

Is Social Media Killing Local News?

An Examination of Engagement and Ownership Patterns in U.S. Community News on Facebook

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Abstract

This article focuses on two forces linked to declines in coverage of genuinely local civic affairs: (a) the impact of increasing corporate consolidation in ownership among news providers, and (b) the degree to which the economic incentives and logics of digital platforms may also drive editorial decision-making at news organizations away from coverage of local news. Using a unique dataset of 2.4 million Facebook posts published by local news organizations in three U.S. states between 2018 and 2019, we find evidence that both factors matter. Long-running trends toward conglomeration in the industry have a demonstrable impact on how much and what kinds of local news gets posted on the site, but we also find that the platform itself may incentivize certain types of coverage over others. Specifically, we find organizations owned by chains are more likely to post duplicative, repurposed content that receive fewer interactions per post—evidence of quantity being valued over quality—as well as higher rates of engagement with national, hard news stories over unique content about local affairs. Findings shed light on how Facebook—combined with media ownership structures—may hinder the task of serving local communities with original news that satisfies important civic needs.

Keywords: Local news, social media, Facebook, audience research, analytics, online news, news deserts, media ecosystems

Local news in the United States faces an increasingly dire future. Three-quarters of Americans say they follow local news at least somewhat closely (Pew 2019), yet the dwindling supply or outright disappearance of local news in many communities has prompted growing concern about widening news media “deserts” (Abernathy 2018; Ferrier et al. 2016; Napoli, Weber, McCollough, and Wang 2018). While social media platforms ostensibly provide digital start-ups and struggling legacy organizations opportunities to expand their reach (Weber, Andringa, and Napoli 2019), news generally remains a small part of how people spend their time online with search engines and social media companies siphoning a growing and dominant share of digital advertising revenue (Hindman 2018).

This study is motivated by concerns about two forces believed to be linked to declines in coverage of genuinely local civic affairs: (a) ownership trends within the news industry which have led to increasing consolidation among news providers, and (b) the degree to which the economic incentives and logics of digital platforms may drive editorial decision-making at news organizations, what others have called the “Facebook problem” (Pickard 2020) or the “platformization of news” (van Dijck, Poell, and de Waal 2018). Using a unique dataset of 2.4 million Facebook posts published by local U.S. news organizations in 2018 and 2019, we find evidence that both forces may shape how much and what kinds of local news circulate online. Ownership matters, but aspects of the platform itself appear to matter as well—whether due to its affordances, distribution practices, or the way user preferences are channeled via algorithms. Specifically, we find that news organizations owned by publicly-traded conglomerates are most active on Facebook and generally receive more engagement on the platform relative to other kinds of news organizations. Second, we find that chains are also most likely to post content repurposed or duplicated from other sources, including wire services, which may serve as a

substitute for unique and original local coverage. These posts often received relatively fewer interactions on the platform but enable news organizations to post more frequently, which helps them to expand their reach on the platform. Third, we find that particular types of content—namely national, “hard news” stories—all else equal generate relatively higher rates of online engagement compared to local, “soft news” stories, potentially disincentivizing posts about local affairs. Combined, these findings shed light on how both media ownership structures and Facebook itself may limit the supply of local news that satisfies important civic needs.

Dual Forces Fueling the Crisis in Local News

A large body of evidence has long pointed to corporate consolidation as one of the most important factors contributing to the local news crisis. This history, which primarily has focused on the newspaper and television industries in the U.S., emphasizes how local news was once such a “cash cow” that it precipitated a series of mergers and acquisitions, including most recently by financial firms, which have become the largest owners of newspapers (Soloski 2019). Between 1997 and 2018, the share of weekly newspapers in the U.S. that were independently or locally owned fell from half to less than one third (Abernathy 2018). With venture fund Alden Global Capital purchasing Tribune Publishing (Izadi and Ellison 2021), it leaves just six conglomerates owning more than half of all daily papers in the U.S. (Future of Media Project 2021), with publicly-traded Gannett alone owning more than 500 daily and weekly publications (Tracy 2019). While consolidation is attractive to investors as a way of creating efficiencies and acquiring greater regulatory influence (Noam 2018), these trends typically have left local news organizations saddled with high debt loads, which is often accompanied by aggressive cost-cutting on the editorial side (Pompeo 2020).

To be sure, consolidation is only partly responsible for the crisis facing local news. Audiences have contracted for decades—newspaper circulation peaked in the U.S. in 1984 (Chittum 2014), for example—and digital competition for local advertising and classifieds led to catastrophic revenue losses regardless of ownership (Nielsen 2020; Jenkins and Nielsen 2020). Nevertheless, ownership is linked to declines in the quality of local journalism in two specific ways. First, consolidation is often associated with the “disappearance of local characteristics of media organizations and media content” (Croteau, Hoynes, and Hoynes 2006, 155). In other words, ownership by conglomerates is associated with less news produced within local communities. For example, when corporate organizations acquired local radio stations, those stations have often been weakened or shuttered altogether (Crider 2012). In the newspaper sector, corporate mergers have led to centralized newsrooms, where local content is edited, produced and packaged often outside the communities covered, altering the topics they cover (Franklin 2005; Jenkins and Nielsen 2020) and allowing for 24-hour republishing of third-party content. Even as employment at news organizations has fallen dramatically (Geiger 2019), news organizations have turned to non-local, duplicative stories provided by parent companies or wire services (Lewis, Williams, and Franklin 2005) to publish more under their own brands at lower cost (Johnston and Forde 2011). The result may be growing homogenization (Boczkowski and de Santos 2007), especially among chains that share syndication contracts (Beckers et al. 2019).

