The media agenda-setting on Indonesian forest fires: Content analysis study on three Indonesia online news media

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Abstract. The news regarding Indonesian forest fire has become an international concern regarding its huge catastrophe. Indonesian citizens share the suffering of the disaster and their experience through the news. However, Indonesian media reports the news of forest fire in a different way related to their respective media agendas and the adoption of Industry 5.0 cultures. The study of news construction of mass media on forest fires is crucial because it relates to government policymaking. This research aims to determine the media agenda in constructing forest fires that occur in Indonesia related to the development of Industry 5.0. It applies a mixed-method of qualitative content analysis of published news during October 2019-January 2020 and newsroom ethnography of three national online news media. Media agenda-setting factors observed in univariate analysis are news focus, news sources, forest fire-prevention, the impact of a forest fire, and the event of a forest fire. This paper is a working paper and has not yet concluded the results because it needs further investigation on newsroom ethnography. However, preliminary findings indicate that there are different agenda-setting for each media studied.

Keywords: agenda-setting, digital journalism, forest fire, Indonesia, media Industry 5.0, sustainability

1. Introduction

The news regarding Indonesian forest fire has become an international concern regarding its huge catastrophic. Forest fires that occurred in Indonesian territory throughout 2019 are one of the biggest fires in the world. The National Disaster Management (BNPB) recorded at least 857 thousand hectares of land burned from January to October 2019 [1]. Forest fires have occurred in several provinces, including South Sumatra, South Kalimantan, Jambi, Central Kalimantan, West Kalimantan, Riau, East Nusa Tenggara, and Banten. BNPB estimates that the loss suffered from this incident reached IDR 66.3 trillion. A large number of burnt areas affect many Indonesians. Even so, most Indonesians feel the impact of the fire through the news in the mass media.

Media agenda-setting on an issue is influenced by journalism culture applied in a particular country or region. Floss and Marcinkowski (2008) say that political culture is a dominant factor in the framing of news coverage [2]. Along with Floss and Marcinkowski, Prawira (2019) stated that political factors in news media organizations have an important role as guidelines for media workers in determining
news framing [3].

Studies show that news is used to support certain parties [4, 5, 6, 7, 8]. It supports that news is operationalized by the media organization using news framing and agenda-setting in stories production and dissemination. However, other researchers also show dynamic framing studies due to changes in society value [9].

The development of Industry 5.0 has the potential to provide better benefits in serving the community. In the media industry, technological development of Industry 5.0 is adopted to gain sustainability by applying Search Engine Optimization (SEO) known as a sophisticated artificial intelligence (AI) to investigate user behavior through a search engine such as Google and Yahoo. Prawira and Rizkiansyah (2018) state that the online news media companies in Indonesia have implemented SEO in the media agenda-setting in the 2017 governor's general election [10].

Researchers' opinions on forest fires news in media influence government policy in handling them [11, 12]. According to Ekayani et al. (2015), the selection of news sources in reporting forest fires relates to the agenda-setting of news media and the government's agenda-setting in protecting the environment, especially forest preservation [12].

The media plays an essential role in the distribution of information on ecological issues such as forest fires and other environmental disasters. Forest fires in Indonesia have become common that causes immense material and immaterial losses. Forest fires have occurred in 1997, 1998, and 2015. The World Bank recorded the loss of forest fires in Indonesia in 2019, reaching IDR 75 Trillion [1]. News on forest fire can influence the government in making policy to handle forest fire.

Scholars understand that news production in Indonesian media is driven by economic interests [13, 14]. Economic motivation has implications for news prioritizing quantity or audience rating compared to the news quality. Media companies adopt digital technology development to have sustainability. This study aims to enrich the digital journalism study in Indonesia related to the development of Industry 5.0 with the study case of Indonesian forest fire news in 2019. The use of this study also provides literacy for the public regarding news operations related to the development of digital journalism and input to journalists in the production process related to reporting forest fires. The reporting of forest fires is expected to be able to encourage better policies in handling ecological disasters. This study intends to analyze government policy related to forest fire by studying the news. This study asks what the media agenda-setting is during a forest fire in 2019 in Indonesia.

