A Dip, Not a Decline: Engagement per Follower on the Facebook Pages of European Parties and Leaders, 2016 to 2020

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Abstract

A common claim is that Facebook steadily reduced the organic reach of pages. CrowdTangle does not record reach, but it does record the number of page likes at the time of each post, which allows engagement to be measured per follower. I use 506,179 posts from 112 party pages and 74 party leaders' pages in 20 European countries. Follower counts are absent before 2013 and sparse until late 2015, so the analysis covers January 2016 to September 2020. Comparing each page with itself, interactions per post per follower fell by about 25 to 35% from 2016 to 2018, depending on whether the unusually busy first months of 2016 are included. They reached a low in mid-2018 and then rose by about half, ending at or somewhat above their 2016 level in 2020. The fall and the recovery were found on most pages, on party and leader pages, and within each type of post, so they are not explained by the shift to video. There was no sudden fall at the News Feed changes of June 2016 or January 2018: the decline was gradual. Nor was it a mechanical effect of growing audiences: within pages, interactions rose roughly in proportion to followers. Over the period followers grew by about 93% and total monthly interactions by about 89%. Engagement per follower dipped and recovered rather than fading steadily, although engagement is not reach, and the years of the best known fall in organic reach, 2012 to 2014, lie outside what these data can measure.

Keywords: organic reach; engagement; followers; Facebook; News Feed; political parties; party leaders; Europe; CrowdTangle

1 Introduction

Parties build audiences on Facebook so that they can reach people without paying. Whether those audiences are worth much depends on how many followers see and respond to what a page posts, and that depends on the platform's ranking, which parties do not control (Bucher 2012). A widely repeated claim is that Facebook steadily reduced the organic reach of pages. An industry analysis of more than 100 brand pages in 2014 reported that in February 2014 a page's posts reached on average about 6% of its fans, down by about half since October 2013, and about 2% for pages with more than 500,000 likes, and predicted that organic reach would approach zero (Social@Ogilvy 2014). Facebook warned pages

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that changes to the News Feed in June 2016 and January 2018 might reduce their reach (Backstrom 2016; Mosseri 2018).

Reach is not public, and CrowdTangle, the tool used to collect these data, does not record it (CrowdTangle Team 2020). What CrowdTangle does record, alongside the interactions each post received, is the number of people who liked the page when the post was published. Interactions per follower is an observable, if partial, signal of the response a page's audience gave it: if organic reach fell steadily, it should have fallen steadily too, unless those who still saw posts responded more.

This paper measures engagement per follower on the pages of European parties and leaders and asks three questions. **RQ1.** How did engagement per follower change within pages over time, and was any change gradual or concentrated at known platform changes? **RQ2.** Is a fall in engagement per follower just the result of followings growing faster than engagement? **RQ3.** Did the change differ between party and leader pages, between countries and between kinds of post?

2 Data and method

Posts and pages. The posts come from CrowdTangle lists of official party and party leader pages that I built for my doctoral research and exported in October 2020 (CrowdTangle Team 2020; Hotham 2021). The full data contain 856,699 posts from 112 party pages and 74 leader pages in 20 countries, from January 2010 to September 2020. Interactions are the sum of likes, comments, shares and emoji reactions.

Follower counts and usable years. The follower count is the page likes recorded with each post. Its coverage depends on the year (Table 1). No post before 2013 has a count, fewer than 0.1% in 2013, 1% in 2014 and 25% in 2015 do; coverage reaches 83% in 2016 and almost 100% in 2020. The missing values are not scattered: in every page, all missing counts fall before the first recorded one (330,773 posts), except for 1,234 posts inside the recorded range, and none after it. The count therefore begins when CrowdTangle started to track the page, which for 103 pages was by January 2016 and for the rest later, up to 2020. I use January 2016 to September 2020 and drop the 311,726 earlier posts. Within this window I drop 38,794 posts made before a page's first recorded count.

No backfilling. Filling gaps inside a page's recorded range is defensible, because followings change slowly; this affects 4 page-months (643 posts), filled by log-linear interpolation. Extending the series backwards is not: it would mean assuming growth rates for years in which growth is unobserved and probably faster than later (Hotham 2026a), so estimates before 2016 would mainly reflect the assumption. I report earlier years only for engagement per post.

