



Article

Toward ‘Cultures of Engagement’? An exploratory comparison of engagement patterns on Facebook news posts

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Abstract

Information production, dissemination, and consumption are contingent upon cultural and financial dimensions. This study attempts to find cultures of engagement that reflect how audiences engage with news posts made by either commercial or state-owned news outlets on Facebook. To do so, we collected over a million news posts

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($n = 1,173,159$) produced by 482 news outlets in three Scandinavian countries (Denmark, Norway, and Sweden) and analyzed over 69 million interactions across three metrics of engagement (i.e. comments, likes, and shares). More concretely, we investigate whether the patterns of engagement follow distinct patterns across national boundaries and type of outlet ownership. While we are skeptical of metrics of engagement as markers of specific cultures of engagement, our results show that there are clear differences in how readers engage with news posts depending on the country of origin and whether they are fully state-owned or private-owned outlets.

Keywords

Comparative research, culture, engagement, journalism, social media

Introduction

Journalistic ideas, practices, and artifacts are manifested in content, and they reflect specific news cultures (Esser, 2008). These are, on one hand, journalistic “cultures of production” whose output is contingent on national contexts, market configurations, and the individual characteristics of news outlets (Aalberg and Curran, 2012; Hallin and Mancini, 2004; Örnebring and Jönsson, 2004; Sjøvaag, 2019), and on the other hand, “cultures of news consumption,” represented by patterns of consumption explained by country-level factors beyond individual user differences (Toff and Kalogeropoulos, 2020). As news organizations continue to concentrate on quantifying audience engagement, it is unknown what the patterns of audience engagement are and whether they are similar across countries and media.

This study aims to explore and compare what we tentatively call “cultures of engagement” across three Scandinavian countries (Denmark, Norway, and Sweden) and different outlet types. We do so by investigating the patterns of audience engagement with news posts on Facebook produced by Scandinavian state-owned (i.e. public service media) and private-owned news media. Our interest lies in whether aggregated metrics of engagement with news organizations’ output on Facebook show distinct patterns of engagement across countries and ownership, and whether these patterns align with news outlets’ Facebook distribution strategies. Essentially, our goal is to move the debate on media engagement forward by exploring patterns that can be attributed to national contexts and to expand the “cultural approaches” beyond production and distribution domains.

Scholarship on “measurable journalism” (Carlson, 2018) explores the many ways in which news audiences’ consumption practices are quantified and examined by newsworkers through metrics and analytics. The widespread adoption of audience data and metrics (Cherubini and Nielsen, 2016) presupposes that a concept such as engagement can be captured, quantified, and used for editorial and commercial purposes (Ferrer-Conill, 2017). This is important because the central role of metrics of audience engagement in news organizations sets the standards for journalistic success (Belair-Gagnon, 2018) and economic relevance (Gerlitz and Helmond, 2013), and also social legitimacy

(Carlson, 2018). As long as the industry continues to understand engagement as a predominantly measurable behavior at a user level (Steensen et al., 2020), research will fail to understand whether aggregated metrics of interactivity represent broader forms of engagement with the news.

Our departing argument suggests that if audience feedback and data have an effect on news production (Lee and Tandoc, 2017), then the patterns of consumption should align with production patterns. Therefore, this alignment should be a variable that helps explain differences across journalistic output. Considering that audience engagement has become a key performance indicator of journalistic production (Cherubini and Nielsen, 2016) and that audience analytics exert social influence in norm formation in the newsroom (Zamith et al., 2019), it is relevant to investigate if engagement metrics are contingent on cultural markers.

To attune to trends in newsrooms, in this study, we consider engagement as a form of interaction, or what Haim et al. (2018) call “popularity cues” as a site where news production and consumption interact. Our goal is to scrutinize audience engagement through aggregated metrics, seeing what newswriters see, but at a scale that is often out of reach for individual journalists or news organizations. Thus, this study’s contribution lies in providing the first insights into the existence of distinct, national forms of engagement. These insights are backed by a wealth of data that showcase over 69 million interactions by Facebook users with news posts, providing an accurate view of engagement patterns across the three Scandinavian countries. This constitutes the first study, to our knowledge, to focus on engagement as a cultural trait while analyzing the practical entire national engagement of three countries. We analyze 1,173,159 public posts published by 482 Scandinavian news outlets’ to their 694 Facebook pages. We acknowledge that finding causation between news consumption on Facebook and news production is beyond the reach of this study. However, if the patterns of engagement show similar variation as journalistic output based on key contextual variables, it would be an indicator that “cultures of engagement” exist and could be a relevant factor when thinking about contemporary news engagement.

A reductionist and quantified approach to audience engagement

Due to the current focus on metrics and analytics in journalism scholarship (see Zamith, 2018), the notion of engagement has slowly been reduced, among researchers and practitioners, to an aggregation of ill-defined technological measurements (Nelson, 2018) that loosely indicate what audiences want from news outlets (Ferrer-Conill and Tandoc, 2018). While we remain skeptical of equating metrics to what the audience wants, at a larger scale, metrics point to the content with which audiences chose to engage. Following the approach of Steensen et al. (2020), we believe this is a reductionist and quantified understanding of audience engagement, but we acknowledge it is the one practitioners adopt and welcome. While “cultures of news” are more a theoretical approach than an established theory, our interest here is, first, to discuss the social importance of quantifying journalism and engagement in social media; second, to visualize forms of cultures of production and dissemination across Scandinavian news media on Facebook; and third,

to explore the existence of cultures of engagement based on the quantification of their behavior.

Quantifying audience engagement with popularity cues

The quantification of social phenomena continues to grow as an attempt to simplify and measure the complexity of social dynamics through technological means (Berman and Hirschman, 2018). In news media, the “desire for numbers” (Kennedy, 2016) can be understood as a form of rationalizing both the societal and commercial relevance of an industry and a profession that embraced online publishing with the speed of an aging tortoise.

