

Love, Anger and Laughter: Do Women and Men Leading European Parties Get Different Reactions on Facebook?

Tristan Hotham*

October 2026

Preprint, not peer reviewed

Abstract

Women in politics receive more hostility online than men, at least in some settings and on some measures. Most of the evidence comes from the text of messages on Twitter. Facebook’s emoji reactions offer a different record: millions of quick, public judgements of what politicians post. Do audiences react differently to the Facebook pages of women and men who lead European parties? I use 125,056 posts from the pages of 74 party leaders and leading politicians, 17 of them women, in 15 European countries from March 2016 to September 2020, collected through CrowdTangle. Pooled, women’s pages drew about half the share of angry reactions that men’s did (2.8% against 5.8% of all reactions), but this reflects party and position: the angriest pages belonged to men leading opposition parties of the radical right and left. Comparing women and men in the same country and month, with the same party family and the same position in and out of government, I find no detectable difference in the share of Love, Angry, Haha, Sad or Wow reactions, in comments or shares, or in interactions per post. The differences in Love and Angry are under half a point, with confidence intervals that rule out gaps of more than about one and a half points either way, against averages of about 6%. The result holds with controls for page size, without heads of government, without the United Kingdom, in randomisation inference and when each leader is compared with their own party’s page. There are hints, resting on few pages, that women whose parties were in government drew less love and more laughter. The data cannot rule out gaps of one or two points, but they show no sign that the reactions on European leaders’ pages differed by gender once party and position are taken into account.

Keywords: gender; women in politics; party leaders; Facebook; emoji reactions; anger; incivility; Europe; CrowdTangle

1 Introduction

Women in politics are often described as facing a harsher online environment than men. Studies of messages sent to politicians on Twitter find that women receive more uncivil messages in some settings, particularly when they are prominent (Rheault et al. 2019), and more identity-based attacks, even where the overall rate of incivility is similar (Southern and Harmer 2021; Lühiste et al. 2025). Role congruity

*Independent researcher. ORCID 0000-0003-4931-9349. Correspondence: contact@tristanhotham.com. The views expressed are the author’s own and do not represent those of any employer.

theory offers one explanation: women who hold or seek leadership, a role associated with men, may be judged more harshly for doing so (Eagly and Karau 2002). On Facebook, a study of candidates in Israel found that women candidates in the 2018 municipal elections were not rewarded for “masculine” campaign styles, including attacks on opponents, in the way men were (Samuel-Azran and Yarchi 2020).

Most of this evidence comes from the words people write. Facebook’s emoji reactions, introduced in February 2016, give another record. Each post on a politician’s page receives thousands of quick public responses: likes, and reactions of Love, Haha, Wow, Sad and Angry. Reactions are cruder than comments, but they are far more numerous and they are recorded for every post. They have been used to compare how audiences respond to parties across democracies (Muraoka et al. 2021), and in my earlier work to describe how anger on European party pages changed over time (Hotham 2026a). If audiences respond to women leaders with more anger or more ridicule, or with more warmth, the reactions to their posts should show it.

This paper compares the reactions to the Facebook pages of women and men who led, or were leading figures in, European parties between March 2016 and September 2020. I use 74 pages in 15 countries, 17 of them belonging to women, including two prime ministers, Theresa May and Erna Solberg, and Mette Frederiksen, who became prime minister of Denmark in 2019. I ask two questions. **RQ1.** Do women’s pages draw a different mix of reactions, in particular more Angry or Haha reactions and fewer Love reactions, than men’s pages in the same country and at the same time? **RQ2.** Do they draw less engagement overall?

The answer to both is no, as far as these data can tell. The raw differences are large, but they disappear once women are compared with men in similar parties and positions. The adjusted differences are small, though not precise enough to rule out gaps of one or two points.

2 Background

Gender and hostility online. A growing literature documents the abuse that women in politics receive online. Analysing tweets sent to Canadian politicians and United States senators, Rheault et al. (2019) found that women received more uncivil messages than men, but only among the most visible politicians. A study of tweets sent to Members of Parliament in the United Kingdom found that women were more often subject to stereotyping and questioning of their position, even when overall incivility was similar (Southern and Harmer 2021). A larger study of politicians in Germany, Spain, the United Kingdom and the United States found little consistent gender gap in the share of uncivil tweets, but more identity-based attacks on women and, in Europe, incivility towards women whatever their prominence (Lühiste et al. 2025). These studies concern Twitter, and the messages directed at politicians.

