

Digital-Born and Legacy News Media on Twitter during the German Federal Election

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Key Findings

In this RISJ factsheet we analyse 720,799 news-related tweets from a larger dataset of 4.4 million tweets collected during the 2017 German Federal Election to examine the role of digital-born¹ and legacy news media in online political discussions in Germany.

We find that:

- The main public service media organisations, ARD and ZDF, alongside weekly news publications, especially Die Zeit and Der Spiegel, figured very prominently during the German campaign. All four have wide reach and higher levels of audience engagement than other news providers.
- Coinciding with increased popular support for far-right parties in Germany, some news outlets with a clear national-conservative political position, including several digital-born brands and one newspaper, played an important role on Twitter. Notably, they generated much more engagement than their posting activity and generally limited audience reach would suggest.
- Despite the surprising prominence of otherwise small right-wing media on Twitter, overall, news related discussions were dominated by established brands. Legacy media generated four times as much activity and engagement as digital-born news media during the elections: 80.6% of news content on Twitter regarding the election was related to or posted by a legacy media outlet, compared with 19.4% of news content that originated with or included explicit reference to digital-born outlets. This is comparable to what we found during the French Presidential Election (see Majó-Vázquez, Zhao, & Nielsen, 2017)
- The brands that received the most engagement on Twitter include both (a) some legacy news media with wide audience reach, strong brand awareness, considerable editorial resources, and high levels of activity on Twitter and (b) a number of much smaller digital-born outlets with much more limited audience reach, brand awareness, editorial resources, and lower levels of activity, who nonetheless were among the most frequently mentioned media at specific points during the campaign.
- In contrast, regional newspapers, which are a very important part of the German media environment, were rarely prominent in Twitter discussions during the election. Only one regional newspaper, the Berlin-based Der Tagesspiegel, figures among the most active media outlets. Overall, audiences did not engage very much with content from regional and local brands on Twitter (measured by the number of retweets (RT) or mentions received).
- Two weeklies, Die Zeit and Der Spiegel, played a key role in political discussions on Twitter during the campaign. Their content received some of the highest levels of RTs and drew more attention than that of many other news media with similar posting activity.
- Posting activity is largely correlated with audience attention, and the majority of news media outlets that generated more news content on Twitter captured more audience engagement. Yet, some particularly active legacy media did not see proportional levels of attention in return.

¹ Note that in this study we classify as legacy media those outlets that preceded the advent of the web and as digital-born media those outlets that do not have an offline edition.

- In line with survey data suggesting Twitter is less widely used in Germany, both in general and for news specifically, than in many other markets, we found much less activity around the Federal Election than around the French Presidential Election.

Our findings suggest that legacy news media – especially the main public service media organisations and the most important weeklies – figured very prominently in political discussions on Twitter, but also that a number of new digital-born brands, including several aligned with national-conservative political positions saw far wider engagement on social media than their size would suggest. In contrast, many established media, especially regional and local newspapers, saw little engagement on Twitter.

General Overview

The 2017 Federal Election offers a unique opportunity to investigate how legacy news media and digital-born outlets compete in Germany for audience attention and engagement on social media. The purpose of this RISJ factsheet is to present an overview of 1) the allocation of news audience attention on Twitter during the Federal Election and 2) the potential influence of digital-born and legacy media on this platform of news distribution. The factsheet builds on our previous study of the French Presidential Elections and offers another opportunity to study the role of Twitter in one of the most important countries in Europe, with a media and political system that is different from the English-language markets most frequently analysed.

The German context is characterized by a combination of high levels of internet use but relatively limited reliance on online news and social media compared to many other high-income democracies (Newman, Fletcher, Kalogeropoulos, Levy, & Nielsen, 2017). Television is still the most widely used source of news, and while print readership is declining, it is still higher than in many other Western European countries. In this context, some have invested aggressively in digital but many legacy news organisations have adopted a “wait and see” approach (Cornia, Sehl, & Nielsen, 2016). In parallel, several domestic and international digital-born brands have been launched in Germany but overall, the country has not seen the kind of growth in digital-born media that some other European markets have (Bruno & Nielsen, 2012; Nicholls, Shabbir, & Nielsen, 2016).

Despite this, digital media and especially social media are becoming a more and more important part of news distribution in Germany. The number of Germans who say they get news from social media has increased from 18% in 2013 to 29% in 2017 (Newman et al 2017). Twitter specifically is used by 11% of German Internet users, and 4% say they use it for news. As the audience for traditional offline media continues to age and erode, and digital media become more important, especially among

younger people, German news media are increasingly investing in digital and social media (Cornia, Sehl, & Nielsen, 2017; Sehl, Cornia, & Nielsen, 2017).

Twitter is still only used by a small minority as a source of news, but it is specifically important for German news media because activist groups, political parties (especially at the extremes of the political spectrum), and various elites and opinion leaders alike use the platform. All of these actors know that political discussions on social platforms can impact beyond the platforms’ boundaries. In part this is because those who use Twitter for news, while few in Germany, are generally younger and more politically interested and highly educated than the population at large. Previous research has already shown the political conversations on Twitter can set the news agenda and drive political participation (Ceron, Curini, & Iacus, 2016; Jungherr, 2016; Vaccari et al., 2015). We therefore want to analyse political discussion on Twitter during the German Federal Election and specifically focus on the role of legacy and digital-born news media organisations.