Measures. For each page-month I take the median recorded follower count as the denominator. This means that one-off glitches in the recorded count, such as the 2,000 posts whose count differs by more than 20% from their month's median, do not affect it; no posts are removed for this reason. The analysis sample has 506,179 posts in 8,873 page-months, from all 186 pages. The post-level outcome is the log of interactions (plus one) per 1,000 followers. At the page-month level I use the logs of total interactions, followers, posts and interactions per post per 1,000 followers; the first is the sum of the other three, which allows an exact decomposition. Posts are grouped as links (including YouTube), photos, videos (native, live and other) and text-only updates.

Models. I regress these outcomes on year (or month) indicators with page fixed effects, so that each page is compared with itself, and at post level also with post-type fixed effects. Standard errors are

clustered by page. Because there are only 20 countries, for clustering by country I also report wild cluster bootstrap p-values (restricted, Webb weights, 1,999 draws). Percentage changes are $100(e^b - 1)$. To look for breaks at the News Feed changes of 29 June 2016 (Backstrom 2016) and 11 January 2018 (Mosseri 2018), I estimate a step in a window around each date, with page-specific or common linear trends. To examine the denominator, I regress log interactions on log followers with page and calendar-month fixed effects.

Table 1. Coverage of the follower count recorded with each post, by year.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Posts with count (%)	0	0	0	<0.1	1.3	25	83	89	93	96	100
Pages with any count	0	0	0	1	8	100	132	151	168	185	184

3 Results

3.1 A dip and a recovery, not a steady decline

The median post drew 4.7 interactions per 1,000 followers in 2016, 3.8 in 2018 and 5.9 in 2020; per month, the median page drew 392, 282 and 482 interactions per 1,000 followers. Comparing each page with itself and holding post type constant, interactions per post per follower were about 20% lower in 2017 than in 2016 (SE 0.05 log points), 35% lower in 2018 (SE 0.07), 20% lower in 2019 and back at the 2016 level in 2020 (0.0%, SE 0.08). With country clusters, the wild bootstrap gives p = 0.001 for 2018, 0.02 for 2017, 0.07 for 2019 and 0.995 for 2020. From 2018 to 2020 engagement per follower rose by about 53%. The monthly series (Figure 1, left) shows a gradual decline to a low in June 2018, about 43% below July 2016, and a steady rise from early 2019.

How large the fall was depends on the start of the series. In the analysis sample, interactions per post in January 2016 were about 46% higher than in July 2016, and interactions per post per follower about 58% higher; across all posts, including those without a follower count, interactions per post in January 2016 were 29% higher than in July 2016, and in 2015 they averaged 17% higher. Early 2016 was a busy electoral period, with the aftermath of the Spanish election of December 2015 and elections in Ireland in February and Slovakia in March 2016, which offers a reason unrelated to the platform. Taking the second half of 2016 as the reference, engagement per follower in 2018 was 25% lower (SE 0.08) and in 2020 14% higher (SE 0.09, not significant); dropping January to March 2016, it was 29% lower in 2018 and 8% higher in 2020. The rise from 2018 to 2020 is the same, about 53%, under either reference.

78% of the 132 pages observed in both 2016 and 2018 had lower engagement per follower in 2018 (median change −35%), and 75% of the 166 pages observed in 2018 and 2020 had higher engagement in 2020 (median +44%). Between 2016 and 2020, half the pages gained and half lost (median −6%). By point estimate, engagement per follower fell from 2016 to 2018 in 17 of 20 countries, all except Finland, Romania and Slovenia, and rose from 2018 to 2020 in 19 of 20. Several countries have only 2 to 6 pages, so these counts are of imprecise point estimates.

