

# Measuring the influence of German Members of Parliament on Twitter: The Vanellus-Twitter-Index VaTI.

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## Abstract:

Vanellus (the peewit) is a twitter-bot developed by Christian “Chrilly” Donninger. The bot downloads in real-time all German tweets and stores them in a special-purpose and efficient database. The database can be searched and analyzed according a host of criterion. This article describes the Vanellus-Twitter-Index VaTI for the German MdBs (Mitglieder des Bundestages/Members of Parliament) and for the leaders of the Austrian parties. The VaTI measures the real Twitter-footprint of users. It is much more informative than usual the measure “number of followers”.

## The Data:

The Vanellus-bot downloads since April 27, 2018 in real-time all German tweets with the search term “lang:de” from the Twitter server and stores the data in a custom and very efficient database. The number of tweets is around 1 million/day. The recording is not perfect. The (German) Twitter Server does not react to request between 0:00 and 2:00 local time (CET). Besides this my office is located at one of the most remote places in Austria. The internet-infrastructure has potential for improvement. Blackouts of a few minutes are relatively common. Twitter does not guarantee the complete availability of tweets. A tweet is no bank-transaction. The Vanellus data-collection is nevertheless one of the most extensive and most complete for German tweets. The effect of a few missing tweets is certainly of no significance for the VaTI ranking.

There is a [Wikipedia entry](#) for the 709 MdBs of the current 19<sup>th</sup> legislative period, but I have not found a corresponding official list for Twitter accounts. As a starting point I used a list by [Christoph Zeuch](#). This list is unfortunately not up-to-date and contains also users which were never MdBs. I created my own list from the Wikipedia-entries and Google search e.g. “Jens Lehmann twitter”. Jens Lehmann is a relative common German name and there were hence several accounts with this name. I could not identify the MdB Jens Lehmann. Such accounts were ignored. The final list contains 511 (out of 709 MdBs) entries. This list can be downloaded (see Appendix A). There is a clear relation between Twitter-usage and the political affiliation and to a lesser degree also to the age of the MdB. A relative large fraction of the MdBs of the ruling CDU/CSU of Angela Merkel ignore Twitter. They have a strong foothold in traditional regional media and consider the new forms of communication less important. Sometimes the accounts of the party-machinery send tweets on behalf of these members by mentioning the name of the MdB in a hashtag. Although these tweets are stored in the Vanellus database I ignored them for the investigation. Only the tweets from personal accounts are counted. There are several “zombie-accounts” of CDU/CSU MdBs. They were obviously once arranged by the party-machinery (including a batch of followers) but were never used by the MdB. These zombie-accounts are a part of the 511 entries.

The complete list of followers of these 511 accounts were downloaded next. This step is straightforward, but it takes some time. Vanellus uses the free Twitter data-access. The rate of download is limited to 1 download/minute with a maximum of 5.000 followers per download. If a user has more followers, one has to split up the operation. The MdB Martin Schulz (SPD) has 703.227 followers. It takes more than 2 hours to retrieve his followers. The download was done at the 11. and 12. July 2018 and repeated at 31. July 2018 for calculating the July 2018 index.

## The Measurement of Influence [1]:

**Follower:** The usual measure of influence is the number of followers. It is easy to retrieve this number, but it has very limited significance. One example is [Philipp Amthor CDU](#). His 1422 followers are still waiting for his first tweet. Obviously the party-machinery once arranged the account and the followers (see [2]), but Philipp Amthor does not use the medium and has hence no direct influence on Twitter. The VaTI considers the number of followers, but it is only one factor with limited weight.

**Active Followers:** Twitter is a rather liquid medium. People use the medium for some time but the interest fades easily away. The accounts are for free, so there is no incentive to close it. The account and hence also the membership in a follower list continues, although the user has lost his interest in spending/wasting time for Twitter. To account for this effect the VaTI calculates also the number of active followers. A follower is active, if he has tweeted at least once within the observation period (e.g. May 2018). The content of the tweet does not matter. A remark about a soccer-match is as good as a political statement. By posting a tweet the user documents that he is still interested in the medium. It is of course possible that a user follows passively what's going on. He reads tweets but has no intention to write one. For this reason it is not advisable to ignore the number of followers at all. I know of no way how to differentiate between passive users which still read tweets and users which have stopped to use Twitter at all.