The second way ownership has been linked to declines in the quality of local journalism has been with respect to the types of local stories that get covered. Research in this area is less definitive, focusing mainly, for example, on how public service media (Aalberg, Van Aelst, and Curran 2010) and non-profits (Konieczna 2018; Scire 2020) provide more extensive civic affairs journalism compared to commercial alternatives. Among privately owned media companies,

however, dynamics are inconsistent. Dunaway (2008) finds that publicly-traded newspapers are less likely than other privately owned media to offer local political affairs coverage, but Abdenour (2018) shows that publicly-traded television news are actually more likely to produce investigative stories since such work is more resource-intensive to produce. Studies have also shown how different forms of ownership (Picard and Van Weezel 2008) can impact news judgements and hiring (Cornia, Sehl, and Nielsen 2020; Drew and Thomas 2018; Krumsvik 2015) and even willingness to engage in discussion about controversial topics (Rohlinger and Proffitt 2017), further impacting the quality of local journalism. As a result, critics contend corporate consolidation will lead to less diverse newsrooms, less investigative and fact-based critical reporting, and less local content (e.g., Nielsen 2020; Pickard 2020).

One form this argument about ownership's effects on the content of local news has taken is the concern that corporate news conglomerates may be more likely to prioritize "soft news," also called "infotainment" and "tabloidization" (see Reinemann, Stanyer, Scherr, and Legnante 2012), over the "hard news" topics for which local journalism is often deemed civically important. Prior research, however, does not offer conclusive evidence about this concern. Soft news content, defined by its focus on human interest stories, sensationalism, and lack of attention to public policy debates, began to proliferate in U.S. news media offline during the 1980s and 1990s (Patterson 2000, Scott and Gobetz 1992, Turow 1983) in parallel with trends toward conglomeration and consolidation, but few empirical studies have examined the supply of hard versus soft news online or its appeal to digital audiences. Most existing research on the subject has instead focused on journalists' evaluations of the newsworthiness of hard and soft news and its various dimensions (see, for example, Glogger and Otto 2019). But there are indications that the affordances of digital media may impact the way practitioners evaluate soft and hard news.

Boczkowski (2009), for example, finds that digital newsroom production processes may make distinctions between hard and soft news more visible in the practice of daily journalism.

Likewise, an experiment conducted on political journalists in Belgium shows how positive audience analytics data can make soft news headlines in particular seem more newsworthy (Lamot and Van Aelst 2020). On the other hand, Martin (2019) found that political and civic content was shared relatively *more* often on Facebook and Twitter than non-public affairs content.

Finally, for all the focus on ownership as contributing to the crisis in local news, the extant research on the business of local news has only intermittently grappled with its digital dimensions. For example, “news desert” research is sometimes criticized for not fully factoring in the role played by digital-born start-ups as a countervailing trend alongside the disappearance of offline news organizations (Carlson and Usher 2015; Nicholls, Shabbir, Graves and Nielsen 2018). We know little about whether these online news providers serve as plausible substitutes for local civic affairs content, nor whether their owners, such as venture capitalists (Usher 2017), may be beholden to the same incentive structures as legacy media. In fact, with the exception of isolated case studies in single locations (Anderson 2010; Pew 2015; Stonbely, Konieczna, and Holcomb 2019), little research has evaluated the quality of entire local news ecosystems across multiple distribution modes and geographies.

Competing for Online Attention and the Platformization of News

A second factor often blamed for the local news crisis involves changes in audience behaviors—specifically the growing importance of online news distribution (Geiger 2019). Local news providers, who once held near monopoly status in the US as information brokers, now compete online with countless others, including individual voices on social media and national

and international news sources, all of whom compete for users' finite attentions (Myllylahti 2019; Simon 1971).¹ Today's digital news user, no longer loyal to a small number of publications, builds a "personal news menu" (Costera Meijer 2020, 391) which may not contain any local news at all (Hindman 2018). This competition for attention may have a significant impact on the business strategies news organizations pursue to retain loyalty among followers, putting smaller organizations at a decided disadvantage to those with resources allowing for more sophisticated audience strategies. Researchers have noted in particular a growing emphasis on online audience metrics within many newsrooms (Canter 2018; MacGregor 2007; Tandoc 2014; Vu, 2014), which are thought to reshape editorial decision-making about story selection and newsworthiness (Lamot and Van Aelst 2020; Welbers et al. 2016). Journalists seek to duplicate successful stories online and target "surefire traffic-getters" (Cohen 2019, 578), contributing to increases in content aggregation (Coddington 2020). While news is expensive to produce, it is cheap to reproduce (Nielsen 2020).

