corroborate previous studies that show how negative affects predict news users’ reactions to news stories. We have seen that Bellovary et al. (2021), for instance, speculate that this negative pattern might be explained by the phenomenon of “negative bias” (Baumeister et al., 2001). But Salgado and Bobba’s (2019) results are of relevance here, when they suggest that the nature of events elicits more engagement than the specific characteristics of news stories. Our findings also point to further research that explores news users’ reactions to news posts by assessing whether there is a correlation between reactions to negative news and increased polarisation of news contents, and consequent audiences. Our study presents some limitations, such as the absence of analysis of events as well as news articles associated with posts on Twitter. Such an analysis would help us to better understand the causes of engagement with news stories. This however cannot be done with our dataset, because we did not retrieve news stories at the very outset, only tweet content. A further possible step is to conduct qualitative interviews to assess newspapers’ views on our findings, partisan media, audience engagement, alongside their strategies for using emotional expression to craft news posts.

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Biographical Note

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Giulio Rigoni received the MSc in Computer Science from the University of Padua in 2017. Following a brief experience in IT, he pursued a grant focused on cyber-security and joined the SPRITZ Security and Privacy Research Group led by Prof. Mauro Conti at the University of Padua. He then enrolled in a PhD program in Mathematics, Computer Science, and Statistics at the University of Florence, where they focused on drone security and applications, earning their doctorate in June 2022. In August 2022, he began a PostDoc position in the Department of Political Science, Law, and International Studies (SPGI) at the University of Padua, working on the Triskelion project, which studies social media interactions between users and news outlets using machine learning systems. Currently, Giulio is an Assistant Professor at Sapienza University of Rome in the Department of Computer, Control, and Management Engineering, specializing in cyber-security topics.

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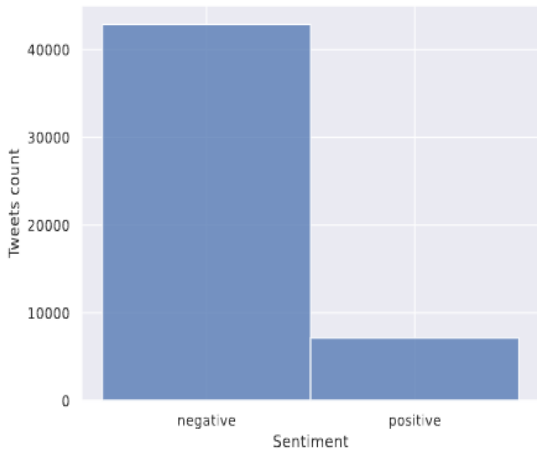
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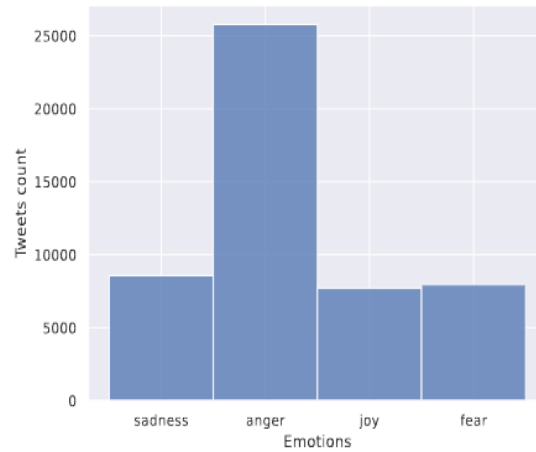
Notes

- ¹ Twitter is the go-to social media site for U.S. journalists, but not for the public. Retrieved from <https://www.pewresearch.org/short-reads/2022/06/27/twitter-is-the-go-to-social-media-site-for-u-s-journalists-but-not-for-the-public/> (Pew Research Center)