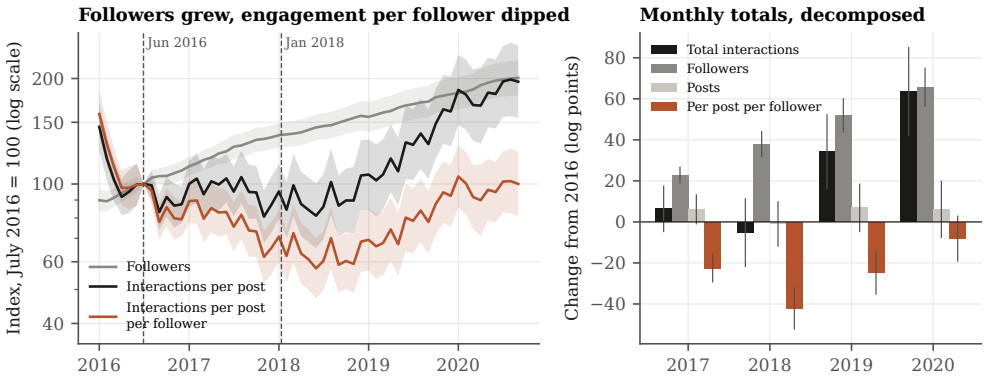


Figure 1. Left: within-page indices of followers, interactions per post and interactions per post per follower, by month, July 2016 = 100 (page fixed effects; bands are 95% confidence intervals clustered by page). Dashed lines: News Feed announcements of 29 June 2016 and 11 January 2018. Right: change from 2016 in the logs of monthly total interactions and of its three components (followers, posts, interactions per post per follower), within page. 506,179 posts; 8,873 page-months.

3.2 Followers grew, engagement kept up only later

The decomposition (Figure 1, right) shows how this happened. By 2018 the typical page had about 46% more followers than in 2016, but its total monthly interactions were no higher (−5%, SE 0.09) and it posted about as often (−1%), so interactions per post per follower fell by about 34%. By 2020 total monthly interactions had caught up with followers (followers +93%, interactions +89%), posting was 6% higher (SE 0.07), and interactions per post per follower were 8% lower, not distinguishable from zero (SE 0.06; not 0% as at post level, because page-month means of logs weight pages and months differently).

3.3 Not a denominator effect

Engagement per follower would fall whenever followings grew if engagement did not scale with audience size. Within pages, and comparing pages in the same month, a 1% larger following went with about 0.93% more interactions per post (SE 0.14; 0.17 clustering by country), a coefficient close to and not distinguishable from one. At the page-month level the coefficient for total interactions is 1.12 (SE 0.11), and 0.88 (SE 0.09) holding the number of posts constant. In post-level models it is about 1.06 for party pages (SE 0.24) but 0.79 for leader pages (SE 0.10), which is below one: as leaders' followings grew, their engagement per follower tended to fall somewhat. Across pages in the same country and month, larger pages drew less per follower (coefficient 0.80, SE 0.05). The dip from 2016 to 2018 was mainly a shift common to pages in the same period, not the arithmetic of growing audiences.

3.4 No sudden fall at known platform changes

Neither News Feed change shows a fall (Figure 1, left). Allowing for page-specific trends in a 12-month window either side, the step in January 2018 was +3% (SE 0.05), and at the June 2016 change, in a six-month window, +10% (SE 0.06). In a six-month window with a common linear trend the January 2018 step was +16% (SE 0.04), the largest of 45 such steps from July 2016 to March 2020; but 12 of the 45 were significant at the 5% level (8 negative, 4 positive) against about 2 expected by chance, because a step with a straight-line trend is misspecified for a curved series, so this is weak evidence

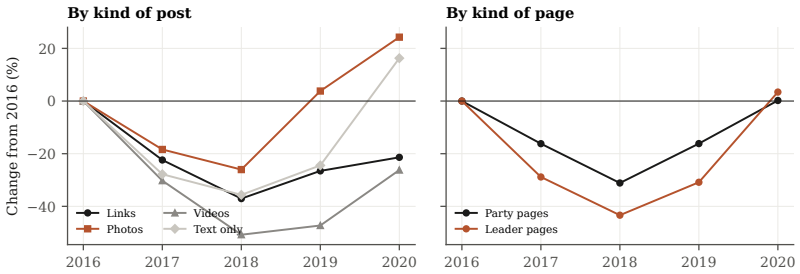


Figure 2. Change from 2016 in interactions per post per follower, within page. Left: estimated separately for each kind of post. Right: party and leader pages, with post-type fixed effects. 506,179 posts.

either way. Comparing 12 months either side without a trend gives a fall in monthly interactions per follower (−21%, SE 0.05; 4th lowest of 33 months), which mostly picks up the ongoing decline. The results fit my earlier finding of no fall in engagement per post around January 2018, alongside a rise in sharing (Hotham 2026c).

3.5 Party and leader pages, and kinds of post

In post-level models, leaders' pages dipped further than party pages, by about 43% against 31% in 2018, and both returned to their 2016 level by 2020 (Figure 2, right). The shift in formats does not explain the pattern. From 2016 to 2020 links fell from 43% to 25% of posts and videos rose from 18% to 33% (Hotham 2026b), but the year estimates are almost the same with and without post-type fixed effects (−35% and −33% in 2018). Within each kind of post, engagement per follower fell to 2018: by 37% for links, 26% for photos, 51% for videos and 36% for text-only posts (Figure 2, left). The recovery differed: by 2020 links were still 21% and videos 26% below their 2016 level, while photos were 24% and text-only posts 16% above it, though these two increases are not statistically significant.