While the current push for engagement responds to a “public media journalists’ desire to make their relationship with the public more enduring and mutually beneficial” (Belair-Gagnon et al., 2019: 558), the widespread adoption of metrics and analytics as a form of quantifying audience behavior signals an attempt to capture “audience engagement.” This quantification of behavior has three major developments. First, the deployment of analytic tools in the newsroom is becoming central in editorial decision-making and advertising negotiations (Moyo et al., 2019). Second, this development has also spurred the creation of new journalistic positions, such as audience-oriented editors, whose task is to translate audience engagement in the newsroom (Ferrer-Conill and Tandoc, 2018). And third, it has led to the uptake of external analytic providers (Belair-Gagnon and Holton, 2018) inside newsrooms analyzing both internal and social media audience engagement. The transition from an “imagined audience” (Litt, 2012) to a “constructed audience” (Napoli, 2011) responds to a technologically aided attempt to understand the audience as a path to slowly close the gap between what news organizations produce and what news audiences consume (Boczkowski and Mitchelstein, 2013). This shift can be explained by an attempt to maximize the commercial value of the audience (Napoli, 2011) by producing what news organizations believe will yield higher levels of engagement. Bonsón and Ratkai (2013), for example, claim that metrics, such as popularity, commitment, and virality are suitable to assess reactivity, dialogic communication, and stakeholder engagement, as well as their social legitimacy on corporate Facebook pages. While Steensen et al. (2020) claim that to truly capture audience engagement, news organizations should not only focus on the behavior-technical aspects and instead expand their analysis on emotional, spatial-temporal, and normative dimensions of engagement, it is clear that practitioners tend to equate audience behavior captured by metrics to audience engagement (Cherubini and Nielsen, 2016).

Thus, it is important to acknowledge that the current understanding of engagement across most media industries relies on few quantified patterns of behavior on social media, specifically small “acts of engagement,” such as liking, sharing, and commenting, which require limited audience investment (Picone et al., 2019). Being “small,” however, does not diminish their importance, as aggregating multiple instances of specific behavior ascribes a monetary value to that behavior (Gerlitz and Helmond, 2013). Despite not capturing emotional or normative aspects of engagement, these popularity cues are “metric information about users’ behavior or their evaluations of entities” (Haim et al., 2018: 188) that have the capacity of affecting not only news production but also

patterns of consumption among the audience as they often feed into algorithmic recommendation systems that drive news consumption (Porten-Cheé et al., 2018). Moreover, by posting news on social media, news organizations aim to both drive and increase engagement with their content, which, at the same time, will modify audience behavior. If technical constraints fail to capture all dimensions of engagements (Steensen et al., 2020), may be the large-scale aggregation of technical-behavioral dimension (through the actions of Facebook's platform-driven population), as well as the spatial-temporal dimension (through the externally constructed Scandinavian population during 2018/2019) might yield better results. This implies that, just like with any dimensions of news production and consumption, there are nuances affected by their cultural contexts, and even the adoption or pushback of metrics in news media is contingent on specific "news cultures" (Hanusch, 2017).

Cultures of news production and consumption

There have been multiple impressive comparative projects theorizing the relationship between journalism, politics, economics, and culture, and what this means for news content, professional ideals, and independence, to mention a few dimensions (De Vreese et al., 2017; Hallin and Mancini, 2004; Hanitzsch et al., 2011; Mellado, 2015). Drawing from a functionalist model of culture (Hofstede, 1980), media researchers have ascribed these dimensions to cultural and national borders. Deuze (2002), for example, comparing Germany, Great Britain, Australia, and the United States, concludes that a

national news culture can be seen as consisting of the characteristics of its journalists, its types of storytelling, and its relationships to news sources and public, or, in other words, to its structure and agency in relation to media types, genres, and public perceptions. (p. 143)

Similar "cultural" approaches, often scrutinized through international comparative research, have been explored in journalism scholarship (Bødker, 2015; Esser, 2008; Hanitzsch, 2007; Hanusch, 2009). Particularly, in Scandinavian countries, the news media market is characterized by a strong presence of the state, as a player that not only regulates the market tightly, but that also participates in it via subsidies and public broadcasting services (Sjøvaag, 2019). While the role of the state exerts different influences in other media systems (such as clientelism in the polarized-pluralist media; Hallin and Mancini, 2004), the involvement of the welfare state in the Nordic media system is associated with maintaining journalistic professionalism and the democratic and social duties of news media (Kammer, 2016). The coexistence of a public media sector alongside a commercial, private media rests on the ideals that the public should have access to a diverse wealth of content that is both commercially and socially viable (Syvertsen et al., 2014).

On the reception side of the engagement, the fast-growing body of literature concentrates on how and why users interact (e.g. shares, likes, comments) in one particular country (Lee and Ma, 2012; Picone et al., 2016; Swart et al., 2018). Alternatively, research is interested in exploring correlations between specific content dimensions (e.g. emotions, subjective writing) and how much news items are shared (Khuntia et al., 2016;

Trilling et al., 2016). The focus on users per se suggests that the results are either an aggregation of randomly chosen individuals (quantitatively) or insights into how culturally embedded people relate to engagement (qualitatively) rather than an actual investigation into the diversity of voices as they collectively exist online (e.g. Silverstone, 2013). Toff and Kalogeropoulos (2020), however, consider that group-level social, cultural, or political forces form specific “cultures of news consumption” that should yield observable country-level differences in collective patterns of consumption. In this study, we focus on patterns of user engagement as they unfold at a large scale in real-life settings, following a similar logic. If there are “cultures of news production” and “cultures of news consumption,” we should find “cultures of engagement” where patterns of news production and distribution on social media meet users’ consumption patterns.

Comparative research has demonstrated that there are indeed distinctions in journalism, depending on the culture in which it is embedded. Similarly, studies on news consumption demonstrate the relationship between news media output and news consumption and knowledge levels about current affairs among the public (Aalberg et al., 2013; Curran et al., 2009; Shehata and Strömbäck, 2011). Similar comparative studies indicate that commenting and sharing of news on social media vary between countries and news sites (Kalogeropoulos et al., 2017; Larsson, 2018). From the perspective of news consumption in Scandinavia, Schröder et al. (2020) find that while news consumption commonalities (e.g. preferred sources of news, pathways to news, paying for online news, and trust in the news) confirm the existence of a “Nordic news media system,” there are intra-systemic differences across the countries. This does not challenge Hallin and Mancini’s (2004) composition of the Democratic Corporatist Model, but rather suggests a more granular and nuanced account for the sub-division of that model. What Schröder and colleagues propose is that the North/Central European model can further be divided into sub-systems and that within the Nordic system, there are minor, but significant national differences. Surveying these popularity cues highlights the perceived relevance of news items among a population that can be appreciated by both news producers and audiences, potentially affecting both patterns of news production and consumption (Porten-Cheé et al., 2018). At a large-scale and aggregated level, these cues or acts of engagement show Facebook audiences considered worth interacting with and providing patterns of collective behaviors toward news outlets’ posts.

Theoretical synthesis and research questions

In light of the theoretical discussion, this article offers three theoretical propositions.