Data Collection

Our dataset contains 720,799 news-related tweets in German from a larger dataset of 4.4 million tweets collected between 21 August and 25 September 2017. We gathered all tweets sent by a pre-selected set of 160 German media (see the complete list in Table A1 in the Appendix) based on their audience reach as measured by ComScore. To minimise the risk of excluding important sites not captured by the overall sampling, we verified the final list with a group of five German journalists and researchers (see the Acknowledgements). As a result of this process, several news media, mainly regional outlets, were strategically added to the original selection despite not having been initially selected based on their audience reach alone.

We collected all tweets that explicitly included the name or username of our list of news media. Moreover, tweets where media names were mentioned in URLs embedded in text were also gathered. To avoid missing data from relevant election conversations, we also fetched news-related tweets from other users by identifying relevant hashtags and keywords in the German Twitter domain (see Figure 4). To this end, we tracked trending conversations twice per day – and more frequently during unforeseen events and the polling day – and included the most important hashtags around those discussions in our Twitter content crawler.

The final sample includes 267,240 original tweets and 453,559 RTs. We refer readers to Figure 4 and our previous factsheet on the [French Presidential Elections](#) (Majó-Vázquez, Zhao, & Nielsen, 2017) for a more detailed discussion of the data collection strategy and its limitations and a description of the filtering process.

News Content Activity

We tracked the Twitter activity of 160 German news media and 187 individual user accounts. We classify the outlets into seven different categories. The most important breakdown, in terms of the number of outlets, includes: regional news media (n=94); broadcasters including both commercial and public service media (n=20); digital-born outlets, which includes a mix of pure players, blogs, and aggregators (n=19); national (or “überregional”) newspapers, which also includes business and weekly news providers (n=16); news magazines (n=6); and radio stations (n=4). There is also one news agency in our list (Deutsche Presse-Agentur).

- The overall flow of news content on Twitter is overwhelmingly dominated by legacy media. They generated four times as much activity and engagement as digital-born news media during the elections: 80.6% of news content on Twitter regarding the election was related or posted by a legacy media outlet, compared with 19.4% of news content that originated with or included explicit reference to digital-born outlets.
- There are two main spikes in the line representing overall Twitter activity around news during the election. The highest jump in the overall number of tweets is the election day. On 24 September, more than 115,000 news-related tweets were posted in the German Twittersphere;