Facebook is at the heart of this challenging attention economy. Nearly eight-in-ten local news outlets in the US have a Facebook page, including 34% of outlets that otherwise do not have a website (Holcomb 2018). Being active on social media has not, however, produced substantial, sustainable digital revenue (Myllylahti 2018; Cornia, Sehl, Levy and Nielsen 2018) and "direct monetization on social media is still a challenge" (Cornia et al. 2018, p. 28) to put it mildly. Social media platforms, along with search engines, now control as much as 80% of total advertising spent in many media markets (Myllylahti 2019), undermining the very business models that sustain local news (Pickard 2020). What's more, Facebook's habit-forming features, game-like notifications, and personalized algorithmic feeds offer a steady stream of information

¹ This same trend toward increasing competition online also applies to countries with dominant public service broadcasters (see Sehl et al. 2019).

fragments that some have suggested may keep users hooked at the expense of deeper engagement with providers of in-depth reporting distributed on the platform (Vaidhyathan 2018). News topics that may be important, such as coverage of local civic affairs, may draw much less attention when they are forced to compete in this manner (Carlson 2018).

Furthermore, as critical political economy scholars note, the platforms themselves are far from neutral technologies spurring these changes; they hold enormous power and influence over the practice of news work and the forms that news takes (Hardy 2014) as well as the specific ways audiences engage, share information, and express themselves (Poell and van Dijck 2014). The “platformization of news,” as van Dijck, Poell, and de Waal (2018, 51) refer to it, involves not only an unbundling of news from its previous forms but a “rebundling” into a form that can be best commodified by the platform itself (see also Bell and Owen 2017). Facebook itself has even begun directly funding local news initiatives—providing grants for audience development trainings (Dinsdale 2019), for example, or directly supporting ‘community journalists’ embedded in news outlets (Dinsdale and Chan 2020; Wrenn and Cox-Brooker 2018).

Scholars and practitioners have been grappling with the growing influence of platforms for some time (see, e.g., Gillespie 2010, Nielsen and Ganter 2018). Principally, news organizations have granted control over distribution to non-proprietary platforms (Westlund and Ekström 2018), outsourcing link-sharing (Ryfe, Mensing, and Kelley 2016), and maintaining little influence over these processes (Bell 2016). News organizations have adopted “platform counterbalancing” tactics to limit their dependence on the companies (Lindskow 2020; Seale 2020; Steensen and Westlund 2021), but a recent International News Media Association report found news publishers increasingly frustrated by the extent to which platforms wield power over them (Whitehead 2019).

Limited empirical evidence has been gathered about precisely how these concerns have impacted local news specifically. We know that Facebook itself is concerned enough about what role it may be playing that it has put resources toward research examining the phenomenon of “news deserts” (O’Keefe and Mabry 2019) and explicitly sought to increase engagement with local news on its platform (Brown 2018; Weber, Andringa, and Napoli 2019). However, no previous independent study has evaluated the role of the platforms in engagement with local news on the platform—nor done so while also examining the impact of media ownership.

Research Questions

By examining engagement on Facebook with different sources of local news controlled by different types of owners, this study offers a window into the challenges facing local news providers as they seek to compete online. Our results are framed around several specific research questions and hypotheses. First, we seek to characterize the relationship between local news ownership structures and how active organizations are on social media. We ask (RQ1a) *How is ownership associated with how frequently an organization posts messages on Facebook?*; and (RQ1b) *How does ownership relate to levels of user engagement with Facebook content posted by local news organizations?*

Second, we focus specifically on the use of repurposed, non-local content. We test two hypotheses generated from the research outlined above. We expect (H1) *that local news organizations which are part of larger media conglomerates will post more repurposed, non-local content*. However, since past research has also shown that audiences say they prefer unique local information they cannot access elsewhere (Gulyas, O’Hara, and Eilenberg 2019; McCollough, Crowell, and Napoli 2017), we also expect (H2) *that this repurposed, non-local content will receive relatively lower levels of Facebook engagement*.

Third and fourth, we examine the geographic focus of stories posted by local news outlets and the topics of stories posted—namely whether the content can be classified as “hard” or “soft” news. We expect (H3a) *that local news organizations which are part of larger media conglomerates will post more content focused on national and international topics* since they are likely to have access to more external and wire service copy, and (H3b) *that national coverage will receive more engagement on Facebook than stories focused on local or state-level subjects*. We also seek to evaluate whether this geographic focus varies in relation to the types of subject receiving coverage. Our final research question (RQ2) is *how does engagement on Facebook with local versus national news differ according to whether the topics are “hard” or “soft” news subjects?* This last question is important for understanding engagement trade-offs for news organizations around prioritizing local hard news.

Methods and Data

To investigate these hypotheses and research questions, we collected and analyzed Facebook engagement data on 2.4 million posts collected from CrowdTangle, a social monitoring tool owned by Facebook and marketed to publishers for tracking how well public posts perform on the site over time. We also gathered secondary data about the characteristics for each news organization’s owner and the demographics of the communities they serve.

Data on News Ecosystems in Three U.S. States

We focus on posts made by news organizations in three medium-sized U.S. states: Arizona (7.3 million residents, 14th in the nation by population), Minnesota (5.6 million, 22nd overall), and Virginia (8.5 million, 12th overall). In selecting these states, we sought to balance variation in population and geography while also ensuring heterogeneity along socioeconomic

and cultural lines, each of which could impact rates of engagement with news. We also sought to avoid states at the extremes, like New York or Montana, where local news organizations might be especially likely or unlikely to receive wider national or international attention. To assemble lists of the unique news organizations in each state, we consulted databases created and maintained by third parties, using a process inspired by the News Ecosystem Mapping Project (see Stonbely, Konieczna, and Holcomb 2019).² We drew mainly on three databases: (1) lists of local news pages in each state generated and maintained by CrowdTangle; (2) official membership lists provided by the press associations in each state, and (3) a local news dataset separately developed by a data journalist and research scientist (Yin 2018). Merging these lists and eliminating duplicates produced a dataset of 836 unique news organizations, 617 of which were found to use a public Facebook page during 2018-2019, the period our data covered. These lists contain organizations that operate exclusively online as well as offline in print, radio, and television.

