Sentiment Polarity Identification in Banner Headlines of Broadsheets in the Philippines

Manuel O. Diaz Jr.

West Philippine Sea Institute

Abstract. This study analyses the sentiment polarity of the banner headlines from six broadsheets in the Philippines with the biggest circulation nationwide. The sentiment polarity is the general perception of whether it is worded positively, neutral, or negatively. This study employs five machine learning and artificial intelligence (AI) to conduct the analysis. The results reveal a tone reflecting editorial policy that tends to lean towards the negative tone. While there is a utility for negative framing of the news, this paper argues that a pivot to the positive, particularly in the Philippine setting, is worth considering. Based on current literature, positivity shows the potential to bring in more readers. Publishers can leverage positivity in the news as part of strategies to stem the tide of readership decline. Positivity in the news should start with the headline, through which readers have a first glimpse of the story.

1. Introduction

In the Philippines, there are two newspaper formats. There's the broadsheet, usually published in the English language, and the tabloid, usually published in Filipino/Tagalog and other local languages. There are also newspapers published in Spanish, Mandarin Chinese, Japanese and Korean, but the circulation of those is limited to a very small minority speaking the language, mostly expatriates. Broadsheets focus on a wide range of issues, while tabloids are known for sensationalized stories on crime, sex and entertainment (Estella & Löffelholz, 2019). Tabloids, however, have a bigger readership than broadsheets. According to the media transparency initiative Media Ownership Monitor, tabloids make up 7 of the top 10 most read newspapers in the Philippines, with broadsheets Manila Bulletin, Philippine Daily Inquirer and Philippine Star at 4th, 6th and 9th places respectively (Vera Files, 2016). Data from the 2012 Philippine Media Factbook (Philippine Information Agency, 2012) indeed show that tabloids are more popular. The top tabloid Bulgar had a circulation of 600,000 while the top broadsheet Manila Bulletin circulated between 349,000 to 419,000 only.
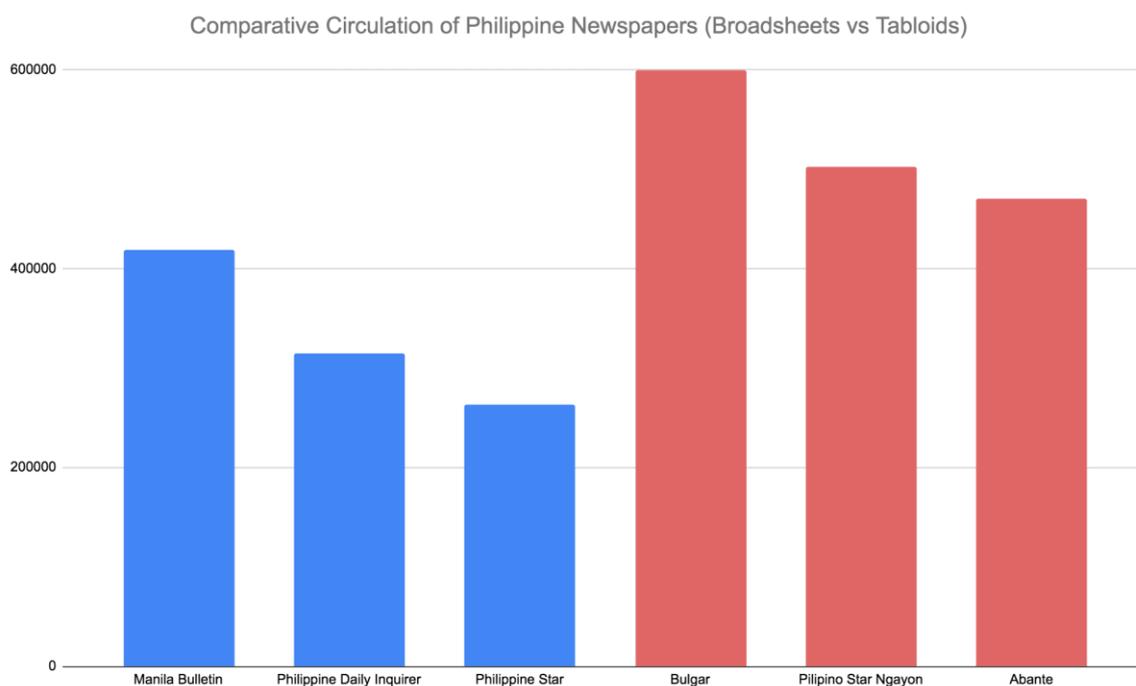

Figure 1. Circulation of Broadsheets and Tabloids in the Philippines (Source: 2012 Media Factbook)

The disparity between broadsheets and tabloids in the Philippines is probably best described by the Oxford Business Group (2012) when it stated that broadsheets in the country are *an effective way of reaching the better-off sections of society*. Marcelo Lagmay, then president of the National Press Club, once lamented that newspapers have become too expensive for the masses, pointing out that Philippine media has failed to reach the masses and has become an elite media (Guioguio, 1988). Presently, a copy of Manila Bulletin costs ₱18, while the tabloid Bulgar costs ₱10. The price point alone can already explain the popularity of the tabloid over the broadsheet.

Income has been consistently found to have a positive correlation to newspaper readership (Burgoon & Burgoon, 1980). In a country with more than 17 million people living in poverty (plus 40 million more belonging to a family of 5 living on less than US$450 per month, and a further 31 million belonging to a family of 5 living on less than US$870 per month), it is not difficult to see how anyone wanting some news would spend ₱18 per day for it. For 17 million people, it means food on the table. For 40 million people, it means 10% of their daily budget. Shown below is a proportional representation of the income groups in the Philippines according to a 2020 Philippine Institute for Development Studies discussion paper which used data based on the 2018 Family Income and Expenditure Survey (FIES) conducted by the Philippine Statistics Authority (Albert et al. 2020).
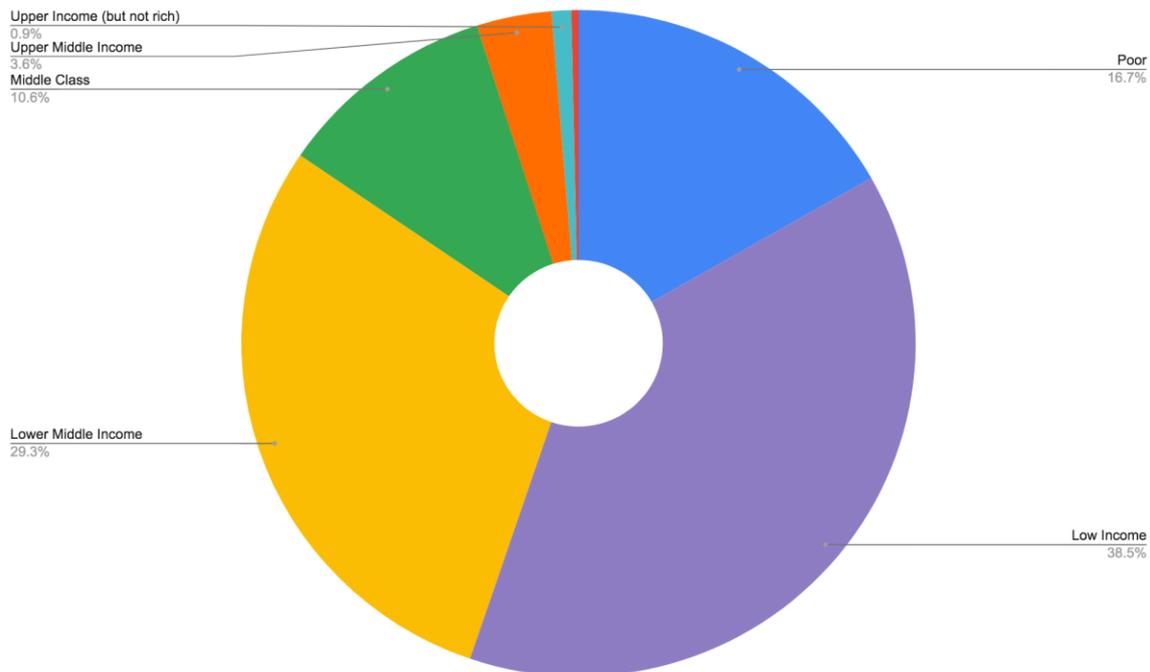

Figure 2. Income groups of the population in the Philippines

Low income is defined as a family of 5 living on less than US$450 per month, while Lower Middle Income is a family of 5 living on less than US$870 per month. The officially poor, the low income and the low middle income constitute the big majority of people. The wealth in the country is controlled by a very small minority of rich people, represented by the tiny red strip in the chart above, or about a third of one percent in a country of 109 million people.

The decline in the readership of newspapers is a global phenomenon. In Australia, Roy Morgan Research has revealed that readership of printed versions of the major news outlets have gone down by as much as 20% (Robinson, 2020). In the United States, there was a decline of 6% in 2020 based on data from Pew Research (Barthel and Worden 2021). A Google-commissioned report published this year also shows the same trend in Western Europe (Accenture, 2021). In fact, the global newspaper publishing industry has shrunk by -7.6% during the period between 2016 and 2021 (IBIS World, 2020). In the Philippines, the downtrend is serious. According to the spokesperson of the Newspaper and Magazine Dealers Association (MDAP), readership was declining by 10% a year. Less and less young people buy newspapers, while older people increasingly get their news from the Internet or TV (Greenslade, 2006).

The number of Filipinos exposed to a newspaper of any kind at least once a week has steadily declined as well based on the Functional Literacy, Education and Mass Media Survey (FLEMMS), a survey conducted by the National Statistics Office (NSO) every five years. In 2008, 62.8 percent of the population did not have access to or had seldom exposure to newspapers. In 2013, it increased to 72.2 percent. In 2019, it further went up to 82.1 percent (Philippine Statistics Authority, 2010; 2015; 2021).