Figure 1. Volume of tweets over time by legacy media and digital-born outlets

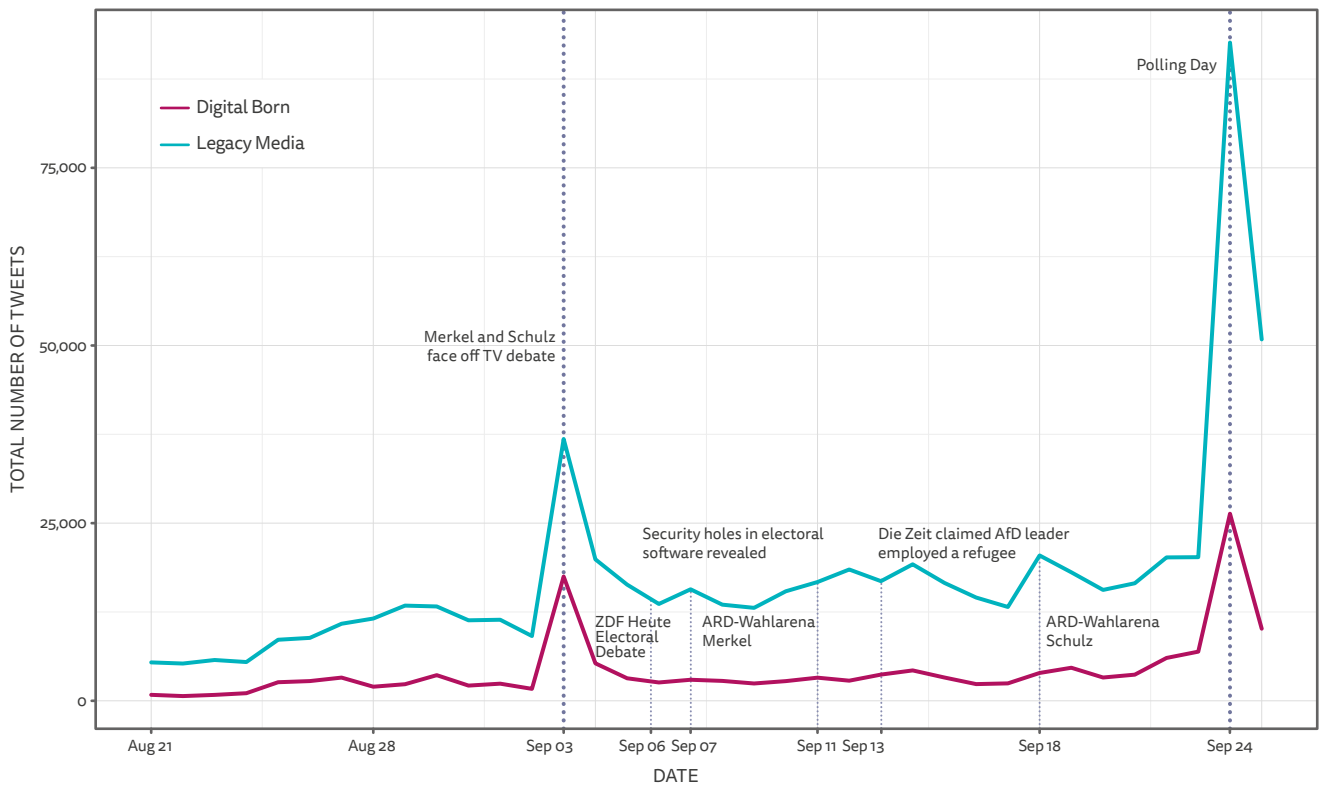


Figure 1 shows the total volume of tweets about the German election by legacy and digital-born media across the political campaign and up to 24 hours after the polling day. The most important events are identified to provide context to the evolution of news-related tweets.

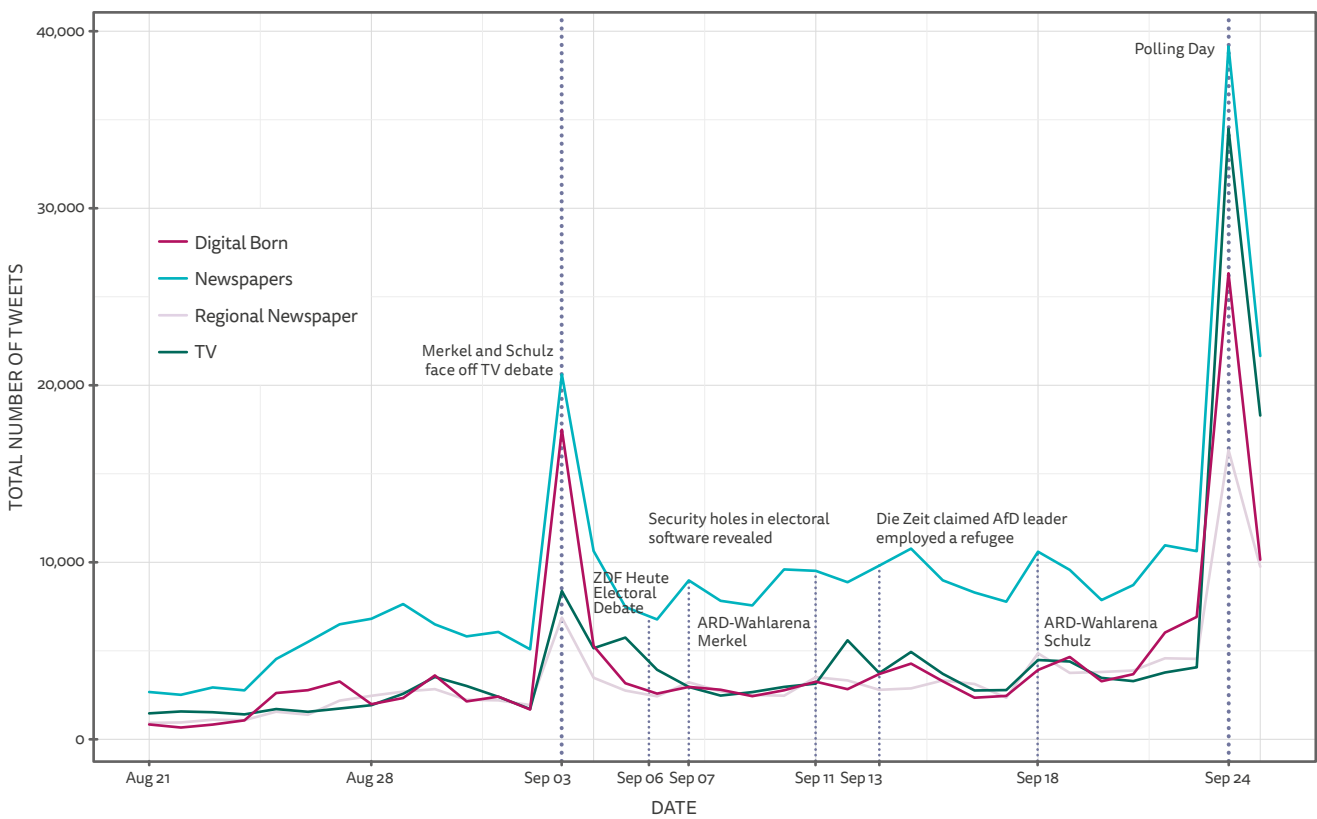
Additionally, Figure 2 provides a close-up analysis of the flow of news content by the seven² different types of news media mentioned above. The main findings of the two longitudinal analyses plotted in Figures 1 and 2 are as follows.

the second-highest jump, although representing a much lower number of tweets, coincides with the debate that featured the CDU and SPD candidates for chancellor, Angela Merkel and Martin Schulz, respectively. That event sparked a moderate rise in the number of news-related tweets, equivalent to around 35,000 messages. Apart from these two moments, the amount of activity remains surprisingly stable, far more so than what we observed during the French Presidential Elections (Majó-Vázquez et al., 2017).

