

An Examination of Affiliate and Network Television Channels' Facebook Use for Addressing
Audiences' Critical Information Needs

Abstract

Based on the principles of localism and Critical Information Needs (CIN), this study analyzed the news content posted on Facebook by three television news channels—one local ABC affiliate each in Phoenix, Arizona and Kearney, Nebraska, and ABC News network channel — to examine the extent to which these posts fulfilled the critical information needs of audiences via social media. Results showed the local channel in Phoenix posted more CIN content than both, national network ABC and the local television channel in Kearney. Audience engagement with CIN posts differed across communities, with some categories increasing engagement in Phoenix and the same categories decreasing engagement in Kearney. This finding highlights not all critical information posts lead to increased audience engagement on social media and it is important for television channels to pay attention to content format and user feedback to further increase audience engagement with critical information.

Keywords: *Local television news, critical information needs, social media, Facebook, digital audiences, engagement metrics*

Introduction

Audiences rely on local news more than they do national news as it is personal and helps strengthen communal identity (Kaniss, 1991). People want quality stories of local and national significance from their local outlets and they highly rate news that includes enterprise and investigative reporting (Belt & Just, 2008). They expect more knowledgeable reporting and personal community involvement from their local reporters (Pew Research, 2019), want their local media to be effective public watchdogs and cover stories that showed “caring for the community,” (Heider, McCombs & Poindexter, 2005, p. 961). Of all local news outlets, about 50 percent Americans prefer to watch the news (television) rather than read (print) or listen (radio) to it (Mitchell, 2018). A Nielsen report (2020) stated that during the early months of the pandemic in 2020, there was a spike in audience viewing of local television news.

Along with local television news, social media platforms have emerged as information avenues for audiences. People consider it an important news source (Aillerie & McNicol, 2018) and in remote towns with few news sources, Facebook Groups have emerged as important vehicles for community discussion and opinion (Clifford, Smith & Christie, 2020). About two thirds or 68% of Americans say they use Facebook and of these users, majority claim they visit the site on a daily basis (Smith & Anderson, 2018). A Pew Research Center study found that one in five Americans get their political news from social media (Mitchell, Jurkowitz, Oliphant & Shearer, 2020).

Consequently, newsrooms incorporated posting news content on Facebook and Twitter in their news operations (Papper, 2019) and in many instances, hired staffers to solely focus on social media postings (Higgins-Dobney, 2021). Many news directors mention Facebook as their primary social platform for delivering content to not only their loyal viewers but also to attract

new and younger audiences (Wenger & Papper, 2018) and increase audience engagement (Imre & Wenger, 2020). There is, however, a general disconnect between the information local news outlets—television and newspapers-- post on social media and what people prefer to see on these platforms (Masullo, Jennings & Stroud, 2021; Paulussen & D’heer, 2013). When newsrooms post content on social media, their posts sometimes contain broken or inaccurate hyperlinks and/or vague, generic messages that do not encourage audience engagement (Ware, 2018). Previous research found that news organizations tend to break and promote news stories more on Twitter than they do on Facebook (Cox, 2016) but users tend to share more stories via Facebook than they do on Twitter (Almgren & Olsson, 2016). Researchers also found that newsrooms and journalists did not particularly engage with audiences on Twitter (Meyer and Tang, 2015) and used the platform to talk to other journalists (Molyneux & Mourão, 2019). Thus, newsrooms’ presence on social media does not necessarily mean they are communicating with their audiences or providing their viewers with the information the latter deem relevant.

Scholars claim it is the news media’s responsibility to provide communities with the information they need to live fulfilling lives (Friedland, Napoli, Ognyanova, Weil & Wilson, 2012). Called Critical Information Needs or CIN, it is conceptualized as, “those forms of information that are *necessary* (italics in original) for citizens and community members to live safe and healthy lives; have full access to educational, employment and business opportunities; and to fully participate in the civic and democratic lives of their communities should they choose,” (p. v). This complements the principle of localism specific to broadcast programming-- a requirement by media policy makers that local television stations fulfill the information needs of the communities in which they broadcast (Slattery & Hakanen, 1996).

Digital technologies have certainly challenged traditional conceptualizations of “local” and “community” (Robinson, 2014, p. 114). Hess (2013) made the argument that it may be useful to think of local news in the digital age as geo-social; small news outlets provide a sense of place and community in a digital world to individuals who may be connected to a location not only because they might have lived there but also through other means such as general interest or travel. As social media break down geographic barriers, there is little research regarding local television channels’ use of these networking platforms to post CIN content for their audiences and giving them the local news they wish to see on social media.

Senior decision makers in local television news emphasize their focus on social media as a strategic move to win more audiences. They also stress that younger employees must be listened to and given a chance to produce content their generation reads on social media, and some newsroom leaders also exhort their peers to improve and catch up with the changing times if they want to survive in the digital age (Wenger & Papper, 2018). In an attempt at survival, though, do local television channels provide content related to their audiences’ critical information needs? This study analyzes and compares the Facebook posts of a national network, ABC News, with two local affiliates-- ABC15 in Phoenix, Arizona and NTV in Kearney, Nebraska-- to examine how much of the posted content comprises CIN. It also analyzes audience engagement with the Facebook posts to understand people’s preference for CIN content.