First, as the industry only has technological means to quantify audience behavior, news organizations have conflated audience engagement with popularity cues while overlooking the emotional, normative, and spatial–temporal dimensions of engagement (Steensen et al., 2020). These cues have become central to establish news media’s commercial and societal success. They are also an instrumental part of the production process as well as in the consumption process. The former draws from metrics to discern what resonates with the audience to “inform” editorial decisions. The latter strengthens consumption patterns as liking, commenting, and sharing spreads the news across social media networks. By aggregating at a large-scale the results of technical–behavioral (i.e. Facebook likes, shares,

and comments) and the spatial–temporal (i.e. Scandinavia during 2018 and 2019), we provide a more contextualized understanding of audience engagement.

Second, we know there are specific cultures of news production that shape how journalism is produced according to various contextual variables, particularly national boundaries. Drawing from Esser (2008), if “news cultures” are manifested through content, we believe similar dynamics should exist around how audiences engage with that content and that the patterns of engagement with the content should visualize existing “cultures of engagement.” While Scandinavian countries coexist within the same media system (Hallin and Mancini, 2004) and, therefore, we should find small differences in social media news distribution, these differences should be further explored at the national level (Schröder et al., 2020). Similarly, we propose that the patterns of engagement should reproduce these patterns of output dissemination, and whether there are any differences in production, these should be replicated across the patterns of production (e.g. more output in one country should be followed by more engagement in that same country).

Third, due to more substantial metrics-driven scrutiny of audiences and stronger attempt to close the news gap as a way to increase revenues (Boczkowski and Mitchelstein, 2013), we propose that audience engagement should be sharper with private-owned outlets than with state-owned ones since the role of public service media is not to maximize profit but rather to offer more diverse content (Sjøvaag, 2019). We do not have a priori comparative data of engagement across countries; however, we expect to see similar patterns of engagement with commercial and public outlets across national boundaries.

Given these theoretical propositions, this study sets out to respond to the following research questions:

First, we want to establish a baseline and see to what extent engagement varies, if at all, between news posts and news items in the different countries. Thus, RQ1 asks:

Do the patterns of engagement with the news posts on Facebook in the three Scandinavian countries align with the patterns of news items posted on Facebook? If not, how do they diverge?

Second, given our literature review and theoretical synthesis above, we are interested to see how the engagement patterns established in RQ1 are connected to country and ownership.

RQ2 asks: Are there different patterns of engagement depending on outlet ownership or country?

Finally, in RQ3, we want to make a combined comparison, including both countries and ownership: How do differences between patterns of engagement vary across countries and outlet ownership?

Data and method

This study is based on an inductive research design based on a rich dataset of Facebook posts along with their engagement metrics (i.e. likes, shares, comments) from all news outlets in three Scandinavian countries. This first exploration looked for patterns and

relationships that offer potential meanings, rather than causal relationships. The reason for looking at three countries within the same media system is that comparing patterns of engagement from very diverse countries would present “obvious differences which could be explained in terms of the societal and corresponding media cultural differences of the countries” (Deuze, 2002: 135). We believe the presence of variance in patterns of engagement in countries that are very similar would be a better indicator of a cultural approach to engagement.

The empirical material builds on an initial amount of 489 news outlets, active in one or several of the Scandinavian countries (Denmark, $n=165$ active outlets; Norway, $n=153$; and Sweden, $n=173$). This list represents all news outlets as compiled in early 2018 in accordance with the editorial poster, to which these outlets reportedly adhere and thus claim to follow ethical guidelines as well as Facebook’s code of the press. We then coded the outlets manually for whether they are wholly state-owned (Danish Broadcastin Corporation (DR), Norwegian Broadcasting Corporation (NRK), and Swedish Public Radio (SR) as well as Television SVT) or commercial outlets ($n=485$). Moreover, we manually collected these outlets’ Facebook pages, summing up to 710 Facebook pages. This increase from 489 outlets to 710 Facebook pages results from several outlets maintaining more than one Facebook page to, for example, separate sports from politics.

Actual post data, then, were collected through the Swedish commercial social media data supplier *Twingly*¹ (which later transferred these services to *Netfeed*²). Until recently, *Twingly* provided access to monthly archives of public Facebook posts along with their publication date, post texts, and the cumulated numbers of likes, shares, and comments (counted 1 month after publication). Although most researchers were prohibited access to these parts of the Facebook application programming interface (API) after April 2018 (Freelon, 2018), *Twingly* was able to retain bilateral contracts with Facebook for some time to digest public posts along with aggregated numbers. We provided *Twingly* with our list of Facebook pages in mid-2018 and retrieved data from August 2018 until the end of June 2019. While originally aiming for 1 year of data, technical issues led to the ultimate set of 11 months. We collected all public posts, including links, status updates, photo, and video posts, and manually inspected a sample of posts to compare it to the actual Facebook pages of the news outlets to validate *Twingly*’s data, yielding no irregularities. We also removed all Facebook pages and outlets that were less active than one post per month. Ultimately, this left us with a total of 482 active news outlets subsuming 694 Facebook pages and a total of 1,173,131 posts (see Table 1).

The posts distribute across the three countries following roughly similar proportions as the numbers of Facebook pages; that is, while the final data consist of 27% Danish Facebook pages (Norwegian: 38%; Swedish: 36%), it also consists of 22% posts from Danish pages (Norwegian: 44%; Swedish: 33%). Relatedly, state-owned pages from Denmark make up for 2% of all Facebook pages (Norway: 5%; Sweden: 4%) and 1% of all posts (Norway: 3%; Sweden: 4%).

Twingly also provided us with the numbers of comments, likes, and shares each post retrieved 1 month after its publication. While these metrics of engagement vary heavily, in total, all posts yielded over 69.6 million interactions (i.e. 20.2 million comments, 42.7 million likes, and 6.7 million shares). While we cannot be sure *Twingly*’s data collection actually contains every single post and interaction, to the best of our knowledge, our

Table 1. Descriptive statistics across outlets for posts, likes, comments, and shares in Denmark, Norway, and Sweden.

	Denmark	Norway	Sweden	Totals
Available outlets	165	153	173	489
Available Facebook pages	190	267	255	710
Active outlets	162	153	169	482
Active Facebook pages	185	263	248	694
Posts	260,155	521,247	391,729	1,173,131
Posts/outlet	1605.90	3406.84	2317.92	2433.88
Comments				
Total amount	8,165,604	6,471,947	5,589,092	20,226,640
<i>M</i>	10.00	4.65	4.89	6.52
<i>SD</i>	19.65	8.70	8.71	13.60
Max. <i>M</i>	154.57	70.07	77.66	154.57
Median	1	0	0	0
<i>M</i> of 0 comments (%)	49	58	55	54
Likes				
Total amount	11,083,260	16,742,440	14,885,530	42,711,230
<i>M</i>	20.75	20.80	19.90	20.47
<i>SD</i>	25.14	18.57	21.20	21.81
Max. <i>M</i>	243.30	134.54	188.54	243.30
Median	6	5	5	6
<i>M</i> of 0 likes (%)	14	16	14	14
Shares				
Total amount	2,469,640	1,787,363	2,445,991	6,702,994
<i>M</i>	4.78	1.87	2.85	3.19
<i>SD</i>	6.68	1.90	3.28	4.61
Max. <i>M</i>	55.09	14.73	28.56	55.09
Median	1	0	1	0
<i>M</i> of 0 shares (%)	41	58	49	49

SD: standard deviation.

