

Article

# An Analysis of a Repetitive News Display Phenomenon in the Digital News Ecosystem

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**Abstract:** In South Korea, approximately 88.5% of online users have obtained news and information from news aggregators such as *Naver* and *Daum*. Since most users read news on the internet, a new type of tabloid journalism, referred to as “news abuse,” has emerged in South Korea. “News abuse” is jargon used in South Korea to mean the repetitive display of news by online news publishers. “News abuse” is similar to “clickbait” in its use of clickbait headline links to attract online users’ attention and encourage them to click on links. This study explores the characteristics of news abusing phenomena in South Korea. With content analysis of 2101 articles (609 stories for soft news and 1402 stories for hard news), we attempt to investigate when news abuse saliently occurs and to whom news abusing is attributed. Our results show that news abuse is prevalent among South Korean newspapers during the first three hours after initial news reports are made and when people have time to rest after lunch between noon and 3 p.m. Moreover, the highest percentage of news abuse of soft news was found among tabloid daily newspapers, while that of hard news was found among daily newspapers. In addition, intermedia news abuse was more frequently utilized than intramedia news abuse. The percentage of intermedia abuse, in particular, was higher in general daily newspapers and business newspapers than in other news media platforms. By contrast, the percentage of intramedia news abuse was significantly higher in 24-h news channels. News abuse may be a side effect of news aggregation in the division of labor of news production and news distribution. More steps are required to decrease news abuse, which will lead to maintenance of a healthy digital news ecosystem and development of the news aggregation business.

**Keywords:** news aggregators; Naver; tabloid journalism; news abusing; repetitive news; hard news; soft news

## 1. Introduction

News aggregation is an innovative method of news distribution. After collecting news from multiple sources, news aggregators display it on a single website, and the public can enjoy a variety of news quickly and cheaply [1]. By aggregating news articles from different news companies and displaying them in the form of headline lists with some introductory lines, several news aggregators, such as Google News, Yahoo News, and *Huffington Post*, have outperformed traditional news outlets and become major news distribution platforms [2–4].

In South Korea, approximately 88.5% of online users receive news and information from news aggregators such as *Naver* and *Daum* [5]. Although Google provides news aggregation services in South Korea, its market share is only about 11.2% of total online news users in South Korea, while *Naver* has the lion’s share (75.2%) of South Korean online news readers [6]. *Naver* News is the most popular news source in South Korea, even though *Naver* does not perform any journalistic activity

itself. *Naver* hosts news stories from various news publishers, similarly to *Apple's* news-aggregation apps. However, *Naver* has a particular model for working with many South Korean news publishers, which involves paying a news usage fee to 124 news publishers contracted as “*Naver* News in-link partners.” News from these publishers is provided on *Naver's* portal, allowing news readers to enjoy a one-stop news service (*Naver's* news distribution model is different from Google's model in its news display. When a Google user clicks on a link to a news article, he or she is taken directly to the original source's website. However, when a *Naver* user clicks on a news link, they are taken to a page hosted by *Naver*, which means that users technically remain on *Naver* while reading a variety of news articles). Another 1000 or more news companies, which are not contracted as “*Naver* News in-link partners,” do not pay a news usage fee to *Naver*, but their news articles are still linked to *Naver* as “news search partners” in a similar way to Google's news service model.

Since most online users read news on the internet, a new type of tabloid journalism, “clickbait journalism,” has emerged [7]. Since newspaper companies' revenue decreased dramatically as news transitioned to an online format, many online newspaper companies have used “clickbait” strategies to attract attention and encourage online users to click on links to particular sites where sensational, misleading, and low-quality news is provided. In the past, newspaper companies' main revenue sources included both subscriptions and advertising. However, as newspaper users began to consume news on the Internet, traditional newspaper companies had to witness drastic falls in advertising revenues as well as subscription fees. The legacy news media have no choice but to depend on online advertising revenue based on page views [8]. To encourage online users' clicks on particular sites, online news companies often use clickbait headlines, which attract online users' attention. Click-bait has been criticized for its tabloidization (i.e., “hard news” topics are replaced by “soft news”) [9] and “willful blurring of lines between fact and fiction” [10]. Specifically, clickbait headlines may lead to the spread of fake news, which can give rise to serious social, economic, and democratic crises [11].

A repetitive news display is another tactic to attract users' attention. “News abuse” is jargon used in South Korea to refer to repetitive news display by online news publishers. News abuse is similar to clickbait in terms of its use of clickbait headline links that attract online users' attention and encourage them to click on links. After clicking on a link to the headline, however, the user is faced with a familiar news article he or she may already have read. This means that a lot of similar news articles are reproduced or republished either from the same news publishers or other news publishers. Thus, news abuse may be a peculiar case of the clickbait phenomenon in South Korea. We use the term “news abuse” throughout this paper instead of “clickbait” or “repetitive news,” although the term is seldom used in other countries.

“Repetitive news” is much like plagiarism in academia. Plagiarism is strictly prohibited by copyright laws in the academic field; academic papers may not be reproduced, republished, distributed, or modified except as specifically permitted by prior written permission of the original source of the paper. However, much news content is copied from the original news source with slightly different headlines to attract online users' attention from among thousands of news headlines on the internet in South Korea. To some extent, news abuse reflects news-making conventions among South Korean journalists who are members of pack journalism or press clubs that often share sources and main contents. News abuse was not a serious problem when each news media had its own news outlets. However, news abuse becomes a noisome habit in digital news aggregators that enable users to compare news articles from different news outlets.

As the advertising-supported business model has collapsed [12], news publishers save news production costs through the repeated use of original news content, either from their own news or from other publishers. As a result, an erosion of journalism is steadily underway. For example, small-sized news publishers suffering from financial difficulties are known to either copy other publishers' news content entirely or plagiarize some of a variety of news publishers' news content [13]. Large-sized news publishers are also known to display their own news content repetitively with slight changes to the original news content. These kinds of “news-abusing” phenomena are criticized for violating sound

journalism ethics but are generally accepted news publishing strategies among online news publishers in South Korea. Many news publishers argue that thousands of news publishers in South Korea have no choice but to copy or partially copy original content to survive in a seriously competitive environment.

This study explores characteristics of the news-abusing phenomenon in South Korea. By analyzing the content of 2101 articles (609 stories for soft news and 1402 stories for hard news); we attempt to investigate when news abuse saliently occurs and who are the main contributors. In addition, we analyze news abuse characteristics, according to the news article's features (hard news vs. soft news), and news publishers' characteristics (daily newspapers, economic-oriented dailies, online-only news, broadcasting news). Then, we categorize and discuss news-abusing phenomena in terms of intermedia news abuse and intramedia news abuse. Finally, we discuss how to decrease news abuse as a side effect of news aggregation in the division of labor of news production and news distribution.