Literature Review

Localism and Influence of Ownership and Market Factors on Local News Content

In the United States, the Federal Communications Commission (FCC) grants broadcast licenses to local radio and television companies with the expectation that every community

would have at least one station that would provide it with relevant programming (Silverman & Tobenkin, 2001). This policy was incorporated as part of its “localism doctrine,” to ensure local broadcasters contributed to the “marketplace of political ideas” (Slattery & Hakanen, 1996, p. 403). Thus, the more locally entrenched a media organization, the better its performance ought to be in producing relevant and important news content that serves communities’ needs (Yan & Napoli, 2006). In this paper, localism is conceptualized similar to FCC’s approach of defining it as a specific geographic location with physical borders (Yanich, 2010). A local television station meets its obligation of delivering local, relevant news to communities living in a designated market area if their reported news stories take place within that area (Yanich, 2010).

Studies have shown local television stations in larger markets were likely to produce more local content than those in smaller markets with few competitors (Napoli & Yan, 2007). The same study found affiliates of the Big-Four network (ABC, CBS, Fox and NBC) produced more local news than television channels with local ownership—meaning the owner was located in the same market as the station-- or duopoly ownership-- one station owner owned a second station in the same area. Local content output was not only influenced by channel ownership and community characteristics (Dunaway, 2011) but also the political slant observed in political news content (Martin & McCrain, 2019) and whether the emphasis is on generating advertising dollars or serving the community’s interests (Higgins-Dobney & Sussman, 2013). With reference to social media, Ferguson and Greer (2016) found national TV channels use social media platforms more successfully than their smaller counterparts in smaller markets. Little is known about how local television stations and a national channel use social media to post CIN content and fulfill their localism function.

Research related to CIN content published by three local news outlets in New Jersey thus far shows local media output varies across communities—higher socio-economic status begets more local media and thus, more CIN output, while poorer communities, in comparison, receive a fraction of CIN content (Napoli, Stonbely, McCollough & Renninger, 2017). Napoli et al.’s study was an overview of local news outlets in three communities in New Jersey. More studies are needed to further examine the production and dissemination of CIN by different media, especially television stations, in different contexts at a time when news organizations, and the resources they have, are limited, but the need for local and relevant information is endless.

CIN (Critical Information Needs) on SNS (Social Networking Sites)

Of the many alternatives provided by digital technologies, Facebook has emerged as an important platform for people to find news and information. Some refer to Facebook groups for answers to all kinds of queries and say they represent “real people,” lived experiences, and help form offline friendships (Mudliar & Raval, 2018, p. 2062). In small towns and communities where news infrastructure is weak, Facebook is used by not just community members but also non-profits, political and civic actors and institutions, thus elevating its importance in the local information sphere (Thorson et al., 2020). There are newsrooms that lack a clear strategy, however, for engaging their audiences on social media. They may use social platforms to disseminate their stories rather than interact with their readers and/or viewers (Molyneux & Mourão, 2019; Hille & Bakker, 2013). While newsrooms in the early years may not have known what kind of news content their audiences look for on social media (Paulussen & D’Heer, 2013), recent research shows there remains a gap between the information audiences indicate they want from their local news outlets—especially during a crisis—and the content local media provided them (Masullo et al., 2021).

Napoli et al. (2017) said local media's social media presence is an important criterion for assessing the quality of local journalism infrastructure and its CIN output. As an instrument to empirically analyze the quality of local news content, the Critical Information Needs (CIN) construct comprises eight categories— *emergency/risks, health and welfare, transportation, education, economy, environment and planning, civic information and politics, and legalities and policies* (Friedland et al., 2012, p. v). Studies specific to CIN posts on social media are few; One showed most Facebook posts of a local University-run television news channel were related to *civic information*, including recreational and cultural activities, and updates on community organizations, followed by *weather* (Author1, 2018). Another study found a local television news channel posted Facebook entries related to *civic information* the most, followed by *crime, entertainment and environment* (Guo & Sun, 2020). Yet another study that specifically examined Facebook's *Today In* feature focused on providing local news to its users, found that 59 percent of the posts could be categorized as CIN, with *emergencies—that included crime stories—* topping the list, followed by *schools, civic information and transportation* (Weber, Andringa & Napoli, 2019, para 6). These studies show different channels use Facebook to post CIN content but differ in the topics they post on social media. In order to further parse out this difference, we examined the CIN output of a national network and two of its local affiliates.

Thus, the first question posed is:

RQ1: How do local TV affiliate stations and their national network serve a community's critical information needs (CIN) on Facebook?