Reactions on Facebook. Facebook pages are the main channel through which many European parties and leaders speak directly to supporters, and the audience on a page is mostly self-selected: people who follow it or are shown its posts by friends. Reactions are therefore likely to come more from supporters than the replies directed at politicians on Twitter. A page’s reactions mix reflects both what its owner posts and who reacts. Populist radical-right parties’ pages draw far more anger than others, and governing parties’ pages less (Hotham 2026a). Any comparison of women and men must therefore account for party and position, because women and men are not evenly spread across them.

Expectations. If audiences judge women leaders more harshly, women’s pages should draw a higher share of Angry and Haha reactions, the latter often used for ridicule, and perhaps fewer Love reactions.

If women leaders draw warmth from supporters, the reverse might hold. If audiences respond mostly to party and position, there should be little difference once those are taken into account.

3 Data

Pages and posts. The posts come from CrowdTangle lists of party leaders and leading politicians that I built for my doctoral research and exported in October 2020 (CrowdTangle Team 2020; Hotham 2021). The list covers 74 pages in 15 countries with posts from March 2016 to September 2020. Most are pages of party leaders, but some belong to former leaders, leaders-to-be, or prominent figures who did not formally lead their party. I code each person’s gender, the dates on which they led their party, and the dates on which they were head of government of their country, from public records; Nicola Sturgeon, First Minister of Scotland, is not coded as head of government. Seventeen pages belong to women, in eight countries: Switzerland, Denmark, the United Kingdom, Greece, Ireland, Norway, Romania and Sweden (Table 1). Together the pages published 125,056 posts and received 320 million interactions.

Table 1. The 17 women’s pages: posts with reactions, March 2016 to September 2020, and Love, Angry and Haha reactions as a percentage of all reactions (pooled over the page’s posts).

Leader	Country	Party	Posts	Love	Angry	Haha
Mette Frederiksen	Denmark	Social Democrats	1,224	9.5	0.7	0.6
Pernille Skipper	Denmark	Red-Green Alliance	1,069	8.0	4.7	1.1
Pia Olsen Dyhr	Denmark	Socialist People’s Party	1,255	5.7	6.0	1.0
Fofi Gennimata	Greece	PASOK / Movement for Change	2,443	7.9	1.0	2.6
Mary Lou McDonald	Ireland	Sinn Féin	2,073	8.8	2.5	1.0
Erna Solberg	Norway	Conservatives (H)	1,653	6.2	1.1	1.1
Siv Jensen	Norway	Progress Party	1,480	3.8	1.5	1.3
Trine Skei Grande	Norway	Liberals (V)	961	9.8	1.0	0.8
Raluca Turcan	Romania	National Liberal Party	3,193	3.3	6.9	4.6
Anna Kinberg Batra	Sweden	Moderates	888	2.7	0.9	0.8
Annie Lööf	Sweden	Centre Party	1,451	8.5	2.1	2.0
Petra Güssi	Switzerland	FDP	347	2.6	0.4	1.0
Caroline Lucas	United Kingdom	Green Party	835	7.2	4.2	0.4
Jo Swinson	United Kingdom	Liberal Democrats	631	11.5	1.5	2.5
Natalie Bennett	United Kingdom	Green Party	5,844	4.0	8.6	0.5
Nicola Sturgeon	United Kingdom	SNP	1,103	13.3	2.3	1.7
Theresa May	United Kingdom	Conservatives	1,070	6.8	4.0	4.0
All 57 men’s pages (median page)			1,540	6.6	3.0	1.8
All 17 women’s pages (median page)			1,224	7.2	2.1	1.1

Measures. For each post I compute Love, Angry, Haha, Sad and Wow reactions as a percentage of all reactions, including likes, and comments and shares as a percentage of all interactions. Care reactions, introduced in 2020, are counted in the total. I also measure interactions per post on a log scale. For each page and post I record whether the person was then leading their party, whether they were head of government, their party’s family under the PopuList (populist radical right, other populist, non-populist far left or far right) and whether the party was in government (Hotham 2026b).

4 Method

The main model compares posts on women’s and men’s pages in the same country and month:

$$y_{ipcm} = \beta \text{Woman}_p + \mathbf{x}'_{pm} \gamma + \alpha_{cm} + \tau_{\text{type}(i)} + \varepsilon_{ipcm}, \quad (1)$$

where y is the outcome for post i on page p in country c and month m , α_{cm} are country-by-month fixed effects, τ are fixed effects for the type of post, and $\mathbf{x}$ contains the controls listed above. Because gender does not vary within a page, the comparison is between pages, and standard errors are clustered by page. With 17 women’s pages, the main threat to inference is that a few pages drive the result. I therefore also use randomisation inference, reshuffling gender among the pages within each country 1,000 times on page-month data and asking how often the reshuffled estimate is as large as the real one. As a second design, I compare each leader’s page with their own party’s page in the same month, and ask whether the gap between leader and party differs for women and men. This holds constant the party’s audience and the political moment.