2. Literature review

2.1. Agenda setting theory and content analysis

Media scholars have developed new theories related to digital developments such as the theory of voice, actor's role theory, and normative and holistic perspective. However, theories such as agenda-setting, priming, and framing still occupy important positions in media studies [15]. These theories are still considered relevant and capable of displaying the characteristics of journalism on how to organize, interpret, and construct reality. Specifically, researchers such as Shaw (2007) and Tapsell (2015) see the importance of agenda-setting theory in media development in a new democratic country [4, 13].

The media selects, produces, and interprets reality in society. The media selects information that they think is important to be reported. In compiling agenda-setting, the media uses the depth of coverage with negative and positive news construction and uses the frequency of reporting [4, 6]. McCombs and Shaw's classic study (1972) shows that editors, newsroom staff, and broadcasters play an important role in constructing political reality [6].

Media agenda-setting means that the media influence the public to make them think about what the media think. McNair (2003) says that the news agenda shapes the public and political agendas [16]. Although the news agenda is not the only factor and may not be the main factor in shaping the public agenda, studies show that there are similarities between the media and public agendas. Media institutions function as interpretive tools in analysis, assessment, and comment in addition to their function as cognitive functions [17, 18, 19]. The opinions of these researchers lead to the view that the
media function as political actors. McNair (2011) argues that the media acts as a political actor in society through different types of products, such as straight news, editorial content, and political interviews [19].

2.2. Industry 5.0 in digital journalism

Industry 5.0 is a concept emphasizing the development of industry 4.0 to increase the potential of the individual relationship with technology to support people's life quality development through a super-smart society [20]. Similarly, Hayashi says that community 5.0 aims to improve intellectual property development, the Internet of Things (IoT) system, big data analysis technology, artificial intelligence (AI), and so on [21].

The media industry has moved towards Industry 5.0 by implementing automated story production techniques in recent years with major newsrooms, such as the Associated Press (AP), Reuters, and Forbes, in producing thousands of news per month based [22]. Studies show that journalism is familiar with the development of AI in news production, leading to the concept of "computational journalism" [23]. The use of SEO utilizing computer technology and AI has formed a new culture in the newsroom. Media companies try to meet the audience's needs following framework society 5.0 with the help of search engines such as Google, Yahoo, and Bing. SEO benefits media companies in identifying user preferences to gain economic sustainability. However, the practice in meeting economic profit is often contrary to the function of the social responsibility of media.

McQuail (2011) states that there are management, technical, and media professionals in a media organization [24]. In producing news, two main factors influence media organizations: economic pressure and political pressure. Economic pressures include competitors, news/information agents, advertisers, owners, and trade unions. Whereas social and political pressure includes legal/political control, pressure groups, and other social institutions. Henderson (2017) mentions three things in influencing newsrooms in producing news: social, political, and economic [25].

Meanwhile, according to Shoemaker and Reese (1996), five factors influence the mass media contents: individual or individual-level factors, factors or levels of media routines, media organization factors or media organization levels, extra media factors or extra media levels, and ideological factor [26]. The factor of media organization or level of media organization is related to the organizational structure in this case newsroom or media company, which can also influence the contents of mass media. Journalists, editors-in-chief are only a part of the people in a media company, media organization, including the newsroom or editorial room, all of which may influence the media contents.

2.3. Forest fire in Indonesia

Indonesian forest fire is a result of many factors. However, it is commonly known to be related to illegal burning. The phenomenon of illegal burning causes a sustainable impact on several countries in North American, South European, Australian, and Indonesia.

Apart from having an impact on economic and social factors, illegal burning also leads to climate change. Not just increasing the earth's temperature, climate change is also said to provide a reciprocal effect in the form of increased frequency, intensity, and expansion of the fire area [27, 28]. Few studies also show that efforts to control illegal burning cannot easily stop the spread of fire [29, 30].

