Companies and the media
Content, causes, and consequences of news about large corporations

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CHAPTER 4
THE INFLUENCE
OF NEWS COVERAGE ON
CORPORATE REPUTATION

ABSTRACT

Building on the agenda-setting theory, this study investigates the effect of corporations' visibility and tone in news coverage on reputation. More specifically, we examine the buffering role that prior reputation may have for the potential damaging impact of news coverage. Providing a stringent test of causality, data from an automated content analysis of Dutch online and print newspaper coverage (N = 5,235 articles) were linked to individual responses from a three-wave panel survey (N = 3,270) with repeated measurements of corporate reputation (12 organizations). The analyses show that mere exposure to corporations negatively affects reputation, whereas tone has a positive effect on reputation. It is furthermore shown that the effect of negative news is three times larger than the effect of positive news. Finally, in accordance with research on buffering effects of corporate reputation, we demonstrate that negative news is less influential for people holding more positive existing reputational attitudes.

INTRODUCTION

Research shows that media coverage affects (corporate) reputation both positively and negatively depending on the amount and tone of coverage (e.g., Fombrun & Shanley, 1990; Wartick, 1992; Meijer & Kleinnijenhuis, 2006a, Kiousis, Popescu, & Mitrook, 2007; Zhang, 2016a; 2016b). However, much remains unknown about *under what conditions* media visibility and tone *influence* reputation (Zhang, 2016a; 2016b) and how this influence depends on the personal characteristics of audience members. This is remarkable because corporations invest vast resources in public and media relations (Moon & Hyun, 2014). Companies do so because they know that members of the general public and other stakeholders inform themselves mainly through the news media (Carroll & McCombs, 2003). In this study, we combine two streams of literature – PR studies (e.g., *buffer effects*) and media effects research (e.g., *agenda-setting theory*) – and apply an innovative multi-method approach to further examine the causality and nature of the relationship between news coverage and corporate reputation.

Over the last several decades, contradictory claims have been made about the direct effects that corporate visibility may have on reputation (see for an overview Mariconda & Lurati, 2014). Some have argued that mere media attention should be beneficial for reputation (e.g., Brammer & Millington, 2005; Brammer & Pavelin, 2010), whereas others have claimed the opposite, pointing to potential negative consequences (e.g., Wartick, 1992). Several scholars have argued that attention could have positive effects on reputation, provided the tone of coverage is favorable (e.g., Deephouse, 2000). Surprisingly, however, the effects of visibility and tone on reputation have scarcely been tested and compared (see for exceptions Zhang, 2016a; 2016b). Although communication research on other topics (e.g., political communication and health communication) has closely examined the moderating impact of individual characteristics (e.g., Valkenburg & Peter, 2013), such as existing predispositions, corporate communication studies have rarely tak-

en such conditional media effects into account (Meijer & Kleinnijenhuis, 2006a; 2006b). Nevertheless, one can imagine that such effects are also contingent, for example, on prior reputations (Fombrun & Shanely, 1990; Sohn & Lariscy, 2015).

Notably, visibility-based and tone-based studies in news-mediated reputation research commonly examine correlational relations using cross-sectional or aggregate data. To our knowledge, only two studies have sought to effectively examine causal relations (Meijer & Kleinnijenhuis, 2006a; 2006b). These studies have particularly focused on the effects of issue news on reputation (i.e., media coverage of linkages between large organizations and such issues as environmental damage). We extend these efforts by investigating how people's existing opinions of corporations moderate their responses to the news coverage of these corporations.

Against this backdrop, this paper aims to refine and test key propositions about the direct and conditional influence of corporate visibility and tone on corporate reputation. At the theoretical level, we combine insights from corporate communication literature and media effects research (mainly from the field of political communication). Methodologically, we link the results of an automated content analysis to a three-wave panel survey of the general public, measuring both the reputations of twelve Dutch corporations and personal media use. This approach enables us to make convincing causal claims about the relationship between exposure to company news and the reputations of these corporations in the eye of the public (Meijer & Kleinnijenhuis, 2006b). The high external validity of such an approach (e.g., compared to experiments) significantly improves our understanding of mass communication effects (see, e.g., Schuck, Vliegenthart, & De Vreese, 2016) and enables us to answer the overarching research question of this study: *To what extent do media visibility and tone of coverage influence corporate reputation, and how are news effects moderated by prior reputation?*

THEORETICAL BACKGROUND

The effect of media visibility on reputation

Corporate actors in the news are "attitude-objects" (Carroll & McCombs, 2003), which are typically evaluated by members of the public in positive and negative terms. Classical agenda setting refers to the idea that the salience of the media agenda influences the salience of the public agenda (McCombs & Shaw, 1972; Kiousis & McCombs, 2004). Carroll and McCombs (2003) were the first to apply this idea to corporate reputation, proposing that "[t]he amount of news coverage that a firm receives in the news media [should be] positively related to the public's awareness of the firm" (p. 39). Management scholars, however, proposed that the visibility of corporate actors in news coverage could *directly* affect reputation as well.

Within this realm, Fombrun and Shanley (1990) found a negative relationship between visibility and reputation. Wartick (1992) also expected a negative effect of visibility on reputation but did *not obtain* significant results. Wartick, by contrast, *found* a positive effect of visibility for companies, but only for those corporations with relatively good reputations. Remarkably, scholars interested in news-mediated reputation research

did not follow up on the results of these early management studies from the 1990s by assessing the direct effects of visibility on reputation in greater depth.

In communication science more widely, however, positive evaluations of attitude objects in the news have been explained by the mere exposure effect, according to which repeated exposure to an object situated in a non-negative context leads to a more positive evaluation of that object (Zajonc, 2001). Political communication scholars, for example, have repeatedly investigated the relationship between the media visibility of political actors and voting preferences (e.g., Hopmann, Vliegenthart, De Vreese, & Albæk, 2010). These studies have found that mere contact with a political object (e.g., a party or candidate) may lead to an increased preference for that object due to growing familiarity, especially with objects that are initially less well known (Vliegenthart & Van Aelst, 2010). Fombrun and Shanley (1990) made a similar point with regard to company news, observing that familiarization with companies through news visibility should generally lead to more positive reputations. However, audiences most likely are already familiar with major corporations; thus, the benefits of such familiarization may be limited.

