# Revised results.

**3. Key characteristics of supranational Twitter messages**

*3.1. Volume*

We begin our investigation by examining the volume of communication on twitter. Figure 1 shows the average number of tweets per account and day.

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**Figure 1**: Number of tweets per day and account

The left panel initially indicates that supranational actors have markedly increased the number of messages on Twitter. It increased nearly seven folds from roughly one tweet every second day during the early phase of supranational Twitter presence to 3 to 3.5 daily tweets. The major increase in supranational Twitter messaging happened during 2010-2016, a phase of strongly surging public EU politicization amidst the Euro- and Schengen crises. It also coincides with a period in which the European Commission notably reduced its output of traditional press releases (Rauh 2021b), possibly indicating a re-distribution of internal communication resources.

The right panel of Figure 1 highlights that this supranational tweet volume is to a large extent driven by institutional accounts, indicating a centralized and probably professionalized approach to supranational social media presence. Institutional EU accounts post around 3.5 tweets per day, while supranational actors tweeting in personal capacity issue around one fewer daily tweet. Moreover, the right pane indicates that the EU institutional accounts outperform their peers in terms volume while the individual executives are only marginally behind their peers on national level. The volume indicates that the EU supranational actors are equally, if not more, keen on engaging in public communication on Twitter compared to their peers.

There is significant variation within our supranational population. Among the most avid tweeters are the Commission’s Directorate-General for Digital Policies (@DigitalEU) with 13.7 tweets per day and the official account of the whole EU Commission run by the spokespersons service (@EU\_Commission) with 10.4 tweets a day. On the lower end of the distribution, we find the European Court of Justice (@EUCourtPress) with around one tweet every second day and the Euratom Supply Agency (@EuratomA) issuing a message only around every 10th day on average. Yet, this variation in the tweet volume across supranational EU actors (standard deviation: 2.58 daily tweets) is not distinct from our UK sample (2.23 daily tweets) and markedly lower than in our sample of international organization tweets (4 daily tweets).

*3.2. The language of supranational Twitter messages*

In the next step, we zoom in on the communication quality, i.e comprehensibility, of the EU executives. We aimed to isolate the textual content to ensure reliable extraction of the language indicators below. To this end, we removed all non-textual symbols, media, and external links (analysed separately), treated hashtags as individual or multiple words (if camel cased), and ensured proper punctuation. The replication scripts provided full details from each tweet; Table 2 illustrates two random examples from the supranational EU corpus. All benchmark samples were processed similarly.

| **Original tweet** | **Extracted text** |
| --- | --- |
| I fell asleep hoping to wake up from a bad dream.Europe is full of wonders that no one will bring us back. Preserving with #digitization is important for us & for future generations. Close to the Parisians. With #NotreDame we've lost a piece of our history https://t.co/hQRqMGSsq3 https://t.co/CPLs1DqEcl | I fell asleep hoping to wake up from a bad dream. Europe is full of wonders that no one will bring us back. Preserving with digitization is important for us & for future generations. Close to the Parisians. With Notre Dame we've lost a piece of our history. |
| 🤝 Sharing risk. 🌍 Maximising impact.  Today we’ve signed 4 new guarantee agreements under the EU External Investment Plan to create more 💡 opportunities for people in countries near the EU and in Africa.   Read more ➡https://t.co/YY3zPWSti4 📈 #InvestGlobal #EIP https://t.co/HvYWuoVEOC | Sharing risk. Maximising impact. Today we’ve signed 4 new guarantee agreements under the EU External Investment Plan to create more opportunities for people in countries near the EU and in Africa. Read more. Invest Global EIP. |

**Table 2:** Tweet text processing examples

English is clearly the lingua franca of supranational tweets, as detected on sentence level with Google’s Compact Language Detector 2 as implemented in the cld2 R package (Ooms and Sites 2020). In total, 82% of all supranational tweets were solely written in English while 88.2% contained at least on English sentence. Other languages appeared much less frequently: we detected French in about 4%, Italian and Polish in around 1.5%, as well as Italian, Swedish and German in around 1% of tweets. This seems to suggest that supranational actors do not respect the EU’s linguistic diversity but that should not be overstated. Virtually all Twitter end-user applications offer reliable auto-translation at the click of a button.