As Anderson (2016) notes, there are multiple ways of defining news ecosystems, and this task has become increasingly complex as digital media organizations often serve multiple audiences which may or may not hew to geographic boundaries. For purposes of this study, and its focus on *local* news, we excluded organizations that were based out-of-state but nonetheless served metropolitan areas overlapping the three states unless those organizations appeared in the relevant state press associations' membership lists.

² Using Stonbely, Konieczna, and Holcomb's (2019) terminology, our design largely employs an "environmental, government-drawn, scaled/scalable" approach.

Coding for Geography and Ownership

Using our assembled lists of news organizations, we identified the city or town served by each Facebook page and where relevant the larger metropolitan or micropolitan statistical area (MSA), as defined by the US Census, in which the organization was situated (see Figure 1). For each city or town and for each MSA, we collected Census-based variables to control for key demographics: population size, percent over 65 years old, median household income, percent with college degrees, percent Hispanic, percent Black, percent foreign-born, and percent with a broadband internet subscription.

[Insert Figure 1 Here]

Next we identified owners and parent companies of each Facebook page and coded for whether news organizations were owned by publicly-traded companies as well as whether they were independently owned or part of multi-state or single-state chains.³ We also coded for whether Facebook pages were controlled by public service media, governmental organizations, or non-profits. We elaborate on these data collection processes in the supplementary online appendices and summarize the sample in Table 1.

[Insert Table 1 Here]

Analytic Strategy

The first two sets of analyses below use the entire corpus of Facebook posts, examining how ownership relates to how often messages were posted on the platform by each page and how much engagement each post received. We analyzed engagement using CrowdTangle's aggregate

³ Organizations were coded as part of a chain if more than two properties were owned by the same parent organization.

measure of total interactions per post, which sums together the number of reactions such as “likes” (or other emoticons), “shares,” and comments. To be clear, our use of these data does not confer that we believe they are neutral reflections of audience interest; instead CrowdTangle’s data help to illuminate engagement patterns conditioned on the ways in which Facebook’s algorithms prioritize particular news stories from particular news outlets.⁴

The last set of results makes use of a stratified random sample of these posts ($N = 3,689$), which were hand-coded by the authors (procedures, including reliability statistics, are included in the supplementary online appendices). To ensure a breadth of organizations were represented in this focused sample, we categorized organizations as “light,” “medium,” or “heavy” users according to how frequently they posted and sampled a greater number of posts in relation to this classification.⁵ These posts were then coded for (1) geographic focus—whether local/state, national, both, or international—as well as (2) topical focus, which we aggregated to the level of “hard” or “soft” categories.⁶ Soft news topics included posts about animals, sports, or the arts, leisure, or entertainment. Posts were coded as hard news if they concerned other topics including politics, civic information, law and crime, or other information categories (see supplementary online appendices). We recognize that this coding scheme fails to account for stylistic differences in hard and soft news that are not reflected at the topic level—a practical limitation we return to in our discussion of our findings.

⁴ We note there is an unresolved debate about the degree to which CrowdTangle engagement metrics correspond to reach or exposure on Facebook (Roose 2021). As the platform itself makes no such alternative metrics available, in this study we limit our focus to interactions with posts.

⁵ The focused sample consisted of three random messages per page for light posters (under 60th percentile in post frequency), 20 per page for heavy posters (at or above the 90th percentile), and 8 per page for all others classified as medium posters.

⁶ We developed a codebook by adapting categories used in previous studies of the “critical information needs” supplied by local news organizations (see Friedland, Napoli, Ognyanova, Weil, and Wilson 2012).

Results

In this section, we describe our three main findings and detail the analysis we conducted to assess each of our hypotheses and research questions.

Ownership Patterns Relate to Activity and Engagement on Facebook

We first examined news organizations' activity on the platform (RQ1a) and levels of engagement with each page's posts (RQ1b). We found evidence that ownership matters for both. To account for unobserved covariates which may be correlated with ownership, we estimated a series of linear regression models that controlled for possible confounding factors.⁷ These factors included (1) demographics associated with the communities served by the organization, (2) indicators capturing whether the page's audience were niche rather than mass market (e.g., publications catering to college students, ethnic communities, or specific groups of hobbyists or professionals), (3) the mode of any offline media associated with the page (e.g., print, television, or radio), and (4) Facebook-related variables including likes per page (logged). We report the full model output in the supplementary online appendices (Table D1), and in Figure 2 we plot the predicted frequency of posts per page per day (logged) and total interactions per post (logged).

[Insert Figure 2 Here]

These results show that even when controlling for possible confounding variables, pages owned by publicly-traded, multi-state chains were among the most active on the platform. Publicly-traded, multi-state chains also were more likely to have higher rates of interactions (likes, shares, and comments) on a per post basis than privately-owned multi-state chains or pages owned by public or governmental organizations. Ownership differences in interaction rates

⁷ Bivariate difference-in-means tests are also provided in the online appendices (Table A2).

were less pronounced for other ownership categories and generally less important in explaining variation than variables related to the organization's broader use of the platform. For example, all else constant, a page with a larger number of followers (logged number of likes) was generally also a page that posted more frequently and received more interactions per post. The difference between non-profits and multi-state private chains in how frequently they posted was comparable to a one standard deviation difference in number of page likes.