SNS and CIN Engagement

Social networking sites have become an important component in audiences' information repertoire (Swart, Peters & Broersma, 2019). Interactive features such as reaction buttons, ability

to post comments on one's own and others' walls, and tagging friends, encourage greater engagement with content (Oeldorf-Hirsch & Sundar, 2015). These activities are important because engagement with news on social media significantly predicts offline civic and political participatory behaviors (Gil de Zúñiga, Jung & Valenzuela, 2012).

Social media platforms facilitate individuals' incidental exposure to news, which in turn leads to more online news consumption (Fletcher & Nielsen, 2018) and possibly increased awareness of events taking place around them that are relevant to their daily routines. Individuals have a wide range of unique information needs and trying to cater to all those requirements is nothing short of a "monumental task," (Watson & Cavanagh, p. 670). Social media platforms have the potential to fulfill that need; Not only individuals from all backgrounds, private and public institutions, corporate and unorganized groups, have a presence on the sites, but the platforms aid the dissemination of a wide variety of information produced formally (such as by news and public relations organizations, other media professionals) and informally (user-generated content). Social media especially perform the duty of providing news and information to communities (Thorson et al., 2020) that have become news deserts due to decreasing local coverage and closure of several newspapers (Abernathy, 2018).

Additionally, Facebook's interface allows people to like, share and comment on posts and provides a deeper understanding of user engagement (García-Perdomo, Salaverría, Kilgo & Harlow, 2018). "Liking" is the easiest and most passive mode of opinion expression as it requires a simple button click. Number of 'likes' is a useful indicator of audiences' affective responses (Alhabash & McAlister, 2015). "Sharing" is the next level of engagement as it involves the user deciding to share the content on their personal profile or with their network. "Sharing" also is important for triggering the virality of online content, causing some researchers

to compare “shareworthiness” of social news to newsworthiness of events (Trilling, Tolochko & Burscher, 2016; Kilgo, Lough, & Riedl, 2020). “Commenting” on Facebook reflects the highest level of cognitive investment and is thus ranked as the highest engagement act (Bene, 2017; Author2, 2019).

Research has found users thought social media had “improved news and communication in their local community,” (Gulyas, O’Hara and Eilenberg, 2019, p. 1855). People mostly shared news related to change and safety in the neighborhood, health, and environment, and were unlikely to share stories related to sports, crime, and accidents, even though these topics featured frequently in local media’s social posts (Almgren, 2017). Specific to CIN, a report by the Knight Foundation that included an analysis of audience engagement with news stories posted on Facebook showed human interest stories (coded as non-CIN category) elicited the most audience engagement, followed by entertainment (coded as non-CIN category) and emergency and risk (coded as CIN category), (Wenger, Papper, Prakash & Goldman, 2018). Other findings in the report showed that stories related to CIN categories of education, health and welfare, transportation, economic opportunities and environment were few and the posts that had high audience engagement were non-local. Weber et al. (2019) found users engaged with stories related to *emergencies*, *transportation*, and *health* more so than other topics Facebook’s local-focused *Today In* feature. The authors also wrote that stories related to CIN performed better in terms of user engagement than those unrelated to these topics.

Some studies further parsed which kind of CIN content gets what kind of engagement on Facebook. Author1 (2018) found *education* posts received a lot of user comments, likes and shares, while *health* and *economy* news were shared the most. Guo & Sun (2020) examined Facebook posts of one local television channel and found *politics* related posts received more

comments and reactions but less shares, while *education* posts received greater shares but not many reactions or comments. The same study found *health* posts led to significant number of shares while *economic development* posts received no significant engagement. While Wenger et al. (2018) found local television channels also posted non-local content on Facebook that received high audience engagement, few studies have examined audience engagement with CIN content on Facebook as posted by a national network and its two affiliates. As social media transcend geographic boundaries and allow people from anywhere to engage with local content that resonates with them, we posed the following research question:

RQ2: How do audiences engage with CIN-related posts on Facebook posted by different television channels, measured by sharing, liking and commenting?

Methods

Researchers collected television news posts spanning a six-month period from the Facebook pages of two local stations affiliated with American Broadcasting Company (ABC) and the network itself. ABC was selected because it has the biggest market share, operating its local affiliates in six of the eight largest media markets (Schmidt, 2018). Among ABC-affiliates, researchers selected ABC15 in Phoenix, Arizona and NTV in Kearney, Nebraska.

We chose ABC15 due to our familiarity with the geographical region it served and overall workings of the station. Specifically, ABC15 mainly served a metropolitan area with the population of 4,737,270 (Census Bureau, 2017) but its audience base also covered rural areas¹ underrepresented by national news. Importantly, it actively managed its Facebook page by regularly updating content at least twice per week. We then searched for a comparison station that also maintained its Facebook page at least twice per week while being distinctive from

ABC15 in terms of geographic and census characteristics of the main community it serves (that is, more rural audiences than ABC15). We deliberately excluded stations located within news network hubs, such as New York City and Los Angeles (Benton, 2016). These criteria resulted in a small number of candidate stations, from which we chose NTV, considering its relatively proximity to Phoenix. NTV is located in Kearney, Nebraska, serving a population of 56,262. While ABC15 is owned by E.W. Scripps, NTV is owned by Sinclair.