**Retweets:** A retweet is a tweet which starts with „RT @username“. A retweets expresses in almost all cases a strong approval of the original tweet. Only in rare cases are explicit opponents of a politician retweeting his tweets. This happens, if they think the tweet condemns itself. The VaTI differentiates between the number of retweets and the number of users which retweet at least one tweet of a MdB. This differentiation reflects the fact that there are bots and “power-users” which retweet sometimes thousands of tweets per period (a month). E.g. the user @mrstone0856 posts 10.000 tweets/month. Most of them are retweets from the right-wing-populist party AfD. If one only counts the number of retweets @mrstone0856 would get an inappropriate high weight and would inflate the influence of AfD MdBs. According to a second measure – number of users - @mrstone0856 has no more importance than a casual user which retweets just once a given MdB. The majority of users retweet in total only 1-2 tweets per month. The number of tweets is generally highly inflated by bots and these power-users (@mrstone0856 could be a bot. But according to the temporal pattern of his activities he seems to be a human with a lot of spare time).

**Replies:** A reply is a tweet starting with „@username“. A reply does not always express an approval of the tweet. It can also be a riposte. But a tweet which provokes ripostes has also some influence. Like for retweets the VaTI differentiates between the number of replies and the number of users which send at least one reply. The antipode to @mrstone0856 is the user @ContraAfD1. He sends a host of ripostes to tweets of the leading AfD politicians like @Alice\_Weidel or @Beatrix\_vStorch. The differentiation has the same – desirable – effect than for retweets.

**Mentions:** A mention is a tweet which contains at any position – besides the first one – „@username“ or „#username“. A tweet can contain several mentions. Like above there are two different measures. The number of mentions and the number of users sending a mention. The substring „#username“ is exactly speaking a hashtag. It is only counted if it matches exactly the username. It happens frequently that hashtags contain only part of the name. E.g. #Weidel instead of the exact username #Alice\_Weidel. The hashtag #Weidel is not counted because it is frequently not possible to make an assignment. E.g. the hashtag #Storch could mean the politician Beatrix von Storch but it is in German also the name for

the bird stork. There are some tweets which use this double meaning for ironic comments. E.g. “Niemand möchte ein Baby von #Storch” (Nobody wants a baby from #stork). There are 14 “Müller” (miller) in the Bundestag. Each party has at least one. There is no way to assign such a hashtag to one of them. Actually the hashtag #Müller refers most of the time to the soccer-players Thomas or Gerd Müller. Besides this hashtags are often written with different spelling. E.g. #müller or #mueller, #Weidl or #Waidel instead of #Weidel (the German pronunciation is almost the same). For these reasons only the exact username is counted.

**Tweets:** The VaTI considers additionally for each MdB the number of tweets. This number is multiplied with the number of active users.

The VaTI is calculated from these indicators according to the following formula:

$$\text{VaTI} = 0.0005 * \text{Tweets} * \text{Active-Followers} + 0.005 * \text{Followers} + 0.05 * \text{Active-Followers} + 0.02 * \text{Retweets} + 0.20 * \text{Retweets-Users} + 0.01 * \text{Replies} + 0.10 * \text{Replies-Users} + 0.01 * \text{Mentions} + 0.10 * \text{Mentions-Users};$$

This value is rounded to the next integer number. An active follower has 10-times the weight of an inactive. A retweet is worth 4 followers, a retweeting user 40 followers ... These values were chosen to get a balanced relation between the sheer number of followers and the actually measured activity in the observation period. These weights are not cast in stone. But the author has done several other studies and has developed an intuitive feeling for the internal logic of Twitter. The weights are hence also not completely arbitrary. It is easily possible to generate a differently weighted index from the available raw-data. If this alternative index is published it is a matter of etiquette to mention the Vanellus project as the source.