Chains Posted More “Repurposed” Content, Which Received Less Engagement

Next, we evaluated the role of repurposed, non-local content on Facebook. To formally test H1 and H2, we first coded an indicator variable classifying posts as “repurposed” or non-repurposed ($N = 142,085$, 5.8% of total), which was based on whether posts referenced major wire service or used the same verbatim language of other posts in the corpus (see supplementary online appendices for more detail). Using this measure of repurposed content, we found support for both hypotheses. Using difference-in-means tests, we found significantly higher rates of repurposed content posted by organizations that were publicly-traded and/or part of larger multi-state or single-state chains compared to alternatives (Table 2). We also examined the overall difference in total interactions between repurposed posts and all other posts and found that repurposed posts on average received 57 fewer interactions: 665 interactions compared to 722 for non-repurposed posts ($\chi^2 = 24.2$, $p < 0.001$).

[Insert Table 2 Here]

Given that conglomerates were much more likely to post repurposed content generally, we conducted an additional test of H2 where we controlled for other page-level and post-level factors that might co-vary with whether a post referred to repurposed content. We estimated two regression models designed to account for skews in per page rates of interactions per post—a

linear model using the log of interactions as the dependent variable and a quasipoisson count model. In both models, we controlled for confounding variables including place-level demographics, ownership- and page-level characteristics, as well as the time of day and day of the week of the post (see full output in Appendix E in the supplementary online materials). Posts of repurposed content still received significantly fewer interactions in both models. The effect associated with repurposed content was comparable in magnitude to the increase in interactions associated with a one unit change in the number of logged page likes.

Interactions on Facebook were highest for national, hard news posts

Lastly, in addition to differences due to repurposed versus non-repurposed content, we sought to evaluate whether dynamics associated with the platform itself might incentivize certain coverage areas over others. To examine H3a, H3b, and RQ2, we made use of a random sample of posts from the full corpus, which we coded for both their geographic and topical focus as detailed in the methods section.

To test H3a, which predicted that news organizations that were part of conglomerates would post more content focused on national and international topics than other local news organizations, we first calculated the percentage of posts for each page in each category and averaged across each type of owner. Results are summarized in Table 3. While local and state content was the most frequently posted content across all types of news organizations, publicly-traded, multi-state chains, and public-service media were all relatively more likely to post

national content, providing qualified support for our hypothesis.⁸ Very few stories focused on international topics were covered at all.

[Insert Table 3 Here]

To test H3b, which predicted that national coverage would receive more engagement on the platform than local stories, we again first looked at the overall patterns in interactions and then modeled for potential confounding variables. Posts coded as having a national geographic focus ($N = 533$) did receive more interactions on average—817 compared to 607 for local posts ($N = 2719$), a statistically significant difference ($\chi^2 = 578.8$, $p < 0.001$). In regression models controlling for ownership type as well as place-level demographics, page-level characteristics, as well as the time of day and day of the week of the post (Table F1 in the supplementary appendices), we still found that posts focused on national topics attracted more interactions all else equal, although the magnitude of the effect was fairly small. National posts were associated with 0.11 more interactions per post compared to those focused on local or state issues; video posts in comparison received 0.18 more interactions than posts without video.

Our final set of results involved analyzing not only the geographic focus of posts but their topical focus. This relates to our last research question (RQ2), which asked whether engagement levels differed depending on whether posts covered topics involving either “soft” or “hard” news subjects. In Table 4, we report overall percentages of posts in each specific subtopic area coded. Soft news topics were more common across all types of ownership. Law and crime stories were the second most common type of post for most types of organizations, followed by coverage of civic affairs, which ranged from 12-23% of all posts in a given ownership category.

⁸ Logistic regression models were also estimated using these data controlling for place-based demographics and other possible confounding variables. Doing so resulted in only publicly-traded owners and public-service media remaining significant predictors of a given post being nationally focused.

[Insert Table 4 Here]

To examine patterns in interactions by genre, we again estimated models with an additional indicator variable for whether the post was coded as topically “hard” or “soft,” controlling for the same covariates as in our previous model (Table F1). We find on average that soft news posts received fewer interactions than hard news posts ($b = -0.10, p < 0.05$), but that this effect was largely conditional on the geographic focus of the post. When models included an interaction term crossing the geographic and topical focus of the posts, the interaction variable was both substantively and statistically significant ($b = -0.32, p < 0.001$). That is, while nationally-focus posts received significantly more interactions, effects were concentrated among hard news topics, with national soft news posts actually receiving fewer interactions compared to non-national soft news posts. This dynamic is plotted in Figure 3.

[Insert Figure 3 Here]

What explains this distinct pattern in Facebook engagement? We conducted one additional test using the full corpus of local news posts to assess whether differences we observed were driven specifically by content about Donald Trump given the time period spanned by our data. Approximately 4% of all posts in the local news dataset referenced the then-president by name ($N = 97,013$). These posts also generated an unusually high number of interactions—1,234 per post compared to 719 per post that did not mention Trump—accounting for nearly 7% of all interactions in the dataset. This “Trump effect” explains some but not all of the engagement patterns we found for national, hard news posts. When messages that referenced Trump are excluded from the hand-coded data, the interaction depicted in Figure 3 remains significant, albeit smaller in magnitude ($b = -0.24, p < 0.01$).