## 2. Previous Studies and Research Questions

### 2.1. News Preferences: News Publishers vs. News Consumers

Journalists did not much pay attention to readers' preferences in the traditional news production process. Owing to the scarcity of news channels in the past, news editors, as gatekeepers, had the power to decide which news should or should not be passed on [14]. Bockzkowski et al. [15] found that news story preferences were different for news producers and news consumers. News producers preferred public affair stories such as politics, economics, and international news to non-public affair stories (e.g., sports, crime, entertainment, or weather). On the other hand, news consumers preferred to obtain the opposite from news producers. Tewksbury [16] found that public affairs were not in news consumers' preference lists. As scarcity of news channels became a non-issue in the online environment, the role of gatekeeping in legacy media changed to one of gate-watching in the collaborative online news system [17]. In the online news environment, news producers began to recognize audiences' preferences and power. In particular, selectivity of exposure becomes a feature of 21st-century news media [18]. News viewers do not passively consume news publishers' articles anymore. Instead, people actively select and filter their favorite news [19,20]. Furthermore, audience clicks exert a significant overall lagged effect on news placements [19]. As Shoemaker et al. [14] have argued, the audience plays an important role in news gatekeeping through online news selection. As a result, editors are responsive to audience desires and need to provide what audiences want. Moreover, news companies have begun to write similar news stories to attract online news consumers' clicks as competition among news publishers on the internet becomes severe.

### 2.2. Click-Bait Journalism vs. News Abuse

One malfunction of audience-sensitive journalism may be clickbait journalism [21,22]. In the era of digital journalism, news publishers want to know how to increase their news traffic because users' clicks on their online news articles are recognizable and measurable, and thus lead to revenue [23]. Thanks to recent technology enabling monitoring systems of online news consumption, news publishers began to race toward the lowest common denominator, ghettoizing citizens into bundles based on narrow preferences and predilections rather than drawing them into a community [24].

A new form of tabloidization in the internet environment is called "clickbait journalism", which refers to a type of online news that employs formula writing and linguistic techniques in headlines to trick readers into clicking on the content [25,26]. The problem is that clickbait journalism is becoming popular among online news publishers, resulting in a negative impact on the digital news ecosystem [22]. Furthermore, the danger of clickbait journalism is that news publishers focus on attention-grabbing reporting that could lead to "the willful blurring of lines between fact and fiction" [10]. The spread of false news driven by clickbait is very problematic because both the spread of unverified rumors and the manipulation of facts harm the notion of journalistic integrity [27]. Several studies have proposed potential methods for the detection of clickbait content [7,27,28].

South Korea is suffering from a different type of clickbait journalism, called “news abuse”, which refers to the copying of similar news, either when a sensational and interesting original news story is posted on the internet or a popular search topic is observed in *Naver’s* real-time search ranking. When multiple news publishers post a headline link that attracts users’ attention, users click on the link to that headline. However, users soon realize that the news they clicked is almost the same article with a slightly different headline from an article they have already read.

The popularity of news aggregators and widespread digital news in South Korea has also caused soft news to become more prevalent and hard news to shrink [13]. News can be generally categorized as hard news or soft news. Hard news refers to the coverage of breaking events in the topics of politics, international affairs, and business news [29]. Breaking news may include significant diversions in the routines of daily life such as earthquakes or an airline disaster [30]. The same rationale holds true for stories of mass shootings or massacres. By contrast, soft news topics are concerned with entertainment or celebrity news, lifestyle news, arts and culture news, and sports news [29]. In this vein, soft news is more personality- or celebrity-oriented, less time-bound, and more incident-based than hard news.

Although copyright infringement in the academic field is strictly prohibited in South Korea, it is relatively common among South Korean journalists. The “news abuse” phenomenon is prevalent and generally considered as an accepted practice among South Korean journalists, who often copy other publishers’ news without getting news reuse permission. About 20 years ago, replicating other news publishers’ articles (a kind of plagiarism) was rarely detected unless journalists complained of copyright infringement, but it is easily detectable in the era of online journalism. Nevertheless, online publishers’ practice of copying other publishers’ articles is increasing, because it is easy to copy and paste other online publishers’ trendy, hot news in the online environment.

There are some news topics that are more time-sensitive than others and the news life cycle is getting shorter in the online environment. For example, business-related news articles have, on average, a longer life; entertainment-related articles have an intermediate life; and sports-related articles have a shorter life. Thus, when a news link is first posted on the internet in the news section, it tends to cause an initial spike in visits, followed by a consistent drop in the number of visits. Similarly, when interesting news is posted on the internet, news publishers’ news abuse may increase significantly before the news’ life cycle is finished. It is therefore interesting to note how news publishers’ news abuse strategies change over time. In addition, the extent of news abuse may be different depending on news stories’ characteristics, for example, hard news and soft news. On the basis of previous studies that have found news abuses to be frequent in soft news than in hard news [2,13], it is useful to explore how patterns of news abuse differ between hard news and soft news. The first research question is elaborated as follows:

*RQ 1. What are the main characteristics of “news abusing phenomena” in South Korea?*

*RQ 1-1. How does the proportion of “news abuse” change over time after the first news related to the “abusive news” is distributed?*

*RQ 1-2. How do the patterns and frequency of “abusive news” distribution differ in coverage between hard news and soft news?*

According to Rony et al. [22], the percentages of clickbait headlines were 33.54% in mainstream media and 39.26% in small-scale, unreliable media. Among mainstream media, the percentage of clickbait was lower in print media (24.12%) than in broadcast media (47.56%). This means that clickbait behaviors may be different in online media. Similarly, online publishers who use a large number of “news abuse” strategies may have different characteristics from those who use fewer news abuse strategies. News publishers who employ relatively high news abuse may be economically unstable, having fewer employees and a brief history as a news publisher. This “abusive news” process may be driven by economic incentives because newspaper circulation and subscriptions continue to decrease, and news publishers depend more on online advertising revenue based on page views [8].

On the other hand, depending on whether it is hard news or soft news, the quantity of publishers' news abuse may vary. It is generally expected that news publishers will tend to copy soft news instead of hard news, because the most viewed news contents are dominated by soft news such as entertainment, crime, sports, and gossip. Several studies have shown that hard news topics are being replaced with soft news topics [9,16,31]. Furthermore, depending on news publishers' characteristics (print media, broadcast media, etc.), the proportion of news abuse in both soft news and hard news could be different. The second research question is elaborated as follows:

*RQ 2. What are the characteristics of newspaper companies that frequently use "news abuse" as a strategy?*

*RQ 2-1. Is there any difference in the proportion of "news abuse" according to the news media's characteristics (daily news, economic-oriented news, 24-h cable news channels, terrestrial broadcast networks, and online-only news)?*

*RQ 2-2. Is there any difference in the proportion of "news abuse" in terms of news type (soft news vs. hard news) depending on the news media's characteristics (daily news, economic-oriented news, 24-h cable news channels, terrestrial broadcast networks, online-only news)?*

### 2.3. Intermedia and Intramedia News Abuse

News abuse may be classified as intermedia news abuse or intramedia news abuse. Inter-media abuse refers to news abuse between different news media, while intramedia abuse indicates news abuse within the same news outlet. Choi et al. [2] refer to intermedia news abuse as a vertical form of repetitive news and intramedia news abuse as a horizontal form of repetitive news.