Rank	User	Description	Tweets	Followers	Active-Followers	Retweets	Retweets-User	Replies	Replies-User	Mentions	Mentions-User	VaTI-Index
1	c_lindner	Christian Lindner FDP	197	299006	10639	2583	1546	3409	2311	26292	11257	5090
2	MartinSchulz	Martin Schulz SPD	3	703227	12930	814	774	383	325	2315	1671	4580
3	Alice_Weidel	Alice Weidel AfD	70	51708	2150	20430	4190	8097	4376	64627	13864	4239
4	peteralmaier	Peter Altmaier CDU	34	235072	30441	428	372	789	635	3990	2301	3639
5	SWagenknecht	Sahra Wagenknecht LINKE	19	383692	5228	3054	1748	1472	992	8169	3448	3181
6	Beatrix_vStorch	Beatrix von Storch AfD	166	37446	1423	21348	3753	7284	3440	41794	7903	3179
7	GregorGysi	Gregor Gysi LINKE	12	316038	18028	1664	1314	505	393	2974	1914	3151
8	HeikoMaas	Heiko Maas SPD	40	283674	4026	1611	1212	1619	1077	11536	5597	2774
9	cem_ozdemir	Cem Ozdemir GRÜNE	94	113084	4419	3334	2496	1580	1112	9150	4636	2242
10	GoeringEckardt	Katrin Göring-Eckardt GRÜNE	234	130322	4287	1221	806	1262	915	6983	3456	2073
11	PetrBystronAfD	Petr Bystron AfD	189	9267	1912	7991	2381	2214	1340	12876	3511	1595
12	Frank_Pasemann	Frank Pasemann AfD	330	7170	213	8563	2586	2695	1583	14250	4405	1538
13	DoroBaer	Dorothee Bär CSU	114	79479	8038	135	111	593	465	2262	1471	1505
14	anked	Anke Domscheit-Berg LINKE	295	27411	4248	1850	1228	470	351	2598	1649	1489
15	Karl_Lauterbach	Karl Lauterbach SPD	83	67396	1014	1918	1310	3781	2238	7806	3785	1448
16	katjakipping	Katja Kipping LINKE	111	82121	1608	1911	1250	1283	864	5814	2973	1323
17	DietmarBartsch	Dietmar Bartsch LINKE	95	42754	3703	1438	866	1395	951	6358	2771	1227
18	nicolabeerfdp	Nicola Beer	425	7985	1365	1946	1109	1108	729	8258	3051	1131
19	jensspahn	Jens Spahn CDU	78	75739	1020	368	335	509	414	11154	4255	1127
20	petertauber	Peter Tauber CDU	42	193463	720	136	100	194	153	963	508	1119

The table shows the top-20 MdBs for May-2018.

The results are based on slightly more than 29 million tweets which have been recorded in May 2018. Martin Schulz SPD has by far the most followers, but there is little actual activity on his account. Out of the 703,227 followers only 12,930 were active. The most active followers has Peter Altmaier CDU with 30,441 out of 235,072. Alice Weidel AfD got with her controversial tweets the highest attention. Christian Lindner FDP achieved the VaTI gold medal. He was the most balanced competitor.

The table below shows the results for June 2018. There are 29.3 million tweets. Martin Schulz SPD and his followers were somewhat more active and his high follower-base placed him in June before Christian Lindner FDP. But over all the picture is rather similar to the previous month.