Scholars interested in the effects of economic news have found that the sheer volume of coverage of the economy leads to more *negative* evaluations of the economy (e.g., Kleinnijenhuis, Schultz, & Oegema, 2015). They have found that journalists performing their watchdog role primarily focus on problematic and negative events, situations, and issues and consequently trigger alarm bells simply by drawing attention to economic issues (Zaller, 2003). This finding fuels the idea that the visibility of objects may lead to negative associations by the public simply because people have become accustomed to the notion that more news implies more negative news.

Empirical findings on the structural negativity of the news underline this reasoning. With regard to economic news, for example, Soroka (2006) found that "the size of the window for negative economic news is greater than the window for positive economic news [because] there is simply more negative news" (p. 378). Similarly, Jonkman, Trilling, Verhoeven, and Vliegenthart (2017) found that *company news* in the Netherlands tends to be more negative than positive. The notion that news is generally negative also inspired Wartick (1992) to argue that "more corporate visibility should merely increase the likelihood that members of the public receive discrepant information, which would then lead to disturbed prevailing schema and stereotypes" (p. 41).

Altogether, this structural negativity bias in company news should severely limit the potential positive consequences of the mere exposure effect because this effect is based on *non-negative* contacts with objects (Geiß & Schäfer, 2017). We therefore expect that the influence of corporate visibility on corporate reputation is negative because increased visibility may trigger negative associations. This expectation leads to the following hypothesis:

H1: *Visibility of a corporate actor in the news negatively affects the corporate reputation of this actor.*

The effect of tone on reputation
In addition to visibility, management scholars have analyzed the relationship between tone of coverage – alternatively termed "media reputation" (e.g., Deephouse, 2000) or

"favorability" (e.g., Meijer and Kleinnijenhuis 2006b) – and reputation. Wartick (1992) found positive correlations between the tone of company news and corporate reputation, whereas Fombrun and Shanly (1990) found a positive relation between favorability and reputation only for corporations with high diversification (i.e., companies active in multiple business segments). A decade later, Deephouse (2000) concluded that *media reputation*, referring to "the overall evaluation of a corporation presented in the media" (p. 1097), positively affects the financial performance of banks, possibly because of improved reputations.

In the early and mid-2000s, communication scholars began to use the second-level agenda-setting framework to study the transfer of tone salience from the media agenda to the public agenda (e.g., Carroll, 2004; Kiousis et al., 2007). However, they did not obtain univocal results (Zhang). Meijer and Kleinnijenhuis (2006b) studied the effects of favorability in both "success and failure news" as well as in "support and criticism news" on corporate reputation. They found support for both a "bandwagon effect," implying that positive news leads to a more positive reputation, and an "underdog effect," referring to the notion that negative news could also lead to a more positive reputation.

More recently, Zhang (2016b) empirically compared five measures of media favorability and found a positive effect of the tone of news coverage on reputation at the overall level (i.e., the tone of news items about the corporation) as well as at the attribute level (i.e., specific substantive attributes in news coverage that are linked to a corporation, such as particular products or the idea of leadership). In another study comparing seven measures of media reputation (i.e., the portrayal of corporations in positive or negative terms), Zhang (2016a) found positive correlations between media reputation and corporate reputation. In accordance with the above, we expect the following:

H2: *The more positive the tone of news about a company, the more positive the corporate reputation of that company.*

Negative versus positive News
Scholars have long and repeatedly argued that the attitudinal impact of negative information should generally be stronger than the impact of positive information (e.g., Richey Koenigs, Richey, & Fortin, 1975). Recently, Zhang (2016b) found strong support for this imbalance by statistically comparing the effect of media tonalities on corporate reputation. Research on economic news more generally also documents robust evidence for this assumption (e.g., Boomgaarden, Van Spanje, Vliegenthart, & De Vreese, 2011). Given that people tend to be more focused on preventing loss than obtaining potential gains, negative news will evoke a stronger attitudinal response than positive news (Kahneman & Tversky, 1979). In accordance with this negativity bias among citizens, people may respond asymmetrically to information provided by the news media (Soroka, 2006), which leads to the following hypothesis:

H3: *The effect of negative news on corporate reputation is stronger than the positive effect of positive news.*

Moderating impact of pre-existing opinions

Introducing their Differential Susceptibility to Media Effects Model (DSMM), Valkenburg and Peter (2013) urged scholars to consider that media effects normally do not affect all individuals equally; rather, the effects depend on individual characteristics of the message receiver. Arguably, this is also the case for the impact on corporate reputations of the visibility and tone of news about companies.

More specifically, Sohn and Lariscy (2015) experimentally investigated whether prior opinions about a corporation functioned as "antibiotics or a hemlock cup in times of organizational crisis" (p. 250). Although a good prior reputation was found to backfire in crises where a corporation's morality was being challenged (i.e., the corporate social responsibility (CSR) strategy turned out to be misleading), under normal conditions, reputation functioned as a "buffer." People who held positive opinions about a corporation were less likely to be (negatively) influenced by information about a crisis. This finding can be explained by cognitive dissonance theory (Sohn & Lariscy, 2015): people prefer not to see their opinions challenged by media coverage.