The dataset contained Facebook posts of all three channels, from January 1, 2017 through June 30, 2017, and comprised mostly video clips. To minimize the confounding effect of the period since the video was uploaded, on the level of audience engagement, the data was collected in January 2018. An API-based tool called NetVizz (Rieder, 2013) was used to collect metadata and engagement metrics. The number of tags in each post, video views, the times a video was repeatedly posted, and stylistic elements present in the videos, such as music and format, were manually coded. Videos tended to result in high view counts (ABCNews = 965,022 times with Median of 301,950; ABC15 = 202,930 times Median = 45,673; NTV = 174,518 times with Median= 7,459). This is probably due to much larger sizes of followers and viral potential of Facebook page than the audience bases of the geographic communities they serve. We excluded two videos from ABC15 that were viewed less than ten times. As a result, a total of 99 videos from NTV (Kearney), 326 from ABC15 (Phoenix), and 262 from ABC News (national) were included in the analyses.

Variables

Variables that required human input were coded by two graduate students who received multiple sessions of training until they reached an acceptable interrater reliability, tested on 20%

randomly pooled samples. Information on interrater reliability was reported for each variable, where applicable.

Dependent Variables: Three engagement metrics –likes, shares, and comments –were used to compute relative engagement scores. Instead of using raw counts of likes, shares, and comments, the raw counts were converted to ‘counts-per-10,000 views. A *relative engagement value* is useful when comparing engagement among differently sized audience bases. For example, when comparing raw click counts of 100 likes and 500 likes, the latter indicates a higher degree of engagement. However, a video that received 100 likes, and had 1000 people view the video (10% engagement out of the total views), would show more meaningful engagement than a video that received 500 likes but had one million people view it (0.05% of the total views). A *relative engagement value* allows for such distinction.

The value of engagement per view, E , was computed for each engagement activity k (i.e., liking, sharing, commenting) as $E(k) = \left(\frac{\text{Raw Count of Engagement}(k)}{\text{Total View Counts}} \times 10000 \right) + 1$ where $E(k)$ was rounded to be treated as a count variable.

In recent years, Facebook allowed people to engage with content by expressing five emotions: Love, Haha, Wow, Sad and Angry. As this study focused on engagement metrics that showed dissemination rather than reaction, the conventional measures were selected for analysis (such as Alhabash & McAlister, 2015; Trilling et al., 2016; Kilgo et al., 2020).

Critical information needs (CIN). Stories that fulfill critical information needs (CIN) are the primary predictors of interest in this study. The original categories were slightly modified to create the following: (a) emergency/risks, (b) health/welfare, (c) education, (d) transportation, (e) environment/planning, (f) economic opportunities, (g) civic information and (h) politics. Routine traffic and weather updates were coded as part of transportation. Coders were advised to treat

each category independent from the other, allowing multiple categories to be assigned to a single video. Given the one-to-many classification, Fuzzy Kappa was used to test the interrater reliability $Kappa_{fuzzy} = .745$ (Kirilenko & Stepchenkova 2016). The **Appendix** describes each category in detail.

Locality. A categorical variable was created to indicate whether a post is from a micropolitan-based TV station (NTV =0), metropolitan-based TV station (ABC15 =1), or the national station (ABC News =2).

Control Variables: Emotion, time and day of posts, and video style variables, known to influence audience engagement, were coded and controlled in the analysis. In terms of video style, Kim & Yang (2017) found that posts with photos and videos positively predicted “shares” and posts with photos increased “likes” from audiences but not necessarily comments. A recent eye-tracking study found that videos and photos were the entry point to audiences’ engagement with a news-related Facebook post (Vergara, Stiles, Castro & Chaves, 2021). The study did not examine the *kind* of visual elements and imagery included in the posts which we accounted for in our research. Thus, stylistic effect such as video length, sound effects (Cohen’s Kappa = .951 for interrater reliability), and video format (conventional package clips -- anchor news, press briefing, or congress hearing-- and unpackaged social media clips-- raw videos or user generated video, promotional clips, and Facebook Live videos) were coded (Cohen’s Kappa = .928 for interrater reliability) (Bonson, Royo & Ratkai, 2015).

Variables

The Kruskal-Wallis’s test was used for descriptive analyses. To analyze the effects of CIN-related posts on audience engagement (sharing, liking and commenting), we conducted a

series of negative binomial regression modeling as the engagement variables were count variables.