Rank	User	Description	Tweets	Followers	Active-Followers	Retweets	Retweets-User	Replies	Replies-User	Mentions	Mentions-User	VaTI-Index
1	MartinSchulz	Martin Schulz SPD	8	703227	13317	2050	1676	1767	1313	6727	3918	5219
2	c_lindner	Christian Lindner FDP	207	299006	11047	3676	1924	3332	2058	18613	7362	4811
3	peteraltmaier	Peter Altmaier CDU	41	235072	31335	379	333	907	695	6727	3786	3983
4	GregorGysi	Gregor Gysi LINKE	18	316038	17945	3527	2776	884	683	6409	4004	3806
5	SWagenknecht	Sahra Wagenknecht LINKE	22	383692	5211	3360	1757	1895	1244	10865	4271	3334
6	Alice_Weidel	Alice Weidel AfD	56	51708	2353	18057	4334	5190	2891	37242	7933	3177
7	Beatrix_vStorch	Beatrix von Storch AfD	174	37446	1484	21079	3951	5172	2762	36206	8346	3127
8	cem_oezdemir	Cem Özdemir GRÜNE	74	113084	4735	5221	3732	2726	1908	12916	6615	2837
9	GoeringEckardt	Katrin Göring-Eckardt GRÜNE	255	130322	4402	3254	2048	2456	1522	10819	4993	2692
10	HeikoMaas	Heiko Maas SPD	63	283674	4122	1406	926	1613	994	8668	4126	2582
11	anked	Anke Domscheit-Berg LINKE	550	27411	4283	2324	1504	821	478	3280	1910	2156
12	KonstantinNotz	Konstantin v. Notz GRÜNE	194	50161	1143	6393	3748	1470	994	9408	4784	1983
13	PetrBystronAfD	Petr Bystron AfD	221	9267	1902	10974	2626	2039	1153	14387	3362	1712
14	DoroBaer	Dorothee Bär CSU	114	79479	8221	197	163	546	432	3109	1922	1586
15	petertauber	Peter Tauber CDU	62	193463	762	835	763	1090	883	2801	1577	1483
16	katjakipping	Katja Kipping LINKE	146	82121	1616	1944	1072	1698	1080	9032	3700	1448
17	JoanaCotar	Joana Cotar AfD	120	7572	671	9110	2489	1498	975	10665	2806	1291
18	Karl_Lauterbach	Karl Lauterbach SPD	68	67396	1043	1789	1124	3645	1925	5816	2734	1246
19	JTrittin	Jürgen Trittin GRÜNE	70	98225	588	1688	1498	842	676	3395	2215	1206
20	nicolabeerfdp	Nicola Beer	426	7985	1358	2921	1780	1202	771	5104	2532	1205

The table below shows the result for July 2018. One notices a summer break effect. The values are generally lower than before. Martin Schulz SPD is in July clearly ahead. He has by far the most followers. As there is generally less activity the followers have a stronger influence on the ranking than in the months before.

Rank	User	Description	Tweets	Followers	Active-Followers	Retweets	Retweets-User	Replies	Replies-User	Mentions	Mentions-User	VaTI-Index
1	MartinSchulz	Martin Schulz SPD	9	703227	12510	981	787	1149	862	3402	2217	4728
2	HeikoMaas	Heiko Maas SPD	68	283674	4284	4711	2988	4434	2450	22390	10127	3996
3	Alice_Weidel	Alice Weidel AfD	59	52975	2350	22733	4782	7906	3854	46591	9125	3706
4	c_lindner	Christian Lindner FDP	106	299006	10482	1772	1149	2503	1470	11596	5424	3670
5	peteraltmaier	Peter Altmaier CDU	25	235072	30985	134	121	367	290	2993	1677	3369
6	SWagenknecht	Sahra Wagenknecht LINKE	19	383692	4995	4425	2303	1895	1236	8260	3453	3335
7	Beatrix_vStorch	Beatrix von Storch AfD	173	37565	1524	22106	4024	7803	3970	40468	7511	3274
8	cem_oezdemir	Cem Özdemir GRÜNE	81	114618	4790	6049	3773	3694	2357	13714	6576	2950
9	GregorGysi	Gregor Gysi LINKE	2	316038	17544	133	109	37	33	419	290	2536
10	GoeringEckardt	Katrin Göring-Eckardt GRÜNE	144	130322	4356	1783	1196	1753	1253	9871	4935	2193
11	kahrs	Johannes Kahrs SPD	3899	16834	563	1592	742	3685	1263	8333	3413	1978
12	PetrBystronAfD	Petr Bystron AfD	198	9403	1917	9942	2715	2000	1169	15200	3697	1733
13	DoroBaer	Dorothee Bär CSU	62	79479	8072	311	285	808	720	5055	3165	1562
14	anked	Anke Domscheit-Berg LINKE	356	27411	4232	1606	1051	605	433	2328	1336	1551
15	katarinabarley	Katarina Barley SPD	38	24246	4322	2131	1597	2418	1661	6912	3717	1413
16	Frank_Pasemann	Frank Pasemann AfD	301	7240	197	8161	2464	2104	1327	11912	3567	1361
17	JoanaCotar	Joana Cotar AfD	123	7679	658	9394	2565	1603	985	11237	2846	1324
18	petertauber	Peter Tauber CDU	77	193463	706	539	436	706	557	1708	1074	1315
19	Karl_Lauterbach	Karl Lauterbach SPD	89	67396	1035	2208	1262	3428	1859	6685	2921	1310
20	KonstantinNotz	Konstantin v. Notz GRÜNE	124	50388	1126	3716	2052	879	624	4955	2527	1236