Here we focus on the English-language content of the tweets and want to learn whether they contribute to making EU politics transparent. In this regard, very different literatures have repeatedly stressed that more political communication does not help if it does not clarify but rather obfuscates political responsibilities (Fairclough 2003; Fowler *et al.* 1979; Orwell 1946). Sending clear and easily understandable messages seems to be a particular challenge for detached, highly specialized institutions that often resort to a rather technocratic discourse (Moretti and Pestre 2015; Rauh 2021b; Thibault 1991).

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**Figure 2**: Language clarity indicators

Figure 2 presents results from comparison of linguistic quality of communication. On average, supranational EU tweets tend to be clearer than those published by international organizations (with the notable exception of clarifying agency through a more verbal style). More importantly, however, supranational communication is clearly and significantly harder to understand for citizens when compared to random messages on the Twitter platform and especially when compared to the tweets of national institutions and executives from the UK. This reaffirms findings of a very technocratic approach to communication by supranational executive actors (Rauh 2021b).

However, notable variation within the supranational population exists. Based on the standardized averages of the three language-clarity indicators, the messages by current Commission President Von der Leyen, Commissioners Timmermans and Vestager, as well as Matthew Baldwin (European Coordinator for Road Safety) are easiest to understand. The least accessible messages - on average - are sent by the European Maritime Safety Agency, by the Commission Director-General for Competition Policy (ironically headed by the clearly communicating Margrethe Vestager), Justice Commissioner Reynders, and the European Defence Agency. Averaged across indicators, the tweets from supranational actors tweeting in personal capacity are easier to understand than tweets from institutional accounts.

While our empirical results are insufficient to draw causal relationships, there are a few contender explanations regarding the difference in clarity of communication between personal and institutional EU Twitter accounts. As previously noted, there has been a growing tendency to presidentialize in the last two EP election cycles. Consequently, the individual authority holders are grasping more of the limelight. As they are more visible, it stands to reason that they aim to have a clearer communication with their audience. Another possible explanation pertains to the von der Leyen commission itself. The current commission sponsors a set of very ambitious political goals such as complete carbon neutrality in the EU. It is beneficial to have the public’s backing as they champion such controversial and ambitious policies. Therefore, individual commissioners may be investing more resources to maintain a clearer communication to achieve their political goals.

*3.1. Media usage*

Beyond text, Twitter offers various multimedia features designed to attract attention and generate engagement with messages. To what extent do supranational actors and institutions use this additional communication potential? Relying on the raw tweet texts as well as on the URL entities object of the Twitter API, we aggregate data on multimedia usage in Figure 3.

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**Figure 3**: Multimedia usage

The top left panel of Figure 3 shows that around 35 to 40% of all supranational tweets embed at least one picture. This clearly exceeds picture usage in the tweets by domestic political actors as well as by institutional accounts of international organizations. Likewise, videos (we consider movie files uploaded directly to Twitter as well as embedded videos from major platforms such as YouTube, Vimeo, TikTok, and Twitch) occur frequently in supranational tweets – at least in relative terms. Institutional accounts of supranational actors feature a video in around 6% of all messages which is only surpassed by the around 8% of Tweets from domestic executive institutions in the UK.

Furthermore, Twitter is notorious for having popularized the use of special characters and especially emoticons in public communication. Including such pictograms into the tweet text(an example in Table 2 above) can encode large amounts of information and attracts visual attention, thus aiding message comprehension (Tang and Hew 2018). The lower left panel of Figure 3 indicates that supranational EU tweeters are indeed champions of using such special symbols in their messages. Additional analyses show that the by far most used symbol is the EU flag, occurring more than 50,000 times and thus in about 5% of all supranational tweets. Flags of different individual countries occur in a combined total of about 7% of tweets. Beyond that, supranational actors like to use various pointing hand and arrow symbols, a pictogram of the globe, as well as various versions of checkmark symbols.