Studies of corporate reputation provide support for such a "buffering effect" of corporate reputation (e.g., Coombs & Holladay, 2006). This effect follows the logic of cognitive dissonance, leading to so-called confirmation bias. As Sohn and Laricy (2015, p. 239) have argued, "[t]he reduction of dissonance is accomplished by selectively paying attention to information that is consistent with previously held beliefs and weighing unequal values on different pieces of information." In line with this, Wartick (1992) proposed that a favorable previous reputation could moderate the effect of negative cues to the extent that these cues do not harm one's opinion of a corporation or, in extreme cases, even lead to a more positive evaluation of a corporation. Wartick found support for this proposal, although only for companies with an average prior reputation.

In communication research, abundant evidence is provided for the idea that evaluative communication that matches pre-existing attitudes is particularly powerful (see, e.g., Stroud, 2010). In the field of political communication, empirical research has repeatedly shown that the presence of political objects in the news (e.g., candidates, political parties) can lead to positive evaluations of those objects when people hold positive pre-existing attitudes toward those objects (Geiß & Schäfer, 2017). Reinforcing the existing attitude, people tend to interpret news coverage in ways that accord with their existing beliefs (Arceneaux, Johnson, Cryderman, 2013; Levendusky, 2013; Taber & Lodge, 2006). Such motivated reasoning (Kunda, 1990) may even have "boomerang effects." Negative information that contradicts one's existing opinions may eventually strengthen one's initial position.

Consequently, we may expect existing attitudes to have buffering effects on the influence of negatively valenced news coverage. Following the theoretical rationale of buffering effects (Sohn and Laricy, 2015), we expect that those who hold more positive opinions of a company are less likely to take negative news as a cue for negative developments to confirm their prior beliefs. Hence, the following hypothesis is formulated:

H4: *Pre-existing reputation moderates the effect of tone on corporate reputation such that the weaker the negative effect of negative news on reputation is, the more positive the individual's initial opinion of that corporation.*

METHOD

We use data from a three-wave panel survey and link these data to data obtained from an automated content analysis of news coverage that was published *between* waves of the panel survey. Surveys were administered in the first half of 2015. In the survey, respondents reported how frequently they used the media outlets that were selected for the content analysis. Hence, we can infer to which news *content* they were exposed during the research period. Measuring corporate reputation at three different time points allowed us to control for people's existing opinions and establish a strong causal link between the news items to which people were exposed and their subsequent opinions regarding corporations.

Content analysis

We analyzed online and print news from four daily national newspapers. These included two quality newspapers (*de Volkskrant*, *NRC Handelsblad*), one popular newspaper (*Telegraaf*), and one free daily (*Metro*; print only). Their content was analyzed for the periods between Wave 1 and Wave 2 and between Wave 2 and Wave 3 (*n* = 5,235; see Table 1). The unit of coding was a whole article. Resonating with the approach of Jonkman, Trilling, Verhoeven, & Vliegenthart (2016), the coding relied on a collection of Python scripts (McKinney, 2012) for preprocessing and content analysis of company news coverage.[20] We elaborate below on the data cleaning procedure that we applied.

TABLE 1.

Sample description – content analysis (N = 5,235)

News outlet	Description	n (Wave 1-2)	n (Wave 2-3)	n (Total)
Telegraaf (print)	Popular newspaper with financial focus	605	519	1124
Telegraaf (online)	Popular newspaper with financial focus	657	614	1271
NRC (print)	Quality newspaper with focus on economy	358	329	687
NRC (online)	Quality newspaper with focus on economy	210	212	422
Volkskrant (print)	Quality newspaper	386	319	705
Volkskrant (online)	Quality newspaper	462	379	841
Metro (print)	Free daily	107	78	185

In our content analysis, we assessed the coverage of twelve large Dutch corporations: *Rabobank* (bank), *ING* (bank), *KLM Air France* (airline), *ABN AMRO* (bank), *Royal Dutch Shell* (energy company), *Philips* (electronics and technology manufacturer), *KPN* (telecommunications), *NS* (Dutch national railway), *PostNL* (postal services), *SNS* (bank), *Heineken* (brewer), and *V&D* (department stores).[21]

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20 All Python scripts used in this article are available upon request.

21 A small number (0,05%) of the articles consisting of all news items published by these outlets in the first six months of 2015 (*N*=112,483) that were included in the initial dataset were removed because their publishing dates could not be verified.

Measurement of visibility. Our script automatically counted news items mentioning one or more of the twelve companies, with a minimum of one company mention regarded as one article about that corporation (for a similar approach, see Jonkman et al., 2016). In our data, 82.6 percent of all articles covered only one company, whereas 17.4 percent of the articles included information about two or more firms (with a maximum of seven firms mentioned in one article). In the next step, visibility scores at the article level were summed and aggregated to the level of the survey waves. Consequently, we know how many articles each individual outlet published on each corporation between survey Waves 1 and 3 and between survey Waves 2 and 3.

Measurement of tone. As suggested by Carroll (2009), the coding of the tone variable is based on "peripheral media favorability" (p. 15). That is, we code the tone of the whole article instead of the tone of specific article passages (e.g., sentences or paragraphs) associated with corporate actors (see Carroll, 2009, for a discussion). Because we work with aggregated data, we are interested in the overall tone that emerged from a stream of media reports in which a corporate actor is mentioned.

Following the recommendation of Zhang (2016a; 2016b; 2017) and in line with the approach of Meijer and Kleinnijenhuis (2006), we use a visibility-based measure of tone (i.e., a combination of the number of news items on a corporate actor and tone scores) in the statistical analyses. Zhang (2016a) compared seven measures of media reputation and found the strongest correlations between this visibility-based measure of tone (which he coined the *Meijer–Kleinnijenhuis index*) and corporate reputation. Zhang (2016b) showed that this compound measure of tone and visibility has advantages in predicting corporate reputation over tone measures alone, which do not take visibility into account (see also Zhang, 2017). The compound measure reflects interactions between tone and visibility (Zhang, 2016b, p. 19). We adhere to this approach by applying an aggregated measure of tone. That is, by aggregating the data from the article level to the wave level and by summing the tone scores, tone is, by definition, a function of the number of articles published between waves.