² Only the top four most important categories in terms of volume of activity are shown.

- Tweets that include explicit reference to or originate with national newspapers account for half of the volume (51.6%) of legacy media content in Twitter. The content related or posted by broadcasters and public media organisations stands in second position (25.5%), and regional newspapers make up almost 20% of legacy media news content in Twitter. Those news-related tweets that either originated from or include explicit reference to radio stations, magazines, or the news agency included in the sample only account for 3.2% of the total volume of legacy media Twitter content. Most notably, tweets related to the news agency, Deutsche Presse-Agentur, account for one third of this activity. Consequently, as shown below (see Figure 3), it was one of the top 20 most influential German news outlets during the elections due to the amount of conversation it generated relative to its posting activity (more on this below).
- Despite the overall dominance of newspapers, content that originated from or includes explicit reference to digital-born outlets featured very prominent at three points during the electoral campaign: the already mentioned debate including the two main political candidates and simultaneously broadcast on four channels on 3 September; during and after the Die Zeit’s piece on the AfD leader, who allegedly employed a refugee as a house cleaner, published on 13 September; and after the ARD Walharena TV debate on 18 September, when the SPD leader was also questioned by the public. On all of those occasions, digital-born media generated the same or more activity as broadcasters. Yet, they never surpassed the level of activity of newspapers, although they closely followed them in the electoral debate between the two main candidates.

Figure 2. Volume of tweets over time by media type



Most Active Media

Table 1 shows an individual analysis of German media activity on Twitter during the elections. At this level we find that:

- Posting original news content is highly monopolised by legacy media organisations and correlated with online audience reach. That is, news media with higher audience reach published a higher number of tweets during the election. This suggests both their larger resources to carry out this posting activity and the interest of legacy organisations in featuring more prominently than digital-born outlets.
- National newspapers and weekly news publications are at the top of the most active news media during the German election, with Die Welt as the most active (2,062 election messages), followed by Der Spiegel (1,243 tweets) and Focus (1,188 tweets).
- With the exception of BuzzFeed (556 election messages posted), no digital-born outlets feature at the top of the ranking of Twitter posting activity during the German election.
- Regional media, with the exception of Der Tagesspiegel (917 tweets posted) and several digital-born outlets, were among the least active media outlets on Twitter during this political event.

Table 1. Ranking of the 20 most active news media outlets on Twitter

Type	Brand	Twitter usernames	Tweets
Up-market newspaper	Welt	Welt, Welt_Politik	2,062
Weekly Newspapers / News Magazine	Spiegel	Spiegelonline, Spiegel_Politik	1,243
Weekly Newspapers / News Magazine	Focus, Focus-Online	focusonline, focuspolitik	1,188
Business Newspaper	Handelsblatt Global	handelsblatt, hb_politik, HandelsblattGE	994
Weekly Newspapers / News Magazine	Die Zeit	zeitonline_pol, zeitonline	971
Regional Newspaper	Der Tagesspiegel	tagesspiegel	917
Up-market newspaper	FAZ	FAZ_Politik, faznet	821
Public service media organisation	ZDF	ZDFheute, heuteplus, heutejournal	791
Public service media organisation	BR	BR24, bayern1	758
TV	N-TV	ntvde, ntvde_Politik	700
Up-market newspaper	Süddeutsche Zeitung	SZ, SZ_Politik	562
Digital-Born International	BuzzFeed	BuzzFeedNewsDE, BuzzFeedGermany	556
Public service media organisation	Deutsche Welle	DeutscheWelle, dw_deutsch	551
Public service media organisation	MDR	mdrde, MDRAktuell	544
Public Radio	Deutschlandradio deutschlandfunk	DLF, DLFNachrichten	534
Public service media organisation	RBB	rbbinforadio, rbb24	521
Public service media organisation	Die Tagesschau / ARD	tagesschau, tagesschau_eil, tagesschau24	520
Up-market newspaper	Die Tageszeitung	tazgezwoitscher, taz_news	507
Mid-Market/Tabloid Newspaper	Bild, BILD-am-SONNTAG	bild, bild_News, BildamSonntag	462
Up-market newspaper	Neues Deutschland	ndaktuell	443

Media Influence

After examining the raw news activity on Twitter, a pertinent question is whether the efforts invested in being prominent in terms of messages sent is equivalent to commanding high audience attention. The basic proxy to measure audience attention or influence on Twitter is the number of RTs that news content receives. Table 2 shows the ranking of the ten most retweeted tweets.