3.6 Robustness and earlier years

Under other choices (Table 2) the fall to 2018 ranges from 25% to 38%. The 2020 level ranges from 7% below to 14% above 2016, except with page-specific linear trends, which put 2020 38% above 2016; with a U-shaped series, page trends fitted over the whole period absorb part of the fall and exaggerate

Table 2. Change in interactions per post per follower from the reference period, within page (%; standard errors of the log coefficients, clustered by page, in brackets).

Specification	2018	2020
Main (reference 2016)	−35 (0.07)	0 (0.08)
Reference: second half of 2016	−25 (0.08)	14 (0.09)
Dropping January to March 2016	−29 (0.07)	8 (0.08)
Each page-year weighted equally	−36 (0.06)	−7 (0.06)
Each country-year weighted equally	−32 (0.09)	0 (0.09)
Excluding Spain and the United Kingdom	−26 (0.09)	9 (0.10)
101 pages observed January 2016 to 2020	−38 (0.08)	6 (0.10)
Excluding 11 pages with follower jumps over 50 log points	−34 (0.07)	2 (0.09)
Year effects with page-specific linear trends	−27 (0.09)	38 (0.13)

the later rise. Spain and the United Kingdom provide 32% of posts; without them the fall is smaller (−26%). Ending in December 2019 gives −36% for 2018 (SE 0.07); the recovery began in 2019, before the Covid-19 pandemic.

Interactions were counted at export in October 2020, so recent posts had less time to gather them. The last seven days of September 2020 contain 2,994 posts, 3.0% of posts in 2020, and their median interactions (521) were not lower than in the three weeks before (509), so any shortfall would bias the 2020 estimate by well under 1%.

Before 2016 only engagement per post can be measured: within pages, the typical post in 2016 drew about 16 times as many interactions as in 2010 and 2.9 times as many as in 2013, so per-follower engagement was flat from 2013 to 2016 only if followings grew about threefold.

4 Discussion

The claim that Facebook steadily wore down the organic reach of pages does not describe what happened to engagement per follower on European party and leader pages from 2016 to 2020. It fell by a quarter to a third over two years and then recovered, gradually rather than at the announced News Feed changes, and across kinds of page and post.

Why engagement per follower fell and then rose cannot be settled here. A gradual change in ranking that showed page posts to fewer followers would produce the fall; later changes, or more attention from followers in the busy electoral years of 2019 and 2020, could produce the recovery. Part of the measured fall reflects a high start in early 2016. Year comparisons within pages do not remove other changes common to a year, such as political events.

Engagement is not reach. CrowdTangle has no data on how many people saw a post, so a fall in engagement per follower may reflect fewer people seeing posts, the same people responding less, or both, and a rise may reflect either in reverse. Page likes include inactive accounts, and posts deleted before the export, likelier for older posts, are missing. The follower series begins only in 2016 for most pages, so the years of the best known reports of falling organic reach, around 2012 to 2014 (Social@Ogilvy 2014), cannot be examined per follower, and I do not backfill them.

5 Conclusion

Measured per follower, the engagement received by 186 party and leader pages in 20 European countries did not fade steadily from 2016 to 2020. It fell by a quarter to a third to mid-2018, as followings grew and engagement stalled, and recovered to about its 2016 level, or somewhat above, by 2020. The fall was gradual, not tied to the announced News Feed changes, and not mainly a product of growing audiences. Whether reach itself followed the same path cannot be known from these data.

Data and code

The posts were exported from CrowdTangle in October 2020. CrowdTangle's terms do not permit sharing the raw posts. The analysis code, the list of pages and page-month aggregate data are available from the author.

Provenance and AI use

The data were exported from CrowdTangle in October 2020 for my doctoral research. This paper builds on my doctoral thesis (Hotham 2021). The analysis and writing were completed in 2026.

I designed the study and am responsible for the analysis and conclusions. I wrote the text, with drafting and editing assistance from Claude (Anthropic), which also helped prepare the analysis code. I reviewed and checked all text and results.

Ethics

Not applicable: the study involves no human participants. The data are public posts by the official Facebook pages of political parties and party leaders, analysed only as counts of page likes and interactions aggregated by page, month and year. No post content is quoted or reproduced, and no data on individual users are used.

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