To capture tone, we employed the *SentiStrength* algorithm (Thelwall, Buckley, Platoglou, Cai, & Kappas, 2010), with which we measured positivity and negativity in each news article mentioning at least one of the selected firms. We constructed tone as a composite measure of positivity and negativity (e.g., Jonkman et al., 2017). The *SentiStrength* algorithm is increasingly used in communication research (e.g., Vargo, Guo, & McCombs, 2014) and has been shown to perform well compared with similar approaches (Gonçalves, Araújo, & Benevenuto, 2013; González-Bailón & Paltoglou, 2015). The algorithm is also increasingly used in research on the effects of company news (e.g., Kroon & Van der Meer, in press).

SentiStrength automatically codes positive and negative words that are subsequently weighted following a scheme that also takes linguistic devices such as negations, punctuation marks, or modal particles (e.g., very, completely, slightly) into account. Because *SentiStrength* creates separate measures for negativity and positivity, articles can score either low or high on positivity and negativity. For example, a very neutral article may have values of 1 for positivity and -1 for negativity, whereas a very opinionated report that highlights different sides of an issue may score +3 and -4 or even +5 and -5. In the news data, we obtain a Pearson correlation of -0.29 (p < 0.001) between positivity

and negativity, indicating that, on average, articles are skewed toward either positivity or negativity rather than completely neutral.

Following the procedure by Jonkman et al. (2017), we employed the positivity and negativity scores to construct a tone variable. We calculated a standardized measure of tone using the following formula

$$\text{Std Tone} = \frac{\Sigma(\text{pos-1}) + \Sigma(\text{neg+1})}{\Sigma(\text{pos-1-neg+1})}$$

Where $-5 \leq \text{neg} \leq -1$ and $1 \leq \text{pos} \leq 5$

Note that we add 1 to negativity values and subtract 1 from positivity values so that the ranges of both variables include zero, where the latter indicates that an article has no negative or positive sentiment. Notably, the standardized variable for tone in the content analysis data now theoretically ranges from -1 to +1. Figure 1 shows the distribution of tone values in the company news data.

Separate measurement of positivity and negativity. To distinguish between positive and negative news items, an article was coded as positive (1 for positive and 0 for negative) when the standardized tone score for the article was above 0. If the tone score was below 0, negativity was coded 1 and positivity was coded 0. Articles scoring exactly 0 retained this value because we considered these items neither positive nor negative. See Table 2 and Table 3 for an overview of all variables in the content analysis.

Survey data

A three-wave online panel survey was conducted by Dutch pollster *I&O Research* of a sample of the Dutch population in the first half of 2015. There was a gap of eight weeks between each wave, and respondents had 24 days to respond to a survey invitation (the majority did so in the first two days). A total of 6,386 respondents completed the first survey, which was conducted beginning on February 23 (Wave 1). All these respondents were then invited to participate in the second wave, which was administered beginning April 20 (Wave 2), with 4,301 respondents completing the survey (RR1 = 69.0%).

TABLE 2.

Descriptive statistics – visibility and tone content analysis

Variable	M Visibility (W1-W2)	SD Visibility (W1-W2)	M Visibility (W2-W3)	SD Visibility (W2-W3)	M Tone (W1-W2)	SD Tone (W1-W2)	M Tone (W2-W3)	SD Tone (W2-W3)
Shell	0.09	0.29	0.09	0.29	-0.24	0.46	-0.25	0.45
ING	0.17	0.38	0.15	0.36	-0.25	0.42	-0.25	0.46
Rabobank	0.11	0.32	0.14	0.34	-0.22	0.44	-0.20	0.46
Philips	0.09	0.28	0.10	0.30	-0.31	0.45	-0.20	0.44
Heineken	0.04	0.20	0.04	0.20	-0.22	0.45	-0.20	0.43
ABN Amro	0.26	0.44	0.16	0.37	-0.26	0.37	-0.21	0.39
KPN	0.07	0.26	0.07	0.26	-0.29	0.43	-0.25	0.47
PostNL	0.03	0.18	0.04	0.20	-0.26	0.50	-0.22	0.46
NS	0.16	0.37	0.24	0.43	-0.46	0.47	-0.36	0.45
SNS	0.04	0.19	0.02	0.15	-0.24	0.38	-0.08	0.39
V&D	0.07	0.26	0.04	0.19	-0.34	0.46	-0.25	0.43
KLM	0.12	0.33	0.15	0.35	-0.31	0.37	-0.25	0.40

TABLE 3.

Descriptive statistics – positivity and negativity content analysis

Variable	M Positive (W1-W2)	SD Positive (W1-W2)	M Negative (W1-W2)	SD Negative (W1-W2)	M Positive (W2-W3)	SD Positive (W2-W3)	M Negative (W2-W3)	SD Negative (W2-W3)
Shell	0.20	0.40	0.80	0.40	0.29	0.46	0.71	0.46
ING	0.16	0.37	0.84	0.37	0.23	0.42	0.77	0.42
Rabobank	0.24	0.43	0.76	0.43	0.26	0.44	0.74	0.44
Philips	0.14	0.35	0.86	0.35	0.23	0.42	0.77	0.42
Heineken	0.18	0.39	0.82	0.39	0.29	0.46	0.71	0.46
ABN Amro	0.13	0.34	0.87	0.34	0.18	0.39	0.82	0.39
KPN	0.17	0.38	0.83	0.38	0.23	0.43	0.77	0.43
PostNL	0.26	0.44	0.74	0.44	0.29	0.46	0.71	0.46
NS	0.10	0.30	0.90	0.30	0.16	0.37	0.84	0.37
SNS	0.17	0.38	0.83	0.38	0.36	0.49	0.64	0.49
V&D	0.18	0.39	0.82	0.39	0.20	0.40	0.80	0.40
KLM	0.09	0.29	0.91	0.29	0.20	0.40	0.80	0.40

The final wave of the survey, which commenced on June 15, 2015 (Wave 3), was completed by 3,270 respondents (RR1 = 77.0%). Response rates are comparable to those of other studies that have relied on panel survey methods (e.g., Boomgaarden et al., 2011; Meijer & Kleinnijenhuis, 2006a).