Based on data from the 2019 FLEMMS, only 4.3 percent of Filipinos were exposed to newspapers every day. In contrast, 96 percent had daily exposure to television and 73.9 had daily exposure to the Internet through social media (Philippine Statistics Authority, 2021). This was confirmed in the 2021 Reuters Digital News Report, which showed that 87 percent of Filipinos sourced news from the Internet, 61 percent from television, and just 16 percent from print (Chua, 2021). As with the rest of the world, Philippine broadsheets had to adapt and leverage the Internet as a channel. On 27 October 1997, the Philippine Daily Inquirer was the first broadsheet to establish an online presence (Labog-Javellana, 2016). Today, all of the English-language broadsheets have websites and social media presence.

2. Literature Review

The decline in newspaper readership has been a concern for publishers and journalists across the world. When the Internet came along, it was thought that its disruptive nature would radically realign market forces, profit expectations, and business models (Anderson, 2000). Many, if not all, businesses—not just newspapers—were faced with the challenge of pivot or perish: the future is online and digital. So, newspapers went online and published digitally. It was thought that the Internet would usher in a new golden age for newspapers, just as when the printing press was invented, but it did not. This is because no one has yet come up with a viable business model for digital news media (Edge et al., 2020). Digital subscription as a revenue source has proven to be quite insignificant (Doctor, 2017). Online advertising is dominated by giants Google and Facebook. They account for 73 percent of digital advertising in the United States and control 83 percent of all digital advertising growth (D'Onfro, 2017), leaving bread crumbs for the rest of the online advertising world to share. Paywalls have achieved some degree of success for a few major brand newspapers, but they do not provide enough income to the majority of newspapers that use them that could offset losses in print ad revenue (Hagey & Alpert, 2019). In the United States, for example, not a single newspaper has made it digitally after more than 20 years of experimentation in the digital space (Edge et al., 2020). So, while embracing the Internet is a must—certain demographics prefer digital—the problem of declining readership remains.

Readership of newspapers in print has been shown to be fairly stable. Tammy Mendoza, Vice President for Operations of *Philippine Star*, has confirmed that the newspaper business in the Philippines has remained relatively stable for a decade (Cruz II & Delos Reyes, 2014). This is because the news readers, particularly those of the national broadsheets, have remained loyal to the medium. This is problematic, however, because while the newspapers are not losing so many customers, they are also not converting new consumers of news, particularly the younger age groups, to become new customers. In time, the market share for newspapers will become smaller, and its readership will dwindle. To keep up with the increasing costs of publishing, newspapers need to increase revenue. A sustainable way of increasing revenue is increasing readership. If readership remains more or less constant, as with the case of broadsheets in the Philippines, the only other way of increasing revenue is to increase prices. This was, in fact, what a longitudinal study of widely-circulated American newspapers found: there were more-than-substantial price increases of newspapers in the United States (Chyi & Tenenboim, 2019). Publishers decided to increase circulation revenue by increasing the retail price of newspapers. In the long run, this is not sustainable. Loyal customers are being penalized for their loyalty.

Newspapers then need to increase the number of their readers, whether in print or online. The decline in readership, whether seen as loss of customers or the inability to attract new customers—that will first stem the churn rate and second increase revenue—is rooted in the engagement of readers.

Engagement of readers starts with the headline. The headline sells the story to the reader. They attract attention to the story, urge reading of the story, create a vivid story impression, lure the reader into the full story, indicate the reward for reading the story and convey a sense of immediacy (Smith, 1999). The headline therefore influences the subsequent action of potential readers. For print, it may determine whether or not one will pick a copy and read the story or simply move on. For online news, it may determine whether or not one will click through and read the story or scroll away to find more interesting content.

The headline is an interesting subject of study. A paper was presented in the 9th International AAAI Conference on Web and social media in the UK which investigated strategies used by online news corporations in the design of their news headlines (Reis et al. 2015). A University of Edinburgh researcher analyzed newspaper headlines to see how psychiatric illness is being presented (Lawrie, 2000). With the stigma that society has attached to mental health issues, the role of newspaper headlines in overcoming this prejudice is very important. Similarly, another study looked at how headlines presented stories about Jews and Muslims in The New York Times and The Guardian (Nisar & Bleich, 2020). With the resurgence of anti-Semitism and a growing social tension around Islam, it is very important to understand how the media presents issues on the subjects.

a. Sentiment Analysis

Before computers were used in sentiment analysis, things were done manually. Niederhoffer (1971) analyzed the headlines of the New York Times covering a period of 20 years to look for correlation between the news and financial markets. He used semantic categories to classify newspaper headlines across a good-bad rating scale. He found that markets positively react to good news, while it has the tendency to overreact to bad news. Today, what Niederhoffer painstakingly worked on is easier to achieve using sentiment analysis.

Also known as opinion mining, sentiment analysis *is the computational study of opinions, sentiments and emotions expressed in text* (Liu, 2010). In computational linguistics, it examines what textual features— such as lexicon, syntax, punctuation and the like —contribute to the affective content of text and how these features can be

automatically identified to derive a sentiment metric for a word, a sentence or the whole text (Devitt & Ahmad, 2007).

Professor Janyce Wiebe at the University of Pittsburgh worked extensively in subjectivity identification research. Grounded on a strong human evaluative component, the work of Wiebe and colleagues initially used syntactic class, punctuation and sentence position features as subjectivity classifiers and subsequently expanded to the use of more lexical features such gradation of adjectives and word frequency to identify texts which are affectively neutral and those which are not (Wiebe et al., 1999; Wiebe et al., 2005). Instead of looking at the presence or absence of affective content in text, Turney (2002) and Pang, Lee & Vaithyanathan (2002) investigated their positive and negative polarity. Others, such as Kim & Hovy (2004), combined the identification of affectivity and the detection of sentiment polarity in text.

b. Sentiment Polarity

Sentiment refers to the attitude of a speaker or a writer in regards to a topic (Yuan et al. 2021). The polarity of sentiment—or sentiment polarity—is the orientation of the sentiment expressed in the spoken words or written text. This orientation can be positive or negative. When the net orientation is neither positive nor negative, the sentiment polarity is said to be neutral, although neutrality really means that there is no sentiment expressed, or that the text is objective, such as an expression of fact. Net orientation is determined by the positive words or groups of words offset by the negative words or groups of words, such as in the case of phrases, sentences and paragraphs that consist of a mix of words that are identified as positive and words that are identified as negative. Meanwhile, the task of determining whether the expressed sentiment is positive or negative is called sentiment polarity identification, which is actually a form of coding or categorizing text in order to establish sentiment orientation. Broadly, coding is the symbolic assignment of a summative, salient, essence-capturing, and/or evocative attribute for a portion of text-based or visual data (Saldana, 2016).

Positive sentiment, or the positive polarity of the sentiment, means that taken as a whole, the text expresses positivity. Text expresses positivity when it evokes positive emotion. Linguistically, this means use of positive words or groups of words both in literal and figurative forms. Through text, and language in general, we construct emotion by simulating past experiences of the words we are using (Knuppenburg & Fredericks, 2021). Written text, therefore, expresses how the author

feels about the subject and what the author wants the reader to perceive about the subject, thereby shaping and influencing the reader. Positive sentiment in written text expresses a positive view of the writer to the subject and at the same time evokes a positive perception of it from the reader.

Negative sentiment, or the negative polarity of the sentiment, means that taken as a whole, the text expresses negativity. Text expresses negativity when it evokes negative emotion. Linguistically, this means use of negative words or groups of words both in literal and figurative forms. Interestingly, expressing negative sentiment in written text may need some effort. 10,000 of the most frequently used words of the English language, according to Kloumann et al. (2012), exhibits a clear positive bias. In addition, people tend to use positive words more frequently than negative words (Zajonc, 1968). Known as the Pollyanna hypothesis or the *linguistic positivity bias* (LPB), the tendency to use positive words has been shown to be a panhuman tendency. That is, LPB is exhibited by people across different languages and corpora (Iliev et al. 2016). On the other hand, there is a reward for writing text that expresses negativity. Humans are hard-wired to detect negative information with priority. This is called the negativity bias, or the propensity to attend to, learn from, and use negative information far more than positive information. Negativity bias serves critical evolutionarily adaptive functions and Vaish, Grossmann and Woodward (2008) have shown that it already exists in early development based on research on infant social referencing and other developmental domains.

c. Significance of the Study

In this study, sentiment analysis will be employed on headlines—specifically banner headlines of the six broadsheets of national circulation in the Philippines. The sentiment polarity of the banner headlines will be identified to attempt an answer to the question of whether said headlines, and consequently the editorial policy of Philippine broadsheets, tend to be positive or negative. The effect of the sentiment polarity of the banner headlines to readership will then be investigated.

This study contributes to the body of knowledge of Philippine media and communication both in terms of scope, technique and subject matter. As to scope, most of the available literature on Philippine English-language broadsheets generally focus on the big three, namely: Manila Bulletin, Philippine Daily Inquirer and Philippine Star. For example, Media Ownership Monitor, a project of Vera Files and Reporters Without Borders funded by the German Federal Ministry for Economic Cooperation and Development, does not include the small Philippine broadsheets

Daily Tribune, Manila Standard and The Manila Times (Vera Files, 2017). Similarly, there is also no mention of them in the Reuters Institute Digital News Report 2021 (Chua, 2021). The inclusion of the small broadsheets in this study makes it more comprehensive.