The tables on the next page display the VaTI for the leaders of the Austrian political parties. Chancellor Sebastian Kurz ÖVP dominates – not only on Twitter – the communication. He even improved his position in June 2018. He holds the presidency of the Council of the European Union for the second half of 2018. In the past his most severe social media competitor was H.C. Strache from the right-wing-populist FPÖ. H.C. Strache has considerable lost ground. He now holds the position of vice-chancellor and does not use social-media as offensive and aggressively as before. He is even placed behind Christian Kern SPÖ (Social Democrats).

The NEOS (Liberals) have since June 2018 with Beate Meisl-Reisinger a new party leader. The study includes additionally the previous leader Matthias Strolz. The NEOS are a small party, but Strolz was quite active on social media. Beate Meisl-Reisinger could double her score in June, but is still far behind Matthias Strolz.

Like for the German MdBs one can infer from July-2018 VaTI the summer break. The values are generally lower. Beate Meisl-Reisinger has lost ground to her successor. Matthias Strolz is on Twitter – but also for the traditional media – still the leading figure of the NEOS.

Rank	User	Description	Tweets	Followers	Active-Followers	Retweets	Retweets-User	Replies	Replies-User	Mentions	Mentions-User	VaTI-Index
1	sebastiankurz	Sebastian Kurz ÖVP	145	306992	18395	6066	2814	2179	1196	16860	5871	5370
2	KernChri	Christian Kern SPÖ	201	104729	13183	1421	644	607	420	6237	1942	2970
3	matstrolz	Matthias Strolz NEOS	236	71845	1303	560	391	584	475	4345	1760	940
4	HCStracheFP	HC Strache FPÖ	36	51099	1928	1191	633	813	494	5939	2216	876
5	Peter_Pilz	Peter Pilz LISTE PILZ	41	47222	938	72	52	96	85	1144	489	384
6	WKogler	Werner Kogler GRÜNE	392	16746	333	185	120	56	52	657	338	239
7	BMeinl	Beate Meinl-Reisinger NEOS	52	10394	241	102	82	86	66	625	312	134

### Austrian Party Leaders, May 2018

Rank	User	Description	Tweets	Followers	Active-Followers	Retweets	Retweets-User	Replies	Replies-User	Mentions	Mentions-User	VaTI-Index
1	sebastiankurz	Sebastian Kurz ÖVP	182	306992	19418	11537	3971	3995	2143	33767	10283	6918
2	KernChri	Christian Kern SPÖ	178	104729	13263	1564	772	632	405	5093	1751	2826
3	HCStracheFP	HC Strache FPÖ	24	51099	1852	1996	1125	770	495	6487	2717	1029
4	matstrolz	Matthias Strolz NEOS	195	71845	1333	450	288	266	211	2436	1167	787
5	Peter_Pilz	Peter Pilz LISTE PILZ	39	47222	977	228	126	235	159	1796	711	441
6	BMeinl	Beate Meinl-Reisinger NEOS	127	10394	256	329	228	225	171	1209	599	225
7	WKogler	Werner Kogler GRÜNE	297	16746	331	58	46	65	50	897	392	214