Measurement of media exposure (independent variable). In the first survey wave, respondents were asked how often they consumed a wide variety of daily newspapers (print) and associated online websites. On a scale of 0 (*never*) to 7 (*seven days per week*), respondents indicated how often they read the newspapers and news websites. See Table 4 for an overview of mean media exposure per outlet.

TABLE 4.

Descriptive statistics – media exposure panel survey.

Outlet	Mean	SD
Telegraaf (print)	2.04	2.23
Telegraaf (online)	2.16	2.35
de Volkskrant (print)	2.05	2.23
de Volkskrant (online)	1.57	1.61
NRC Handelsblad (print)	1.96	1.86
NRC Handelsblad (online)	1.36	1.27
Metro (print)	1.37	1.01

Measurement of corporate reputation (dependent variable). The reputation of a corporation is this study's dependent variable of interest. At the individual level, this translates into people's opinion of a company. Following Meijer and Kleinnijenhuis (2006a), reputation was measured by asking people what they think of a company on a scale from 0 (*very negative*) to 10 (*very positive*).[22] To validate this measure, we examined the correlation between the mean aggregate reputation score per company in our survey and the *2015 RepTrak* reputation scores for these companies.[23] Our results correlate strongly with the RepTrak findings ($r = 0.77$, $p < 0.001$),[24] suggesting that our sample provides a valid reflection of public opinion of the corporations considered. See Table 5 for an overview of the mean reputation score for each corporation and per wave.

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22 For the statistical analyses, we added 1 to the reputation variable so that the theoretical range would be 1 to 11.

23 See https://netherlands.reputationinstitute.com for the 2015 results. See Ponzi, Fombrun, and Gardberg, 2011, for the reputation measure used in the RepTrak corporate reputation study.

24 The firms "*PostNL*" and "*V&D*" were not included in the RepTrak study and are therefore not included in our correlation analysis. See also Figure 1.

TABLE 5.

Descriptive statistics – reputation panel survey.

Company	Type	M Wave 1	SD Wave 1	M Wave 2	SD Wave 2	M Wave 3	SD Wave 3
Rabobank	Bank	6.03	2.30	5.60	2.52	5.77	2.45
ING	Bank	6.26	2.24	5.28	2.49	5.64	2.42
KLM	Airline	6.38	1.98	6.66	2.02	6.34	2.04
ABN	Bank	5.95	2.29	4.65	2.45	5.05	2.43
Shell	Energy	6.11	2.37	6.39	2.55	6.25	2.54
Philips	Electronics	7.15	1.79	7.38	1.89	7.20	1.89
KPN	Telecom	6.39	1.93	6.44	2.08	6.38	2.06
NS	Railway	5.85	2.13	6.09	2.18	5.52	2.26
PostNL	Post	6.23	1.99	6.30	2.08	6.03	2.10
V&D	Dep.Stores	5.83	2.20	5.97	2.04	5.92	2.00
SNS	Bank	5.51	2.07	5.75	2.22	5.79	2.25
Heineken	Brewer	7.08	2.06	7.14	2.10	7.10	2.10

Linking the content analysis to the survey data

In the next step, we combined the content and survey data at the individual level by cal-culating, separately for each individual, (1) how much news he or she consumed about a particular corporation (i.e., visibility) and (2) the tone and proportion of positive and negative content in this coverage. More specifically, for the periods between Wave 1 and Wave 2 and between Wave 2 and Wave 3, we multiplied the share of days per week a re-spondent reported consuming a newspaper or website (e.g., 2 of the 7 days would imply a share of 2/7) by the number of articles published in the particular newspaper/website mentioning a specific organization.

We summed the scores for exposure to individual newspapers to create one mea-sure indicating the number of articles about a given organization to which a respondent could have been exposed. We did so because we were not interested in the effects of particular newspapers but in exposure to news coverage generally (for a similar approach, see, e.g., Gattermann & De Vreese, 2017; Svensson, Albæk, Van Dalen, & De Vreese, 2017). We followed a comparable procedure to obtain the tone variable (i.e., multiplying exposure measurements by tone in newspapers).

Statistical analyses

After linking the survey and content analysis data, our dataset consisted of several levels of analysis. At the lowest level, we identified repeated observations of reputation per organi-zation in three consecutive wave periods. These observations were hierarchically clustered among (a) respondents and (b) organizations, with variation located in media visibility, tone and reputation. The dataset was stacked according to these levels. To work with this structuring of the data, we opted for multi-level modeling with three levels: observations, respondents and organizations. In this setup, respondents were *not* hierarchically nest-

ed within organizations. That is, each individual was combined with each organization. Consequently, we used a cross-classified multi-level model that included a lagged dependent variable to account for temporal dependencies.

Importantly, because visibility and tone are strongly correlated with each other (r = -0.92, p < 0.001), the effects of both cannot be examined in one model but must be analyzed in separate models to avoid multicollinearity problems (Schuck et al., 2016). In the discussion below, we will elaborate on our measurement of tone and the relation between visibility and tone.

RESULTS

We begin by inspecting the descriptive results based on the combined dataset. We coupled the content analysis data with data on the extent to which the survey respondents use certain media outlets.

TABLE 6.

Descriptive statistics – panel survey linked with content analysis: exposure to companies and tone in news coverage.