In Indonesia, illegal fires were massive and deadly in 1997. Recorded as one of the biggest forest fires in history, this disaster has killed hundreds of lives and burned millions of hectares of land. It also increased the risk of extinction of orangutan species and spread smoke and fog to Southeast Asia for months, which endangered the health of the respiratory tract of the community. The case of illegal burning in Indonesia is one of many events producing so many adverse impacts on various aspects of human life. To generalize, illegal burning for the environment is divided into several types. According to Paveglio et al. (2015), three types of consequences can be caused by illegal burning: loss of life, damage to property, and economic loss; disruption of social processes and functions; and the effects
on the mindset of its victims [31].

3. Research method
This study adopts a qualitative study to understand the development of Industry 5.0 in digital journalism related to forest fires reports. It focuses on media discourse by analyzing the content analysis of Indonesian national online news media: Kompas.com, liputan6.com, and detik.com.

The research data is obtained from the online national news reporting media in Indonesia from October 2019 to January 2020. By following the Slonim sample [32], the news analyzed in this study totaled 291 items. This study uses a mix-method analysis of news content analysis and an ethnographical study of three newsrooms of Indonesian online news media.

4. Results and discussion
This study applies a univariate analysis of news focus, news sources, prevention, impact, and event of the forest fire. Preliminary data shows the different focus of online news media in constructing news about forest fires. The government is the primary source for news construction, while the media shows low attention to forest fire prevention efforts.

4.1. Analysis of Kompas.com on forest fires
The news analyzed from kompas.com totaled 102 news stories regarding forest fires in Indonesia. There is 0.09% of the total news that has been observed to focus on forest fire prevention. This study finds that 72% of news stories focus on the event forest fires, including fire-fighting stories and the impact of a forest fire. In comparison, the remaining 21% of the news focuses on restoration or land rehabilitation and providing law enforcement to those causing the forest fire.

There are differences in the primary sources used by Kompas.com. A total of 44% of the news come from the government, both the central and regional governments. Police and military officers are also included as government representation. Meanwhile, the rest sources are from people's representatives, politicians, environmental activists, and environmental observers. Some news stories do not include people as news sources but based on research documentation, such as legal aspects, comparison of the conditions of forest fires in other countries, or other research sources.

There are 10% of news items related to forest fires prevention published on Kompas.com, none of which shows the government's role in preventing forest fires. Efforts to prevent forest fires published in online media include the reporting of forest fire prevention by the community, environmental activists, or the views of some academics or environmental observers on how to prevent forest fires from occurring in the future. The lack of news stories that raise forest fire prevention shows that Kompas.com does not consider forest prevention as an interesting issue raised and sought by readers. The absence of news titles that raise the forest prevention efforts undertaken by the government also shows that there is not too much attention from the government, both at the central and regional levels, so that cases of forest fires do not happen again.

For 70% of news on Kompas.com regarding the event, the suppression efforts and the impact of forest fires are the highest compared to prevention and forest rehabilitation news. These findings show that the forest fire incident is an interesting issue, especially since, in this section, there are many opinions and accusations between the government and environmental activists or academics. In this section, there is a lot of information regarding various facts relating to the loss of life, environment, and socio-economy caused by the spread of the forest fire incident. More specifically, the impact of forest fires occurred becomes the most news presented by Kompas.com. Alternately from various aspects, it shows how the extent of the effects of forest fires that happen, both its impact on Indonesia's people and neighboring countries. Kompas.com produces news about how Singaporean and Malaysian are affected by Indonesia's forest fires. Kompas.com also focuses on writing the forest fire impact. This study finds that there are 36% of the stories focusing on forest fire impact. The article on the effects of the forest fire is attractive to many readers because it is considered a discussion that can be followed by various groups, including politicians who often criticize this government policy. Kompas.com directs their
agenda-setting to discuss the impact of the widespread forest fire.

A total of 21% of news written by Kompas.com focus on efforts after forest fires or land rehabilitation efforts after the forest destruction occurred. Some of its contents are influenced by the existence of government policies to address environmental improvement after a forest fire. On the contrary, there are also reports criticizing the policies or actions taken by the government after the forest fires. The data shows that Kompas.com focus on rehabilitation problem following the forest fire rather than the event of the forest fire.