Discussion

This study examined Facebook interaction data for 2.4 million posts made by local news outlets in three U.S. states. We found that both ownership and the platform itself mattered in relation to the levels of engagement local news received. Specifically, we found that organizations owned by publicly-traded chains posted more frequently and attracted more engagement on Facebook relative to other local news organizations. They did so, at least in part, by posting more repurposed and duplicative content from wire services and other media properties on the site. Even though such content received fewer interactions on average, more frequent posting may allow such news organizations greater opportunities to engage with users and attract followers. Lastly, we found that hard news stories at the national rather than local level generated modestly higher levels of engagement on Facebook, which may shape incentives for local news organizations to post fewer stories on genuinely local affairs.

These results contribute to our understanding of the crisis facing local news in two ways. First, our findings demonstrate that ownership plays an important role in how local news organizations compete online. We found conglomerates and multi-state chains benefited from scale to maximize the amount of content they post, which in turn may impact the prominence given to their content in news feeds. We found, all else constant, posting frequently was one of the most important predictors for receiving higher levels of engagement on the platform. In other words, scale may compensate for quality; even if individual posts are more likely to be repurposed and non-local—both characteristics associated with fewer interactions—posting more often may more than compensate for those downsides. This dynamic illustrates the impact platforms can have on how news organizations make decisions about how to deploy resources.

Second, no previous study has provided as extensive empirical evidence on how locally focused news content fares on social media. While we cannot say definitively that social media is

“killing” local news, on balance Facebook does not appear to be helpful to its survival. The “platformization of news” (van Dijck, Poell, and de Waal 2018) is often cited as a major factor contributing to the problems facing the industry and while our findings cannot speak to Facebook’s impact on advertising revenue (Pickard 2020), we do find evidence that local “hard news” content may be relatively disadvantaged on the platform despite the company’s stated interest in supporting such sources (Brown 2018; Weber, Andringa, and Napoli 2019). Whether these results are a consequence of audience preferences, differences in news organizations’ deliberate social media engagement strategies, or Facebook’s own algorithms giving priority to larger companies is beyond the scope of these data, but these findings do point to modest yet significant differences in interaction rates over an extensive two-year period, which may be troubling on their face.

These findings capture how the dual forces of corporate conglomeration and the platformization of news are consequential for the business of digital news. On the one hand, publishers may infer from these findings that they can maximize their reach on Facebook by posting more often and on more national “hard news” topics—even if it means posting less original content and news with genuinely local focus. Conglomerates are considerably advantaged in that sense over smaller single-owner news outlets through their access to a greater supply of content. On the other hand, this strategy makes news organizations that much more dependent on Facebook for their survival. Given the importance many news organizations assign to cultivating digital audiences wherever they are increasingly spending their time (Nielsen and Ganter 2018), many may well choose to alter their production practices accordingly even though doing so arguably sacrifices their main competitive advantage over other news providers—their unique local character. We think this dilemma captures one of the core business strategy

dilemmas facing contemporary local news. Doubling down on providing essential local information may be at cross-purposes with the economics of how to compete for attention online.

To be sure, our findings contain several caveats. While we have sought to construct a comprehensive dataset featuring the entire local news ecosystem on Facebook for Arizona, Minnesota, and Virginia, it is possible we have omitted sources for locally relevant information both on the platform or elsewhere online. For example, most out-of-state news sources were excluded even though many, especially national organizations, do cover some local news stories, especially during times when events transcend their local context, such as the killing of George Floyd in May 2020. This study also focuses specifically on news at the institutional level, excluding pages for individual journalists or influencers who may disseminate news directly to their own followings. It is possible these peer-to-peer relationships are more pronounced in smaller communities. Some may also question how generalizable our results are beyond the three U.S. states and/or beyond the two-year duration of our study, particularly as Facebook continually tweaks its algorithm and interface. While we argue that our geographic and temporal focus is broad enough and varied enough to reflect local news dynamics across the U.S., we recognize the country itself is anomalous with its dispersed networks of mostly private, commercial news providers. In other countries, where the supply of news may be more concentrated and where public service media is more influential, publishers may have relatively more leverage in terms of their presence on platforms—or they may not. Likewise, we employ a relatively coarse coding scheme for hard and soft news that no doubt leaves out many important nuances. We hope this study serves as a roadmap for future research using aggregate behavioral data made available by CrowdTangle to investigate how contextual factors such as a country's changing political information environment or aspects of the content of news may impact how

people use the platform, but we also encourage future researchers to examine these data alongside smaller scale individual-level studies to investigate motivations for why users interact with certain forms of content, local news among them, and the role played by algorithmic factors versus audience preferences.

These limitations notwithstanding, this study highlights the distinct challenges local news organizations face when they turn to a social media platform like Facebook to engage with audiences online. The “Facebook problem” facing local news is not only about the decimation of the advertising market but the attention economy as well. Privately owned firms not linked to larger conglomerates may offer unique content relevant to their local communities, but their posts must compete with everything else on the site vying for users’ attentions.