Variable	M Visibility (W1-W2)	SD Visibility (W1-W2)	M Visibility (W2-W3)	SD Visibility (W2-W3)	M Tone (W1-W2)	SD Tone (W1-W2)	M Tone (W2-W3)	SD Tone (W2-W3)
Shell	32.89	38.80	29.80	36.48	-7.67	9.39	-7.49	9.36
ING	62.55	77.66	49.63	65.16	-14.98	18.51	-12.52	16.55
Rabobank	41.76	53.13	44.23	58.16	-8.44	10.65	-8.63	10.91
Philips	29.54	35.29	30.82	38.24	-8.94	11.31	-6.21	8.90
Heineken	15.39	17.86	12.59	15.32	-3.56	4.13	-2.25	3.28
ABN Amro	88.61	105.74	51.27	62.03	-23.41	28.93	-10.83	12.95
KPN	26.55	32.35	23.48	29.86	-7.37	9.22	-5.98	7.63
PostNL	12.06	15.68	12.82	15.56	-3.02	4.17	-2.73	3.57
NS	50.63	61.77	65.36	80.47	-24.00	32.27	-24.05	30.41
SNS	12.95	15.94	6.51	7.44	-3.23	3.98	-0.65	1.10
V&D	23.87	28.17	11.27	13.85	-7.92	9.47	-3.16	4.79
KLM	43.58	55.91	45.40	55.09	-13.16	16.78	-11.54	14.58

Table 6 shows that company visibility is relatively stable over time (i.e., the two periods between Wave 1 and 2 and between Wave 2 and 3) but varies across companies. For example, whereas the least visible company (SNS, bank) had an average exposure rate of 6.15 articles (SD = 7.44) in the period between Wave 2 and Wave 3, the most visible company (ABN, bank) had an average exposure of 88.61 (SD = 105.74) articles in the first period. Note that the high standard deviations indicate that there is considerable variation across respondents in terms of exposure to company news articles due to their varying media use.

TABLE 7.

Descriptive statistics – panel survey linked with content analysis: exposure to positive and negative news coverage.

| Variable	M Positive (W1-W2)	SD Positive (W1-W2)	M Negative (W1-W2)	SD Negative (W1-W2)	M Positive (W2-W3)	SD Positive (W2-W3)	M Negative (W2-W3)	SD Negative (W2-W3)
Shell	4.36	5.63	16.59	19.58	6.69	9.28	14.92	17.93
ING	7.46	11.78	34.08	41.51	7.22	10.85	22.37	28.86
Rabobank	7.66	11.67	20.87	25.55	7.91	11.92	20.30	25.21
Philips	2.92	3.40	17.62	21.26	4.65	6.06	14.44	18.23
Heineken	1.86	2.29	7.92	9.17	3.23	3.85	6.25	8.00
ABN Amro	8.38	10.47	54.12	65.50	6.02	8.43	25.18	30.18
KPN	3.39	4.61	14.50	17.74	3.53	5.10	10.97	14.06
PostNL	2.03	2.95	5.45	6.95	2.61	3.12	6.37	7.81
NS	3.98	4.49	36.19	45.67	7.98	10.13	40.87	50.03
SNS	1.33	1.78	6.48	8.00	0.75	1.08	1.86	2.36
V&D	3.04	3.75	13.80	16.34	1.09	1.58	5.83	7.90
KLM	3.38	4.66	29.33	37.18	5.96	7.21	24.66	30.80
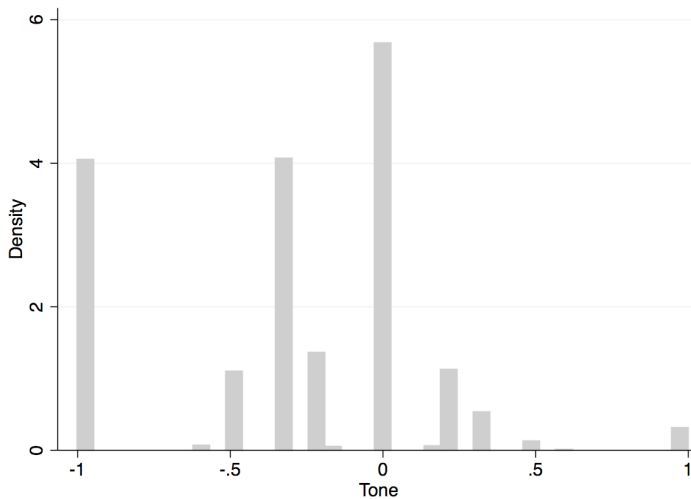
FIGURE 1. The distribution of tone scores in the content analysis

The second parts of Table 6 and Table 7 show that news coverage is structurally negative across companies and time. Both tables clearly indicate that company news is skewed toward negativity and that the respondents in our sample have been exposed

mainly to negative information. Note that the descriptive results from the content anal-ysis point to this conclusion (see Table 2 and Figure 1). Negativity bias also explains the high correlation between visibility and tone: increased exposure to company news means increased exposure to negative news (see Soroka, 2006, for a similar argument with regard to economic news).

We now turn to analyses of how exposure to this content influences corporate reputation. Table 8 (Model 1) shows the results of a multi-level regression model, with the visibility of a company as the independent variable and opinions about this company as the dependent variable. As expected, lagged reputation has a strong and positive impact: the more positive respondents' views of a corporation were in the previous wave, the higher they ranked the corporation in the subsequent wave.

However, the results also show a negative effect of corporate visibility on repu-tation: as people are exposed to more articles about a company, their opinions regarding the corporation deteriorate. This finding confirms *H1*.

TABLE 8.

Mixed-effects regression results, visibility, lag reputation, visibility x lag reputation

	Model 0	Model 1
Expected predictors of reputation		
Lag reputation		0.453(0.003)***
Visibility		-0.028(0.004)***
Content	0.000(0.082)	0.000(0.049)
Intercept level 3	0.079(0.032)	0.028(0.011)
Intercept level 2	0.357(0.009)	0.125(0.004)
N level 3	12	12
N level 2	3270	3270
N level 1	78480	78480
LL	-93494	-84645
ICC level 3	0.079	0.139
ICC level 2	0.356	0.294

Note. Cells show standardized coefficients from a mixed-effects regression, with standard errors in parentheses.
In all analyses, we controlled for individual corporations and previous waves. However, for clarity, we choose not to report these statistics. Nb. Model 0 is only shown in this table (not in tables 9 and 10) because the null-model is equivalent in all analyses. *p < .10; **p < .05; ***p < .01.