Inter-media news abuse seems to be more prevalent in South Korea. South Korean journalists may go easy on themselves by copying other newspapers' articles because they are used to sharing news. In journalism practice, the intermedia agenda setting may explain why the news media have very similar news items and news contents [32,33]. In this vein, McCombs et al. [33] argued, "Across the world, the norms of journalism exert a powerful pressure toward similarity in telling the news of the day." In general, prestige newspapers such as the *New York Times* and the *Washington Post* are assumed to influence the contents and direction of articles. However, the copying of other newspapers' articles is becoming more rampant in the era of online journalism. Instead of finding new stories as traditional journalists did, many journalists simply copy articles and add some additional information, thanks to easy access to other journalists' articles on the internet [34].

News abuse also happens within the same news outlet. To some extent, the news-making process is based, in practice, on updating previous news as news develops. From an ethical perspective, journalists must reveal their reuse of previous works. However, news abuse ignores ethics.

The extent of news abuse may be related to the scale of news publishers. Cho et al. [13] expected that small, online-only news media companies would produce news-abusing reports by copying and often plagiarizing big news companies. However, the results showed that news abuse was more prevalent in major news companies than in small- and mid-sized news companies. Kim [35] also found that major news companies tended to copy hard news, while small and mid-sized news companies tended to copy soft news. Based on these arguments, we may address the following research questions:

*RQ3. What are main differences between intramedia news abuse and intermedia news abuse?*

*RQ3-1: Is there a difference in the proportion of news abuse in intramedia and intermedia practice?*

*RQ3-2: Is there a difference in intramedia news abuse and intermedia news abuse according to news categories and news publishers' size?*

### 3. Methods

#### 3.1. Sampling Process

We selected both soft news and hard news, which were heavily reported in South Korean media in October 2017. As an example of soft news, we selected stories about a famous South Korean actor and singer, Choi Si-won, and the scandal associated with his pet dog, which caused a neighbor woman's death from sepsis. Similarly, we selected the Las Vegas shooting incident, which killed 58 people and injured 851 people on the first day of October 2017, as an example of hard news. In part because of the Las Vegas shooting's magnitude, causing 58 fatalities, and in part because it concerned international news for a South Korean audience, we categorized the massacre as hard news.

There were a total of 1082 articles on the Choi's dog incident in the first two days. Among these articles, we excluded articles that were not directly related to the incident. For example, entertainment news about the drama in which Choi performed as a main actor was excluded. We also dropped articles reported only once in the same news outlet, because our definition of news abuse refers to repeated transmission of the same or very similar articles to increase readers' clicks. Thus, a total of 609 articles were finally analyzed in the study.

In a similar manner, we selected a total of 1402 articles on the Las Vegas shooting after excluding 175 stories that were mostly about stock prices or weather news. Among these articles, 50 were produced on the first day of the incident, 758 the second day, and 294 on the third day. Although we limited the news period to within 48 h in this study, the stories were distributed over three days because of time differences between Seoul and Las Vegas.

The "Beautiful Soup" package in Python was then used to do web-scraping, which provided basic information on the news articles. During this process, the study identified the media platforms that reported the news article, the title, the journalist, and the URL of the article. Furthermore, the study collected other information, such as the news article texts and input time.

#### 3.2. News Categories and News Organization Classifications

Daily news media can be broken down into six main sectors: network TV news, print newspapers, online-only news sites, radio news, 24-h news channels, and news agencies [36]. Print newspapers can also be divided among local and national newspapers in terms of coverage scope, as well as financial newspapers, tabloid newspapers, and general newspapers in terms of topics. Vargo et al. [37] also classified news media into news agencies, traditional media (newspapers, radio, television), and online media. In this study, we break down news media into the following eight sectors: daily newspapers, economic daily newspapers, tabloid newspapers focusing on sports and entertainment, terrestrial broadcasting, 24-h cable news channels, news agencies, online-only news media, and others.

Table 1 shows the number of news articles by news media platform. Newspapers, including daily newspapers, economic dailies, and tabloid newspapers, had the highest percentage of news articles for both soft news and hard news (64.9% for soft news and 41.5% for hard news). Online-only news and broadcasting news had the second and third highest percentages of news articles for soft news, respectively, while broadcasting news and news agencies had the second and third highest percentages of news articles for hard news, respectively.

**Table 1.** The number of news articles by media platform.

Media Platform (No. of News, %)		Soft News		Hard News	
Newspaper	Daily Newspapers	395 (64.9)	179 (29.4)	581 (41.5)	293 (20.9)
	Economic Dailies		99 (16.3)		257 (18.4)
	Tabloid Newspapers		117 (19.2)		31 (2.2)
Broadcasting	Terrestrial Broadcasting	62 (10.2)	19 (3.1)	306 (21.8)	115 (8.2)
	24-h News Channel		43 (7.1)		191 (13.6)
	News Agency		18 (3.0)		216 (15.4)
	Online-only News		113 (18.6)		189 (13.5)
	Others		21 (3.3)		110 (7.8)
	Total		609 (100)		1402 (100)

### 3.3. Definition of News Abuse and Measurement

The concept of “news abuse” used in this study can be defined as “a repetitive posting of news either through self-replication or from copying other publishers’ news articles.” More specifically, when a certain publisher posts news article that copies more than 50% of the original article, we call this behavior “news abuse.” There were thousands of news articles originating in the same sources, and we limited our data to those articles posted within 48 h of the original article’s posting. This is an extension of the conceptual understanding of abusive behavior presented in prior research that considers both the “repetitive use of articles through self-replication” and the plagiarism of “copying articles from other publishers” [13,38].

We measured content duplication of the news articles using paired comparison of news articles, while morpheme analysis based on text mining was applied to the content of individual articles. Morpheme analysis divides the contents of an article into morphemes, and then measures the extent of duplication between two articles. We reclassified individual articles into subcategories by checking the contents of the sample news originating in the “Choi Si-won” and “Las Vegas” issues. For example, thousands of articles based on the Choi incident changed the news topic over time: “Choi Si-won French Bulldog,” “SNS Apology,” and “Dog Photo Deletion” are subcategories of “Choi Si-won” news. In fact, eight different subcategories of news were generated within 48 h of the original news posting. In the case of the “Las Vegas shooting,” 11 subcategories of news, including “Shooting incident in Las Vegas” and “Identities of the terrorists” were generated over the two days following the original article’s posting (the original article’s posting is referred to as a model of news in this paper). In this study, for each of the leading articles in the “Choi Si-won” and “Las Vegas” events, individual news articles were grouped into eight subcategories and 11 subcategories, respectively. We then measured “content duplication” among individual articles within the subcategories.

The current study established news abusing networks by setting an individual article as a node, as well as a duplication rate as a tie to test the validity of differentiating subcategories of news and subcategorized modeling articles in the content analysis (Here, Choi’s dog scandal consists of 609 nodes and 5717 ties in the network. Similarly, the Las Vegas shooting had 1402 nodes and 11,734 ties in this network analysis). As shown in Table 2, the vector indexes of subcategories, based on linkage of ties in the whole network structure, were calculated using NetMiner 4, and all values were acceptable. Results also illustrate that the External–Internal Index (EII) locates between  $-1$  and  $1$  [39] and the Segregation Matrix Index (SMI) was over  $0$  [40]. Values of cohesion index, density, and group modularity satisfied the standard values [41]. Consequently, the study confirmed that eight subcategories for Choi’s dog scandal and eleven subcategories for the Las Vegas shooting were fitted well.