Comments, likes, and shares summarized within each outlet first, before calculating depicted results across outlets.

dataset accounts for the entire population of news posts made on Facebook by news outlets in these countries during the 333 day period of data collection, with the exception of 2 days (30 December 2018 and 16 May 2019) during which technical issues prevented reliable data collection. This issue, however, should only comprise a minor fraction of posts per outlet.

For our analyses, we employed simple descriptive measures to get a sense of the volume of posts and their respective engagements. To account for outliers among posts, we first summarized within each outlet before deriving measures across countries and ownerships. With such a high volume of data, and considering that we are analyzing the entire population of interactions, typical inferential analyses were unnecessary due to

decreasing standard errors, which in turn increases statistical power. Thus, while the results are mostly descriptive, they are still significant. To answer RQ1 and RQ2, we analyzed the distribution of posts produced and the interactions created. These interactions are divided into three metrics of engagement (i.e. likes, comments, and shares), for which we analyzed their total amount, the mean and median across outlets as well as the highest mean per outlet, and the outlets' average share of posts that did not receive any interactions. Knowing the distribution of posts without engagement helps to further offset the effects of viral posts. While it is interesting to know the number of interactions (total and per post), it is also important to visualize to what extent people engage with the complete set of posts produced by news outlets. To respond to RQ3, we conducted a similar analysis but combining both variables so that we could see the distribution and descriptive statistics for outlets' ownerships across all three countries individually. This allowed us to see whether the individual results for each variable had unusual variations when analyzed together.

Results

Engagement at a national level

The first research question focused on how Facebook users engaged with news posts made by news organizations. Table 1 offers an overview of key indices of posts in each country as per the three main engagement metrics in use—comments, likes, and shares. Figure 1 depicts histogram distributions for each of the three countries and each of the three metrics.

In general, engagement with news posts on Facebook shows a pattern in which likes are most common interactions ($\Sigma=42,711,230$, $M=20.47$, $SD=21.81$), followed by comments ($\Sigma=20,226,640$, $M=6.52$, $SD=13.60$), and shares ($\Sigma=6,702,994$, $M=3.19$, $SD=4.61$). The popularity of likes, comments, and shares goes beyond the sum of interactions. On average across outlets, 86% were liked by at least one user, 46% received at least one comment, and 51% were shared. Moreover, while there is a roughly similar number of posts with comments and shares, likes are almost three times more frequent than both comments and shares. These results show the usual engagement patterns in which likes are more frequent than comments and shares as a representation of different levels of engagement (Kim and Yang, 2017); however, the contrast with the results by Larsson (2017) showing that the means of each interaction, overall, is much lower now than it was in 2014. Larsson (2017), however, analyzed the outlets' pages, while this study covered individual news posts, which are expected to attract less engagement individually than the outlets' pages as a whole.

However, the premise of this study suggests that if there are evident news production cultures that resonate at various levels, there probably are engagement cultures replicated in how users interact with the news. At a national level, the production of posts by news organizations across countries is dominated by Norwegian media. Norwegian outlets posted a total of 521,247 posts, with an average of almost 3407 posts per outlet. In comparison, Sweden, with 2318 posts per outlet, and Denmark, with 1606 posts per outlet, trail behind with much less activity on Facebook.

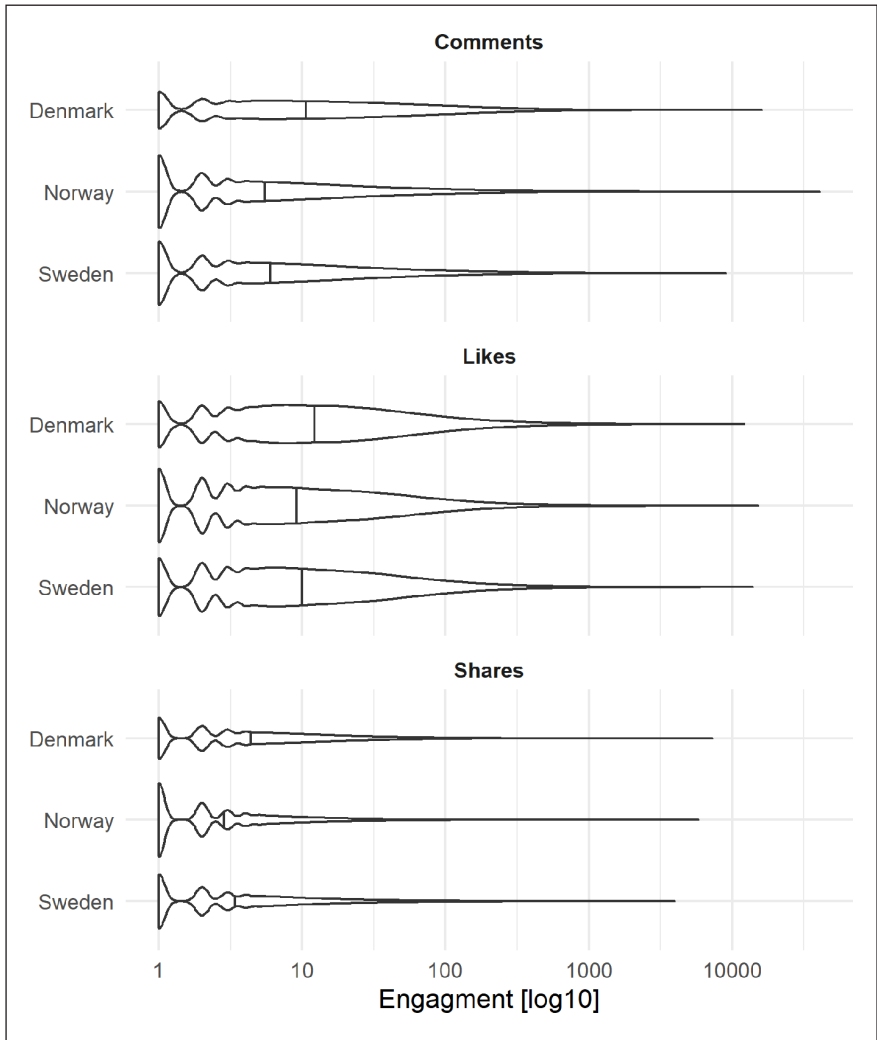


Figure 1. Violin plots of logarithmized engagement metrics. Violin bodies show kernel density (i.e. histograms); vertical lines indicate median values per violin.