As to technique, while the use of artificial intelligence, machine learning and data science in journalism study is no longer new in the Philippines, it is still in infancy and this study is a small contribution towards its maturity. Quijote, Zamora and Ceniza (2019) used SentiWordNet to detect bias in Philippine political news articles. SentiWordNet is a publicly available lexical resource for opinion mining (Esuli & Sebastiani, 2006). Meanwhile, Valdeavilla & Pulido (2019) used Aylien sentiment analysis to detect bias in reporting about the Marawi siege of 2017. Aylien is a text analysis extension of Rapid Miner, a data science platform (Sharma & Ghose, 2020). By introducing commercially available sentiment analysis platforms, this study paves the way for the use of artificial intelligence, machine learning and data science in journalism study in the Philippines without the steep learning curve of using an application programming interface (API) or coding in R or Python.

Finally, as to the subject matter, this study finds correlation between sentiment polarity of banner headlines and the declining readership of newspapers in the Philippines. The number of Filipinos exposed to a newspaper of any kind at least once a week has steadily declined based on the Functional Literacy, Education and Mass Media Survey (FLEMMS), a survey conducted by the National Statistics Office (NSO) every five years. In 2008, 62.8 percent of the population did not have access to or had seldom exposure to newspapers. In 2013, it increased to 72.2 percent. In 2019, it further went up to 82.1 percent (Philippine Statistics Authority, 2010; 2015; 2021). Already struggling with a declining readership, the coronavirus pandemic resulted in at least 13 community papers nationwide to suspend print editions (Esguerra, 2020). Understanding the correlation between sentiment polarity of banner headlines and the decline in readership can help reverse the trend to some extent. Of course, newspaper readers do not read newspapers merely for the sake of reading headlines. However, as will be shown here, the headline has the power to either entice or turn away potential readers.

3. Methodology

The data used in this study consisted of the banner headline from the daily print edition of the major broadsheets in the Philippines over a two-month period. The headlines were run through five sentiment analysis platforms, which yielded information on the sentiment polarity of how each headline was phrased and worded. Sentiment polarity scores were then normalized, and the results interpreted using a qualitative approach.

a. Sentiment Analysis Platforms

This study exploits existing sentiment analysis engines. It is recognized, however, that machine learning techniques or the artificial intelligence (AI) used can vary between sentiment analysis engines. In addition, the body of textual sources from which indicators of affective content have been drawn is certainly different from one sentiment analysis engine to the next. Thus, to validate results, the same samples will be run through multiple platforms, identified as follows:

- *Platform 1*. **Daniel Soper Sentiment Analyzer** (danielsoper.com) is a free online sentiment analysis platform by California State University Professor of Information Systems and Decision Sciences Daniel S. Soper, Ph.D.
- *Platform 2*. **Lexalytics** (lexalytics.com) is a Boston-based company founded by Jeff Catlin and Mike Marshall in 2003. It is a paid platform but provides a demo for free.
- *Platform 3*. **Monkey Learn** (monkeylearn.com) is a San Francisco-based AI company founded by Raúl Garreta, Ernesto Rodriguez, Federico Pascual, and Martín Alcalá Rubí in 2014. It is a paid platform but provides a demo for free.
- *Platform 4*. **Text2Data** (text2data.com) is a company founded by Marius Szym in 2014 as a text analytics software-as-a-service (SaaS) startup in London. It currently operates from the city of Poznań, in west-central Poland. It is a paid platform but provides a demo for free.
- *Platform 5*. **Twin Word** (twinword.com) is a San Jose, California-based natural language processing (NLP) company founded by Kono Kim in 2012. It is a paid platform but provides a demo for free.

While these platforms present sentiment polarity qualitatively, they vary in the quantification of the degree of polarization, such that a score given by one cannot be immediately compared with a score by another. Normalization is thus a necessary

step to adjust scores measured across different scales to a notionally common scoring system.

It should also be pointed out that limitations certainly exist in commercial state-of-the-art sentiment detection. Typically, sentiment detection algorithms have precision of over 80% (Padmaja & Sameen Fatima, 2013; Vinodhini & Chandrasekaran, 2012) but actual implementations perform only at around 50%, at least as Cieliebak, Dürr and Uzdilli (2013) have shown. While the platforms selected for this study are not among those included in the analysis of Cieliebak et. al., it is worth noting that AI is not perfect. Some of the factors that impact precision in addition to the algorithm include the size and scope of the corpora or the body of texts used, as well as the annotations of the corpus. In fact, according to Daniel Soper, the California State University Professor of Information Systems and Decision Sciences that developed danielsoper.com, research has shown that humans will disagree in about 20% of cases deciding on the sentiment polarity of written text (Soper, 2006). This means that even if the AI is perfect, precision will only be up to 80%.

b. Data Sampling

The data used in this study are the banner headlines from the six major broadsheets with national circulation in the Philippines. The data was collected over a two-month period, specifically from 1 May 2021 to 30 June 2021, from a news content aggregator, Broadsheets Philippines (fb.com/broadsheetsPH). Each broadsheet considered has a website. A copy of the front page of the print edition is published either in the website or in the social media channel for the publication. The headlines for the two-month period are fed in bulk, one headline per line of text, to the sentiment analysis engines, in contrast to the option of running the analysis on each headline individually.

In this study, data will be sampled from the English-language general interest broadsheets of daily and national circulation in the Philippines that publish both electronically and in print. Thus, the business-focused Business Mirror and Business World are excluded, as is Malaya, which has for its online version the business-focused Malaya Business Insight. A total of six broadsheets have been identified, as follows:

Daily Tribune (tribune.net.ph) is an English-language broadsheet in the Philippines with offices at 3450 Concept Building, Florida Street, Makati City. It was founded on 1 February 2000 by journalist Ninez Cacho-Olivares but was

subsequently acquired by Concept and Information Group, Inc. in 2018 (CNN Philippines Staff, 2020). Although one of the few broadsheets in the country with national circulation, it has not reached wide circulation yet. Daily Tribune has not made it to the top ten newspapers in the Philippines (Vera Files, 2017). If its social media presence will be used to gauge its reach—the Philippines is, after all, known as the "Social Media Capital of the World" (Pablo, 2018)—Daily Tribune (fb.com/tribunephl) has 221,740 followers on Facebook as of 22 October 2021.

Manila Bulletin (mb.com.ph) is another English-language broadsheet in the Philippines with offices at the corner of Muralla and Recoletos Streets in Intramuros, Manila. It was founded on 2 February 1900 by Carson Taylor, making it the second oldest broadsheet in the Philippines that has outlived foreign occupations, governments and presidents (Vera Files, 2016). It is currently a publicly-traded stock corporation in the Philippine Stock Exchange. It is one of the top three most-read broadsheets in the country for the upper and upper middle class, i.e. those with university degrees, those with supervisory or management roles at work, and/or those who are business owners, according to a 2013 consumer and media view survey by The Nielsen Co. (*Philippine Daily Inquirer* 2014). It is also the most trusted print media brand in the country according to the Reuters Institute Digital News Report 2021 (Chua, 2021). Manila Bulletin (fb.com/manilabulletin) has a very big social media following with 3,705,596 followers on Facebook as of 22 October 2021.

Manila Standard (manilastandard.net) is also an English-language broadsheet in the Philippines with offices at the sixth floor of the Universal RE Building, 106 Paseo de Roxas Avenue corner Perea Street, Legaspi Village, Makati City. It was founded on 11 February 1987 by Rod Reyes and is currently owned by the Romualdez family (Cunanan 2017), relatives of the graft convict and former first lady Imelda Marcos, wife of dictator and former president Ferdinand (Cabico, 2020). It has a small print circulation and if its social media presence is to be used as an indicator of readership, Manila Standard (fb.com/ManilaStandardPH) has only 121,684 followers on Facebook as of 22 October 2021.

Philippine Daily Inquirer (inquirer.net) is another English-language broadsheet in the Philippines with offices at 1098 Chino Roces Avenue corner Yague and Mascardo Streets, Makati City. It was founded on 9 December 1985 by Eugenia Apóstol, Florangel Braid, Betty Go-Belmonte, Louie Beltran, Art Borjal and Max Solivén making it the only broadsheet established under the Marcos regime albeit towards the end of the conjugal dictatorship. Former president and ousted dictator Ferdinand Marcos, known as one of the most corrupt politicians in the world (*Forbes*,

2004) and his wife Imelda, closed or took control of most of the Philippine media during his rule. Also known as PDI or just *Inquirer*, it became the paper of the barricades during the 1986 People Power Revolution and went on to become the country's number one newspaper after the Marcoses were toppled and freedom restored in the Philippines (Yu, 2011). It is now the flagship brand of the Inquirer Group of Companies which is majority-owned by the holding arm of the Rufino-Prieto matriarch. It is the most popular broadsheet in both print form and online according to the Reuters Institute Digital News Report 2021 (Chua 2021). Its social media following is almost double that of its closest rival Manila Bulletin. Inquirer (fb.com/inquirerdotnet) has 7,272,495 followers on Facebook as of 22 October 2021.

Philippine Star (philstar.com) is also an English-language broadsheet in the Philippines with offices at 202 Roberto S. Oca Street Corner Railroad Street, Port Area, Manila. It was founded on 28 July 1986 by the key founders of Philippine Daily Inquirer—Betty Go-Belmonte, Louie Beltran, Art Borjal and Max Solivén—after irreconcilable differences with the other Inquirer founders (Yu, 2011). It is now majority-owned by MediaQuest Holdings, the media conglomerate of businessman and PLDT chairman Manuel Pangilinan, through its subsidiary Hastings Holdings. It is one of the top three most sold broadsheets in the Philippines (Vera Files, 2017) and ranks slightly higher in brand trust than Inquirer according to the Reuters Institute Digital News Report 2021 (Chua, 2021). In terms of social media reach, it has more followers than Manila Bulletin with 6,365,105 followers on Facebook as of 22 October 2021.