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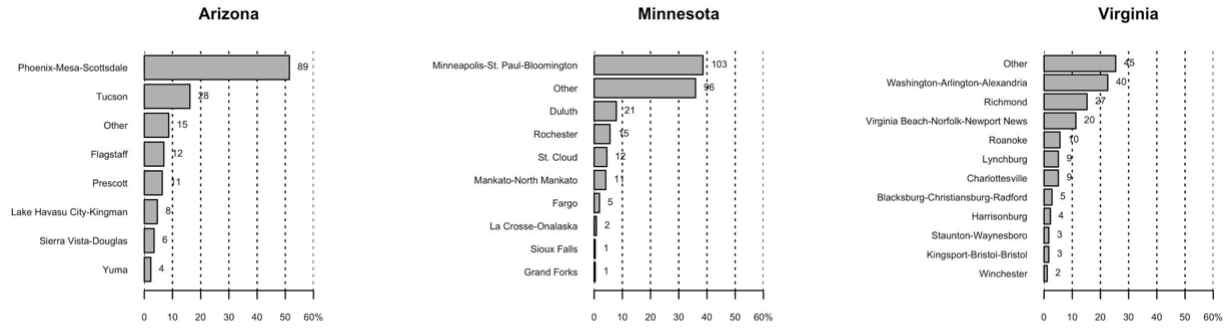


Figure 1. Number of news sources by metropolitan statistical area (MSA) in each state. The category “other” includes both micropolitan statistical areas as well as cities and towns that are not categorized as belonging to either micropolitan or metropolitan areas.

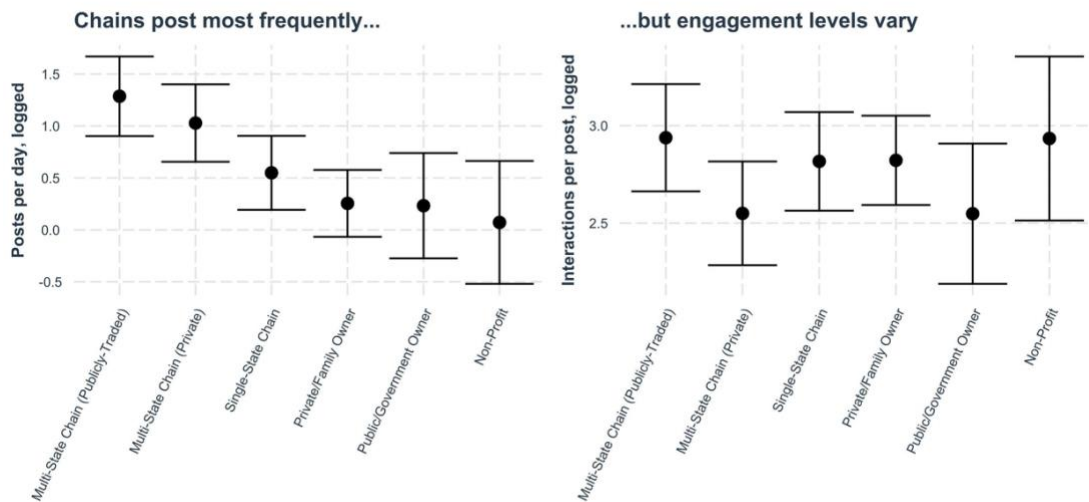


Figure 2. Predicted post frequency and engagement on Facebook by ownership, holding all other variables constant at their means. Model output provided in the supplementary online materials (models 1B and 2B in Appendix D). Confidence intervals are depicted at the 95% level.

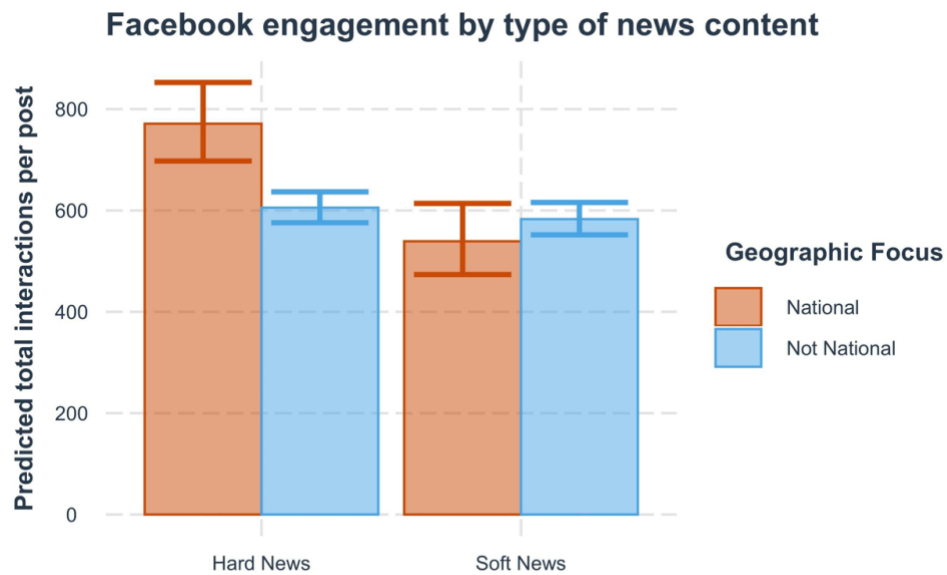


Figure 3. Predicted interactions per post depending on whether the focus was national and whether the subject was a “hard” or “soft” news topic, holding all other variables constant at their mean levels. Full model output provided in the supplementary online materials (model 4C in Appendix F). Confidence intervals are depicted at the 95% level.