### Austrian Party Leaders, June 2018

Rank	User	Description	Tweets	Followers	Active-Followers	Retweets	Retweets-User	Replies	Replies-User	Mentions	Mentions-User	VaTI-Index
1	sebastiankurz	Sebastian Kurz ÖVP	63	307610	18938	4827	2229	1906	1126	19246	6648	4613
2	KernChri	Christian Kern SPÖ	69	104945	13031	732	488	353	264	3759	1524	1958
3	HCStracheFP	HC Strache FPÖ	18	51344	1821	1810	985	832	524	5824	2354	952
4	matstrolz	Matthias Strolz NEOS	122	71877	1286	301	259	459	316	2117	929	710
5	Peter_Pilz	Peter Pilz LISTE PILZ	45	47222	926	240	164	52	43	972	471	402
6	BMeinl	Beate Meinl-Reisinger NEOS	33	10506	250	184	166	113	98	529	321	154
7	WKogler	Werner Kogler GRÜNE	111	16777	323	42	34	27	17	319	190	150

### Austrian Party Leaders, July 2018

#### Literature:

- [1] Alex Leavitt et. al.: The Influentials: New Approaches for Analyzing Influence on Twitter.  
[2] Stefano Cresci et. al.: Fame for sale: efficient detection of fake Twitter followers.

#### Appendix A: Data-Download and VaTI homepage.

The complete data set can be downloaded from:

<http://www.godotfinance.com/Vanellus/csv/VaTIRohDaten.zip>

The zip archive contains the following tables in \*.csv format.

The character set is “Western European – ISO-8859-1”

*MdB.csv*: The list of the 511 Twitter Accounts, the corresponding real-name and party affiliation of German MdBs.

*OePV.csv*: The same list for 7 Austrian Party Leaders.

*VaTIMdBMai2018.csv*: The VaTI-Index for MdBs, May 2018

*VaTIMdBJuni2018.csv*: The VaTI-Index for MdBs, June 2018

*VaTIOePVMai2018.csv*: The VaTI-Index for Austrian Party Leaders, May 2018

*VaTIOePVJuni2018.csv*: The VaTI-Index for Austrian Party Leaders, June 2018

The results for July 2018 can be downloaded from:

<http://www.godotfinance.com/Vanellus/csv/VaTIMdBJul18.csv>

<http://www.godotfinance.com/Vanellus/csv/VaTIOePVJul18.csv>

The homepage for the VaTI with periodically updated results is:

<http://www.godotfinance.com/vati.xhtml>

**Appendix B: Glossary of German Parties:**

**AfD** - Alternative for Germany. New right-wing-populist party.

**CDU** - Christian Democratic Union of Germany. *Christian democratic and liberal-conservative.*  
*Chancellor Angela Merkel is the leader of the CDU.*

**CSU** - Christian Social Union in Bavaria. „Sister party“ of the CDU in Bavaria.

**GRÜNE** - Green

**FDP** - Free Democratic Party. Traditional Liberal.

**LINKE** – Left.

**SPD** – Social Democratic Party.

The current German government is a coalition formed by CDU, CSU and SPD.

**Appendix C: Glossary of Austrian Parties:**

**FPÖ**: Freedom Party of Austria. Right-wing-populist and national-conservative.

**GRÜNE**: Green.

**LISTE PILZ**: Party formed by the former MoP Peter Pilz from the GRÜNE. Left-wing-populist.

**NEOS**: The New Austria and Liberal Forum. New liberal.

**SPÖ**: Social Democratic Party. Similar to SPD in Germany.

**ÖVP**: Austrian People's Party. Christian democratic and conservative. Similar to CDU/CSU of Germany.

The current Austrian government is a coalition formed by ÖVP and FPÖ.