Looking at the engagement of users with these posts, the data show that the patterns of engagement are inverted in the three countries. The engagement with Danish posts is by far the highest of all. While they receive a fewer total number of likes, Danish ($M=20.75$, $SD=25.14$) news posts have about the same average of likes as posts by Swedish ($M=19.90$, $SD=21.20$) and Norwegian ($M=20.80$, $SD=18.57$) outlets. Only 14% of posts by Danish outlets were not liked by Facebook users. The difference is most prominent in shares and comments, though. On average, Danish ($M=10.00$, $SD=19.65$) posts received comments at a far superior rate than Swedish ($M=4.89$, $SD=8.71$) and

Norwegian ($M=4.65$, $SD=8.70$) posts. 49% of all Danish posts receive no comments, while 55% of Swedish posts and 58% of Norwegian posts are left un-commented. Similarly, Danish ($M=4.78$, $SD=6.68$) posts were shared more than Swedish ($M=2.85$, $SD=3.28$) posts and almost three times as much as Norwegian ($M=1.87$, $SD=1.90$) posts. About 59% of Danish posts are shared by users, while only 51% of Swedish and 42% of Norwegian posts are shared.

Considering the number of interactions analyzed, these results suggest that there are differences in the way Nordic audiences engage with news Facebook posts. Overall, Danish audiences like, comment, and share at a higher rate than Swedish and Norwegian audiences, respectively. This is more accentuated in comments and shares. There are two main takeaways here. The first one relates engagement to production patterns. While Norwegian outlets produce more posts than their Swedish and their Danish counterparts, it is the Danish users that engage more with the fewer pieces. Norwegians show much less interest in making comments and sharing posts, despite having a larger pool of posts to interact with. Thus, these differences indicate that the volume of content is not necessarily an indicator of engagement and that, with fewer posts, Danish outlets manage to engage more with their audience. While there is a relationship between the number of posts and the total measurements of engagement, the engagement per post, and most importantly, the type of engagement is not correlated to the overall number of posts in each country. The implication here is that while production patterns have a role in engagement metrics, they are not necessarily a good indicator for the type or intensity of audience engagement with the content that is disseminated through social media. The second one relates engagement to consumption patterns. The fact that we could find distinct differences in consumption patterns and that these also show different patterns across the engagement measures show that there are different forms of engagement across countries. Moreover, seeing that specific “popularity cues” are more pronounced in specific countries (like commenting and sharing in Denmark) means that audiences in these countries tend to interact with news on social media in distinct ways. We cannot claim whether the type of interaction is positive or negative, but the cycles of interaction between the actors are different across nations.

Engagement at the outlet ownership level

The second research question focused on whether outlet ownership (i.e. state-owned or private-owned) has any implications for how audiences engage with them.

As Table 2 and Figure 2 show, commercial outlets in Scandinavian countries outnumber state-owned outlets considerably. The number of commercial outlets is high because, while the newspapers market was always a private sector, with the liberalization of broadcasting services in the Nordic countries, commercially driven outlets multiplied manifold. The higher number of commercial outlets means that the vast majority of Facebook posts in the sample belong to commercial outlets (about 92%), and therefore, the total number of likes, comments, and shares is higher in commercial news media.

The number of posts per outlet, however, shows that commercial outlets post far fewer news items than public broadcasters. Conversely, looking at posts per Facebook page, the number of posted news items is roughly equal. This is because public

Table 2. Descriptive statistics for posts, likes, comments, and shares across state-owned or commercial outlets.

	Commercial	State-owned	Total
Active outlets	478	4	482
Active Facebook pages	618	76	694
Posts	1,082,221	90,910	1,173,131
Posts/outlet	2264.06	22,727.5	2433.88
Comments			
Total amount	17,604,910	2,621,736	20,226,640
<i>M</i>	6.33	30.10	6.52
<i>SD</i>	13.37	22.03	13.60
Max. <i>M</i>	154.57	58.08	154.57
Median	0	4	0
<i>M</i> of 0 comments (%)	54	26	54
Likes			
Total amount	36,725,230	5,985,997	42,711,230
<i>M</i>	20.13	60.96	20.47
<i>SD</i>	21.34	40.66	21.81
Max. <i>M</i>	243.30	102.38	243.30
Median	6	15	6
<i>M</i> of 0 likes (%)	15	6	14
Shares			
Total amount	5,702,981	1,000,013	6,702,994
<i>M</i>	3.13	9.97	3.19
<i>SD</i>	4.56	5.23	4.61
Max. <i>M</i>	55.09	14.73	55.09
Median	0	2	0
<i>M</i> of 0 shares (%)	49	30	49

SD: standard deviation.

Comments, likes, and shares summarized within each outlet first, before calculating depicted results across outlets.

broadcasters are more prominent in scale and branch off to multiple national and local pages. State-owned media, while being few, have the capacity to engage more with audiences by posting more on social media. This is also replicated in how users engage with the posts. While private-owned media produces the vast majority of posts, when comparing the means of likes, comments, and shares shows that public broadcasters outperform private-owned media in audience engagement. The number of likes per post in state-owned media posts on Facebook ($M=60.96$, $SD=40.66$) almost triples the number of likes in commercial media ($M=20.13$, $SD=20.13$). Across all the posts, only 6% of public service posts have no likes. In other words, 94% of all posts by state-owned media have at least one like by the audience. In comparison, only 85% of commercial posts are “liked” by the audience. The difference in comments also favors state-owned media. In this regard, public broadcasting media have an average of 30 comments per post ($M=30.10$, $SD=22.03$), while commercial media have only six comments per post