**Table 2.** News abuse in soft and hard news.

Model News Category	E-I Index	SMI	Cohesion Index	Density	Group Modularity	
Soft News	1	−0.998	0.999	2948.33	0.044	0.135
	2	−0.998	0.999	2214.24	0.06	0.207
	3	−1	1	∞	0.245	0.013
	4	−1	1	∞	0.226	0.025
	5	−1	1	∞	0.352	0.025
	6	−1	1	∞	0.232	0.089
	7	−0.966	1	955	0.139	0.03
	8	−1	1	∞	0.096	0.228
Hard News	1	−1	1	∞	0.034	0.18
	2	−0.977	0.999	435.494	0.051	0.18
	3	−1	1	∞	0.05	0.076
	4	−0.917	0.994	315.862	0.106	0.075
	5	−0.953	1	160.525	0.028	0.161
	6	−0.95	0.996	565.369	0.076	0.05
	7	−0.941	1	1508.10	0.035	0.003
	8	−0.996	1	11,510.25	0.141	0.042
	9	−1	1	∞	0.191	0.002
	10	−1	1	∞	0.05	0.042
	11	−0.74	0.987	154.962	0.025	0.007

This study conducted a paired comparison of plagiarized content utilizing the “Copy Killer Channel” at [www.muhyu.com](http://www.muhyu.com), which is recognized as the leading plagiarism detection service in South Korean academia and used by more than 1600 educational institutions. The plagiarism rate is calculated based on the proportion of suspicious contents among the total words in a specific article after having compared the article with other previous stories. We considered news articles with six or more of the same continuous words as previous news articles to be “news abuse.” News abuse was calculated according to the percentage of suspected plagiarized words among the total words in the article. Therefore, the intensity of plagiarism can be numerically measured from 0 to 100%. To ensure the accuracy of the content plagiarism rate calculation, quotations and source statements were excluded from the analysis.

In the case of Choi Si-won, the median of the content duplication rate was 30.5, while the standard deviation was 21.97. In the case of the Las Vegas shooting incident, the median of content redundancy was 26.35 while the standard deviation was 22.30. The current study judged those articles with more than 50% plagiarism rate to be news-abusing articles. Table 3 shows news abuse between soft news (“Choi Si-won”) and hard news (“Las Vegas”).

**Table 3.** News abuse in soft and hard news.

Category	Soft News (Choi’s Pet Dog)	Hard News (Las Vegas Shooting)
No. of News	609	1402
Plagiarism Detection (pair)	492	1150
No. of Abusing News (%) <sup>1</sup>	116 (19.05%)	219 (15.62%)

<sup>1</sup> More than 50% duplication.

### 3.4. Analysis Procedure and Method

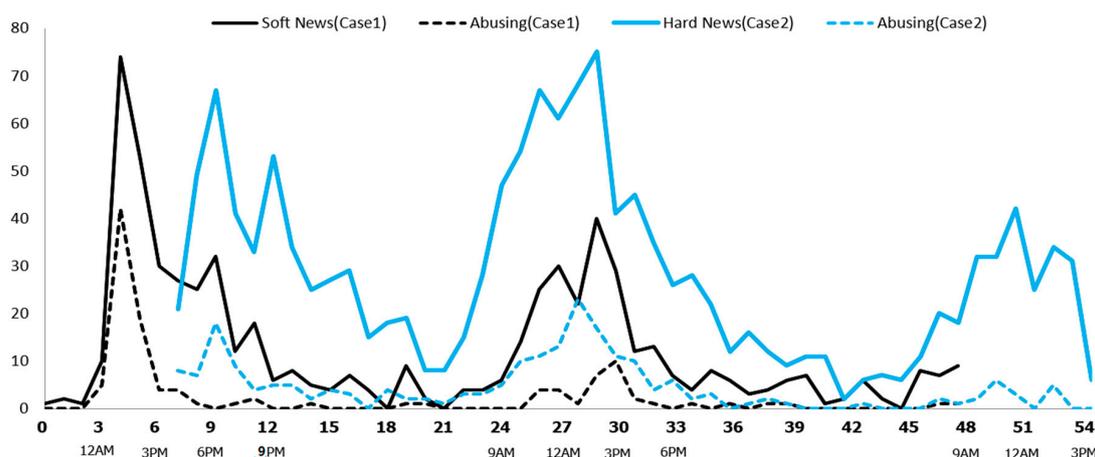
The first step was to examine the changing news topics for 48 h after the original articles related to both “Choi Si-won” and “Las Vegas” were posted on the internet. The second step was to identify which news publishers were most commonly utilizing news-abusing behavior. We also examined whether or not news publishers copied their own articles or other news publishers’ articles. Furthermore, we analyzed whether or not these news-abusing behaviors were different in hard news and soft news. We

used “text mining” based on morpheme analysis and an average-differences check through frequency analysis to examine the extent of news copying.

### 4. Results

#### 4.1. News Abuse by Time Zone

Both Figure 1 and Table 4 showed the similarity and difference of news abuse between hard news and soft news. The study counted the number of news postings per hour in the 48 h after the first news was posted on the internet.



**Figure 1.** News publishing and news abuse patterns after the first news release (X-axis: 3-h interval elapsed time, Y-axis: No. of news reported).

As Figure 1 shows, the initial report of the case of Choi’s pet was published at 8:56 a.m. (All times are presented in South Korea Standard Time (KST)) on 21 October 2017, while the initial news for the case of the Las Vegas shooting incident was published at 3:30 p.m. on 2 October 2017. Although the two incidents became known to the public in the different time zones, related news articles in both cases proliferated within the first three to six hours of the initial news release. The largest numbers of articles per hour were found within the first three hours for hard news, while the peak was between three and six hours after the initial news release for soft news (See Figure 1 and Table 4). Then, the number of news articles per hour decreased in both cases. Around 9 a.m., the lowest points occurred in both cases. The second peaks were witnessed between noon and 3 p.m. over the next several days.

**Table 4.** Frequency of news posting and occurrence of news abuse at specific times.

Elapsed Time <sup>1</sup>		0	+3	+6	+9	+12	+15	+18	+21	+24	+27	+30	+33	+36	+39	+42	+45	+48	Sum (Mean)
Soft News	Release Time <sup>2</sup>	AM		PM			AM			PM			AM			PM			-
	No. of News (A)	1	13	157	84	36	17	11	11	14	69	91	32	18	13	10	8	24	609
	News Abuse (B)	0	5	65	5	3	1	0	2	0	8	18	3	2	2	0	0	2	116
	% (B/A)	0	38	41	6	8	6	0	18	0	6	20	9	6	15	0	0	8	(11)
Hard News	Release Time	PM			AM			PM			AM			PM			-		
	No. of News (A)	21	157	120	81	52	31	129	196	161	89	50	32	19	24	70	99	71	1402
	News Abuse (B)	8	34	14	9	6	6	18	47	38	12	4	3	1	0	5	9	5	219
	% (B/A)	38	22	12	11	12	19	14	24	24	13	8	9	5	0	7	9	7	(14)

<sup>1</sup> 3-h interval after the first news release, <sup>2</sup> Real time of news release (3-h interval).

