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# Exploring Report Tendencies of Korean Media on Social Inequality and Unfairness during the COVID-19 Period: *A Semantic Network Analysis of Newspaper Articles*

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**Abstract**

*This study aims to explore the current status of social inequality and unfairness issues in Korea to which the media devoted attention during the COVID-19 pandemic. We collected 2,069 articles published by 49 media outlets in Korea between January 20, 2020 and November 24, 2020 that satisfied the conditions of "COVID-19 (AND) Inequality (OR) Unfair" and conducted keyword frequency and centrality analysis. We also performed semantic network analysis on 64 main keywords. Semantic network analysis was concurrently conducted with CONCOR analysis for a clear identification of the detailed issues. According to this analysis, the main issues were classified into five types, most of which were related to economic inequality and unfairness. Through this method, we identified issues related to inequality and unfairness in Korean society. We found that news reports focused on the economic sector disprove the notion that there is a relative lack of interest in new types of social inequality.*

**Keywords:** COVID-19, inequality, unfairness, semantic network analysis, CONCOR

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## Introduction

COVID-19 is a global pandemic that has caused massive casualties and economic damage in many countries. Under these circumstances, governments strive to protect the lives and safety of their people and make efforts to respond to and recover from the pandemic through various policy initiatives. However, as shown by the continuing growth of infections in Korea, various levels of small-scale infections continue. The average number of confirmed COVID-19 cases per day in Korea reached more than 400 by January 2021, thus constituting a third wave of the pandemic.

In modern society, risk produces *unequal* damage based on its tendencies toward uncertainty, intensification, and complexity (Chae et al. 2018, 38–42). Disasters that occur indiscriminately and the damage caused by them interact with structures of social and economic inequality, revealing inequalities rooted in income, class, group, and region. Examples of such inequalities include the controversy over screening payments to the beneficiaries of emergency disaster assistance, the decision whether to provide support to those restricted from working due to social distancing and orders to ban gatherings, and educational inequalities among infants and adolescents. This risk from disease leads to various structural inequalities not only in health but throughout society, especially and repeatedly for socially vulnerable subjects.

Risk levels are defined and interpreted differently due to different cultural biases, which consequently affect how we respond to them (Douglas and Wildavsky 1983, 194–195). In other words, the same external pressure can emerge at different levels of risk because it is interpreted not only objectively but also in a cultural context—the subjective world of human beings experiencing it. In this regard, Mutter (2015, 158–159) points out in his book, *The Disaster Profiteers*, how natural disasters occur regardless of differences between rich and poor due to natural uncertainty; however, inequality occurs due to the actions of a small number of powerful people and politicians in the course of post-disaster reconstruction.

In other words, inequality is often born in the process of overcoming disaster. In the face of high-risk uncertainty, Korean society has chosen a

state-centered response by excluding victims and instead forming a closed decision-making structure of government officials and experts (Chae et al. 2018, 39–42). However, this approach to disaster management has revealed that governments are not the sole control towers for disaster management, and that it is difficult to realize the common good when strong central control and closed-door decision-making precludes public participation (Chae et al. 2018, 43–44). Therefore, disaster management at this point needs to be transformed into "improving social responsiveness and social resilience to disasters by respecting and utilizing scattered social knowledge and experiences as valuable social assets" (Y. Lee 2014, 76).

In disaster situations, the media can highlight two semantic actions in the context of social distress (J. Park 2015, 102–103). First, the media can convey the pain and suffering caused by various political and social factors during disasters, creating a process of *dialogue* that consists of cultural representations, values, or collective memories being shared by all members of society. Second, as the process of mediating through the media becomes more common, problems arising from the process of change can emerge, creating opportunities to form a specific theoretical foundation. As such, the media plays a pivotal role in contributing to the exchanges of citizen opinions and their participation in major issues in society beyond the role of information provision in disaster situations (J. Lee 2019, 65).

Taken together, disasters can reveal latent social problems, yielding clues about how to solve these problems and presenting conscious, actionable opportunities to prepare for the same or similar disaster situations in the future. And it is the news that provides clues to the practice of refocusing on the common interest in these disaster situations (Choi et al. 2018, 111). Based on these considerations, this study aims to identify the current status of social inequality and unfairness issues addressed by Korean news sources during the COVID-19 pandemic and to discuss the role of the media in providing information in response to social disasters.

Specifically, we explore and categorize the issues of *inequality* and *unfairness* that were discussed in the news during the government's response process from January 20, 2020, when the COVID-19 outbreak began in Korea, to November 24, 2020. In addition, we would like to discuss the

current status of inequality and unfairness issues that the media paid attention to and the role the media should play in establishing post-COVID policies. To this end, we searched the news archive site BIG KINDS created by the Korea Press Foundation to retrieve articles using the search query: "COVID-19 (AND) Inequality (OR) Unfair." Then, in these articles, we identified analytical words through text ranking and mathematical formulas, and structured detailed issues of inequality and unfairness through CONCOR analysis. Finally, we constructed a density matrix between each detailed issue to identify the relations between each issue and examine the overall context of the issues.

## Literature Review

### *COVID-19 and Social Inequalities*

Equality is a classification-level concept that can be maintained when multiple groups share at least one attribute and have the attribute at the same level (H. Kim 1989, 185). But society is not equal. Resources are limited, and in the process of allocating them, unequal outcomes occur depending on individual efforts, activity levels, and income (H. Kim 1989, 188). Nevertheless, if these inequalities are recognized as a result of fair allocation, people accept them (Trump 2020, 47).