Finally, communicators can enrich their messages by supplying links to external online content. This initially facilitates further information-seeking for message recipients. With regard to this communication feature, tweets from supranational EU actors are on par with or even exceed messages from domestic and international political actors. In about 60 to 80% of all supranational Twitter messages an external online source is referred to. Where these links lead citizens cannot be fully ascertained by automated means as around 41% of them use URL shortening services. Yet, in the remainders we see that supranational actors primarily refer to EU websites within the europa.eu domain (35% of all external URLs), pointing message recipients especially to information from the European Commission’s servers. A sizeable share of around 5% of external links point to other social media platforms, notably Facebook, LinkedIn, and Instagram. Supranational actors also seem to use services that automatically post content across different social media accounts (e.g. the dlvr.it domain accounts for around 3% of all external links).

**4. Publicity of supranational messages**

So to what extent the style and volume of communication translates into publicity for the EU supranational executives? We approximate the publicity of the messages via user engagement with the messages. Our descriptive evidence and elementary inferential analysis (appendix a4) show mixed results. First of all, a necessary condition for engagement is that users see the messages in the first place. Reliable information on this is not easy to obtain, however. The research track API does not include the number of ‘impressions’ per tweet which is also only available for the last 60 days in commercial access options. In addition, the algorithms by which Twitter decides which messages to show to which users with what prominence are not public.

What we do know is that messages are shown in the timelines of users that have subscribed to follow a supranational account. Yet, historical follower count data are also not available through the Twitter APIs – only the numbers for the access day can be retrieved. Thus, we exploit the Internet Archive, a non-profit organisation working for free access to online information. Their archive.org engine crawls the web and takes static, timestamped snapshots of individual sites. We set up automated scripts that extract all available snapshots for each Twitter account in our sample to then scrape the follower counts from the raw html of the snapshots.

One caveat applies: the availability of archive.org snapshots is rather unequally distributed. Within our 115 supranational EU accounts, we can, for example, extract 842 snapshots of the @EU\_Commission profile, 548 for @EUClimateAction, or 380 for @vonderleyen. But there are five accounts with only one snapshot and seven that have never been crawled by archive.org. We linearly interpolate the daily number of followers between each measurement point, taking only the account creation date and the scraping date for accounts without snapshots. This is not very precise but offers a suitable proxy for historical follower counts. Figure 4 estimates how many users followed supranational Twitter profiles over time.

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**Figure 4**: Followers of supranational Twitter accounts

How strongly do these users actually engage with the supranational messages? Clearly, we have no off-platform information on what users do with the information they receive. However, we can observe their direct on-platform engagement. Twitter allows users to like messages, to amplify or contextualise them by retweets or quotes, or to directly publicly reply. We collect the counts of each of these engagements in response to each original, self-authored tweet by supranational actors. Since the number of users that may have seen the tweet in the first place affects the number of possible engagements, we express them as the percentage share of followers at the time each tweet was published. The results for the supranational EU personal accounts are limited to the time period between the day they assumed office and the collection date. For institutional accounts, we reduce our samples to accounts that have at least two archive.org snapshots, considering only tweets at or after the first of those snapshots due to the imprecision in interpolated follower counts noted above, Figure 5 plots these engagement ratios against our equally treated benchmark samples.

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**Figure 5**: User engagement indicators

These data provide three main insights. First, supranational messages receive, overall, as much direct Twitter user engagement as messages from executive actors and institutions at the national and international levels. Supranational messages are, in fact, slightly more frequently liked and retweeted than those from national institutions and actors in the UK. Only UK actors tweeting in personal capacity received a markedly higher share of quotes and replies on their messages. Second, across all samples, Twitter users tend to engage more strongly with personal accounts than with institutional ones. Personalization of political messaging seems to matter on this social medium and for supranational EU actors as well. Third, direct engagement with executive tweets is not particularly high in absolute terms. On average, the number of direct engagements with supranational tweets by either liking, retweeting, quoting, or replying does not exceed a share of 0.14% of the number of users following the respective account.