The Manila Times (manilatimes.net) is the oldest English-language broadsheet in the Philippines with offices at the second floor of the Sitio Grande Building, 409 A. Soriano Avenue, Intramuros, Manila. It was founded on 11 October 1898 by Thomas Gowan just after the Treaty of Paris was signed and Spain ceded the Philippines to the United States (Viray, 2018). Its current publisher is Dante Ang, the publicist of former president Gloria Macapagal-Arroyo and who president Rodrigo Duterte appointed as special envoy of the President for international public relations (Elemia, 2017). Researchers from the University of San Carlos in Cebu City, Philippines, have also empirically shown that the broadsheet is biased (Quijote, Zamora and Ceniza, 2019). The Manila Times has not reached wide circulation and is currently positioned just fourth after the major dailies Manila Bulletin, Philippine Daily Inquirer and Philippine Star, despite being the oldest broadsheet in the country. Its social media presence is dwarfed by the big broadsheets, but it leads the minor papers with 553,526 followers.
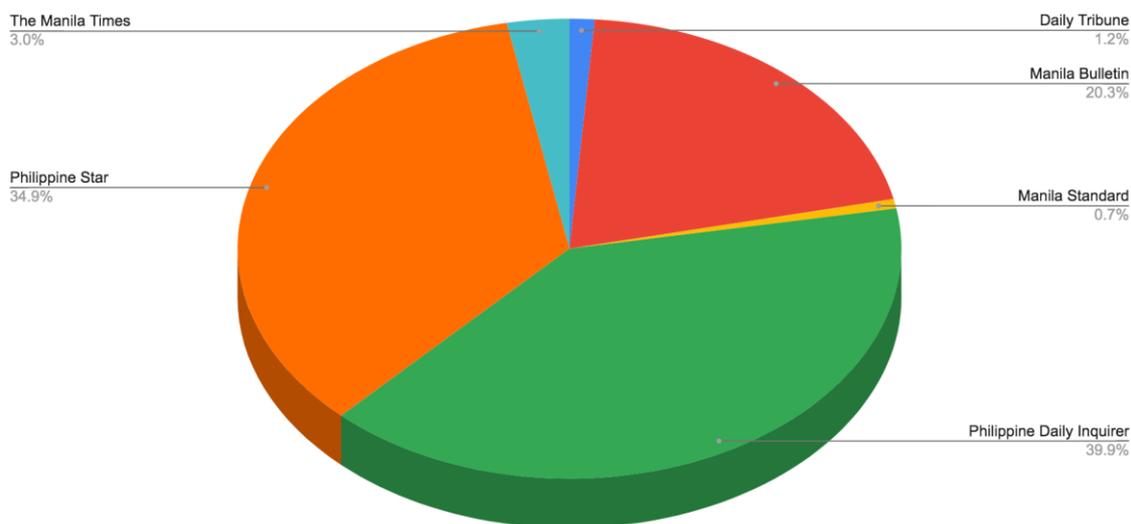
Figure 3. A comparison of the number of social media followers of the 6 broadsheets' Facebook page

4. Results and Discussion

Of the five sentiment analysis platforms used, only danielsoper.com was free to use. The rest were commercial platforms, so only their demonstration versions were used in this exercise (not that the demonstration version would be any less accurate). The results indicated that the general tone of banner headlines in the Philippines to be negative. Daniel Soper detected positive polarity for three of the six newspapers. Results from Lexalytics are similar, except that where Daniel Soper concluded positive polarity, Lexalytics only detected neutral tones at best. Monkey Learn and Text2Data mostly showed negative polarity, while Twin Word concluded neutrality for all sampled broadsheets.
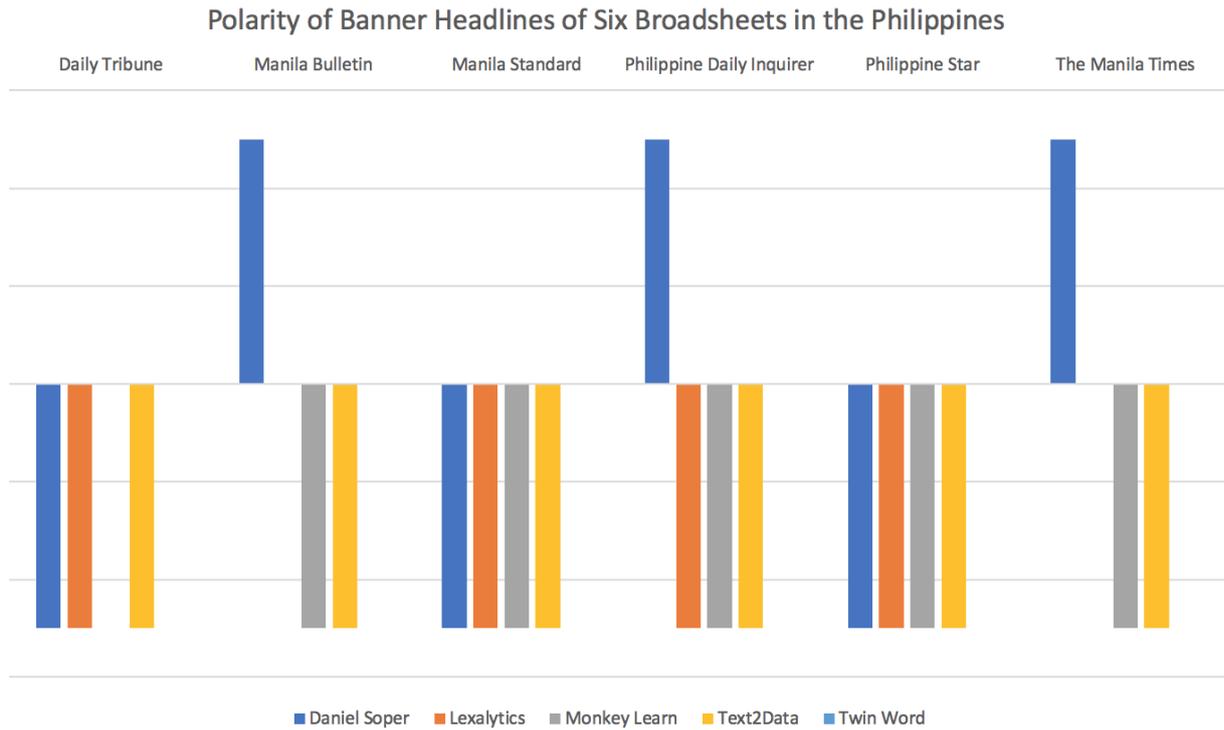
Figure 4. Sentiment Polarity of Broadsheets in the Philippines

Table 1 lists the polarity scores the broadsheet banner headline samples received from each platform. As can be noted, the scores vary across platforms. To better understand how each relates to the others, scaling of the scores is needed to normalize them with a common baseline.

Table 1. Sentiment Polarity Scores of Broadsheets in the Philippines

	Platform 1	Platform 2	Platform 3	Platform 4	Platform 5
Daily Tribune	-62.3000	-0.1100	-55.8000	-0.6700	0.006111765
Manila Bulletin	33.5000	0.0240	-53.0000	-0.6400	0.048201357
Manila Standard	-90.9000	-0.5070	-84.9000	-0.6400	0.011264059
Philippine Daily Inquirer	53.9000	-0.1740	-66.9000	-0.6400	-0.036895752
Philippine Star	-79.6000	-0.3140	-80.4000	-0.5800	0.023654722
The Manila Times	38.2000	0.0090	-63.4000	-0.6100	-0.041875155

The idea behind normalization of scores is to bring scores up (or down) to numbers within ±10 so that there will be no extreme outliers in the data resulting from the different scoring systems of the platforms that produced them. The difference between each score from the same platform, however, will be proportionally maintained. The scaling of the sentiment polarity scores in Table 1 was done as follows, and illustrated using data from Platform 1:

1. The range of scores (R) is determined. The range is the difference between the highest score and the lowest score.

$$R = Score_{max} - Score_{min}$$
$$R = 53.9 - (-90.9)$$
$$R = 144.8$$

2. The scoring interval (i) is found by dividing R by the number of data points, in this case 6.

$$i = R/6$$
$$i = 144.8/6$$
$$i = 24.13$$

3. Finally, the scaled score (S_s) is given by dividing the raw score (S_R) by the scoring interval.

$$S_S = S_R/i$$
$$S_S = -62.3/24.13$$
$$S_S = -2.58$$

The scaled score for *Daily Tribune* (Platform 1) is −2.58, scaled down from −62.3. Table 2 below shows the scaled scores across the different platforms.

Table 2. Scaled Sentiment Polarity Scores

	Platform 1	Platform 2	Platform 3	Platform 4	Platform 5
Daily Tribune	-2.58	-1.24	-1.75	-4.47	0.41
Manila Bulletin	1.39	0.27	-1.66	-4.27	3.21
Manila Standard	-3.77	-5.73	-2.66	-4.27	0.75
Philippine Daily Inquirer	2.23	-1.97	-2.10	-4.27	-2.46
Philippine Star	-3.3	-3.55	-2.52	-3.87	1.58
The Manila Times	1.58	0.10	-1.99	-4.07	-2.79

Since scores from Platform 3 are relatively much higher in proportion, the scaling is done twice. Meanwhile, scores from Platform 4 needed prior scaling by a factor of 10 to achieve results which are within range of the other scaled scores.

The scaled scores (and even the raw scores) are nominal but are quite useful in providing data-based visualization of sentiment polarity. Using a stacked area chart in Microsoft Excel, the polarity of the affective expression in the banner headlines collected over a period of two months for the major broadsheets in the Philippines is quite clear. There is a heavy tendency towards the negative. This is shown in Figure 3.