Table 9 shows the effect of tone in news coverage on opinions about the corpo-rations featured in those stories. In line with our theoretical expectation as formulated in the second hypothesis (*H2*), the data reveal that tone has a significant positive effect on reputation. Thus, as people are exposed to relatively more positive than negative news about a corporation, their opinions about the corporation become more positive.

However, we should note that the effect sizes are small across the board. For

example, the unstandardized effect of visibility (b = -.00018, p < 0.001)[25] indicates that exposure to one additional company news article results, on average, in a reputation decline of -0.00018 points, with reputation measured on a scale of 0 to 10. This finding suggests that the average effects of single news items might be limited, but that cumulative negative reporting can have serious consequences.

TABLE 9.

Mixed-effects regression results, tone, lag reputation, tone x lag reputation.

	Model 1
Expected predictors of reputation	
Lag reputation	0.453(0.003)***
Tone	0.026(0.004)***
Content	0.000(0.049)
Intercept level 3	0.029(0.012)
Intercept level 2	0.125(0.004)
N level 3	12
N level 2	3270
N level 1	78480
LL	-84645
ICC level 3	0.046
ICC level 2	0.203

Note. Cells show standardized coefficients from a mixed-effects regression, with standard errors in parentheses.
In all analyses, we controlled for individual corporations and previous. Waves. However, for clarity, we choose not to report these statistics. *p < .10; **p < .05; ***p < .01.

Third, we examine whether the effect of tone is conditional on whether news is positive or negative (*H3*). Table 10 (Model 1) breaks down the effect of tone into positive and negative news and shows that the standardized effect of negative news is 3 times as strong as that of positive news (-.042 /.014 = -3). After reversing the negative news scale so that its effect becomes positive (i.e., less negative news affects reputation positively), a Wald test shows that the effect of negative news is indeed significantly stronger than that of positive news (χ^2 (1) = 19.56, p < 0,001), which confirms H3.

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25 In tables 8, 9, and 10, standardized results are reported.

TABLE 10.

Mixed-effects regression results, positive news, negative news, lag reputation.

	Model 1	**Model 2**
Expected predictors of reputation		
Lag reputation	0.453(0.003)***	0.453(0.003)***
Positive news	0.014(0.005)**	0.014(0.005)**
Negative news	-0.042(0.005)***	-0.042(0.005)***
Negative news x lag reputation		0.011(0.003)***
Content	0.000(0.049)	0.000(0.049)
Intercept level 3	0.028	0.028(0.011)
Intercept level 2	0.125	0.125(0.004)
N level 3	12	12
N level 2	3270	3270
N level 1	78480	78480
LL	-84628	-84619
ICC level 3	0.045	0.045
ICC level 2	0.203	0.203

Note. Cells show standardized coefficients from a mixed-effects regression, with standard errors in parentheses.
In all analyses, we controlled for individual corporations and previous Waves. However, for clarity, we choose not to report these statistics. *p < .10; **p < .05; ***p < .01.

Regarding the moderating impact of prior opinion, Table 10 (Model 2) demonstrates a significant positive interaction effect between negative news and prior reputation. As one can infer from the regression coefficients, the negative effect of visibility weakens for individuals who hold more positive opinions about a corporation. As can be observed in Table 10 (Model 2), the effect of negative news is significant (b = -0.04, p < 0.001) when previous reputation is zero, but for each additional point on this reputation score, it changes by .001 (b = 0.01, p < 0.001). This finding is in line with *H4*, which predicts a buffering effect of positive prior attitudes. Our results demonstrate that a positive prior reputation lessens (and even dampens) the negative effect of negative news. Prior reputation is thus a buffer for corporate reputation. Our results imply that the effect of negative news is impaired given more positive prior attitudes. Figure 3 shows the interaction effect graphically.
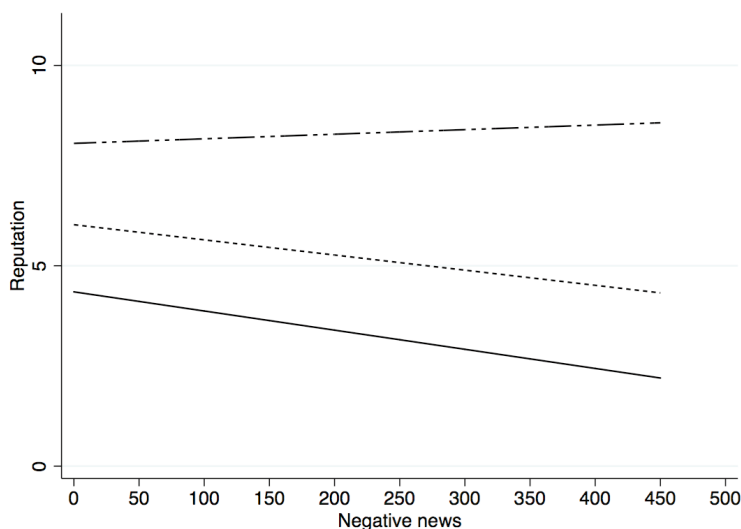
FIGURE 3. The interaction effect between negative news and previous reputation on reputation.

Note: Predictive margins with lines in plot demonstrating the interaction effect of negative news and pre-existing reputation on reputation. Lines are distinct values of pre-existing reputation on a scale of 1 to 11: long dash – short dash line represents a value of 8; dashed line represents a value of 6; solid line represents a value of 2.