5 Results

5.1 Raw differences reflect party and position

Pooled over all posts, women’s pages drew about half the share of angry reactions that men’s pages did: 2.8% of all reactions against 5.8%. They also drew slightly fewer Love reactions (7.8% against 8.1%) and fewer Haha reactions (1.7% against 2.2%). Figure 1 shows that women’s pages are spread through the range of men’s pages, but none is among the seven angriest; Natalie Bennett’s and Raluca Turcan’s come eighth and tenth. The angriest pages belonged to men leading opposition parties, often radical ones, such as Tom Van Grieken of Vlaams Belang, Peter Mertens of the Workers’ Party of Belgium and Nigel Farage; no woman in the data led a party classed as populist radical right.

5.2 No difference in like-for-like comparisons

Once women are compared with men in the same country and month, with the same party family and position, the differences disappear (Figure 2). Women’s pages drew 0.3 points more Love reactions (SE 0.4), 0.3 points more Angry reactions (SE 0.7) and the same share of Haha reactions (−0.0, SE 0.3), against men’s averages of about 6%, 6% and 2% of all reactions. The differences in Sad and Wow reactions, comments and shares are also small and not distinguishable from zero. The 95% confidence intervals run from −0.9 to +1.6 points for angry reactions and from −0.5 to +1.2 points for love reactions. Gaps of that size, a quarter of men’s average anger, cannot be ruled out, but the estimates are close to zero.

Women’s pages drew fewer interactions per post, by about 35%, but the estimate is imprecise (−0.43 on the log scale, SE 0.42) It shrinks to near zero (−0.08) when the comparison is restricted to people while they led their party, and reverses (+0.20, SE 0.20) when the United Kingdom, where several men’s pages drew very high engagement, is excluded.

Table 2 shows the results across specifications. The gaps in Love, Angry and Haha reactions stay below about three-quarters of a point, and none is distinguishable from zero, with controls for page likes, without controls, only for the period in which each person led their party, without heads of government

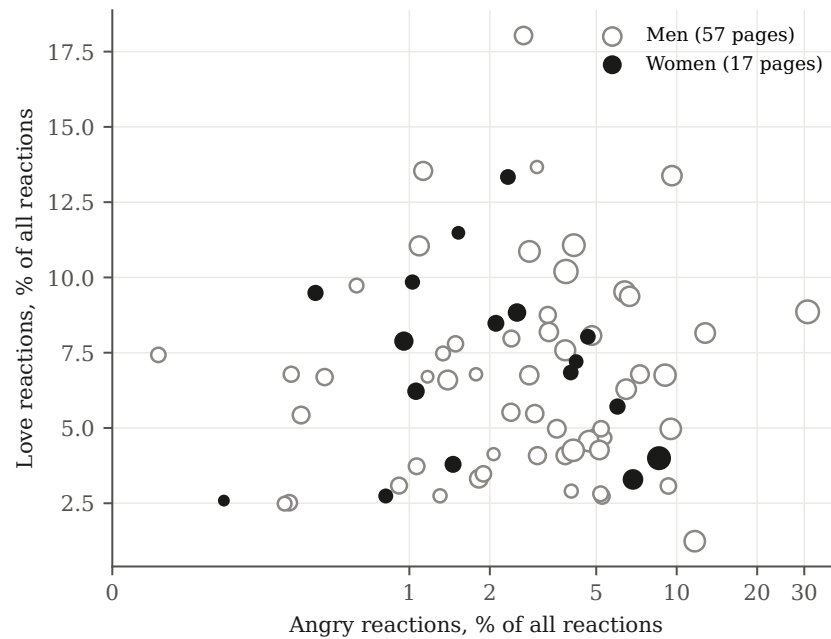


Figure 1. Love and Angry reactions as a percentage of all reactions, by page, March 2016 to September 2020. Marker area is proportional to the square root of the number of posts. The horizontal axis is linear below 1% and logarithmic above.