Another visualization is shown in Figure 4 using a scatter diagram, built with the standard chart function in Microsoft Excel. Even with the scatter diagram, it is easy to see that most of the data points lie under baseline zero. Noteworthy, however, is that all of the six subjects of this study have, at least once, breached neutrality towards positive polarity, although results for the sentiment analysis engines may have shown them still to be of negative sentiment.
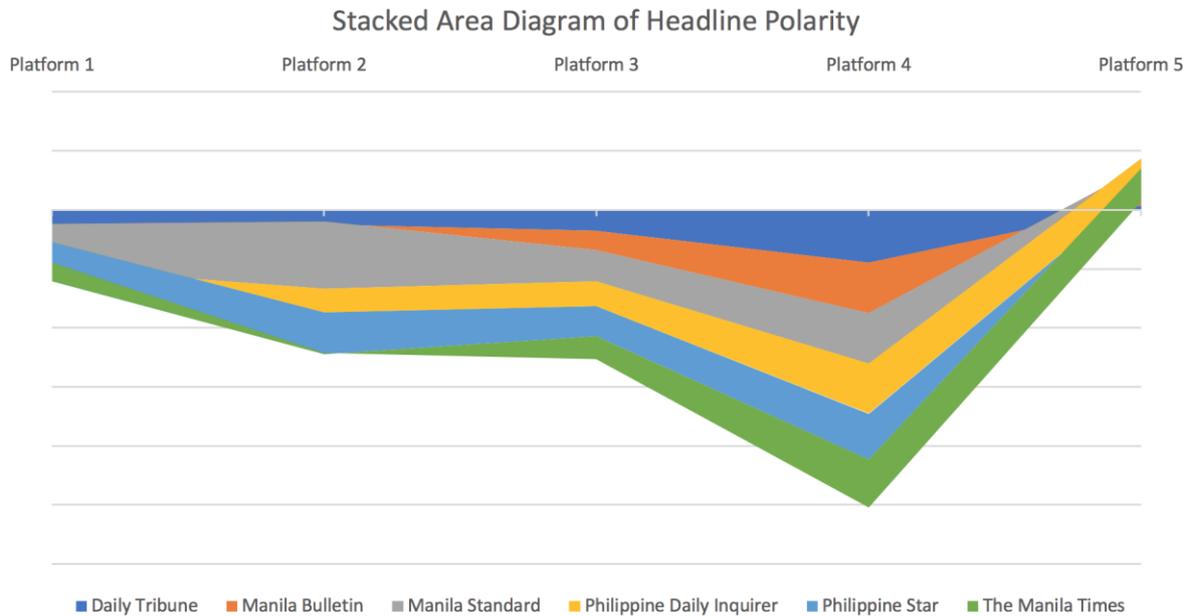

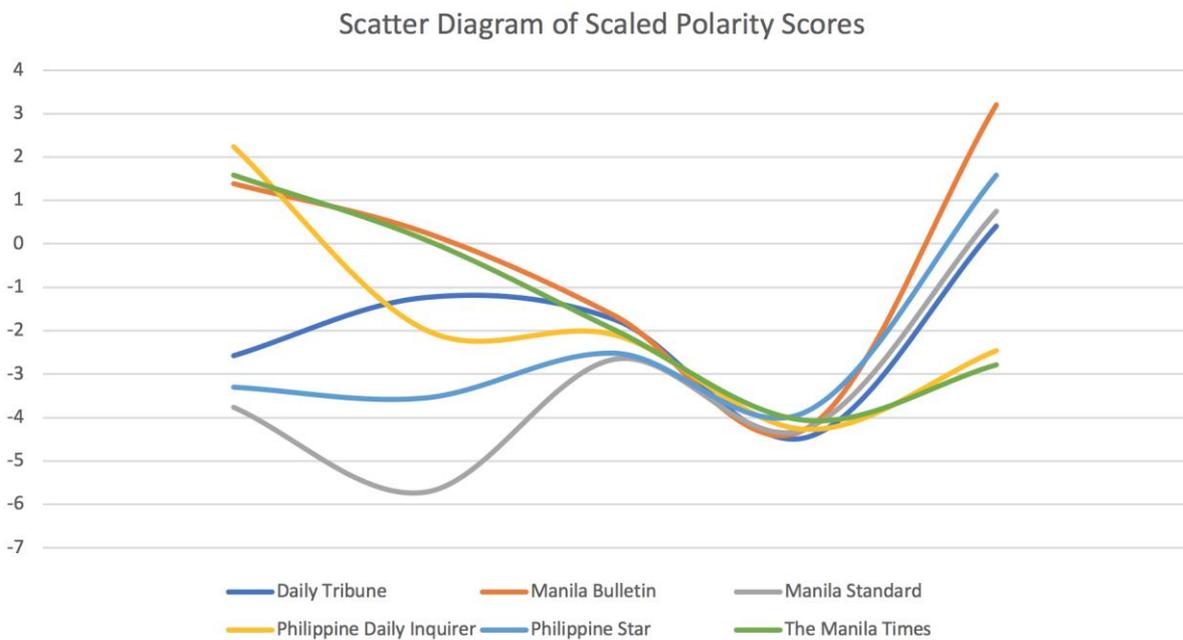**Figure 5**. Stacked area visualization of the scaled polarity scores

Figure 6. Scatter diagram of scaled polarity scores

Empirically, the results of the sentiment analysis performed on banner headlines of some of the biggest broadsheets of national circulation in the Philippines show that there is a trend or tendency for the most important news of the day to be framed negatively. This may not come as a surprise, considering that evidence based on a 17-country 6-continent study suggests that humans react more strongly to negative than positive information, providing clear utility for negative news (Soroka, Fournier and Nir, 2019). More so in the Philippines, for a couple of reasons.

First, the Philippine press, particularly print media, has been subjected to a cycle of suppression. During the Japanese occupation in World War II, only Japanese-controlled media was allowed to operate, which was more of a propaganda machinery than anything. After the war, the press came to life. The underground media became mainstream, and it was particularly critical of the government, exposing issues and pouncing on the smallest mistake of those in power. This was "a natural aftermath borne out of being suddenly set free" (Guioguio, 1988). The suppression of the press was repeated forty years later during the years of the Marcos dictatorship. After the dictator placed the country under martial law, he took over Philippine mass media (San Juan Jr, 1978). Press freedom was only restored in 1986 when Marcos was overthrown in a popular revolution. The press has since made an ongoing effort to hold the government in check (Neumann, 2005). Critical words, no matter how well-meaning, are negative in the polarity identification of text. Hence, with the Philippine media, particularly the newspapers, being critical of the government, news headlines and stories can be expected to be more negative than positive, particularly when reporting about the government.

Second, there seems to be a preference for sensationalized content, mostly the bizarre and appalling, among most Filipino newspaper readers (Estella & Löffelholz, 2019). In fact, tabloids significantly outnumber broadsheets in terms of number and copies sold. While tabloids mainly contain crime, sex and entertainment stories (Tandoc Jr & Skoric, 2010), broadsheets often blur the fine line between real news stories and entertainment stories (Delfin & Garcia, 2016). The Filipino newspaper reader appears to be drawn to negative news, and the Philippine press is just too willing to give them the reading material they are after.

a. Negativity in the News

The Philippines is considered to be the social media capital of the world. This is because Filipino social media users have an extraordinarily high usage time of about four hours per day (Statista, 2021). According to the FLEMMS, 73.9 percent of Filipinos had exposure to the Internet in 2019 (Philippine Statistics Authority, 2021).

While only 17.7 percent of all residences in the country had Internet access as of October 2020, 66 percent had mobile Internet access (Magahis & Santua, 2021). Interestingly, while the 2021 Reuters Digital News Report showed 72 percent of news-consuming Filipinos sourced news from social media, a measly 20 percent trust news on social media (Chua 2021).

Distrust in news influences people's consumption of news. General trust literature has shown that trust matters and has behavioral consequences (Strömbäck et al., 2020). In fact, lack of trust in the news causes people to avoid the news altogether. When people avoid the news, they do so either passively or actively. Passive or unintentional news avoidance stems from a lack of news exposure due to low levels of news interest and a preference for other media opportunities. On the other hand, active or intentional news avoidance is the practice of consciously tuning out of news content due to skepticism, feelings of news overload, or negative effects on their mood (Skovsgaard & Andersen, 2019). Too much negativity and conflict in the news can make people feel upset, powerless or depressed (Damstra et al., 2021). Avoiding the news means avoiding getting upset, avoiding feeling powerless, or avoiding feeling depressed. Negative news can also result in news fatigue. A study of COVID-19 pandemic-related fatigue in Lithuania showed that it can result in desensitization and avoidance of news (Buneviciene et al., 2021). A similar study in the UK revealed that news avoidance has increased during the pandemic, and this is mainly due to negative news and the negative effects of negative news (Kalogeropoulos, 2020).

b. A Case for Positivity in the News

Negative bias has been shown to have utility. With the tendency of people to be interested in the negative—known in psychology as negative bias—it certainly pays off to gravitate towards negative presentation of new stories. However, negativity may have already reached its full potential as a means to entice readers. One of the disruptions that the Internet has brought is that the barrier to entry for the news market is very low. This means that there is now a plethora of providers of news, from digital-only media outfits and independent journalists to bloggers, aggregators and other content creators. Consumers of news are now faced with news overload. Negativity of news, combined with news overload, has been cited in recent studies as a major reason for people to actually avoid news.