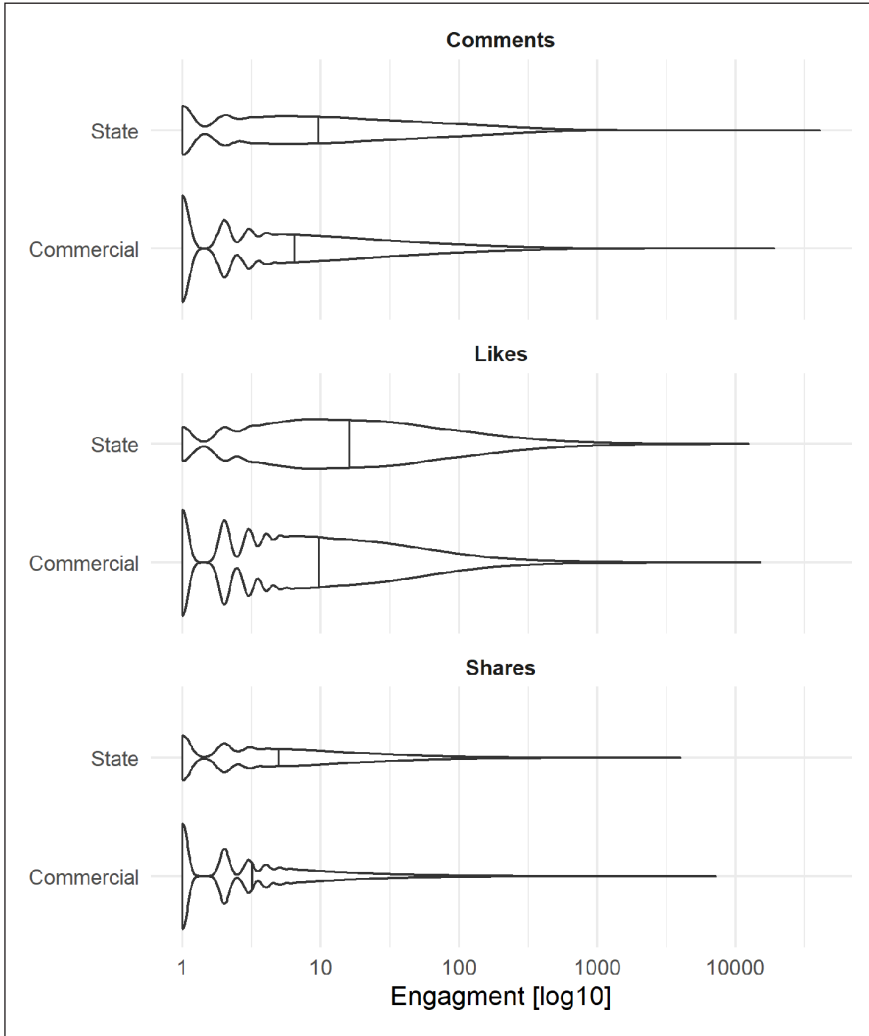


Figure 2. Violin plots of logarithmized engagement metrics as per ownership. Violin bodies show kernel density (i.e. histograms); vertical lines indicate median values per violin.

($M=6.33$, $SD=13.37$). About 74% of all public broadcast posts receive at least one comment, while only 46% of comments in commercial media received comments. This difference is also present in the number of shares. Even though the total number of shares, as discussed above, is smaller, in state-owned media, about 70% of all posts are shared at least once by the audience ($M=9.97$, $SD=5.23$). In contrast, 49% of commercial posts are not shared at all ($M=3.13$, $SD=4.56$).

This finding is surprising in two respects. First, the results challenge the theoretical proposition that commercial outlets, with a higher audience-orientation and more use of

metrics and analytics, should have higher levels of engagement with the audience. This is based on the fact that the more commercial the outlet, the smaller the news gap (Boczkowski and Mitchelstein, 2013) between what the audience wants and what the outlets produce, given that private-owned outlets seek commercial gain, as opposed to public media services (Sjøvaag, 2019). However, the data show a much higher level of engagement with public broadcasters' posts, and therefore, state-owned media posts on Facebook are more popular and successful at engaging the audience. Second, private-owned media, despite producing more content than public broadcasters, fail to engage with the audience, and about half of their posts are not valuable enough to grant a comment or a share.

Engagement across national context and outlet ownership

The third research question focused on whether the comparison of contextual variables like country and outlet ownership could produce more nuanced and complex findings.

Table 3 and Figure 3 show the comparison between the contextual variables of the engagement metrics. Combining these two factors visualizes a more complex situation in Norway. While the national aggregate pointed to a higher number of posts by Norwegian outlets, the comparison shows that it is the commercial outlets that dramatically increase the number of posts per outlet in contrast with the other commercial outlets in Denmark and Sweden. In other words, while Denmark and Sweden have similar patterns of posts per outlet in commercial outlets, Norway is an outlier at this point.

Another apparent anomaly emerging from the comparison of variables is the engagement with Swedish public service broadcasters. Table 1 shows seemingly regular levels of engagement with Swedish outlets, on par or in between the levels of Denmark and Norway. Table 2 shows higher engagement with public broadcasters across the board. However, Table 3 shows that Swedish users' engagement with commercial and state-owned outlets' posts diverges less than engagement in Denmark or Norway; commenting, liking, and sharing in Sweden, while also showing discrepancies between commercial and state-owned outlets, works at more similar rates. This means that Sweden has substantially different patterns of engagement than Denmark and Norway in that the latter clearly favor public service engagement. In fact, after considering outlet ownership separately, we can see that Norwegian outlets have the least comments and the least shares with private-owned outlets. Another striking example is the comparison of comments in Danish ($M=58.08$) posts by state-owned outlets, which is four times higher than in Swedish state-owned ($M=12.62$, $SD=3.62$) posts. Norwegian ($M=37.06$) posts receive comments at over three times the rate of Swedish posts. Similar differences are replicated at the level of likes and shares, where engagement with the state-owned Norwegian outlets is higher than in the other two countries. Interestingly, engagement with Norwegian commercial outlets is on par or lower than in both Sweden and Denmark.

Taken together, these differentiated findings primarily suggest the need to add a more granular set of intervening variables to further scrutinize the role that different variables play in explicating the different emerging patterns of engagement.

Table 3. Descriptive statistics for posts, likes, comments, and shares across state-owned or commercial outlets in Denmark, Norway, and Sweden.