The number of articles including news abuse per hour shows a pattern similar to that of the total news articles per hour. As Table 4 indicates, the total number of news-abusing articles was 116 for Choi’s pet scandal. Among them, 60.3% were concentrated in the first six hours. Specifically, 65 cases of news abuse (56%) occurred between the first three and six hours after the first news release.

Then, 22.4% of cases of news abuse were found from 9 a.m. to 3 p.m. the following day. News abuse for the Las Vegas shooting was relatively dispersed compared to Choi's pet scandal. The number of news-abusing articles for the Las Vegas shooting was 219, and only 25.6% of the total news abuse occurred within the first six hours following the initial news release. However, 38.8% of the total news abuse was found between 18 h (9 a.m.) and 24 h (3 p.m.) after the initial news release.

#### 4.2. Characteristics of News Abuse by News Media Platforms

Table 5 shows the number of total news and news abuse by media platforms. In the case of soft news, tabloid newspapers had the highest percentage of news abuse (29 cases, 25%), followed by economic daily newspapers (26 cases, 22.4%) and general daily newspapers (24 cases, 20.7%). On the other hand, online-only news media (publishing news on the internet without publishing a print newspaper) had relatively low rates of news abuse (17 cases, 14.7%). In the case of hard news, a relatively higher percentage of news abuse was found among daily newspapers (54 cases, 24.7%) and economic newspapers (41 cases, 18.7%), followed by news agencies (16%) and terrestrial broadcasting news (12.8%). Interestingly, broadcasting news media, such as terrestrial broadcasting and 24-h news channels, actively participated in news abuse in hard news areas but not in soft news. News abuse in both soft news and hard news was notably high in daily newspapers and economic dailies.

**Table 5.** Frequency comparisons of news abuse by news media platforms.

Soft News (Frequency, %)				Media Platform <sup>1</sup>	Hard News (Frequency, %)			
Total News Release		Total News Abuse			Total News Release		Total News Abuse	
177	(29.1)	24	(20.7)	1	294	(21.0)	54	(24.7)
99	(16.3)	26	(22.4)	2	257	(18.3)	41	(18.7)
116	(19.0)	29	(25.0)	3	31	(2.2)	4	(1.8)
19	(3.1)	5	(4.3)	4	115	(8.2)	28	(12.8)
43	(7.1)	10	(8.6)	5	192	(13.7)	25	(11.4)
18	(3.0)	4	(3.4)	6	214	(15.3)	35	(16.0)
115	(18.9)	17	(14.7)	7	190	(13.6)	25	(11.4)
22	(3.6)	1	(0.9)	8	109	(7.8)	7	(3.2)
609	(100)	116	(100)	Sum	1402	(100)	219	(100)

<sup>1</sup> Media platform (1 daily newspapers, 2 economic dailies, 3 tabloid newspapers, 4 terrestrial broadcasting, 5 24-h news channels, 6 news agencies, 7 online-only news, 8 others).

#### 4.3. Types of News Abuse Utilized by News Media Platforms

As discussed earlier in the research, news abuse is largely developed in two ways: intermedia news abuse and intramedia news abuse. Additionally, news abuse can be explored in terms of frequency and intensity. Table 6 shows the results of a frequency analysis of intermedia and intramedia news abuse in both soft and hard news.

**Table 6.** Types of news abuse by news media platform (intermedia vs. intramedia news abuse).

Soft News (Frequency, %)						Media Platform <sup>1</sup>	Hard News (Frequency, %)					
Total News Abuse		Intra Media Abuse		Inter Media Abuse			Total News Abuse		Intra Media Abuse		Inter Media Abuse	
24	(20.7)	1	(4.8)	23	(21.1)	1	54	(24.7)	3	(5.45)	51	(31.76)
26	(22.4)	3	(14.3)	26	(23.9)	2	41	(18.7)	2	(3.64)	39	(22.94)
29	(25.0)	9	(42.9)	26	(23.9)	3	4	(1.8)	0	(0.0)	4	(2.35)
5	(4.3)	2	(9.5)	5	(4.6)	4	28	(12.8)	3	(5.45)	25	(14.71)
10	(8.6)	4	(19.0)	7	(6.4)	5	25	(11.4)	15	(27.27)	10	(5.88)
4	(3.4)	1	(4.8)	4	(3.7)	6	35	(16.0)	30	(54.55)	8	(4.71)
17	(14.7)	1	(4.8)	17	(15.6)	7	25	(11.4)	2	(3.64)	23	(13.53)
1	(0.9)	0	(0.0)	1	(0.9)	8	7	(3.2)	0	(0.0)	7	(4.12)
116	(100)	21	(100)	109	(100)	Sum	219	(100)	55	(100)	170	(100)

<sup>1</sup> Media platform (1 daily newspapers, 2 economic dailies, 3 tabloid newspapers, 4 terrestrial broadcasting, 5 24-h news channels, 6 news agencies, 7 online-only news, 8 others).

In general, intermedia news abuse was more frequently utilized than intramedia news abuse. Overall, intermedia abuse occurred more frequently in daily newspapers (21.1% for soft news and 31.76% for hard news), economic dailies (23.9% for soft news and 22.94% for hard news), and Internet-only newspapers (15.6% for soft news and 13.53% for hard news) than did intermedia abuse. Contrastingly, intermedia abuse was more frequent in 24-h news channels (19.0% for soft news and 27.27% for hard news).

News media platforms' intermedia and intramedia news abuse patterns were different for hard news and soft news. Both inter- and intramedia abuse in soft news were significantly high in tabloid journalism media, such as sports and entertainment. However, in the case of hard news, there was no difference between intermedia news abuse and intramedia news abuse among news media platforms. In addition, intramedia abuse was severely high when news agencies covered hard news; Table 7 shows the average ratio of news abuse (intensity) among news media platforms.

**Table 7.** Average ratio of news abuse intensity.

Media Platform <sup>1</sup>	Total Abusing Intensity (%)			Intra-Media Abusing Intensity (%)			Inter-Media Abusing Intensity (%)			
	<i>N</i>	<i>mean</i>	<i>s.d.</i>	<i>N</i>	<i>mean</i>	<i>s.d.</i>	<i>N</i>	<i>mean</i>	<i>s.d.</i>	
Soft News	1	24	64.17	13.62	1	51	-	23	64.74	13.63
	2	26	60.47	7.80	3	82.67	9.86	26	60.41	7.75
	3	29	61.14	9.65	9	81.67	9.96	26	59.97	6.37
	4	5	61.81	7.31	2	52.5	2.12	5	61.86	7.36
	5	10	65.93	18.57	4	94.25	9.94	7	58.41	4.87
	6	4	70.65	13.60	1	99.00	-	4	69.56	11.52
	7	17	63.44	12.50	1	62	-	17	63.58	12.67
	8	1	65.90	-	0	-	-	1	65.90	-
<i>Sum(mean)</i>	116	(62.77)	(11.57)	21	(79.86)	(16.26)	109	(62.04)	(9.93)	
Hard News	1	54	64.69	15.27	3	69	26.89	54	64.71	15.26
	2	41	59.99	8.58	2	58	1.41	39	60.43	8.78
	3	4	62.51	11.90	0	-	-	4	62.51	11.90
	4	28	70.23	17.22	3	87.53	21.59	25	68.64	15.52
	5	25	73.84	18.28	15	86.01	17.39	10	71.09	14.83
	6	35	67.80	15.37	30	87.15	13.49	8	65.80	16.99
	7	25	65.78	14.85	2	100	0	23	66.48	15.28
	8	7	62.84	15.39	0	-	-	7	62.84	15.39
<i>Sum(mean)</i>	219	(66.08)	(15.20)	55	(85.28)	(16.52)	170	(64.84)	(14.11)	

<sup>1</sup> Media platform (1 daily newspapers, 2 economic dailies, 3 tabloid newspapers, 4 terrestrial broadcasting, 5 24-h news channels, 6 news agencies, 7 online-only news, 8 others).