Exposure to negative news brings negative affect. This has been shown in many studies. (Veitch & Griffitt, 1976; Johnston & Davey, 1997; Szabo & Hopkinson, 2007; Unz, Schwab and Winterhoff-Spurk, 2008; Marin et al. 2012; Balzarotti & Ciceri, 2014; McIntyre, 2016; de Hoog & Verboon, 2020). Affect refers to consciously accessible feelings present within emotions and other affective phenomena such as but not limited to physical sensations, attitudes, moods and affective traits (Fredrickson 2001). Negative affect relates to sadness, worry, anxiety, stress, hostility, contempt, desensitization and negative emotional state including lower mood levels, depression and irrational beliefs. Instead of being better informed, those that consume negative news can become mis-calibrated and glum. A 2014 poll conducted by the National Public Radio (NPR), the Robert Wood Johnson Foundation, and the Harvard School of Public Health in the United States showed that a quarter of those polled said that the news was one of their biggest daily stressors (Edwards, 2017). Negative news induces negative mood and emotion and causes people to catastrophize personal worries (Johnston and Davey 1997). A study also found that exposure to the news was directly related to depression and anxiety (McNaughton-Cassill, 2001). Another study found that consuming negative news makes people less effective at work (Achor and Gielan 2015). For these reasons, more and more people are avoiding the news (Pinker, 2018; Kalogeropoulos, 2020; Buneviciene et al. 2021).

On the other hand, positive framing of news is gaining traction. A number of publishers have dedicated themselves to publishing positive stories only. Interestingly, many of these positive-oriented news outlets report large audiences and increasing engagement. A study in the United States showed, perhaps expectedly, that positive news makes readers feel good. And while it cannot be expected that news will always be positive, the same study found that highlighting the positive aspects or outcomes of an otherwise negative story produces higher levels of interest than strictly negative news (McIntyre and Gibson 2016). A study in The Netherlands has also shown that positive news framing can mobilize the skeptics (Schuck & de Vreese, 2009). This can mean that with positively framed news, those that are skeptical about the news and therefore would not have picked up the newspaper nor clicked on an article to read had the news been framed negatively, may get tempted to read the news after all. In the UK, slow media start-up Tortoise has been successfully crowd-funded bringing a fresh approach to news (Granger, 2019). Another emerging trend is solutions journalism, which focuses on how challenges are being addressed instead of merely highlighting problems. In a study of online news, researchers found

that solution-focused stories had higher time-on-page for readers compared to non-solution articles. Those exposed to solution-focused stories also had higher self-efficacy and optimism (Curry, Stroud, and McGregor 2016).

Readers get a first glimpse of the news story through the headlines. Headlines summarize and call attention to the story. Due to limitations of space, however, concise but rich language is used in headlines. They should be able to tell the reader about so many things with very few words. Often, abbreviations are used. They highlight and contextualize the news within the broader organization of the newspaper (Leon, 1997). Headlines provide a compelling first glimpse of the contents of newspapers (Bowles and Borden, 2000; Ellis, 2001; Saxena, 2006), similar to what the table of contents is to a book. They highlight the topic of a story in an intriguing way to direct the attention of the reader to an aspect of the story (Ifantidou, 2009). Headlines are written in different font styles and sizes to provide emphasis as well as to convey priority. More important stories have headlines written bigger than those of stories which are less important. The headline of the most important story is written the biggest among all the other headlines. It is known as the banner headline.

Headlines can be restrained and traditional, providing an overview of the main idea of a story in short, clear and unambiguous text. However, headlines can also use creative language, be less restrained and appeal to curiosity. They can use humor, figurative language and wit. In the very tight battle for attention, headlines online employ what is known as clickbait. Headlines can be further less restrained. They can sensationalize in an attempt to make the story seem more interesting, extraordinary and relevant. Headlines can summarize the news story and help readers comprehend it within an established frame or genre. Headlines can also generate interest in a story. Instead of summarizing a story, headlines can highlight particular facets of the story to direct attention to it. Headlines can also satisfy the need for immediate information particularly for readers who have low propensity to read stories in full (Scacco & Muddiman, 2019).

The polarity of the headline reveals the polarity of the story. A negative headline is most certainly a headline to a negative story. Similarly, a positive headline introduces a positive story. A study found that solutions headlines—the type of headline that focuses on solutions rather than problems, or the positive aspect rather than the negative—are promising. They yielded more clicks than non-solutions headlines (Curry & Stroud, 2016). Pivoting to positivity may just be the key to reversing the tide of readership decline in the Philippines, a country that faces diversity every day.

5. Conclusion

The pivot to positivity has been earlier studied by Edwards (2017), who proposed the resetting and reframing of news consumption. Of course, it is not the responsibility of the journalist to sanitize the news and it is not being suggested that journalists sanitize the news. However, journalists, particularly those working in broadsheets, need to be mindful of the opportunity to reverse the dwindling trends for print journalism. As publishers of Philippine broadsheets find ways and strategies to address the decline in newspaper readership, pivoting to the positive framing of the news may be worth considering. It is not a one-size-fits-all solution nor a magic wand that will make the issue of declining readership disappear, but it has the potential which if adopted and used in conjunction with other approaches, can make a significant difference. A recently published work suggests that the prevalence of positive news is likely to increase (Soroka & Krupnikov, 2021). It may just be a fad or a long-term trend, but whatever the case may be, publishers can leverage it to better position broadsheets and printed news.

This study barely scratched the surface, but it certainly opened other avenues for inquiry which other researchers could follow through. Sentiment analysis or sentiment mining has not fully matured yet. Machine learning and artificial intelligence continues to evolve. Those in informatics are faced with the challenge of developing better sentiment analyzers. Going beyond headlines and looking at the actual news articles will provide more insights on the framing function of headlines. There is also the challenge of validating the sentiment analysis with the actual sentiment of people reading the news, and how it impacts use or reading of newspapers.

Notes on contributor

Manuel O. Diaz Jr. is a corresponding fellow at West Philippine Sea Institute. He served as Dean, College of Computer Studies, Ateneo de Naga University in Naga City, Philippines, where he has also taught in the computer science, information technology, information management, digital arts and computer animation programs. He earned his BSc in Physics and BSc in Computer Engineering at the Ateneo de Manila University (Quezon City, Philippines), Master in Information Technology at Charles Sturt University (NSW Australia), Juris Doctor at University of Nueva Caceres (Naga City, Philippines), and Graduate Certificate in Research Methods and Design at University of Canberra (ACT Australia).
Email: mdiaz@westphilippinesea.org
https://orcid.org/0000-0001-7441-2444

References

Accenture. (2021). *Western Europe News Media Landscape Trends* [A report commissioned by Google, Inc.]. Accenture. https://newsmediaanalysis.s3-ap-southeast-2.amazonaws.com/accenture_analysis_WesternEuropeNewsMedia.pdf

Achor, S., & Gielan, M. (2015). Consuming Negative News Can Make You Less Effective at Work. *Harvard Business Review*. Retrieved July 26, 2021, from https://hbr.org/2015/09/consuming-negative-news-can-make-you-less-effective-at-work

Albert, J. R. G., Abrigo, M. R. M., Quimba, F. M. A., & Vizmanos, J. F. V. (2020). *Poverty, the Middle Class, and Income Distribution amid COVID-19* [PIDS Discussion Paper Series No. 2020-22]. Philippine Institute for Development Studies. https://think-asia.org/bitstream/handle/11540/12319/pidsdps2022.pdf?sequence=1

Anderson, K. R. (2000). From Paper to Electron: How an STM Journal Can Survive the Disruptive Technology of the Internet. *Journal of the American Medical Informatics Association*, *7*(3), 234-245. https://doi.org/10.1136/jamia.2000.0070234

Balzarotti, S., & Ciceri, M. R. (2014). News Reports of Catastrophes and Viewers' Fear: Threat Appraisal of Positively Versus Negatively Framed Events. *Media Psychology*, *17*(4), 357-377. https://doi.org/10.1080/15213269.2013.826588

Barthel, M., & Worden, K. (2021). *Newspapers Fact Sheet*. Pew Research Center. Retrieved July 26, 2021, from https://www.pewresearch.org/journalism/fact-sheet/newspapers/

Bowles, D. A., & Borden, D. L. (2007). *Creative Editing* (5th ed.). Cengage Learning.

Buneviciene, I., Buneviĉius, R., Bagdonas, S., & Bunevicius, A. (2021). COVID-19 media fatigue: predictors of decreasing interest and avoidance of COVID-19–related news. *Public Health*, *196*, 124-128. https://doi.org/10.1016/j.puhe.2021.05.024

Burgoon, J. K., & Burgoon, M. (1980). Predictors of Newspaper Readership. *Journalism Quarterly*, *57*(4), 589-596. https://doi.org/10.1177/107769908005700406

Cabico, G. K. (2020). Whatever happened to: Graft conviction of Imelda Marcos. *Philippine Star*. Retrieved October 22, 2021, from https://www.philstar.com/headlines/2020/11/09/2055672/whatever-happened-to-graft-conviction-imelda-marcos

Chua, Y. T. (2021). Philippines. In *Reuters Institute Digital News Report 2021* (10th ed., pp. 142-143). Reuters Institute for the Study of Journalism.

Chyi, H. I., & Tenenboim, O. (2019). Charging More and Wondering Why Readership Declined? A Longitudinal Study of U.S. Newspapers' Price Hikes, 2008–2016. *Journalism Studies*, *20*(14), 2113-2129. https://doi.org/10.1080/1461670X.2019.1568903

Cieliebak, M., Dürr, O., & Uzdilli, F. (2013). Potential and Limitations of Commercial Sentiment. *Proceedings of the First International Workshop on Emotion and Sentiment in Social and Expressive Media: approaches and perspectives from AI (ESSEM 2013)*. Retrieved July 26, 2021, from http://ceur-ws.org/Vol-1096/paper4.pdf

CNN Philippines Staff. (2020). *Daily Tribune founder dies at 78*. CNN Philippines. Retrieved July 26, 2021, from https://www.cnn.ph/news/2020/1/4/daily-tribune-founder-dies.html

Cruz II, R. V., & Delos Reyes, A. A. (2014). *Is Print Media Dead? A Case Study on the Effects of Reduced Newspaper Readership on the Financial Status of the Philippine Daily Inquirer and the Philippine Star* [An undergraduate thesis submitted to the College of Mass Communication, University of the Philippines - Diliman].