CONCLUSION AND DISCUSSION

This study has investigated the influence of media visibility and the tone of news coverage on corporate reputation and how these effects are moderated by prior reputation. Although previous work found some evidence for a negative relationship between visibility and reputation (e.g., Fombrun & Shanley, 1990) as well as for a positive relationship between tone and reputation (e.g., Zhang 2016a; 2016b), to date, efforts to examine the direction of causality at the level of the individual citizen have been limited.

Employing a combination of content analysis and panel survey data, we demonstrate the effects of visibility and tone on opinions about corporations. Whereas visibility has a negative effect on reputation, tone has a positive effect. Furthermore, we show that the effect of negative news is significantly stronger than that of positive news. Moreover, analysis at the individual level enabled an assessment of whether certain people are more susceptible to these influences than others are. We find support for the idea that prior reputation moderates the effects of both visibility and tone on reputation. A positive prior reputation may thus function as a "buffer" against future negative news coverage (Sohn & Lariscy, 2015; Coombs & Holladay, 2006).

The findings of significant main effects of visibility and tone are important to current theory construction with regard to agenda-setting research because these findings blur the boundary between first- and second-level agenda setting (Zhang, 2016a; 2016b; 2017). Whereas first-level agenda setting assumes that the visibility of corporate actors

in the news media leads to greater public *awareness* of those corporations, second-level agenda setting relates to the notion that the salience of characteristics in company news (such as tone) leads to the *salience of those characteristics* in the public agenda and thus influences attitudes in particular directions (McCombs, 2005). The results of this study, however, provide support for the idea that mere visibility of a corporate actor (a traditional first-level variable) also has a direct effect on attitudes toward that object (a traditional second-level measurement). We see our approach and the results of this study as an indication of the need to re-examine the overlapping and differential effects of news attention, on the one hand, and of specific news characteristics, on the other hand.

We must carefully reflect on the strong correlation in our data between visibility and tone. We have argued that employing a visibility-based measure of tone has certain advantages. Research shows that a combined measure of visibility and tone better predicts reputation (Zhang, 2016a, 2016b). Moreover, assessing the tone of news objects relative to their visibility in the news makes sense in an examination of media effects. Arguably, the effect of affective information depends on the amount of information to which individuals are exposed. However, our data indicate that the tone of company news is structurally skewed toward the negative, whereas it is relatively stable across outlets and companies. This finding provides a powerful explanation of why visibility and tone are so strongly correlated: exposure to more company news means exposure to more negative company news. Bearing this in mind, we still believe that a visibility-based measure of tone is the most suitable measure to use when examining the effect of media content on reputation. However, we acknowledge that this measure would be problematic when it is difficult to empirically disentangle visibility and tone. Therefore, as an extension of the present paper and the work of Zhang (2016a, 2016b), we recommend more empirical research that compares several alternative measures of visibility-based tone.

On a practical note, this study suggests that corporations should be careful in their efforts to gain media attention. First, mere attention has been shown to negatively impact corporate reputation. Second, the vast majority of company news has proven to be negative in character. Taking this into account, we have shown that the (negative) influence of negative news is three times stronger than the (positive) effect of positive news. However, it is important to note that we found a positive effect of tone on corporate reputation. Over time, the effects of new coverage may therefore be positive. For example, if a company enters the news with a large amount of negative coverage, which is quite common (see, e.g., Van der Meer, Verhoeven, Beentjes, & Vliegenthart, 2014), and the tone becomes more positive over time, then news attention is likely to be beneficial to that corporation's reputation. In that sense, increasing positive news attention may have an important rectification function for companies.

With regard to the reputational buffer hypothesis (e.g., Sohn & Lariscy, 2015), we provide compelling evidence that the negative effects of news coverage on reputation are less powerful for corporations with better prior reputations. In other words, people who hold more positive attitudes toward a company are less susceptible to the media effects of (negative) future coverage of the company. In addition, corporations with good reputations are arguably more likely to attract positive coverage, whereas firms with bad reputations tend to receive more negative coverage (Deephouse, 2000). This finding may

point to a sort of "reputational spiral effect" whereby firms with good reputations benefit from coverage, whereas coverage is mainly disadvantageous for companies of poor repute.

In line with our expectations, we found a negativity bias in our news data. Across companies and time, news was skewed towards negativity, a finding that is in line with research on economic news coverage (Soroka, 2006) and political news coverage (Meeusen & Jacobs, 2017). The negativity bias may have profound consequences for company news research on sentiment. In line with Zhang (2016a; 2016b; 2017), we argued for a visibility-based measure of tone. However, with negative news as a baseline, visibility-based tone measures largely become a function of media attention. Therefore, we suggest testing alternative conceptions of tone, such as interactions among tone and issues, topics, and frames (see also Zhang, 2016a; 2016b; 2017), with a methodological approach similar to that used in this study. Because tone may vary substantively across these characteristics of news coverage, it may affect corporate reputation in interaction with these characteristics (Carroll & McCombs, 2003).

We see several opportunities for future research. First, this study has focused on one country only (i.e., the Netherlands). Future studies could compare media effects across countries. Second, we included twelve corporate actors in our study. It would be helpful for future studies to incorporate more companies and advance cross-organizational comparisons. Furthermore, including other organizational types, such as NGOs and governmental organizations, would allow for cross-organizational comparisons. Third, although the measurement of visibility in this study is straightforward, tone is a variable that is much more difficult to operationalize. Future research could use a supervised machine learning approach to obtain a more exact measure of tone.

In particular, the effect sizes we find are small. However, as Scharkow and Bachl (2016) argue, "even in state-of-the-art media effects studies that combine measures of media messages and media use (i.e., linkage analyses), measurement error in both the media content analysis and the media use self-reports will typically lead to severely downward-biased effect estimates" (p. 1).

In all, we believe that this study offers valuable insights for media-effect research in general and for the subfields of public relations research and corporate communication in particular. Future work should continue to merge advanced empirical approaches that have been frequently applied in other subfields of communication science with literature on organizations and news-mediated corporate communication to improve our understanding of this topic.

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