The highest intensity of news abuse was found in news agencies (70.65%) and 24-h news channels (65.93%) for soft news. Similarly, 24-h news channels (73.84%), terrestrial broadcasting (70.23%), and online-only news (65.78%) demonstrated a relatively high intensity of news abuse for hard news. Generally, 24-h news channels and news agencies exhibited higher intensities of news abuse than did other media.

Frequency of news abuse showed that intermedia abuse (279 cases for both soft and hard news) was more frequent than intramedia abuse (76 cases for both soft and hard news). However, intramedia abuse was more intense (79.86 for soft news and 85.28% for hard news) than intermedia abuse (62.04% for soft news and 64.84% for hard news).

In the case of intramedia news abuse, news agencies (99% for soft news and 87.15% for hard news) and 24-h news channels (94.25% for soft news and 86.01% for hard news) had relatively higher abuse intensity for both soft news and hard news. Economic dailies (82.67% for soft news) and tabloid news (81.67% for soft news) recorded relatively higher intramedia abuse intensity for soft news, while online-only media (100% for hard news) and terrestrial broadcasting news (87.53% for

hard news) recorded relatively higher intramedia abuse intensity for hard news. However, in the case of intermedia news abuse, none of the news platforms recorded high abuse intensity for both hard news and soft news. News agencies (69.56%) and general daily newspapers (64.74%) had high abuse intensity for soft news, while terrestrial broadcasting (68.64%) and 24-h news channels (71.09%) recorded high abuse intensity for hard news.

## 5. Discussion and Conclusions

News industries around the world have transformed vehicles of news distribution owing to the internet in past decades. The South Korean news industry has also changed significantly over the past 10 years, thus decreasing major newspaper publishers' power but enabling small media companies to distribute their news using the internet [42]. Thus, the number of newly established online newspaper companies has significantly increased in the last decade. According to the Ministry of Culture and Tourism in South Korea, the number of newspapers increased from 9652 in 2008 to 19,504 in 2016 and most of the newly established newspapers were producing online news only. This means that the newspaper industry is very competitive. Generally, the competitive environment of the South Korean newspaper industry may benefit consumers because consumers have a lot of choice when selecting their favorite news content. However, the negative consequence of severe competition in the newspaper industry may have led to news abuse or clickbait journalism to draw users' attention.

The current study explored the news abuse phenomenon of online news distribution in South Korea, where *Naver* has dominated both in the news aggregation market and the search engine market. Because *Naver* provides real-time ranking in terms of search keywords, news companies tend to post news related to highly ranked keywords. That is why news abuse is prevalent in South Korea. "News abuse" is very similar to "news cloning," which refers to the practice by "NGOs of providing news that mimics or matches the requirements of mainstream news agendas" [43]. A big difference may be the news provider: NGOs for news cloning vs. online media for news abuse.

Although several scholars have defined news abuse as very similar or same news to the original news article, no previous studies have defined news abuse clearly. In this study, we focused on news articles with 50% + similarity to the original news articles and judged that 116 articles (19.05%) on the Choi pet dog scandal and 219 articles (15.62%) on the Las Vegas shooting were news abuse articles.

Click-bait journalism and news abuse occurs not only in South Korea but also around the world with some variations. As Bakker [44] notes, the online news business has not contributed to the production of high-quality journalism and accelerated the production of "articles on subjects that are expected to end up high in searches and generate traffic to the websites catered" by news aggregators (p. 634). These phenomena seem to be more salient in South Korea because of high dependency on online media and weak loyalty to legacy media. Predominance by news aggregators in the field of online news distribution may be a unique trait in South Korea. Furthermore, news plagiarism is prevalent and copyright laws are not working in South Korea. Pressure to decrease costs and increase efficiency certainly did not lead to quality journalism. Instead, it may lead journalists to sensationalizing news and reproduce web-based information [34].

The study found that the frequency of news stories per hour was closely associated with both the public's attention cycle concerning the issues and users' news consumption patterns. That is, the number of news postings dramatically increased during the first three hours following the initial news release. As news gains the public's attention, much related news coverage pours in within the first three hours. Then, the rate of news coverage decreases. The lowest frequency of news release was found from 3 a.m. to 6 a.m. In the morning, news coverage began to rise again. The second peak of news release occurred between noon and 3 p.m. in cases of both hard news and soft news.

The patterns of news abuse in terms of numbers were somewhat different for soft news and hard news. In the case of soft news, about 56% of total news abuse occurred within the first six hours following the initial news release, and then the percentage of news abuse decreased. In the case of hard news, however, news abusing phenomena occurred over a long period of time. That is, about

21.9% of total news abuse occurred within the first six hours, but three peaks of news abuse (more than 20% of total news abuse) were observed between six hours of the initial news release and the next morning. That is, there were four peaks that included more than 20% of total news abuse after the initial news release.

The highest news abuse was found around 6 a.m. to noon, recorded as 29.7%. Then, 22.8% of the total abuse was found around noon to 6 p.m. News abuse ups and downs are mainly related to two factors: First, the public's attention to news is high after the initial news release; then, news abuse wanes as the public's interest wears off. The second rise in news abuse occurred around 9 a.m. to 3 p.m., when online users leisurely read news stories after lunch. These patterns were similar for hard news and soft news.

Indeed, the public's attention to news has a cycle [45]. After an incident occurs, the public may have an intense interest in novelty and negativity. However, the public's interest easily decays and evaporates with the passage of time. Therefore, the news media attempts to provide more news related to the initial news release within the six hours before the public's attention dissipates. In this vein, ranking news in *Naver* becomes a barometer to gauge what the public wants to know, which is similar to Google Trends. News media that want to attract the public's clicks tend to copy news related to the agendas in *Naver's* ranking news.

Even though we are living with the 24/7 immediacy of cable news and online news, people are not free to access news at every moment [46]. Specifically, people in school or at work have limited access to news media. As people consume news during a commute, before starting work, and during their lunch break, news abusing contents poured out at specific times. In this vein, news abuse as a side-effect of news aggregation is a tactic to attract the public's interest to certain issues. As this study found, news abuse occurred mainly in the first six hours following the initial news release and during free time when people aimlessly surf internet news.

The news abuse phenomenon varies according to the news media platform. Daily newspapers and economic daily newspapers turned out to be the main players in news abuse. It is interesting to discover that economic dailies are major players in news abuse. In fact, most online news readers may not be interested in economic and financial news. Thus, economic dailies had limitations and the need to enlarge their online audiences. In order to attract the general public's attention, they chose to add certain topics such as Choi's pet scandal and the Las Vegas shooting, which seem to be irrelevant to economic and financial news.