Cunanan, C. (2017). Three decades of Manila Standard. *Manila Standard*. Retrieved October 22, 2021, from https://manilastandard.net/mobile/article/228971

Curry, A., & Stroud, N. J. (2016). *Solutions Headlines*. Center for Media Engagement. Retrieved July 26, 2021, from https://mediaengagement.org/research/solutions-headlines/

Curry, A., Stroud, N. J., & McGregor, S. (2016). *Solutions Journalism & News Engagement*. Center for Media Engagement. Retrieved July 26, 2021, from https://mediaengagement.org/research/solutions-journalism-news-engagement/

Damstra, A., Vliegenthart, R., Boomgaarden, H., Glüer, K., Lindgren, E., Strömbäck, J., & Tsfati, Y. (2021). Knowledge and the News: An Investigation of the Relation Between News Use, News Avoidance, and the Presence of (Mis)beliefs. *The International Journal of Press/Politics*. https://doi.org/10.1177/19401612211031457

de Hoog, N., & Verboon, P. (2020). Is the news making us unhappy? The influence of daily news exposure on emotional states. *British Journal of Psychology*, *111*(2), 157-173. https://doi.org/10.1111/bjop.12389

Delfin, A. B., & Garcia, J. N. (2016). Covering Corruption: Frames of Broadsheets on the Philippine Government's Priority Development Assistance Fund (PDAF) Scandal. *Online Journal of Communication and Media Technologies*, *6*(3), 69-98. Retrieved July 26, 2021, from https://www.ojcmt.net/download/covering-corruption-frames-of-broadsheets-on-the-philippine-governments-priority-development.pdf

Devitt, A., & Ahmad, K. (2007). Sentiment Polarity Identification in Financial News: A Cohesion-based Approach. *Proceedings of the 45th Annual Meeting of the Association of Computational Linguistics*, 984-991. Retrieved July 26, 2021, from https://www.researchgate.net/publication/220873208_Sentiment_Polarity_Identification_in_Financial_News_A_Cohesion-based_Approach

Doctor, K. (2017). *Newsonomics: Our Peggy Lee moment: Is that all there is to reader revenue?* Nieman Lab. Retrieved July 26, 2021, from https://www.niemanlab.org/2017/09/newsonomics-our-peggy-lee-moment-is-that-all-there-is-to-reader-revenue/

D'Onfro, J. (2017). Google and Facebook extend their lead in online ads, and that's reason for investors to be cautious. *CNBC*. Retrieved July 26, 2021, from https://www.cnbc.com/2017/12/20/google-facebook-digital-ad-marketshare-growth-pivotal.html

Edge, M., Chyi, H. I., Kaufhold, K., McKenney, M., & Claussen, D. S. (2020). Marking 40 Years of Newspaper Research Journal. *Newspaper Research Journal*, *41*(1), 8-36. https://doi.org/10.1177/0739532919900639

Edwards, H. (2017). *From Negative Biases to Positive News: Resetting and Reframing News Consumption for a Better Life and a Better World* (Unpublished Master of Applied Positive Psychology Capstone Projects ed.). University of Pennsylvania. Retrieved July 26, 2021, from https://repository.upenn.edu/mapp_capstone/123/

Elemia, C. (2017). Manila Times' big boss is Duterte's PR guy. *Rappler*. Retrieved October 22, 2021, from https://www.rappler.com/nation/manila-times-dante-ang-appointed-envoy-public-relations

Ellis, B. (2001). *The Copy Editing and Headline Handbook*. Basic Books.

Esguerra, C. V. (2020). Struggling PH newspapers 'barely breathing' amid pandemic. *ABS CBN News*. Retrieved July 26, 2021, from https://news.abs-cbn.com/news/09/02/20/struggling-ph-newspapers-barely-breathing-amid-pandemic

Estella, P., & Löffelholz, M. (2019). *Philippines*. Media Landscapes: expert analysis of the state of media. Retrieved July 26, 2021, from https://medialandscapes.org/country/philippines/media/print

Esuli, A., & Sebastiani, F. (2006). SENTIWORDNET: A Publicly Available Lexical Resource for Opinion Mining. *Proceedings of the Fifth International Conference on Language Resources and Evaluation (LREC '06)*. Retrieved July 26, 2021, from http://www.lrec-conf.org/proceedings/lrec2006/pdf/384_pdf.pdf

Fredrickson, B. L. (2001). The Role of Positive Emotions in Positive Psychology. *American Psychologist Journal*, *56*(3), 218-226. https://dx.doi.org/10.1037//0003-066x.56.3.218

Granger, J. (2019). *2019 Reuters Digital News Report finds that trust in the media continues to fall*. Journalism. Retrieved July 26, 2021, from https://www.journalism.co.uk/news/reuters-digital-news-report-finds-that-trust-in-the-media-continues-to-fall/s2/a740147/

Greenslade, R. (2006). *Philippines newspaper readership in decline*. The Guardian. Retrieved July 26, 2021, from https://www.theguardian.com/media/greenslade/2006/jul/03/philippinesnewspaperreadersh?CMP=gu_com

Guioguio, R. (1988). The Philippine press: reorienting the message. *The Journalist's Journal*, *2*(2), 8.

Hagey, K., & Alpert, L. I. (2019). Hostile Bid for Gannett Rattles Some in the Newspaper Business. *The Wall Street Journal*. Retrieved July 26, 2021, from https://www.wsj.com/articles/hostile-bid-for-gannett-rattles-some-in-the-newspaper-business-11547515298

IBIS World. (2020). *Global Newspaper Publishing Industry*. IBIS World. Retrieved July 26, 2021, from https://www.ibisworld.com/global/market-research-reports/global-newspaper-publishing-industry/

Ifantidou, E. (2009). Newspaper headlines and relevance: Ad hoc concepts in ad hoc contexts. *Journal of Pragmatics*, *41*(4), 699-720.

Iliev, R., Hoover, J., Dehghani, M., & Axelrod, R. (2016). Linguistic positivity in historical texts reflects dynamic environmental and psychological factors. *Proceedings of the National Academy of Sciences of the United States of America*, *113*(49), E7871-E7879. https://doi.org/10.1073/pnas.1612058113

Johnston, W. M., & Davey, G. C. (1997). The psychological impact of negative TV news bulletins: The catastrophizing of personal worries. *British Journal of Psychology*, *88*(1), 85-91. https://doi.org/10.1111/j.2044-8295.1997.tb02622.x

Kalogeropoulos, A. (2020). Coronavirus: a growing number of people are avoiding news. *The Conversation*. Retrieved July 26, 2021, from https://theconversation.com/coronavirus-a-growing-number-of-people-are-avoiding-news-139246

Kim, S. M., & Hovy, E. (2004). Determining the sentiment of opinions. *COLING '04: Proceedings of the 20th International Conference on Computational Linguistics*, 1367-es. Retrieved July 26, 2021, from https://doi.org/10.3115/1220355.1220555

Kloumann, I. M., Danforth, C. M., Harris, K. D., Bliss, C. A., & Dodds, P. S. (2012). Positivity of the English Language. *PLOS One*. https://doi.org/10.1371/journal.pone.0029484

Knuppenburg, R. M., & Fredericks, C. M. (2021). Linguistic Affect: Positive and Negative Emotion Words are Contagious, Predict Likability, and Moderate Positive and Negative Affect. *Inquiries Journal*, *13*(3). Retrieved October 22, 2021, from http://www.inquiriesjournal.com/a?id=1884

Labog-Javellana, J. (2016). From print to multimedia organization: The Inquirer story Read more: *Philippine Daily Inquirer*. Retrieved July 26, 2021, from https://newsinfo.inquirer.net/753376/from-print-to-multimedia-organization-the-inquirer-story

Lawrie, S. M. (2000). Newspaper coverage of psychiatric and physical illness. *Psychiatric Bulletin*, *24*(3), 104-106. https://dx.doi.org/10.1192/pb.24.3.104

Leon, J. A. (1997). The effects of headlines and summaries on news comprehension and recall. *Reading and Writing*, *9*, 85-106.

Liu, B. (2010). Sentiment Analysis and Subjectivity. In N. Indurkhya & F. Damerau (Eds.), *Handbook of Natural Language Processing* (2nd ed., pp. 627-666). CRC Press.

Magahis, C., & Santua, J. (2021). Filipinos' reliance on internet at an all-time high. *Manila Standard*. https://manilastandard.net/mobile/article/357427

Marin, M.-F., Morin-Major, J.-K., Schramek, T. E., Beaupré, A., Perna, A., & Juster, R.-P. (2012). There Is No News Like Bad News: Women Are More Remembering and Stress Reactive after Reading Real Negative News than Men. *PLoS ONE*, *7*(10), e47189. https://doi.org/10.1371/journal.pone.0047189

McIntyre, K. E., & Gibson, R. (2016). Positive News Makes Readers Feel Good: A "Silver-Lining" Approach to Negative News Can Attract Audiences. *Southern Communication Journal, 81*(5), 304-315. https://doi.org/10.1080/1041794X.2016.1171892

McNaughton-cassill, M. E. (2001). The news media and psychological distress. *Anxiety, Stress & Coping, 14*(2), 193-211. https://doi.org/10.1080/10615800108248354

Neumann, A. L. (2005). *The Philippines: amid troubles, a rich press tradition.* Committee to Protect Journalists. Retrieved July 26, 2021, from https://cpj.org/?p=9160

Niederhoffer, V. (1971). The Analysis of World Events and Stock Prices. *The Journal of Business, 44*(2), 193-219. Retrieved July 26, 2021, from http://www.jstor.org/stable/2351663

Nisar, H., & Bleich, E. (2020). Group status, geographic location, and the tone of media coverage: Jews and Muslims in New York Times and Guardian Headlines, 1985–2014. *Comparative Migration Studies, 8*(3).