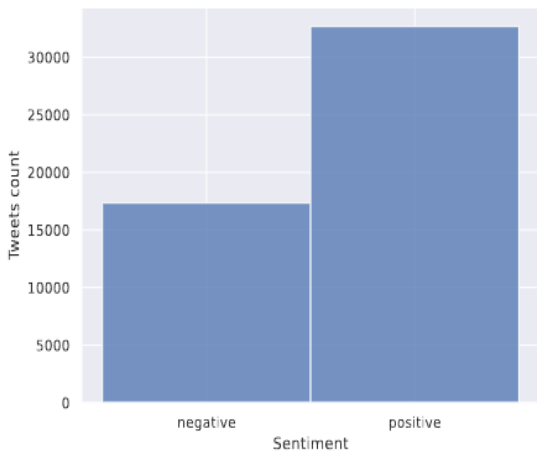
Annex 1 - Sentiment and emotion analysis of Italian news outlets



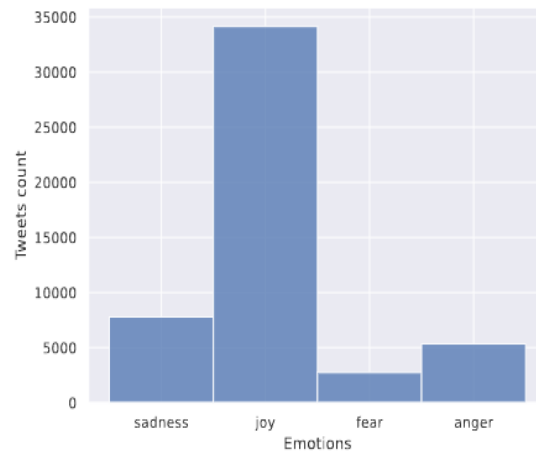
(a) Il Fatto Quotidiano: Sentiment analysis



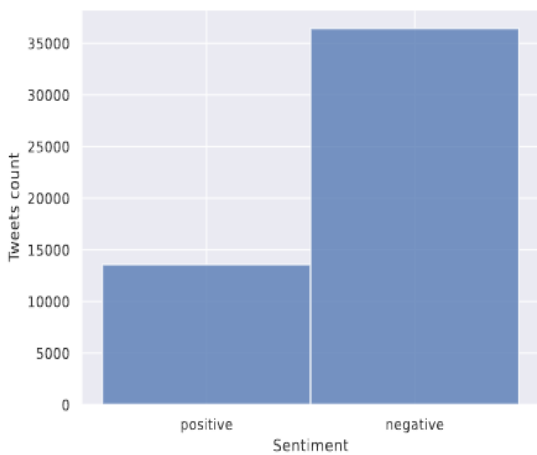
(b) Il Fatto Quotidiano: Emotion analysis