The list shows that the most retweeted election-related news content does not come from the most active news media identified in the previous section. Frequent tweeting does not directly translate into audience attention. This is consistent with our previous research (Majó-Vázquez, Zhao, & Nielsen, 2017). We also find that:

Table 2. Most retweeted tweets³

Type	Brand	Username	Text	RT count	Time	Type of Content
Weekly Newspapers / News Magazine	Die Zeit	zeitonline	Aus aktuellem Anlass: Gestatten Sie uns noch einmal einen freundlichen Hinweis zur #btw17. https://t.co/Ts9Uilo887	3,045	24/09/2017 10.36 pm	Image
Weekly Newspapers / News Magazine	Die Zeit	zeitonline	Gestatten Sie uns einen freundlichen Hinweis zur Bundestagswahl. #btw17 https://t.co/8shHEeiFZw	1,888	24/09/2017 2.28 am	Image
Public service media organisation	ZDF Heute journal	heutejournal	"Das Land, Herr Gauland, gehört weder Ihnen noch der AfD. Und das Volk erst recht nicht", kommentiert der stellv. @ZDF- Chefredakteur https://t.co/Y3rZ7QYZK3	1,881	24/09/2017 12.18 pm	Image
Public service media organisation	Die Tagesschau / ARD	tagesschau	Bringen Sie Ihre Teilnahme an der #BTW17 zum Ausdruck. #fürMehrWahlbeteiligung https://t.co/lcFw8HNw82	1,808	24/09/2017 4.01 am	Animated Image
Public service media organisation	ZDF Heute	ZDFheute	"Das Land, Herr Gauland, gehört weder Ihnen noch der AfD. Und das Volk erst recht nicht." Kommentar des stv. @ZDF-Chefredakteur https://t.co/1ZvLZRP1rP	1,650	24/09/2017 2.17 pm	Video
Public service media organisation	ZDF Heute	ZDFheute	Ströbele empfiehlt, nicht jeden "Furz der AfD" wochenlang zu kommentieren #btw17 https://t.co/6ul8l9MQZO	1,164	24/09/2017 1.19 pm	Video
Weekly Newspapers / News Magazine	Der Spiegel Online	SPIEGELONLINE	Angela Merkel antwortet auf die Aussage von AfD-Chef Jörg Meuthen, er sehe auf der Straße kaum noch Deutsche. #BTW17 #BerlinerRunde https://t.co/R87oJOCM64	1,102	24/09/2017 12.20 pm	Image
Public service media organisation	Die Tagesschau / ARD	tagesschau	U.a. diese vier AfD-Mitglieder wurden in den Bundestag gewählt. Sie sind durch rassistische u antisemitische Ansichten aufgefallen #BTW17 https://t.co/9EYG9TIUvQ	1,001	24/09/2017 9.44 pm	Video
Public service media organisation	Die Tagesschau / ARD	tagesschau	Charlotte Knobloch, nennt das starke Abschneiden der AfD bei der Bundestagswahl einen "wahr gewordenen Alptraum" #BTW17 #Wahl17 https://t.co/as6CZntrkF	919	24/09/2017 10.50 am	Image
Public service media organisation	Die Tagesschau / ARD	tagesschau	Starke Verluste für die Union, die SPD weiter schwach, AfD dritte Kraft. #btw17 https://t.co/lkY9GU3U4m	917	24/09/2017 9.00 am	Image and Graphic

³ You can find the translations of the tweeted messages in the Appendix.

- All tweets in the ranking contain either images or videos, which is a clear signal of the pass-along value of multimedia content.
- The three most retweeted tweets are all comments instead of factual information, a finding aligned to research showing that users value news opinion and commentary on social media (Cozma & Chen, 2013; Lasorsa, Lewis, & Holton, 2012; Ruhela, Bagchi, Mahanti, & Seth, 2016).
- The ten most retweeted tweets were posted on the day of the election and the following day. Six of these (numbers 4 and 6 to 9) were all, except one, posted by public service media (PSM). They can be classified as factual news content in the broadest sense. The remaining four (1 to 3 and 5) were authored by the weekly newspaper Die Zeit and the PSM ZDF, and these constitute commentary.
- The fact that the ranking is clearly dominated by these four media reflects broader trends in Germany's media landscape. One unifying factor among Die Zeit, ZDF Heute Journal, ARD-Die Tagesschau, and Der Spiegel is that they are usually considered trustworthy and quality information sources across much of the political spectrum (ARD, 2017; Newman, Fletcher, Kalogeropoulos, Levy, & Nielsen, 2017).
- Seven of the most retweeted tweets are directly or indirectly related to the national-conservative populist party AfD, which speaks for the high level of attention it received during the campaign.