Results

Descriptive Analysis

RQ1 asked how do local TV affiliate stations and their national counterpart serve a community's critical information needs on their Facebook pages. Of the total 687 videos, 444 (about 64 percent) were categorized as CIN-related content. ABC15's Facebook page had the most CIN content (220), followed by ABC Network (162) and NTV (62). ABC News posts showed the highest raw engagement scores across all three channels. When the numbers were adjusted to engagement scores per 10,000 views, however, all forms of engagement were highest for Phoenix-based ABC15 (see **Table 1**), including comments, the most coveted form of audience engagement (77.31 comments per 10000 views for ABC15; 23.47 for NTV; 26.84 for ABC News; $\chi^2 = 104.81$, $p < .001$). **“INSERT TABLE 1 HERE.”**

RQ2 asked how do audiences engage with CIN-related posts on Facebook posted by different television channels, measured by number of shares, likes and comments. **Table 2** summarizes the results of negative binomial regression models of audience engagement. NTV was taken as a reference point (= 0), thus the control variable effects seen in the results are conditional to NTV. For comparison, engagement scores per 10000 views were used as a dependent variable. Overall, ABC15 and ABC News were associated with more engagement per view than NTV. Specifically, ABC15 showed 4.16 times more shares and 3.27 times more comments than NTV. **“INSERT TABLE 2 HERE.”**

Among CINs, *economic development* posts were ‘liked’ across all news pages [Table 3]. A post related to the topic on NTV, however, received fewer likes (IRR =.71, $z = -2.79$, $p < .01$) compared to 43.84 times more likes on ABC15 (IRR =43.84, $z = 2.89$, $p < .01$) and 51.43 times more likes on ABC News (IRR =51.43, $z = 2.93$, $p < .01$). Likewise, *civic information* posts on NTV received less likes than posts unrelated to it (IRR =.48, $z = -3.82$, $p < .001$). Similar posts on ABC15 received 2.9 times more likes than ones unrelated to the topic (IRR =2.90, $z = 4.02$, $p < .001$) and ABC News did not show a significant difference. NTV’s Facebook posts that included politics also had significantly fewer likes while political news posts on other pages did not show any significant effects.

The regression model with “shares” as the dependent variable showed NTV audiences were 2.46 times more likely to share a post if it was related to *emergency/risks* (IRR =2.46, $z = 3.32$, $p < .001$). This was not the case for ABC15 (IRR =.29, $z = -4.27$, $p < .001$) and ABC News (IRR =.29, $z = -4.29$, $p < .001$). *Education*-related posts from ABC15 enjoyed more audience shares (IRR =14.50, $z = -2.06$, $p < .05$) while similar posts from NTV had fewer shares (IRR =.10, $z = -2.10$, $p < .05$). *Civic information* posts from NTV were not only shared less but any post related to the topic was more likely to *not* be shared. An NTV post without civic information was 0.4 times more likely to be shared (IRR =0.4, $z = -3.95$, $p < .001$).

The regression model for “comments” showed Facebook posts related to *economic development* on the NTV page showed less comments, while an unrelated post was 0.05 times more likely to elicit audience comments (IRR =.05, $z = -2.30$, $p < .05$). In contrast, *economic development* posts on the Facebook pages of ABC15 and ABC News elicited 14.72 (IRR =14.72, $z = 2.03$, $p < .05$) and 14.28 times (IRR =14.28, $z = 1.97$, $p < .05$) more comments than posts unrelated to the topic. On the NTV page, *civic information* posts had fewer comments than those

that did not carry a related story. The other two channels did not show any significant effect. *Political* posts received significantly more comments on the ABC News page. Across all models, audience engagement effects for posts related to *transportation, environment, and education* could not be examined for ABC News due to low occurrences. **“INSERT TABLE 3 HERE.”**

Control variable effects on audience engagement were examined for posts conditional to NTV (=0). The video format variable showed a significant effect on audience engagement: Compared to traditionally packaged videos, social media style clips (raw videos, user-generated content) increased the likelihood of shares (IRR = 1.26, $z = 2.02$, $p < .05$) and comments (IRR = 1.35, $z = 2.93$, $p < .01$). Also, compared to traditionally packaged videos, Facebook Live videos elicited more likes (IRR = 2.73, $z = 5.28$, $p < .001$) and comments (IRR = 2.95, $z = 5.92$, $p < .001$). Long videos and use of background music were negatively associated with receiving likes and comments, although music increased the likelihood of audiences sharing the post on their own pages. *Background music* was most frequently used in NTV posts ($\chi^2 = 15.53$, $p < .001$); *packaged videos and unpackaged social media clips* were common on the ABC News Facebook page, while *Facebook Live* was most prevalent on the ABC15 Facebook page ($\chi^2 = 187.261$, $p < .001$).

Discussion and Conclusion

As audiences turn to social media to get the information they need, it is important to examine if local television stations provide critical information to people on these platforms. It is more important to examine the CIN content audiences engage with and likely consume. Our study does that by specifically comparing CIN related Facebook posts of local television affiliates with their national counterpart and examining audience engagement with the content. Our results show that CIN content published on social media varies across the television outlets

(Yan & Napoli, 2007; Ferguson & Greer, 2016) and audiences on social media engage differently with CIN posts that sometimes belong to the same category. This finding reiterates research which shows local audiences cannot be painted with one brush (Masullo et al., 2021). It is important to not just examine the amount of CIN content published by all local television and/or newspaper outlets but also the nature of the communities they serve.