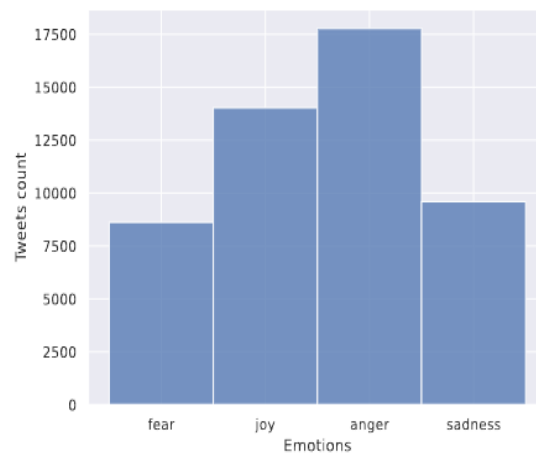
(c) La Gazzetta: Sentiment analysis



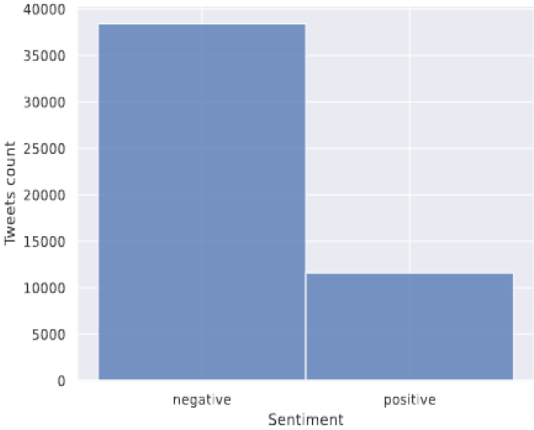
(d) La Gazzetta: Emotion analysis



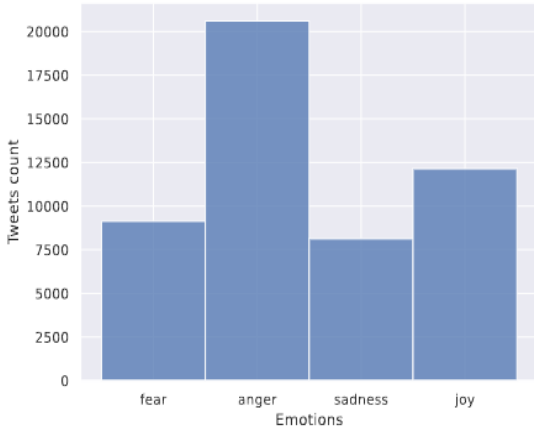
(e) Corriere della Sera: Sentiment analysis



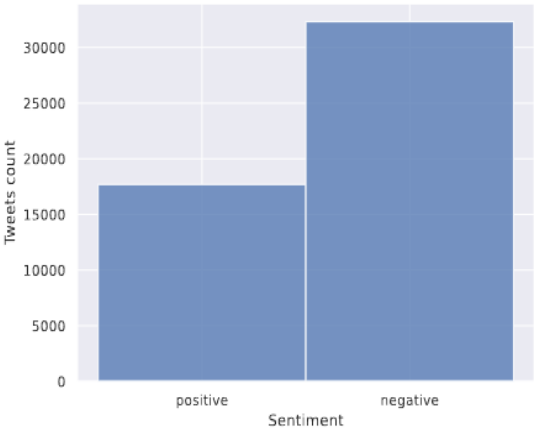
(f) Corriere della Sera: Emotion analysis