Finally, Figure 3 measures news media influence on Twitter by using a more nuanced measure to understand how well media organisations manage to engage with audiences. We map media influence along two dimensions: 1) the ratio of messages sent to messages received and 2) the ratio of accounts followed to the number of followers each outlet attracted. We draw on previous research on network role identification on Twitter (González-Bailón, Borge-Holthoefer, & Moreno, 2013) to understand the influence of news media on this platform. In short, we assess the overall potential media influence by relating the level of audience engagement, as measured by the number of mentions and replies news organisations receive each time they post a message, to the relationship they establish with their followers. The basic idea is that an organisation is considered more influential if it receives a disproportionate number of replies or mentions relative to its own activity on Twitter and the number of followers it has compared with the number of people it follows back. Media brands are plotted along these two dimensions on Figure 3, which shows the distribution of audience attention by media outlet and its relationship with Twitter publics. We find that:

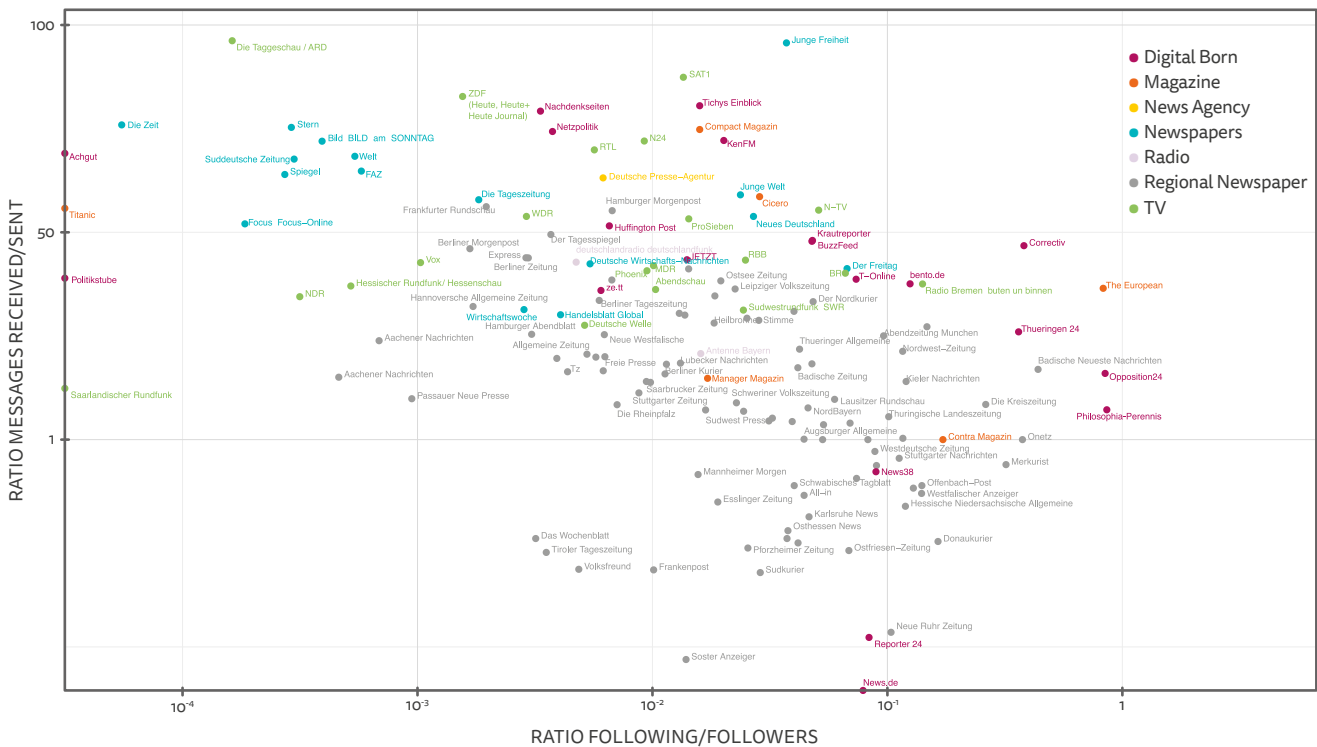
- The main PSM organisations, ARD and ZDF, alongside two weekly news publications and several broadcasters such as SAT1, N24, and RTL, figured very prominently during the German campaign, signalling audience preference for quality journalism and video. The audience more frequently engaged with content from these types of news providers than any other of the remaining categories.
- Media outlets with the highest online audience reach and the highest number of followers on Twitter are not necessarily those that obtained the highest levels of engagement and had more influence.
- Prominent German news media, above all ARD-Die Tagesschau, ZDF, Spiegel, Die Zeit, and the tabloid Bild, had high engagement, as one would expect given their high audience reach across offline and online media, high follower counts, and Twitter activity. Yet, and unexpectedly, they compete with significantly smaller outlets that obtain similar or higher levels of engagement at some point during the campaign.
- Coinciding with the rise of popular support for far-right parties in Germany and the use of bots working in service of this parties (Neudert, Kollanyi, & Howard, 2017), news providers with a clear national-conservative political alignment or that are conspiracy-theory focused played an important role in Twitter political conversations. Most are digital-born but they also include a newspaper. Notably, they received much higher attention than their low posting activity and limited audience reach would suggest. This is the case with Junge Freiheit and Tichys Einblick,⁴ the blog ACHGUT, and the niche site Ken FM.
- The common factor among the smallest outlets with the highest levels of audience engagement is that they are all, except for one Netzpolitik, partisan news media that represent conservative or new right ideological positions.
- At the time that revelations of security holes in the German electoral systems broke during the campaign, Netzpolitik, a niche site on digital rights and culture, saw disproportionately high levels of audience engagement relatively to its tweeting activity. The blog is very active on social platforms and commented frequently on the threat of Russian propaganda during the German election.
- Overall, regional newspapers have higher ratios of following to follower than the most prominent sites in Germany. Only a few other digital-born outlets follow as many accounts relative to their own following. Correctiv, for instance, a non-profit investigative newsroom that present itself as a complement to legacy media (see more on Nicholls, Shabbir, & Nielsen, 2016) follows almost half as many Twitter accounts as follow it.