In terms of frequency, the percentage of intermedia news abuse was relatively high. Specifically, news media platforms' news abuse of foreign news media and news agencies was high at around 31.76% for reporting the Las Vegas shooting, for example. At the same time, 24-h news channels had the highest abuse intensity (73.84%), followed by terrestrial broadcasting (70.23%) and news agencies (67.80%). This may reflect the journalists' eagerness to provide copious news and information about the Las Vegas shooting to the public without considering bad, news-abusing behavior. It seemed that journalists kept copying other news companies' news to save cost and time, thus accelerating intermedia news abuse intensity.

The highest intramedia news abuse frequency (54.55%) was found among news agencies' articles, which may relate to the news production process. Similarly, news agencies (70.65 for soft news and 67.80% for hard news) and 24-h news channels (65.93% for soft news and 73.84% for hard news) had relatively high abuse intensity. News agencies must update their existing news articles with every new fact, instead of distributing newly-written stories. Similarly, 24-h news channels also run news at 30-min intervals, which requires updated news each time. Thus, their intramedia news abuse was 27.27%. In soft news, the highest intramedia news abuse (42.9%) was found in tabloid media, which focused only on sensational issues to attempt to attract the attention of online users.

*Naver's* commercial success as a news aggregator has often been contrasted with the financial difficulties of traditional print newspapers in South Korea. Print newspapers produce original content, but their readerships have continued to shrink, leading to a decrease in both advertising revenue and

subscription revenue. Thus, traditional newspaper companies suffer from financial difficulties. To overcome the current crisis, the legacy news media have attempted to band together to build their own online news distribution platform without providing news to news aggregators like *Naver* and *Daum*. However, in practice, major newspaper companies have failed to build strong news cartels because Korean people are used to reading news either on *Naver* or *Daum*. Furthermore, newspaper companies are not ready technologically or financially to maintain online news platforms. Small and online-only news media that do not have off-line newspapers depend solely on either *Naver* or *Daum* to provide their news to the public. Thus, both major newspaper companies and small-sized online-only media have no choice but to provide news to either *Naver* or *Daum* to maintain their business.

News abuse is a side-effect of digital news distribution through news aggregators. In Western societies, news brand and reputation are important factors in choosing online news [47]. Thus, legacy media have invested in building and keeping their reputations offline as well as online. However, news brand may be not an issue in the era of news aggregation, because news aggregators select and display news by buying from diverse news outlets.

To some extent, news aggregators have contributed to broadening “the free marketplace of ideas” by lowering entrance barriers of the news business. However, intense competition between market participants causes news abuse or clickbait journalism. If plagiarizing or repeated re-use of the original reporting makes more money than producing original stories or investigative reports, there are no incentives for news media to produce good quality reporting. It will be another example of Gresham’s law: bad money drives out good. Moreover, news abuse itself becomes noisome and associated with media malaise for online news users, even though it may increase users’ clicks and revenues.

News media in South Korea suffers from low public trust. A recent survey showed that Greece and South Korea recorded the lowest news trust, 26% and 25% respectively, while the average level of trust in the news around the world, in general, remains relatively stable at 44% [48]. It is a very important issue both for news producers and news distributors to decrease news abuse and enhance public trust in news media. Without recovering public trust, online news users will continuously migrate to other entertainments. We therefore need to consider news abuse phenomena as a factor to erode digital news ecosystem.

Regarding the division of labor in a healthy news ecosystem, both legacy media and news aggregators may cooperate with each other by honestly fulfilling their roles in producing and distributing news. Coevolution may occur in intermedia relationships if legacy media and news aggregators affect each other’s evolution [49]. For this coevolution of news media, the first step is to decrease news abuse as it negatively impacts public trust. Therefore, news media and news aggregators need to cooperate with each other to survive in the era of online journalism.

The study may have some limitations. First, the determination of articles that include news abuse may be a debatable issue. This study used the document plagiarism index to calculate the news abuse rate after a paired comparison of the content duplication of news articles. We consider 50% + of content redundancy as news abuse. However, there are other ways to judge news abuse. Thus, further elaboration is needed to set up a news abuse standard. Depending on content analysis may be another drawback of this study. Interviewing online news producers will provide new insights into understanding why news abuse is prevalent in South Korea. Moreover, a study of online news users’ attitudes and reactions toward news abuse is also needed in future research because of the frequency with which people clicked on repetitive news, regardless of their complaints of news abuse. Thus, future studies must investigate why and when people consume repetitive news, and how news users and online news producers cooperate with each other to eliminate news abuse in South Korea.

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## References

1. Chiou, L.; Tucker, C. Content Aggregation by Platforms: The Case of the News Media. *J. Econ. Manag. Strateg.* **2015**, *26*, 782–805.
2. Choi, S.; Kim, J. Online news flow: Temporal/spatial exploitation and credibility. *Journalism* **2017**, *18*, 1184–1205. [[CrossRef](#)]
3. Lee, A.M.; Chyi, H.I. The rise of online news aggregators: Consumption and competition. *Int. J. Media Manag.* **2015**, *17*, 3–24. [[CrossRef](#)]
4. Miron, E.-T.; Purcarea, A.A.; Negoita, O.D. Modelling Perceived Risks Associated to the Entry of Complementors' in Platform Enterprises: A Case Study. *Sustainability* **2018**, *10*, 3272. [[CrossRef](#)]
5. Oh, S.; Nam, Y. *Internet User Survey 2014*; Korea Press Foundation: Seoul, Korea, 2014; pp. 106–107, ISBN 978-89-5711-374-5.
6. Paek, B. The younger prefers Naver, the older uses Daum. *ZDNet South Korea*, 5 March 2018.
7. Chen, Y.; Conroy, N.J.; Rubin, V.L. Misleading Online Content. In Proceedings of the 2015 ACM on Workshop on Multimodal Deception Detection, Seattle, WA, USA, 13 November 2015; pp. 15–19, ISBN 978-1-4503-3987-2.
8. Barthel, M. Newspapers: Fact Sheet. *Pew Research Center*, 13 June 2018.
9. Reinemann, C.; Stanyer, J.; Scherr, S.; Legnante, G. Hard and soft news: A review of concepts, operationalizations and key findings. *Journalism* **2012**, *13*, 221–239. [[CrossRef](#)]
10. O'Neil, L. The year we broke the internet. *Esquire*, 23 December 2013.
11. Bell, S.; Morse, S. Sustainability Indicators Past and Present: What Next? *Sustainability* **2018**, *10*, 1688. [[CrossRef](#)]
12. Pichard, V. Can government support the press? Historicizing and internationalizing a policy approach to the journalism crisis. *Commun. Rev.* **2011**, *14*, 73–95.
13. Cho, Y.; Yoo, S.; Han, Y. An exploratory study on the relation of the abusing of news articles and the portal site's supply system and supplier's status. *Korean J. Commun. Stud.* **2015**, *59*, 314–338.
14. Shoemaker, P.J.; Vos, T. *Gatekeeping Theory*; Routledge: New York, NY, USA, 2009; ISBN 978-11-3586-060-8.
15. Boczkowski, P.J.; Mitchelstein, E.; Walter, M. Convergence across divergence: Understanding the gap in the online news choices of journalists and consumers in Western Europe and Latin America. *Commun. Res.* **2011**, *38*, 376–396. [[CrossRef](#)]
16. Tewksbury, D. What do Americans really want to know? Tracking the behavior of news readers on the internet. *J. Commun.* **2003**, *53*, 694–710.
17. Brums, A. *Gatewatching: Collaborative Online News Production*; Peter Lang: New York, NY, USA, 2005.
18. Chaffee, S.H.; Metzger, M.J. The end of mass communication? *Mass Commun. Soc.* **2001**, *4*, 365–379. [[CrossRef](#)]
19. Lee, A.M.; Lewis, S.C.; Powers, M. Audience clicks and news placement: A study of time-lagged influence in online journalism. *Commun. Res.* **2012**, *41*, 505–530. [[CrossRef](#)]
20. Thurman, N. Making 'The Daily Me': Technology, economics and habit in the mainstream assimilation of personalized news. *Journalism* **2011**, *12*, 395–415. [[CrossRef](#)]
21. Kormelink, T.G.; Meijer, I.C. What clicks actually mean: Exploring digital news user practices. *Journalism* **2018**, *19*, 668–683. [[CrossRef](#)] [[PubMed](#)]
22. Rony, M.M.U.; Hassan, N.; Yousuf, M. Diving Deep into Clickbaits: Who use them to what extents in which topics with what effects? In Proceedings of the 2017 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, Sydney, Australia, 31 July–3 August 2017; pp. 232–239.
23. Cherubini, F.; Nielsen, R.K. Editorial Analytics: How News Media Are Developing and Using Audience Data and Metrics. Digital News Project 2016. Reuters Institute for the Study of Journalism. 2016. Available online: <http://www.digitalnewsreport.org/publications/2016/editorial-analytics-2016> (accessed on 9 June 2018).
24. Tandoc, E.C., Jr.; Thomas, R.J. The ethics of web analytics: Implications of using audience metrics in news construction. *Digit. Journal.* **2015**, *3*, 243–258. [[CrossRef](#)]
25. Murtha, J. What it's like to get paid for clicks. *Columbia Journalism Review*, 13 June 2015. Available online: [https://www.cjr.org/analysis/the\\_mission\\_sounds\\_simple\\_pay.php](https://www.cjr.org/analysis/the_mission_sounds_simple_pay.php) (accessed on 11 June 2018).