Table 1. Summary statistics of news organizations in each state.

	Arizona	Minnesota	Virginia	Total
News media organizations identified (N)	228	393	215	836
<i>Unique Facebook pages identified (N)</i>	173	267	177	617
<i>Posts per page at first quartile (N)</i>	574	389	552	483
<i>Median posts per page (N)</i>	1,365	1,152	1,412	1,315
<i>Average posts per page (N)</i>	3,671	3,463	5,052	3,979
<i>Posts per page at third quartile (N)</i>	3,587	3,396	5,069	3,708
<i>Total posts (N)</i>	635,132	917,611	894,133	2.4m
Place-Based Statistics				
<i>Located in metropolitan area (%)</i>	91.3	64.0	74.6	74.7
<i>Located in micropolitan area (%)</i>	5.8	19.5	4.5	11.3
<i>Located in other towns/cities (%)</i>	2.9	16.5	20.9	13.9
Ownership Statistics				
<i>Multi-state chain, publicly-traded (%)</i>	9.2	12.4	28.2	16.0
<i>Multi-state chain, private (%)</i>	20.2	26.6	6.8	19.1
<i>Single-state chain (%)</i>	16.8	16.9	15.8	16.5
<i>Private/family owner (%)</i>	41.6	36.3	39.0	38.6
<i>Government/public service owner (%)</i>	9.8	3.4	7.3	6.3
<i>Non-profit owner (%)</i>	2.3	4.5	2.8	3.4

Note: Facebook statistics derived from CrowdTangle for 2018-2019. Place-based statistics for metropolitan and micropolitan areas are based on county borders.

Table 2. Percentage of posts referring to “repurposed” content by each type of news organization.

Ownership Type	Avg %	Std Dev
(a) Publicly-Traded	5.97 ^{def}	7.77
(b) Multi-State Chain	8.05 ^{def}	16.98
(c) Single-State Chain	7.86 ^{def}	11.39
(d) Private/Family Owner	1.41 ^{abce}	5.93
(e) Non-Profit	0.22 ^{abcdf}	0.42
(f) Gov/Public Owner	1.24 ^{abce}	2.48

Notes: Superscripts denote statistical significance in difference-in-means tests between groups of owners at the 0.05 level. The average percent variable refers to the average across the news organizations categorized as belonging to each group.

Table 3. Percentage of posts by geographic focus aggregated by ownership type.

	<u>Commercial</u>				<u>Non-Commercial</u>	
	(a) Publicly- Traded (<i>N</i> = 1148)	(b) Multi-State Chain (<i>N</i> = 1873)	(c) Single- State Chain (<i>N</i> = 467)	(d) Private/ Family (<i>N</i> = 1008)	(e) Non-Profit (<i>N</i> = 88)	(f) Govt/Pub Service (<i>N</i> = 180)
International	1.9% ^{ce}	1.3% ^e	0.5% ^a	1.4% ^e	0.0% ^{abd}	1.2%
National	24.0% ^{bcde}	17.4% ^{abcd}	10.6% ^{abf}	12.5% ^{abf}	10.7% ^{af}	22.5% ^{cde}
Hybrid	5.8%	5.4% ^{ef}	7.9%	5.8%	13.1% ^b	10.1% ^b
State/Local	68.3% ^{bcd}	75.9% ^{acdf}	81.0% ^{abf}	80.4% ^{abf}	76.2%	66.3% ^{bcd}

Notes: Superscripts denote statistical significance in difference-in-means tests between groups of owners at the 0.05 level. The average percent variable refers to the average across the news organizations categorized as belonging to each group. Number of observations refers to the number of sampled posts in each category.

Table 4. Percentage of posts by genre aggregated by ownership type.

	<u>Commercial</u>				<u>Non-Commercial</u>	
	(a) Publicly- Traded (<i>N</i> = 1148)	(b) Multi-State Chain (<i>N</i> = 1873)	(c) Single- State Chain (<i>N</i> = 467)	(d) Private/ Family (<i>N</i> = 1008)	(e) Non-Profit (<i>N</i> = 88)	(f) Govt/Pub Service (<i>N</i> = 180)
“Soft” Categories						
Art & Leisure & Entertainment	31.0%	29.5%	36.0%	41.4%	37.5%	52.8%
Sports	8.6%	9.8%	12.6%	9.6%	5.7%	9.4%
Animals	4.0%	3.3%	2.6%	1.9%	1.1%	1.1%
“Hard” Categories						
Law & Crime	22.7%	20.8%	13.9%	9.6%	2.3%	5.6%
Civic Info	11.9%	16.1%	13.7%	16.9%	22.7%	13.9%
Environment & Weather	8.5%	7.5%	6.2%	5.1%	3.4%	5.0%
Political Life	7.1%	6.2%	3.9%	8.0%	8.0%	3.9%
Education	3.0%	3.1%	3.2%	2.7%	9.1%	3.9%
Health & Welfare	2.4%	3.2%	2.1%	2.2%	5.7%	4.4%
Obits	1.7%	1.3%	0.6%	1.1%	0.0%	0.6%
Transportation	1.6%	1.7%	2.4%	2.4%	3.4%	0.6%
Risks & Emergencies	1.5%	1.3%	2.1%	1.1%	0.0%	0.6%

Notes: Details about coding procedures are provided in the supplementary online appendices.