Content analysis revealed ABC15 not only had the most CIN-related posts, but also was most successful in eliciting relative audience engagement with its content on Facebook. National network ABC came in second and the smaller-NTV occupied third place. This result may potentially allude to the influence of ownership on the quality of local news content on social media. A recent study (Toff & Mathews, 2021) showed that while ownership mattered in the relationship between a local news channel's social media content and the level of audience engagement received, it was the frequency of posting local content that was an important predictor of audience engagement on Facebook. In our sample, ABC15 had the greatest number of CIN posts while NTV, the Sinclair-owned channel in our sample had the least number of CIN posts. Therefore, it is possible that quantity might have influenced that result.

The Sinclair Group—one of the largest players in local television with 193 stations across the United States-- has gained some notoriety for being laser-focused on making profits, often at the cost of news coverage, and letting its political leaning interfere with programming (Stelter, 2019). Studies examining Sinclair-owned affiliates found that political news programming in these local channels shifts from local to national stories and tends to have a conservative undertone to it (Martin & McCrain, 2018; Tryon, 2020).

That said, our analysis could not distinguish between CIN content on the basis of media ownership, and thus it is beyond our scope to conclude the effect of ownership. The same

concern would also apply to market size effect. Although our stations are based in distinctive market sizes, and we controlled for audience sizes by using relative engagement metrics, a comparison of merely three stations –a single sample representative of ownership and market size variables – does not allow us to statistically estimate the market size effect, limiting the generalizability of our findings.

Of the eight CIN categories analyzed in this study, some topics were valued more than others; Facebook posts related to *health, education, environment/planning* and *economic development* were infrequent across all three channels' pages. Thus, it was difficult to even compare audience engagement with these topics. A recent study of CIN-related posts from one local television station found similar results in terms of topic frequency in Facebook posts (Guo & Sun, 2020). Masullo et al.'s (2021) study on whether local news outlets provided their communities with the information they needed, especially during a crisis such as COVID, found that local media failed to provide their audiences with the information the latter wanted, often covering those topics far fewer times than necessary. Therefore, it may be worthwhile for local television stations to pay attention to all CIN-related topics versus just the few topics the newsrooms believe will do well in terms of audience engagement on Facebook. Our findings, as well as studies that have published data collected after the time our sample was collected, consistently show that local television channels are still unable to understand the information needs of their audiences.

Significant results were found for posts containing *emergency/risks* and *transportation* for ABC15; *civic information* for NTC, and *political* news for ABC News. A surprising finding was while these topics led to an increase in audience engagement for some channels, they showed a negative or decreased engagement effect for NTV. *Civic information* and *economic*

information posts on NTV's Facebook page received less liking and commenting, and *political information* posts received less liking. It is possible NTV audiences think of Facebook as a place for personal communication rather than a platform to discuss public affairs. Conversely, these topics translated into greater audience engagement for ABC15 and ABC News. McCollough, Crowell and Napoli (2017) highlighted the self-reliance of local audiences in actively seeking the news they needed and noted the respondents claiming it was a "burden" for them to stay informed (p. 8). Thus, with audiences taking a more active role in seeking the information they need to lead their daily lives, it may help if newsrooms remain dynamic in their news output and examine if variety in news drives up audience engagement on Facebook.

People's perceptions of information sources are influenced by factors such as their education, personal values and attitudes, and socio-economic backgrounds because their lives are designed within this context (Savolainen, 1995). These differences reiterate the importance of accounting for community demographics, preferences for news use on social media platforms and, we believe, community social characteristics when measuring engagement with CIN content. While Imre and Wenger (2020) found that news directors have made audience engagement on social media integral to their news operations and pay attention to the stories people want, the events people post about, as well as engaging with audiences on these platforms, these actions by themselves are insufficient. Newsrooms need to examine audience behaviors with social content more closely and recognize that at the local level, communities are unique, and so are their information needs. Scholars who wish to pursue additional research related to this topic could pay attention to community-specific criteria and their influence on audience engagement with CIN-related news content.

Analysis related to control variables provide further evidence for association between imagery and audience engagement. Compared to traditionally packaged videos, raw videos, user generated content and Facebook Live videos increased the likelihood of comments and one other engagement activity- liking or sharing. Long videos and use of background music were negatively associated with receiving likes and comments. This is possibly because audiences spend very little time—less than 6 seconds—on news they usually encounter versus seek on Facebook (Vergara et al., 2021). Long videos and background music require a level of engagement users aren't usually prepared to provide when scrolling through their newsfeed. Thus, newsrooms should pay attention to not only *what* they post online but also the content *format* to encourage engagement.

This study has limitations, starting with the age of the data. The data was collected in 2018 and the posts included in the analysis were published in 2017. Despite this drawback, this paper offers findings related to audience engagement with CIN-related content and presents a foundation for future studies to explore audience engagement with critical information in different communities. It would be incumbent upon us to point out the obvious fact that this data predates COVID. Thus, we cannot account for changes in local newsroom operations or changes in coverage during the lockdown phase and thereafter.