	Denmark		Norway		Sweden		Total
	Commercial	State-owned	Commercial	State-owned	Commercial	State-owned	
Active outlets	161	1	152	1	167	2	482
Active Facebook pages	174	11	228	35	218	30	694
Posts	247,017	13,138	489,050	32,197	346,154	45,575	1,173,131
Posts/outlet	1,534.27	13,138	3,217.43	32,197	2072.78	22,787.5	2433.88
Comments							
Total amount	7,402,494	763,110	5,278,684	1,193,263	4,923,729	665,363	20,226,640
M	9.70	58.08	4.44	37.06	4.80	12.62	6.52
SD	19.34	-	8.32	-	8.72	3.62	13.60
Max. M	154.57	58.08	70.07	37.06	77.66	15.18	154.57
Median	1	12	0	5	0	2	0
M of 0 comments (%)	49	15	59	24	55	33	54
Likes							
Total amount	9,926,101	1,157,155	13,446,000	3,296,446	13,353,130	1,532,396	42,711,230
M	20.33	88.08	20.26	102.38	19.82	26.70	20.47
SD	24.64	-	17.40	-	21.29	12.64	21.81
Max. M	243.30	88.08	134.54	102.38	188.54	35.64	243.30
Median	6	20	5	23	5	8	6
M of 0 likes (%)	14	5	16	4	14	8	14
Shares							
Total amount	2,291,246	178,394	1,313,165	474,198	2,098,570	347,421	6,702,994
M	4.73	13.58	1.78	14.73	2.82	5.78	3.19
SD	6.67	-	1.59	-	3.28	3.36	4.61
Max. M	55.09	13.58	11.89	14.73	28.56	8.16	55.09
Median	1	3	0	3	1	1	0
M of 0 shares (%)	41	25	58	24	49	35	49

SD: standard deviation. Comments, likes, and shares summarized within each outlet first, before calculating depicted results across outlets. Having only one state-owned outlet, no standard deviations can be calculated for Denmark and Norway.

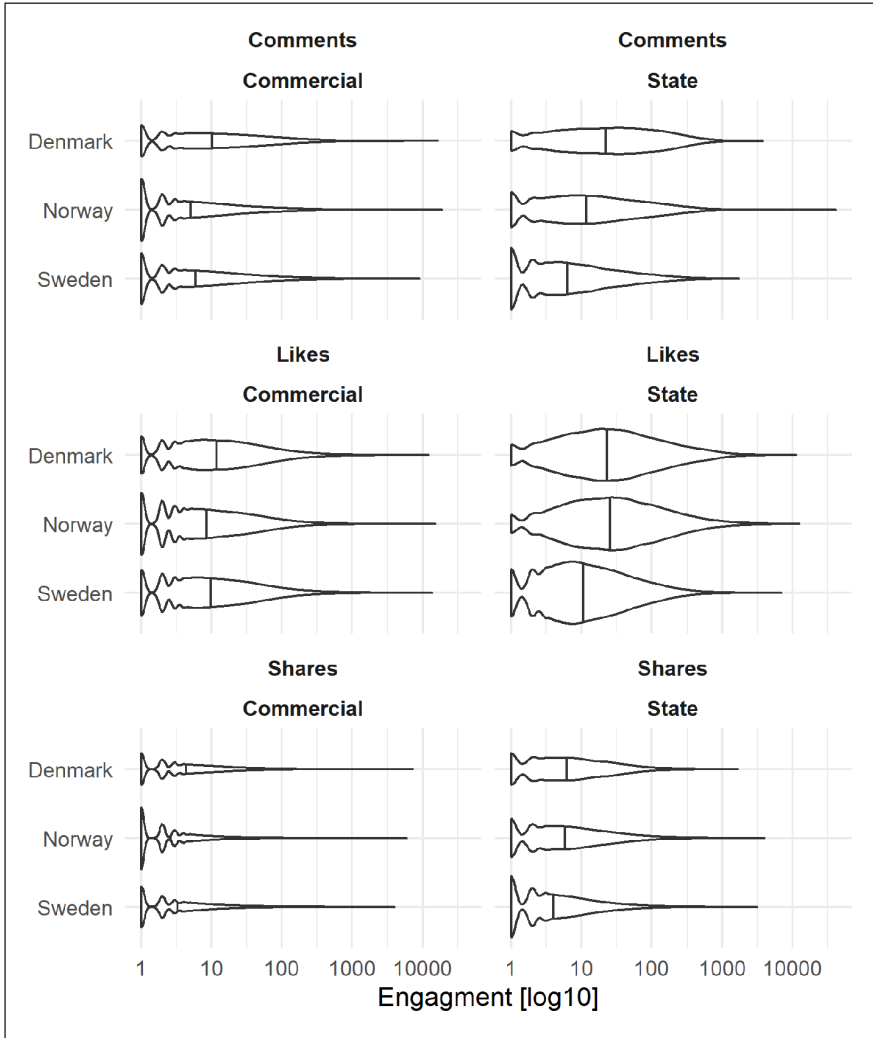


Figure 3. Violin plots of logarithmized engagement metrics as per country and ownership. Violin bodies show kernel density (i.e. histograms); vertical lines indicate median values per violin.

Discussion and conclusion

A few interesting observations can be made of this study. First, we see a clear divergence in how news organizations post news on Facebook and how audiences engage with them (RQ1). We expected that countries with more outlets would make more posts, and therefore would receive more engagement. However, our findings show that posting more news on Facebook does not result in higher levels of engagement necessarily. The three countries have a similar number of outlets, but the total number of interactions are very

different. The differences become even more prominent when comparing engagement per post. Denmark, as the country with the outlets that least post on Facebook, captures over 35 interactions per post on average, 30% more than Norway, at 27 interactions per post, and Sweden, with 28 interactions per post. These differences are replicated with small variations for both comments and shares. Another critical difference is the number of posts receiving at least one interaction. Here, too, Danish readers show more engagement, liking 86%, commenting on 51%, and sharing 69% of all posts. Thus, the pattern of news production does not align with the pattern of engagement. In fact, in our Scandinavian case, these patterns are diametrically opposed, and the country with the least posts reaps by far the most engagement.

This has two important implications. First, quantity does not necessarily drive audience engagement. While it seems logical that the more news outlets publish content, the more it should be consumed by users, it is clear that pushing content and expecting that audiences will engage with it might not be a good strategy for news outlets. Second, it establishes audience agency to navigate, select, and engage with content that better suits their needs, rather than what news organizations produce. While we do not know why each country shows different and distinct patterns of engagement, Kim and Yang (2017) propose that like, comment, and share on Facebook are behaviors reflective of affective and cognitive triggers that can be connected to sensory and visual interaction (such as likes), rational and interactive (such as comments), or a combination (such as shares). Following that logic, cultures that are oriented more toward interactive forms of communication would show a higher level of comments and shares, and cultures drawn toward sensory and visual interaction might prefer likes. This is a theoretical proposition we hope future research might test empirically in order to establish whether such differences exist, or not, between the countries in the study.