4.2. Analysis of Liputan6.com on forest fires

News samples observed on Liputan6.com are 25 news titles about forest fires in Indonesia. From the total amount of news observed, 8% of the headlines are focus on efforts to prevent forest fires. The main focus of liputan6.com is forest fire-related events and its impact on the disaster. There are 21% of the total news focused on recovery or rehabilitation after the forest fires.

The main news source used is 56% representing the government, both from the central and regional governments, as well as the national police and the military. Almost half of the published news on Liputan6.com mainly focuses on government policies or actions regarding forest fires. In comparison, the remaining 44% news article is from academics, environmental activists, and representatives of the people and politicians. Most of them are responding to what the government has done or decided on the forest fires issue.

There are 8% of news stories that focus on the prevention of forest fire. The small number of articles relating to forest fires prevention shows that issues related to how environmental management should be carried out as a manifestation of anticipation of forest fires, are not only unattractive to the government but are also not raised by the mass media. There is a lack of issues in preserving the forest.

The issue that has been raised by the mass media, including Liputan6.com about forest fires, is how the forest fire incident occurred. How great the forest fire incident occurred and the damage and losses caused by the forest fire. The contents of the news in this section are also filled with various policies taken by the government to deal with the forest fire event and, of course, criticism from various sources from environmental activists and academics, about the government's policy towards handling the forest fire case. The polemic and the contradiction of the handling of forest fire case still seems to be an issue raised by the mass media, including Liputan6.com.

The pros and cons of handling forest fires carried out by the government are related to the impacts caused by the widespread of forest fires. There are 24% of news that focuses on the effects of the forest fire. In addition to directly threatening lives, this extensive case of forest fire has caused various losses in various sectors, including the economic sector. Various impacts in multiple fields are contained in Liputan6.com, in quite a large number of stories. It shows that the impact of forest fires is not merely an environmental issue, so that it becomes interesting for many readers and agenda-setting for Liputan6.com. The last issue related to how the environmental recovery is after the forest fires, though not too many headlines, is still far more than the issues related to forest fire prevention. In this section, the coverage is more dominated by how the government plans to restore land functions after a forest fire. The environmental rehabilitation program for former forest fires has also been an issue sounded by environmental activists and academics and raised by the mass media. Including Liputan6.com, the different opinions between government policies and ecological activists related to environmental rehabilitation after forest fires become an interesting issue for media audiences.

4.3. Analysis of detik.com on Forest Fires

Detik.com is highly productive in producing news on forest fire from October 2019 to March 2020, totaling 165 published news. Detik.com focuses on reporting the actual occurrence of forest fires such as the description of the fire event, the extent of the burned land, and the suppression action. There is 48% of the total news reported of the forest fires. The impact of the forest fire in terms of environmental, legal, and social is the second focus of detik.com reports. Meanwhile, the primary sources of news utilized in news production are authorities such as the police, central, and regional government at 24%
of the total published news. There are lacks of news stories which display a scientist as the news source. This finding is in line with the research result of Ekayani et al. [12], even though the scientists may provide better news content to influence the government in setting forest fire policy.

Meanwhile, the three media use government sources as the primary source in news construction. Sources such as the police and Indonesian President Joko Widodo become the most mentioned names because the media focuses on the forest fire event, and media need authority to legitimize the news. Forest fires also coincided in Malaysia and Australia during this period. Detik.com also reports a unique phenomenon during forest fires attracting the readers, such as news about the myth of the weeping tree and the fate of leopards and orangutans due to forest fires.

5. Conclusion
This research has not yet concluded the data findings and discussion because it continues to three ethnographical studies of online news media newsroom. The result of the content analysis will be triangulated with ethnographical data from semi-structured interviews of Indonesia online news media personnel.

Acknowledgements
This work is supported by Research and Technology Transfer Office, Bina Nusantara University, as a part of Bina Nusantara University's International Research Grant entitled Media and Indonesian Forest Fire with contract number: No.026/VR.RTT/IV/2020 and contract date: 6 April 2020.

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