The second limitation is the scale of data. Including more local stations that represent a broader range of communities will allow a systematic examination of market structural effects such as audience size and ownership on CIN content. It will also offer a deeper understanding of how well local television channels in various U.S. markets serve the critical information needs of their communities.

The third limitation is this study examined audience engagement metrics provided by Facebook but not organic interactions between journalists and audiences that also may influence engagement. Research shows such interactions not only influence the audience's perceptions of the reporter but also the affiliated news organization (Lee, 2015). Future research could test whether engagement with reporters and even anchors may influence engagement with local stations' CIN posts on Facebook.

Finally, the fourth limitation is this study focused on CIN on Facebook, and structural elements of the content, but not the content itself. It is possible that topically, the story fits a CIN category but narratively, it may not provide the necessary information. Scholars could build on this line of research and include an analysis of the kind of CIN stories published by television stations and how that influences audience engagement. Also, social media platforms transcend geography, so it is difficult to pinpoint the source of audience engagement; was it geographic connection to Kearney and Phoenix and thus localism at work, was it brand loyalty, or Facebook algorithms at work that presented the story in an individual's newsfeed? Future studies could further explore these conditions when examining CIN engagement on Facebook.

Overall, this study contributes to understanding audience engagement with critical information news topics on Facebook provided by different local television channels serving different communities. Our findings, similar to previous research, show that Facebook has emerged as an information vehicle that people use for all kinds of information, including news (Mudliar & Raval, 2018; Thorson et al., 2020). Thus, news outlets must not only look at engagement metrics but also listen to the communities to which they broadcast to better serve their localism function and provide their audiences with relevant news and information. It may be useful for local television channels to also explore the geo-social nature of local news (Hess,

2013) especially when publishing content on social media. That is, local news outlets understand they operate in a digital world where community is not just based on geography and interested audiences can engage with content for a variety of reasons and interests. This is one way local television can continue to remain relevant in the age of streaming and retain their audiences.

Notes

1. ABC15 serves the entire State of Arizona that includes 134 rural zip codes, among which 24 belong to Maricopa County (where Phoenix is included) and its immediate vicinities including Pinal, Gila, Yavapai, and Lapaz counties. The rural zip codes were defined if it falls in a range from “small town census tract” to “isolated small rural Census tract” based on the Rural-Urban Commuting Area classification by Population Research Center at University of Michigan Institute for Social Research.

(https://www.psc.isr.umich.edu/dis/data/kb/downloads/t1101_ziprural.xls)

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Appendix: Summary of Critical Information Needs Variables.

Variables	Definitions
Emergency/risks	Information on dangerous weather, environmental/hazardous outbreak and public safety threats including terrorism, amber alerts, and crimes, and other threats to public order and safety
Health/welfare	Information about specific health problems, illnesses and treatments; information about general health problems, health campaigns and public health issues; healthcare policies; and information about health outbreaks and health service opportunities
Education	Educational system and policy; quality of schools; school performance assessments, enrichment, tutoring, after-school care and programs; college/university; adult education, including language courses; and job training and GED programs, as well as opportunities for higher education
Transportation & Weather	Daily traffic and weather updates of normal days, such as road conditions, weather and car accidents
Environment/planning	Information on air quality, water, timely alert of hazards, community/city development, recycling, activity for restoration of watershed, parks, building and construction
Economic development	Information on employment, job opportunities, wage increases, tax and small business opportunities, including startup assistance and capital resources and information on major economic development

<p>Civic information</p>	<p>Information about civic institutions; nonprofit organizations and associations; community recreational activity information; social services and programs; and religious institutions and programs.</p>
<p>Political information</p>	<p>Local, regional, state, and federal-level political affairs, protests, elections, elected and voluntary neighborhood councils, city councils and public meetings/hearings/legalities or court decision</p>

Table 1: Comparison of Engagement among Three Channels (N = 687)

Variable	ABCNews (National)		ABC15 (Phoenix, AZ)		NTV (Kearney, NE)		χ^2
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	
Reactions (raw)	12074.50	30563.74	1589.05	2933.24	146.65	338.16	324.62***
Shares (raw)	6196.44	35977.00	533.46	1638.23	36.93	99.44	268.90***
All comments (raw)	1709.82	3784.31	562.02	1142.29	37.46	92.86	232.42***
Comments to content (raw)	1241.12	2869.71	483.96	960.95	29.79	63.46	203.66***
Comments to audience (raw)	468.70	1106.88	78.06	263.82	7.56	35.99	324.93***
Reactions (per views)	154.55	109.04	191.26	192.57	83.32	86.16	48.49***
Shares (per views)	33.60	29.96	47.73	71.78	15.06	25.41	87.47***
All comments (per views)	38.26	46.46	90.61	115.43	26.52	38.77	90.60***
Comments to content (per views)	26.84	39.24	77.31	93.81	23.47	34.90	104.81***
Comments to audience (per views)	13.00	12.41	14.72	43.07	3.70	7.89	131.27***
Tagging	.75	.93	.32	.84	.54	.83	54.81***

Note: *** p < .001; ** p < .01; * p < .05; χ^2 is based on Kruskal-Wallis H test.