⁴ It also appears as a monthly magazine that contains a selection of articles from the website and operates under subscription.

- The ratio of following to followers, which speaks for the types of relationships with Twitter publics, tends to be negatively correlated to the level of audience engagement news media drew.
- Just eight out of 20 of the most active news media make it into the ranking of the 20 most influential news media. Among them are the up-market newspapers Süddeutsche Zeitung, FAZ, and Die Welt.

Notably, the Deutsche Presse-Agentur ranks 20th in the most influential German news media, despite not having been included in the ranking of most active media due to its lower level of posting activity. This again suggests that media tweeting activity does not always explain the overall influence of news media outlets as measured by the number of mentions and replies received to content posted and the ratio of accounts followed relative to followers.

Figure 3. Distribution of media outlets by network position and levels of conversation engagement⁵



Summary

This document provides a descriptive analysis of the role of digital-born and legacy media in the flow of news content on Twitter during the 2017 German Federal Election. We have found that German Twitter users engaged with quality journalism from brands that are trusted across much of the political spectrum. The two main public broadcasters, ARD and ZDF, have broad public appeal and continue to be very important sources of political information, including on Twitter.⁶ As do major weeklies like Die Zeit and Spiegel.

Our analyses also show that at the times when the far-right party AfD peaked in the polls ahead of the election day, and eventually made it into the German Bundestag, several digital-born outlets whose editorial line closely supports the new right stances drew high levels of attention on Twitter. Finally, our data suggest that despite their offline reach, considerable editorial resources, and historical importance, regional newspapers generate overall very little engagement on Twitter during the German Federal election.

⁵ Nodes are identified where space permits. We have used a base 10 log scale for the x and y axis.

⁶ Given long-running discussions on what German public service media are and are not allowed to do online this may frustrate some private publishers.

References

- ARD. (2017). Studien zu Medienvertrauen und Glaubwürdigkeit der ARD. Retrieved October 15, 2017, from http://www.ard.de/home/die-ard/fakten/Studien_zu_Medienvertrauen_und_Glaubwuerdigkeit_der_ARD/4113572/index.html
- Bruno, N., & Nielsen, R. K. (2012). *Survival is success: journalistic online start-ups in western Europe*.
- Ceron, A., Curini, L., & Iacus, S. M. (2016). First-and second-level agenda setting in the Twittersphere: An application to the Italian political debate. *Journal of Information Technology & Politics*, 13(2), 159–174.
- Cornia, A., Sehl, A., & Nielsen, R. K. (2016). *Private Sector Media and Digital News*. Oxford, UK.
- Cornia, A., Sehl, A., & Nielsen, R. K. (2017). *Developing Digital News Projects in Private Sector Media*. Oxford, UK. Retrieved from https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2017-09/cornia_et_al%2C_Developing_Digital_News_Projects_in_Private_Sector_Media_FINAL.pdf
- Cozma, R., & Chen, K.-J. (2013). What's in a tweet? Foreign correspondents' use of social media. *Journalism Practice*, 7(1), 33–46.
- DiGrazia, J., McKelvey, K., Bollen, J., & Rojas, F. (2013). More tweets, more votes: Social media as a quantitative indicator of political behavior. *PLoS One*, 8(11), e79449.
- González-Bailón, S., Borge-Holthoefer, J., & Moreno, Y. (2013). Broadcasters and Hidden Influentials in Online Protest Diffusion. *American Behavioral Scientist*, 57(7), 943–965.
- Jungherr, A. (2016). Four functions of digital tools in election campaigns: The German case. *The International Journal of Press/Politics*, 21(3), 358–377.
- Lasorsa, D. L., Lewis, S. C., & Holton, A. E. (2012). Normalizing Twitter: Journalism practice in an emerging communication space. *Journalism Studies*, 13(1), 19–36.
- Majó-Vázquez, S., Zhao, J., & Nielsen, R. K. (2017). *The Digital-Born and Legacy Media News Media on Twitter during the French Presidential Elections*. Oxford, UK.
- Neudert, L.-M., Kollanyi, B., & Howard, P. N. (2017). *Junk News and Bots during the German Parliamentary Election: What are German Voters Sharing over Twitter?* Oxford, UK. Retrieved from comprop.oii.ox.ac.uk
- Newman, N., Fletcher, R., Kalogeropoulos, A., Levy, D. A., & Nielsen, R. K. (2017). *Digital News Report 2017*. Oxford, UK. Retrieved from <http://www.digitalnewsreport.org/>
- Nicholls, T., Shabbir, N., & Nielsen, R. K. (2016). *Digital-Born News Media in Europe*. Oxford, UK.
- Ruhela, A., Bagchi, A., Mahanti, A., & Seth, A. (2016). The rich and middle classes on Twitter: Are popular users indeed different from regular users? *Computer Communications*, 73, 219–228.
- Sehl, A., Cornia, A., & Nielsen, R. K. (2017). *Developing Digital News in Public Service*. Oxford, UK.
- Vaccari, C., Valeriani, A., Barberá, P., Bonneau, R., Jost, J. T., Nagler, J., & Tucker, J. A. (2015). Political expression and action on social media: Exploring the relationship between lower-and higher-threshold political activities among twitter users in Italy. *Journal of Computer-Mediated Communication*, 20(2), 221–239.