There are a few notable exceptions to these results, however. For example, for 18 tweets from our supranational sample, the overall number of direct user engagements exceeds 30% of the follower counts at the time of the message. Table 3 provides six illustrative examples for extremely ‘engaging’ supranational tweets in our sample.

Caution is warranted when generalising from such few and outlying examples, but we note that the most engaging tweets in our sample also seem to invoke highly politicized EU policy issues. Examples are Commissioner Dalli’s stance on LGBTI rights in Poland, the Frontex tweet embedding surveillance footage from the Mediterranean Sea (leading to a heated Twitter debate about whether priority should be given to sea rescue or the fight against human trafficking), the European Court of Justice’s announcement that the UK may unilaterally revoke its withdrawal request, and the farewell note from the European Medicines Agency when finally leaving London due to Brexit.

| **Tweet** | **Account** | **Date** | **Followers** | **All direct engagements** |
| --- | --- | --- | --- | --- |
| Meet Mismo 🐶, a customs sniffer dog, who will tell you all about his job. #50CU #DogsWithJobs More info about the 50th anniversary of the EU #CustomsUnion: https://t.co/tD9clkog5q https://t.co/5MXpNH3Fqy | *EU\_Taxud* | 2018-06-15 | 11,197 | 9,916 |
| EU values and fundamental rights must be respected by Member States and state authorities. This is why 6 town twinning applications invilving Polish authorities that adopted 'LGBTI free zones' or 'family rights' resolutions were rejected. #LGBTI #UnionOfEquality | *helenadalli* | 2020-07-28 | 9,756 | 8,036 |
| look at THIS !! The WHOLE core centre of brussels to go to 20kph for the summer from 1 May with priority to giving space to🚶‍♀️🚲 to exercise. Using the challenges of #CoronaVirus to rethink and transform mobility ... right here in Brussels... 👍👏🙏 https://t.co/RgmJNBgx89 | *Baldwin Matthew\_* | 2020-04-20 | 6,102 | 4,314 |
| Wait, wait. Why is that fishing trawler towing an empty wooden boat at high seas??? https://t.co/psy2z6z9Wp | *Frontex* | 2019-06-22 | 23,214 | 11,861 |
| Today, EMA staff lowered the 28 EU flags and symbolically said goodbye to their London offices. Guido Rasi expressed his thanks to the UK for its contribution to the work of the Agency and for having been a gracious host of EMA since 1995. https://t.co/KpsBvaXt42 | *EMA\_News* | 2019-01-25 | 39,251 | 18,853 |
| #ECJ: UK is free to unilaterally revoke the notification of its intention to withdraw from the EU – Case C-621/18 Wightman #Brexit https://t.co/KUOI2eQ48C | *EUCourtPress* | 2018-12-10 | 45,522 | 18,736 |

**Table 3:** Supranational tweet examples with extraordinary engagement rates

These examples of highly engaging outliers also showcase the message characteristics that we have discussed thus far. We see, for example, clear and concise language, numerous hashtags and emojis, as well as embedded media and external links. How much these characteristics affect user engagement is hard to model exactly, as the proceedings of the Twitter algorithms are not known and tweet virality seems to follow partially endogenous dynamics and punctuated patterns. However, a basic multivariate perspective in figure 6 provides some valuable initial hints. Higher readability and more verbal style of a tweet is associated with modestly higher user engagement ratios. The inclusion of hashtags comes with slightly higher engagement rates as well. The most important factor in our initial model is visual information, however: embedded pictures as well as emojis are most strongly associated with user engagement in the samples of UK, IO, and EU tweets. It must be noted, in addition, that even when controlling for such message characteristics, user engagement is markedly higher for personal accounts. Individual communication triggers more engagement with supranational messages than messages from institutional accounts.

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Figure 6: Results from OLS regression