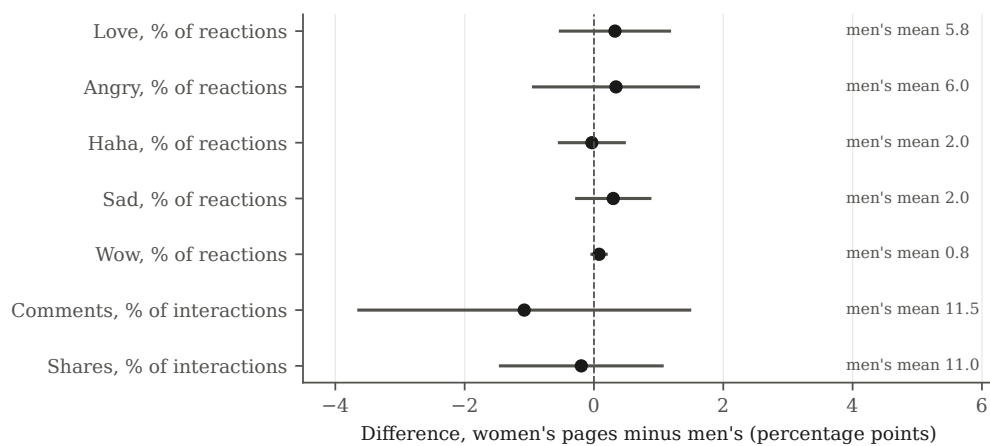


Figure 2. Difference between women's and men's leader pages, in percentage points, with 95% confidence intervals. Post level, with country-by-month and post type fixed effects and controls for current leadership, head of government, party family and government status. Standard errors clustered by page.

and without the United Kingdom. A wild cluster bootstrap, which is more reliable with few treated pages, gives p -values of 0.46, 0.60 and 0.91 for Love, Angry and Haha. In randomisation inference, reshuffled gender produced gaps as large as the real ones in 35% of draws for Love, more than 99% for Angry and 60% for Haha. Comparing each leader's page with their own party's page in the same month, possible for 54 pages, women's pages drew 1.2 points more anger relative to their party than men's did (SE 0.8), a difference not distinguishable from zero, and no more love or laughter.

Table 2. Difference between women's and men's leader pages: percentage points of all reactions, and log interactions per post. Post level, standard errors clustered by page in brackets. Controls: whether the person currently led their party, was head of government, their party's family (populist radical right, other populist, non-populist far left or right) and government status.

	Love	Angry	Haha	Interactions per post (log)
Main: country-month and post type fixed effects, controls	0.33 (0.43)	0.34 (0.65)	-0.03 (0.26)	-0.43 (0.42)
Adding page likes	0.39 (0.41)	0.23 (0.65)	0.00 (0.27)	-0.40 (0.28)
Country-month fixed effects only, no controls	0.26 (0.67)	-0.04 (0.69)	-0.19 (0.29)	-0.70 (0.62)
Only while the person led their party	0.37 (0.43)	0.48 (0.61)	0.22 (0.23)	-0.08 (0.26)
Excluding heads of government	0.41 (0.47)	0.74 (0.72)	-0.10 (0.23)	-0.43 (0.47)
Excluding the United Kingdom	0.40 (0.43)	0.46 (0.70)	0.05 (0.24)	0.20 (0.20)
Men's mean (post level)	5.8	6.0	2.0	
Wild cluster bootstrap p (main model, 9,999 draws)	0.46	0.60	0.91	0.37
Randomisation inference p (page-month, 1,000 permutations within country)	0.35	1.00	0.60	0.79
<i>Leader page minus the same party's page in the same month (54 pages)</i>				
Difference between women and men	0.02 (0.61)	1.19 (0.83)	0.26 (0.33)	-0.11 (0.36)

In the randomisation and within-party rows the last column is the log of the median interactions per post in the page-month.

5.3 Position and time

Two exploratory comparisons suggest where differences might lie, though both rest on few pages. Women whose parties were in government drew 1.7 points fewer Love reactions (SE 0.7) and 1.4 points more Haha reactions (SE 0.8) than would be expected from women outside government and men in government. The same pattern appears for women who were heads of government, a group dominated by Theresa May. Among the three parties whose pages I observe under both a woman and a man as leader (with 43 parties in the comparison), the Conservatives, the Liberal Democrats in the United Kingdom and the Moderates in Sweden, the party page drew 1.9 points more Haha reactions (SE 1.0) while a woman led it. These patterns are consistent with the suggestion that women in positions of power attract more ridicule, but they could equally reflect the circumstances of Theresa May's premiership, and I do not treat them as findings. Year by year, the gaps in Angry and Haha reactions change sign; the gap in Love reactions is slightly positive in four of five years, but never distinguishable from zero.