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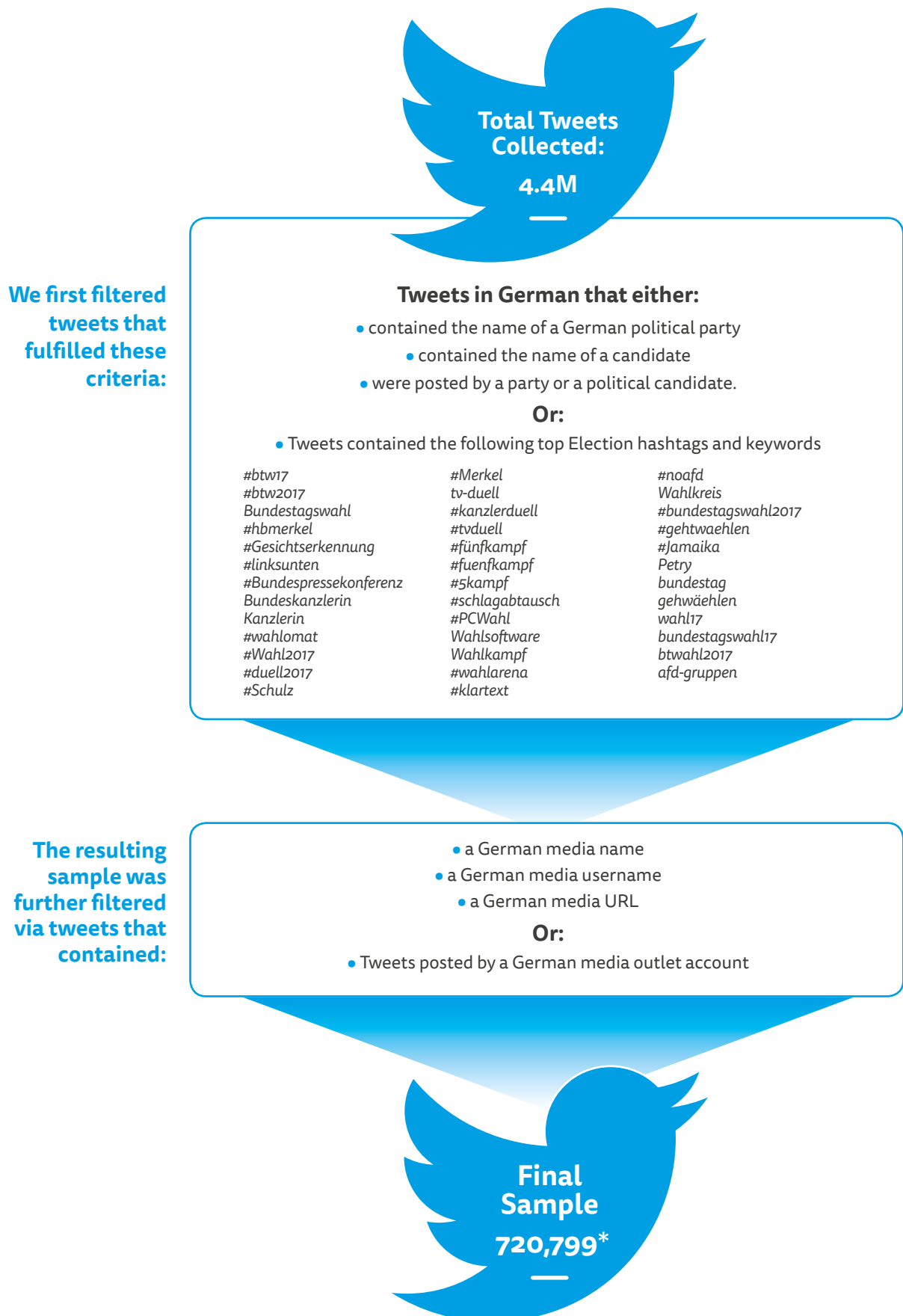
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Figure 4. Sampling and filtering process



* The final sample analyzed includes 267K original tweets and 453K RT