26. Palau-Sampio, D. Reference press metamorphosis in the digital context: CLICKBAIT and tabloid strategies in Elpais. com. *Commun. Soc.* **2016**, *29*, 63–79. [[CrossRef](#)]
27. Chen, Y.; Conroy, N.J.; Rubin, V.L. News in an online world: The need for an Automatic crap detector. *Proc. Assoc. Inf. Sci. Technol.* **2015**, *52*, 1–4. [[CrossRef](#)]
28. Lary, D.J.; Nikitkov, A.; Stone, D.; Nikitkov, A. Which Machine-Learning Models Best Predict Online Auction Seller Deception Risk. American Accounting Association AAA Strategic and Emerging Technologies 2010. Available online: <http://davidlary.info/wp-content/uploads/2012/08/2010-AAA-Strategic-and-Emerging-Technologies.pdf> (accessed on 12 June 2018).
29. Reuters Institutes. *Digital News Report 2016*; Oxford University Press: Oxford, UK, 2016.
30. Patterson, T.E. *Doing Well and Doing Good: How Soft News Are Shrinking the News Audience and Weakening Democracy-And What News Outlets Can Do About It*; Harvard University Press: Cambridge, MA, USA, 2000.
31. Tenenboim, O.; Cohen, A.A. What prompts users to click and comment: A longitudinal study of online news. *Journalism* **2015**, *16*, 198–217. [[CrossRef](#)]
32. McCombes, M.; Lopez-Escobar, E.; Llamas, J.P. Setting the agenda of attributes in the 1996 Spanish general election. *J. Commun.* **2000**, *50*, 77–92. [[CrossRef](#)]
33. McCombs, M.; Valenzuela, S. Agenda setting theory: The frontier research questions. In *The Oxford Handbook of Political Communication (ch. 30)*; Kenski, K., Jamieson, K.H., Eds.; Oxford University Press: New York, NY, USA, 2014.
34. Klinenberg, E. Convergence: News production in a digital age. *Ann. Am. Acad. Political Soc. Sci.* **2005**, *597*, 48–64. [[CrossRef](#)]
35. Kim, J. Study of Portal Real Time Queries Services Triggered Article Abusing, and Improvement of Article Abusing. Master's Thesis, School of Science Journalism, Kaist, Korea, 2016.
36. Pew Research Center. State of the News Media 2016. June 2016. Available online: <https://assets.pewresearch.org/wp-content/uploads/sites/13/2016/06/30143308/state-of-the-news-media-report-2016-final.pdf> (accessed on 9 December 2018).
37. Vargo, C.J.; Guo, L. Networks, Big Data, and Intermedia Agenda Setting: An analysis of traditional, partisan, and emerging online US news. *Journal. Mass Commun. Q.* **2017**, *94*, 1031–1055. [[CrossRef](#)]
38. Choi, S.; Kim, J. *News Abusing and Its Improvement Plans in an Online Environment*; Korea Press Foundation: Seoul, Korea, 2014.
39. Krackhardt, D.; Stern, R.N. Informal networks and organizational crises: An experimental simulation. *Soc. Psychol. Q.* **1988**, *51*, 123–140. [[CrossRef](#)]
40. Fershtman, M.; Chen, M. The segregation matrix: A new index for measuring sociometric segregation. *Megamot* **1993**, *34*, 563–581.
41. Wasserman, S.; Faust, K. *Social Network Analysis: Methods and Applications*; Cambridge University Press: Cambridge, UK, 1994; pp. 28–66.
42. Lee, H. Analysis of News Abusing in News Portal Service. Ph.D. Thesis, KonKuk University, Seoul, Korea, 2015.
43. Fenton, N. *Cloning the News: NGOs, New Media and the News*; Nieman Journalism Lab, Harvard University: Cambridge, MA, USA, 2009.
44. Bakker, P. Aggregation, content farms and Huffinization: The rise of low-pay and no-pay journalism. *Journal. Pract.* **2012**, *6*, 627–637. [[CrossRef](#)]
45. Downs, A. Up and down with ecology-the issue-attention cycle. *Public Interest* **1972**, *28*, 38–50.
46. Serazio, M. Managing the digital news cyclone: Power, participation, and political production strategies. *Int. J. Commun.* **2015**, *9*, 1907–1925.
47. Clemons, E.K.; Gu, B.; Lang, K.R. Newly vulnerable markets in an age of pure information products: An analysis of online music and online news. *J. Manag. Inf. Syst.* **2002**, *19*, 17–41.
48. Reuters Institutes. *Digital News Report 2018*; Oxford University Press: Oxford, UK, 2018.
49. Scolari, C.A. Media ecology: Exploring the metaphor to expand the theory. *Commun. Theory* **2012**, *22*, 204–225. [[CrossRef](#)]