6 Discussion

On the Facebook pages of European party leaders, the reactions to women and men did not differ detectably. The large raw difference in anger, with women's pages drawing half as much, reflects party

and position: men led the parties whose audiences were angriest. Within the same country, at the same time and in similar parties, women and men drew a similar mix of love, anger and laughter. Women's pages may have drawn somewhat less engagement per post, but that estimate is imprecise and not robust. This does not contradict the literature on the online abuse of women in politics. Reactions are not comments, and a Facebook page's audience is not the same as the people who reply to politicians on Twitter. Hostility directed at women may take the form of words rather than emoji, may come from people who do not follow their pages, or may be concentrated in a small share of interactions that a page-level percentage cannot detect. What the results do suggest is that the overall mix of reactions on leaders' own pages, which reflects both what leaders posted and how their audiences responded, did not differ by gender in a way large enough to detect here. Studies that rely on raw comparisons of engagement between women and men in politics should take care to compare like with like, because women and men are not spread evenly across parties.

The limits are important. Seventeen women's pages in eight countries is a small number, and some differences of policy interest, of one or two points, cannot be ruled out. Estimates are weighted by posts, so prolific pages count for more. No woman in the data led a populist radical-right party, so the comparison for that family rests on men alone, and the controls for leadership and office may themselves be shaped by gender. Reactions mix what a leader posts with how audiences respond, and I cannot separate the two. The pages are those on my CrowdTangle lists, not every leader in every country, and the women in the data led mainstream, green, left and centre parties. Reactions are anonymous and aggregated, so I cannot tell who reacted or why. Haha reactions can express amusement as well as ridicule. Finally, the data end in September 2020; the pattern may have changed since.

7 Conclusion

Across 74 leaders' pages in 15 European countries from 2016 to 2020, women leaders' pages drew less anger than men's in raw terms, but no less and no more once they were compared with men in similar parties and positions. Their posts drew a similar mix of love, anger, laughter and sadness. Exploratory results hint that women in government drew less love and more laughter, but they rest on few pages. A useful next step would be to combine reactions with the text of comments on the same posts, to see whether the hostility that studies of Twitter find towards women appears in what people write on leaders' Facebook pages, even when it does not appear in how they react.

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 with gender, leadership and head-of-government coding, 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 interactions aggregated by post, page and month. No post content is quoted or reproduced, and no data on individual users are used. Gender is coded for public office holders from public records.

Funding

I received no specific funding for this work. It builds on my doctoral research, which was funded by the Economic and Social Research Council (ESRC).

References

- CrowdTangle Team (2020). CrowdTangle. Facebook, Menlo Park, CA.
- Eagly, A. H. and Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, 109(3):573–598.
- Hotham, T. (2021). *How Do Political Parties Use Facebook and What Does It Offer to Their Campaigns*. PhD thesis, University of Bath. <https://doi.org/10.5281/zenodo.23300282>.
- Hotham, T. (2026a). Angrier, or just more expressive? Facebook reactions to European parties and leaders, 2016 to 2020. Preprint, Zenodo, <https://doi.org/10.5281/zenodo.23396858>.
- Hotham, T. (2026b). Do populists win on Facebook? The engagement premium of populist parties in Europe, 2010 to 2020. Preprint, Zenodo, <https://doi.org/10.5281/zenodo.23270349>.
- Lühiste, M., Praet, S., Popa, S. A., Theocharis, Y., Barberá, P., Fazekas, Z., and Tucker, J. A. (2025). When does fame not matter? Examining gender differences in politicians’ social media experiences. *Politics & Gender*.
- Muraoka, T., Montgomery, J., Lucas, C., and Tavits, M. (2021). Love and anger in global party politics: Facebook reactions to political party posts in 79 democracies. *Journal of Quantitative Description: Digital Media*, 1.
- Rheault, L., Rayment, E., and Musulan, A. (2019). Politicians in the line of fire: Incivility and the treatment of women on social media. *Research & Politics*, 6(1).
- Samuel-Azran, T. and Yarchi, M. (2020). Women candidates are unrewarded for ‘masculine’ campaigning: Facebook campaigning during Israel’s 2018 municipal elections. *Online Information Review*, 44(6):1199–1216.
- Southern, R. and Harmer, E. (2021). Twitter, incivility and “everyday” gendered othering: An analysis of tweets sent to UK members of parliament. *Social Science Computer Review*, 39(2):259–275.