Oxford Business Group. (2012). Tuning in: Radio and television remain strong as print declines. In *The Report: Philippines 2012.* Oxford Business Group. Retrieved July 26, 2021, from https://oxfordbusinessgroup.com/overview/tuning-radio-and-television-remain-strong-print-declines

Pablo, M. C. (2018). *Internet Inaccessibility Plagues "Social Media Capital of the World".* The Asia Foundation. Retrieved July 26, 2021, from https://asiafoundation.org/2018/10/24/internet-inaccessibility-plagues-social-media-capital-of-the-world/

Padmaja, S., & Fatima, S. S. (2013). Opinion Mining and Sentiment Analysis - An Assessment of Peoples' Belief: A Survey. *International Journal of Ad hoc, Sensor & Ubiquitous Computing (IJASUC), 4*(1), 21-33. 10.5121/ijasuc.2013.4102

Pang, B., Lee, L., & Vaithyanathan, S. (2002). Thumbs up? Sentiment Classification using Machine Learning Techniques. *Proceedings of the 2002 Conference on Empirical Methods in Natural Language Processing (EMNLP 2002).* 10.3115/1118693.1118704

Philippine Information Agency. (2012). *Philippine Media Factbook 2012.* Government of the Republic of the Philippines.

Philippine Statistics Authority. (2010). *2002 Functional Literacy, Education and Mass Media Survey.* Republic of the Philippines. https://psa.gov.ph/sites/default/files/2008%20FLEMMS%20FINAL%20REPORT.pdf

Philippine Statistics Authority. (2015). *2013 Functional Literacy, Education and Mass Media Survey.* Republic of the Philippines. Retrieved July 26, 2021, from https://psa.gov.ph/sites/default/files/2013%20FLEMMS%20Final%20Report.pdf

Philippine Statistics Authority. (2021). *2019 Functional Literacy, Education and Mass Media Survey (FLEMMS).* Republic of the Philippines. Retrieved October 22, 2021, from https://psa.gov.ph/sites/default/files/2019-FLEMMS-Final-Report_Signed_FULL%20VERSION_15%20January%202021rev.pdf

Pinker, S. (2018). The media exaggerates negative news—This distortion has consequences. *The Guardian*. Retrieved July 26, 2021, from https://www.theguardian.com/commentisfree/2018/feb/17/steven-pinker-media-negative-news

Quijote, T., Zamora, A., & Ceniza, A. (2019). Bias detection in Philippine political news articles using SentiWordNet and inverse reinforcement model. *IOP Conference Series: Materials Science and Engineering*, *482*. https://doi.org/10.1088/1757-899X/482/1/012036

Reis, J., Benevenuto, F., Vaz de Melo, P. O., Prates, R., Kwak, H., & An, J. (2015). Breaking the News: First Impressions Matter on Online News. *Proceedings of the 9th International AAAI Conference on Web and Social Media (ICWSM)*. https://ink.library.smu.edu.sg/sis_research/5339

Robinson, W. (2020). *Printed newspapers readership plummets*. Print 21. Retrieved July 26, 2021, from https://www.print21.com.au/news/printed-newspapers-readership-plummets

Saldana, J. (2016). *The Coding Manual for Qualitative Researchers* (3rd ed.). Sage Publications Inc.

San Juan Jr, E. (1978). Marcos and the media. *Index on Censorship*, *7*(3), 39-47. https://doi.org/10.1080/03064227808532787

Saxena, S. (2006). *Headline Writing*. Sage Publications.

Scacco, J. M., & Muddiman, A. (2019). *The Current State of News Headlines*. Engaging News Project. Retrieved July 26, 2021, from https://mediaengagement.org/wp-content/uploads/2019/05/THE-CURRENT-STATE-OF-NEWS-HEADLINES.pdf

Schuck, A. R., & de Vreese, C. H. (2009). Reversed Mobilization in Referendum Campaigns—How Positive News Framing Can Mobilize the Skeptics. *International Journal of Press/Politics*, *14*(1), 40-66. https://dx.doi.org/10.1177/1940161208326926

Sharma, A., & Ghose, U. (2020). Sentimental Analysis of Twitter Data with respect to General Elections in India. *Procedia Computer Science*, *173*, 325-334. 10.1016/j.procs.2020.06.038

Skovsgaard, M., & Andersen, K. (2019). Conceptualizing News Avoidance: Towards a Shared Understanding of Different Causes and Potential Solutions. *Journalism Studies*, *21*(4), 459-476. https://doi.org/10.1080/1461670X.2019.1686410

Smith, E. J. (1999). Leadlines May Be Better than Traditional Headlines. *Newspaper Research Journal*, *20*(1), 55-64. https://doi.org/10.1177/073953299902000105

Soper, D. (2006). *About the Sentiment Analyzer*. Daniel Soper. Retrieved July 26, 2021, from https://www.danielsoper.com/sentimentanalysis/default.aspx

Soroka, S., Fournier, P., & Nir, L. (2019). Cross-national evidence of a negativity bias in psychophysiological reactions to news. *Proceedings of the National Academy of Sciences of the United States of America*, *116*(38), 18888-18892. https://doi.org/10.1073/pnas.1908369116

Soroka, S., & Krupnikov, Y. (2021). The Increasing Viability of Good News. In *Elements in Politics and Communication*. Cambridge University Press. https://dx.doi.org/10.1017/9781108982375

Statista. (2021). *Number of social media users in the Philippines from 2017 to 2020, with forecasts until 2026*. Social Media & User-Generated Content. https://www.statista.com/statistics/489180/number-of-social-network-users-in-philippines/

Strömbäck, J., Tsfati, Y., Boomgaarden, H., Damstra, A., & LIndgren, E. (2020). News media trust and its impact on media use: toward a framework for future research. *Annals of the International Communication Association*, *44*(2), 139-156. https://doi.org/10.1080/23808985.2020.1755338

Szabo, A., & Hopkinson, K. L. (2007). Negative psychological effects of watching the news in the television: Relaxation or another intervention may be needed to buffer them! *International Journal of Behavioral Medicine*, *14*, 57-62. https://doi.org/10.1007/BF03004169

Tandoc Jr, E. C., & Skoric, M. M. (2010). The pseudo-events paradox: how pseudo-events flood the Philippine press and why journalists don't recognize it. *Asian Journal of Communication*, *20*(1), 33-50. https://doi.org/10.1080/01292980903440830

Turney, P. D. (2002). Thumbs Up or Thumbs Down? Semantic Orientation Applied to Unsupervised Classification of Reviews. *Proceedings of the 40th Annual Meeting of the Association for Computational Linguistics*, 417-424. https://doi.org/10.3115/1073083.1073153

Unz, D., Schwab, F., & Winterhoff-Spurk, P. (2008). TV News – The Daily Horror? *Journal of Media Psychology*, *20*(4), 141-155. https://doi.org/10.1027/1864-1105.20.4.141

Vaish, A., Grossmann, T., & Woodward, A. (2008). Not all emotions are created equal: The negativity bias in social-emotional development. *Psychology Bulletin*, *134*(3), 383-403. 10.1037/0033-2909.134.3.383

Valdeavilla, D. D. R., & Pulido, M. T. R. (2019). Bias in Filipino Newspapers? Newspaper Sentiment Analysis of the 2017 Battle of Marawi. *Proceedings of the 4th International Conference on Internet of Things, Big Data and Security (IoTBDS 2019)*, 408-413. 10.5220/0007752104080413

Veitch, R., & Griffitt, W. (1976). Good News-Bad News: Affective and Interpersonal Effects. *Journal of Applied Social Psychology*, *6*(1), 69-75. https://doi.org/10.1111/j.1559-1816.1976.tb01313.x

Vera Files. (2016). *Manila Bulletin*. Media Ownership Monitor Philippines. Retrieved July 26, 2021, from https://philippines.mom-rsf.org/en/media/detail/outlet/manila-bulletin/

Vera Files. (2017). *Print*. Media Ownership Monitor Philippines. Retrieved July 26, 2021, from https://philippines.mom-rsf.org/en/media/print/

Vinodhini, G., & Chandrasekaran, R. M. (2012). Sentiment Analysis and Opinion Mining: A Survey. *International Journal of Advanced Research in Computer Science and Software Engineering*, *2*(6), 282-292.

Viray, M. S. S. (2018). Get to know The Manila Times in 120 ways. *The Manila Times*. Retrieved October 22, 2021, from https://www.manilatimes.net/2018/10/11/supplements/over-the-years/450913

Wiebe, J. M., Bruce, R. F., & O'Hara, T. P. (1999). Development and Use of a Gold-Standard Data Set for Subjectivity Classifications. *Proceedings of the 37th Annual Meeting of the Association for Computational Linguistics*, 246–253. 10.3115/1034678.1034721

Wiebe, J. M., Wilson, T., & Cardie, C. (2005). Annotating Expressions of Opinions and Emotions in Language. *Language Resources and Evaluation*, *39*, 165–210.

The World's All-Time Most Corrupt Leaders. (2004). *Forbes*. Retrieved October 22, 2021, from https://www.forbes.com/2004/03/25/cx_vc_corruptslide.html?sh=178d9e884f07

Yu, D. G. (2011). The beginnings of The Philippine STAR. *Philippine Star*. Retrieved October 22, 2021, from https://www.philstar.com/other-sections/supplements/2011/07/28/710349/beginnings-philippine-star

Yuan, X., Wang, L., Yin, X., & Wang, H. (2021). How text sentiment moderates the impact of motivational cues on crowdfunding campaigns. *Financial Innovation*, *7*(46). https://doi.org/10.1186/s40854-021-00258-w

Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, *9*(2), 1-27. https://doi.org/10.1037/h0025848