Table 2: Comparison of Critical Information Needs among Three Channels (N = 687).

		ABCNews	ABC 15	NTV	Total	χ^2
Critical Information Needs	ALL	162 (169.3)	220 (210.7)	62 (64)	444	2.233
	Emergency/Risks	60 (63.7)	92 (79.2)	15 (24.1)	167	7.506*
	Health/Welfare	9 (7.2)	10 (9)	1 (2.7)	20	3.363
	Education	0 (1.1)	2 (1.4)	1 (0.4)	3	2.132
	Transportation	4 (17.2)	28 (21.4)	13 (6.5)	45	20.200***
	Environment/Planning	6 (5)	7 (6.2)	1 (1.9)	14	2.247
	Economic Development	3 (3.4)	5 (4.3)	1 (1.3)	9	.250
	Civic Information	7 (20.2)	20 (25.1)	26 (7.6)	53	58.340***
	Politics	109 (77.4)	81 (96.3)	13 (29.3)	203	34.568***

Note: *** p <.001; ** p <.01; * p <.05; Expected counts in parentheses.

Table 3: Negative Binomial Regression for Audience Engagement ($N = 687$).

		Likes per Views				Shares per Views				Comments per Views			
		IRR	SE	z		IRR	SE	z		IRR	SE	z	
Constant		82.46	22.94	15.86	***	6.52	2.09	5.84	***	9.24	2.72	7.56	***
ABC15 (=1)		2.22	.32	5.55	***	4.16	.70	8.48	***	3.27	.49	7.95	***
ABCNews (=2)		2.51	.41	5.69	***	3.46	.64	6.69	***	1.45	.25	2.11	*
CIN in NTV (=0)	Emergency/Risks	.98	.23	-.08		2.46	.67	3.32	**	1.34	.34	1.15	
	Health/Welfare	1.10	.30	.35		1.14	.34	.44		1.29	.36	.94	
	Education	1.02	.82	.03		.10	.11	-2.10	*	.74	.61	-.36	
	Transportation	1.02	.25	.07		1.35	.39	1.04		1.54	.41	1.64	
	Environment	.92	.30	-.27		1.01	.36	.03		1.46	.49	1.12	
	Economy	.01	.02	-3.48	***	.05	.06	-2.33	*	.05	.07	-2.30	*
	Civic Information	.48	.09	-3.82	***	.40	.09	-3.95	***	.65	.13	-2.08	*
	Politics	.58	.15	-2.06	**	.95	.28	-.16		.99	.27	-.05	
CIN in ABC15 (=1)	Emergency/Risks	.61	.16	-1.94		.29	.08	-4.27	***	.47	.12	-2.85	**
	Health/Welfare	.55	.21	-1.58		.91	.37	-.24		.76	.29	-.72	
	Education	1.00	.99	.00		14.50	18.85	2.06	*	1.03	1.03	.03	
	Transportation	.59	.17	-1.80		.46	.15	-2.31	*	.36	.11	-3.35	**
	Environment	.73	.33	-.70		.83	.42	-.38		.45	.21	-1.73	
	Economy	43.84	57.86	2.86	**	11.98	16.25	1.83		14.72	19.46	2.03	*
	Civic Information	2.90	.77	4.02	***	1.16	.36	.47		1.44	.40	1.32	
	Politics	1.39	.37	1.23		.60	.19	-1.67		.94	.26	-.22	
CIN in ABCNews (=2)	Emergency/Risks	.70	.18	-1.36		.29	.09	-4.20	***	.66	.18	-1.53	
	Health/Welfare	.94	.45	-.12		.83	.44	-.35		.34	.18	-2.09	*
	Economy	51.43	69.13	2.93	**	13.41	18.60	1.87		14.28	19.25	1.97	*
	Civic Information	1.61	.58	1.32		1.30	.54	.64		1.13	.44	.32	
	Politics	1.53	.42	1.54		.88	.28	-.42		2.39	.69	3.04	**

Television and CIN on Facebook

Video Format	Repeat Posting	.93	.03	-2.23	*	1.02	.04	.56		1.06	.03	1.72	
	Video Length	.79	.05	-4.03	***	.91	.06	-1.42		.85	.05	-2.80	**
	Music	.75	.07	-2.94	**	1.36	.15	2.90	**	.54	.05	-6.20	***
Video Type (Traditional clip =0)	Social Media	1.05	.11	.43		1.26	.14	2.02	*	1.35	.14	2.93	**
	Promotional	1.02	.16	.12		1.16	.20	.87		1.19	.20	1.05	
	Facebook Live	2.73	.52	5.28	***	1.18	.25	.78		2.95	.54	5.92	***

Note: *** $p < .001$; ** $p < .01$, * $p < .05$; IRR= incidence rate ratios; SE = standard error; Education, transportation, and environment effects for ABC News were omitted due to low counts.