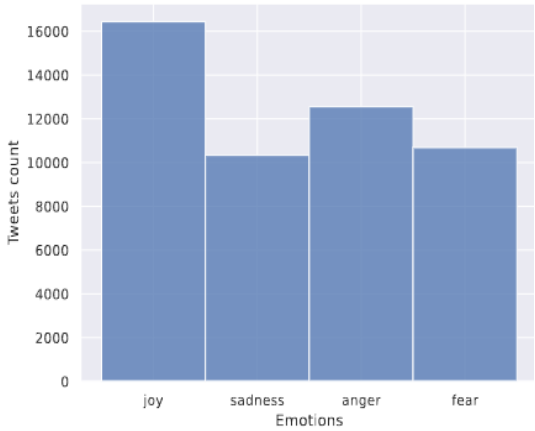
(g) La Repubblica: Sentiment analysis



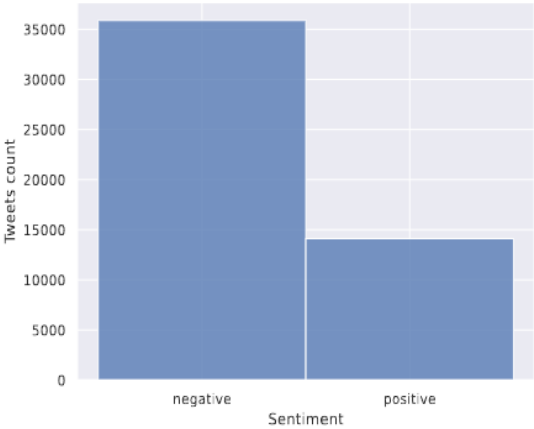
(h) La Repubblica: Emotion analysis



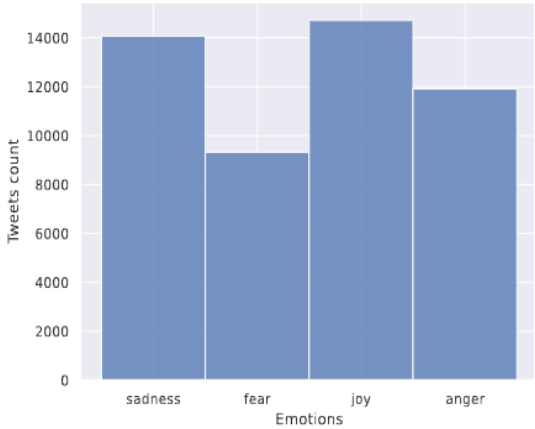
(i) Il Post: Sentiment analysis



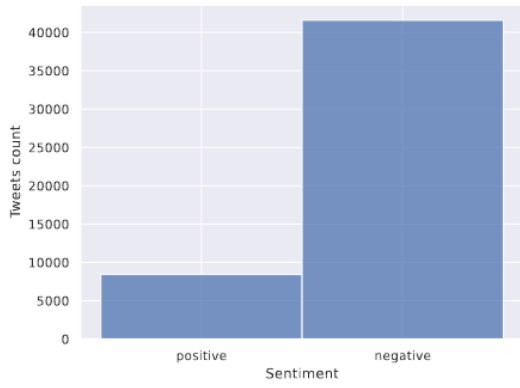
(j) Il Post: Emotion analysis



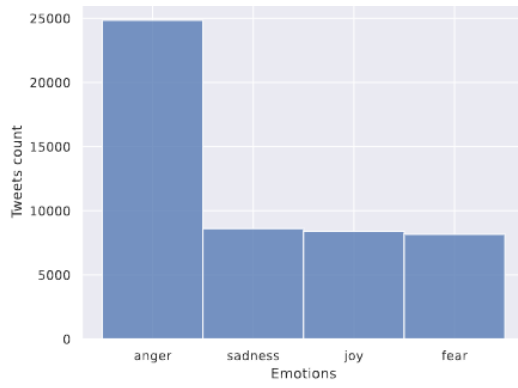
(k) Fanpage: Sentiment analysis



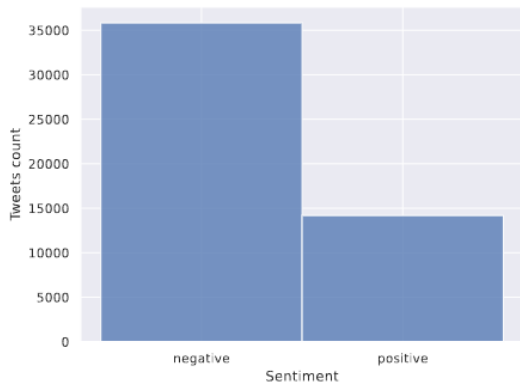
(l) Fanpage: Emotion analysis



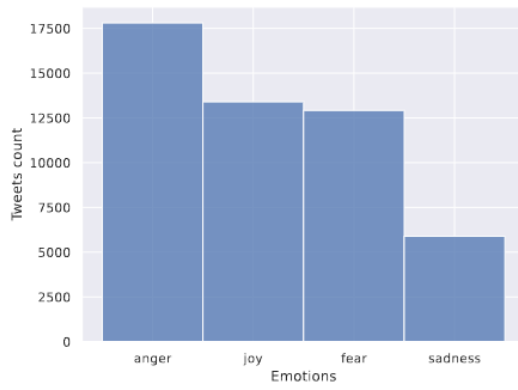
(m) HuffPost Ita: Sentiment analysis



(n) HuffPost Ita: Emotion analysis



(o) Il Sole 24 Ore: Sentiment analysis



(p) Il Sole 24 Ore: Emotion analysis