Turning our focus to outlet ownership (RQ2), we expected that commercial outlets would show higher levels of engagement because they would actively try to produce news that resonates with the audience, thus reducing the news gap (Boczkowski and Mitchelstein, 2013). Instead, what we see are much higher levels of engagement with state-owned outlets than on private-owned outlets. While there are more posts from private-owned outlets, the level of engagement with public broadcast posts outperforms commercial posts in all three metrics of engagement. We believe the higher levels of engagement with state-owned outlets should be understood as users feeling a stronger connection with the stories covered by public outlets. While our data are not conclusive on this, we can find traces of such “strong connections” in scholarship that points toward higher levels of trust in public media (Enli et al., 2018), or willingness to engage publicly with “more important issues” in social media (Newman et al., 2019). New research should explore potential social media strategies across private and publicly owned news outlets.

Looking at national and ownership variables in isolation yielded clear-cut results that we did not expect. However, looking into the relationships between these two variables provides more nuanced insights (RQ3). First, in Denmark, the combination of both variables presents similar results to the variables in isolation, namely, more interaction with state-owned media in all three metrics of engagement and lower engagement with commercial outlets per post on average. If anything, there is an amplification of engagement

across all metrics and both types of outlets. Danish readers comment and share more than their counterparts in Norway and Sweden in general. Second, the results in Norway show a similar development; however, here, the sheer volume of private-owned posts reduces the mean of engagement in the isolated measurements. Third, and probably most surprisingly, Sweden shows the least differences in its distribution of engagement, between private-owned and state-owned outlets. This is a puzzling result that is only present once we analyze the combination of variables, and that was impossible to see in isolation. Closer inspection shows that, while engagement with posts from commercial outlets is higher than in other countries, what truly sets Sweden apart is the much lower levels of engagement with state-owned posts. Swedish readers, after all, seem to follow different patterns of engagement than those from Denmark and Norway.

From the perspective that engagement has become an economic and societal driver of relevance (Belair-Gagnon, 2018; Gerlitz and Helmond, 2013), we believe these results imply three main important conclusions. First, the patterns of production do not necessarily imply similar, aligning patterns of engagement. With such a large dataset, showing empirical results that clarify that fewer posts can lead to more engagement is important should be relevant for news organizations. Quantity of content is not a precondition for success, and, while our data do not include markers of quality, they imply that the relationship between engagement and news lies beyond churning articles on social media.

Second, even for countries as similar to Denmark, Norway, and Sweden, the patterns of engagement are strikingly different. The studies on “cultures of production” discussed earlier showed there are indeed differences in how news media operates across national borders. This is the first study, to our knowledge, that identifies distinct “cultures of engagement” that are mostly overlooked in the literature. More importantly, our results show that the “cultures of production” and the “cultures of engagement” do not necessarily align. This is, of course, because the actors behind each of the “cultures” are different, but it implies that the mechanisms by which these actors interact may also have a cultural component.

Third, the overall level of engagements favors posts made by state-owned outlets against private-owned outlets. However, the more important implication here is that, if more engagement on social media carries an economic value (Gerlitz and Helmond, 2013; Khuntia et al., 2016), media organizations in Scandinavian countries should be more aware of the dominance of public media services and that the public’s engagement in social media should not only be a sign of societal relevance but their economic potential, as well. Our data show that even in social media, the levels of engagement with public media services is higher, and it is a sign of relevance that should be acknowledged.

A final comment in what all this means and why it is relevant. Our attempts to find “cultures of engagement” that showed explicit patterns of engagement across different national boundaries were based on a broader set of characteristics, such as practices, norms, and values. In that regard, claiming there are cultures of engagement based on three metrics of engagement that could be considered mere popularity cues (Haim et al., 2018) seems like a bet we are not willing to take. However, if we adhere to the reductionist approach that the industry and most often scholarship take toward engagement, and consider likes, shares, and comments as measures of engagement, then yes, we can find distinct patterns of engagement across national boundaries. We have already

acknowledged that our empirical material cannot explicate these changes, but our initial interests rested on the existence of these differences. This is relevant because it challenges the notion that engagement should mirror patterns of news production and dissemination in those national contexts. More importantly, it visualizes the need to pay more attention to the patterns of engagement on an aggregate level to understand larger trends in media consumption that may be invisible to news organizations and researchers when looking at just a few individual outlets. The overarching preferences in media consumption might be able to tell us more about the social fabric of a country, the differences between other countries, and the adequacy (or lack of) of media outlets to meet those preferences.

This study contributes to journalism studies in two distinct ways. Theoretically, we set out to find cultures of engagement, and while we argue for the need for a more complex set of measurements to fully grasp how audiences engage with the news, adopting a reductionist approach has provided the first building blocks to address varying forms of engagement across varying contextual factors. We believe this to be an important component that may be equally important to the cultures of news production, but that is often overlooked by journalism scholarship. Empirically, this study has provided the first large-scale insight into how audiences in different countries engage with news on Facebook. Beyond the comparative aspect, analyzing over a million posts and over 69 million interactions provides an empirical scale that is rarely present in our field.

Limitations

There are two limitations to this study we would like to address. Regarding reliability, the dataset was collected by a third-party provider (*Twingly*). This means that, while we could specify the pages we wanted to collect data from, the data collection process was eventually out of our hands, and we have relied on the quality of the data. The corpus of data also is a snapshot of aggregated data that does not account for changes across time.

Concerning validity, we hoped to capture possible “cultures of engagement,” but data on metrics of engagement only reflect a limited understanding of engagement (what Steensen and colleagues (2020) call the technical–behavioral dimension of engagement). Similarly, we are aware that we cannot account for inter-user differences, and their individual takes on engaging with Facebook. We have tackled this issue by taking a look at three most-similar cases, also in that respect. That is, while there are some socio-demographical differences between the three Scandinavian countries, Denmark, Norway, and Sweden have a fairly similar social composition (Syvertsen et al., 2014). According to Newman and colleagues (2019), Facebook’s use in Scandinavian countries is well comparable, as is their willingness to pay and other indications of media use, thus echoing Hallin and Mancini’s (2004) seminal typology for a Nordic media sphere. Hence, we do not have a reason to believe that the distribution of Facebook news users varies across social strata in each country under observation. While we address this issue theoretically, and our goal was to address engagement with the data available to news organizations, we still consider it a limitation to discuss engagement in such a reductionist approach. Similarly, we agree with Macfadyen (2010) that by adopting a functionalist model of culture, we accept a reductionist and essentialist approach to culture, yet, since

the studies defining news cultures are based on the functionalist paradigm, it would be dishonest from us to approach them differently. In addition, we are aware that our study could be interpreted as if engaging with Facebook posts made by news organizations equates to a cultural engagement with news. This is not our intention.

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Notes

1. <https://www.twingly.com/>.
2. <https://www.netfeedr.com/>.

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