Recently, inequality in the economic sector has increased significantly as a result of the COVID-19 pandemic. The economic shocks associated with COVID-19 have been caused by poor containment and severe declines in economic activity in many sectors of the economy. These effects have been amplified through interaction with many preexisting inequalities based on gender, age, region, and income level that are global in nature (Blundell et al. 2020, 313). Unfortunately, this economic inequality was exacerbated during the pandemic by the poorer housing conditions and larger number of jobs that could not be done from home among lower-income households compared to median-income households (Ali et al. 2020, 415; Waller et al. 2020, 244).

South Korea is actively inspecting and monitoring confirmed COVID-19 cases as part of its response, resulting in a relatively small percentage of confirmed cases compared to other countries. In addition, two emergency disaster assistance funds were paid out in response to economic difficulties, especially to assist confirmed cases. An effective budgetary response to epidemics is important in two respects (B. Kim 2020, 945). First, urgent spending on quarantine procedures is an important way of controlling the spread of infectious diseases. Second, the economic crisis caused by the pandemic can be overcome with appropriate government spending. The review period for the emergency disaster aid paid out in Korea is up to 14 days, in contrast to the more than 90 days it took for other budget measures to pass in Korea (B. Kim 2020, 940). Of course, the rapid execution of the additional funds has raised confidence in the government, and there has been no social panic or instances of hoarding as found in other countries.

Nevertheless, controversy persists over the selection process for the beneficiaries and the amounts allotted, as they were not approved by the public, even if the efficiency of the use of funds excludes discussions on national debt growth or fiscal soundness. It is not clear how effective cash support to the entire nation is in protecting groups affected by economic difficulties, and those affected may find such support insufficient (No 2020, 76; Jin and Lee 2020, 1624). On one hand, it is argued that impartial experts should be shielded from public pressure to allow them to make reasonable choices about the efficient allocation of resources (Kuran and Sunstein 1999, 737). However, a support policy finalized by experts or politicians may result in low-income families having difficulty accessing complex systems and miss those that are not included within the government's social safety net but do actually need support (Ahmed et al. 2020, e240). As a representative example, the income data referenced by the Korean government to allocate emergency disaster support funds were based on income from 2018 or 2019, so it is difficult to properly assess the current level of damage (No 2020, 78). In addition, examples of inequality need to be looked at not only from the individual's perspective but also from a social perspective because income can be affected in rich and corporate units as well as in the lower classes (Wilkinson and Pickett 2011).

The efficient and fair allocation of resources through administrative support leads to satisfaction and trust in state and local governments (Chitwood 1974). In this process, social equity can be measured through the process of allocating support, and the distribution of resources, when determined by legitimate public decision-making processes, is considered socially equitable (Chitwood 1974, 33). However, this assessment requires a realistic understanding of the specific inequalities that citizens are experiencing.

*Semantic Network Analysis of News Coverage*

The media has become a constant of modern life in the 21st century, emerging as a new condition of empathy or compassion by mediating the fragmented social experiences of disaster victims (J. Park 2015, 102). When social disruption increases, such as in disaster situations, citizens have high demands for information and situational awareness, and the media is generally known to best meet these needs (Ball-Rokeach and DeFleur 1976; Lowrey 2004). The news, in particular, is a representative source of information that satisfies this public desire for information. The news addresses problems in various areas that affect the public while communicating complex social problems to the public in specific frames (Entman 1993, 52). Thus, understanding the salient emphasis on a particular issue will consequently help the public to better understand public opinion and policy approaches to issues. This is because the news itself shows a reality reconstructed by the interaction of various social factors based on particular perceptions of events and issues (Shoemaker 2006).

The news reconstructs and communicates various problems in society as a means of mediated communication. Silverstone (2005, 194–195) observes that it is necessary to understand how these mediated communication processes form both society and culture in that the news does not quite reflect reality but is a medium for reconstructing and communicating reality. His argument takes into account the role of providing the information needed to maintain social culture while at the same time noting that the information delivered by the news is influenced

by contextualized commitments (Silverstone 2005, 197). Specifically, news about a particular policy organizes government officials' policy ideas into frames, which are interpretive conceptual frameworks for the public formed through news producers' interactions with experts. Entman (2003, 420) also argues that the interaction between news producers and experts functions as "a key transmission point for spreading activation of frames." Therefore, understanding the news and analyzing it at the same time helps us grasp its socially relevant cultural characteristics and helps the news audience understand the political information about a particular issue and the intentions of the actors behind it (Shin 2020, 124).

With the development of agenda-setting and news-framing research in journalism, various research methods have been introduced to study these issues. Recently, research to identify the structures of agendas has been actively attempted by analyzing array logic, which finds correlations between issues and information in the news. In particular, semantic network analysis, which explores detailed issues by combining and comparing the structures of frequently used and highly relevant texts in news-oriented studies, is drawing attention. Semantic network analysis is a type of analysis that uses the concept of social network analysis. Social network analysis refers to an attempt to describe people's social behavior as the consequence of their network of relationships (Mitchell 1969, 2). From this perspective, semantic network analysis aims to analyze the complex network structures that each text consists of to uncover specific meanings in a wider context (Diesner and Carley 2005, 82).

Semantic network analysis demonstrates robust capabilities as a means of achieving the objectives of frame analysis. According to Van Gorp (2007, 72–73), the purpose of frame analysis is "to assess not so much the impact of loose elements in a text but the impact of the implicitly present cultural phenomena conveyed by all these elements as a whole and to relate them to the dynamic processes in which social reality is constructed." In other words, as noted by Entman (1993), frequent use of and emphasis on texts is needed to identify implicit intentions within an article, and semantic network analysis helps to visually identify the text's structure and meaning along with the author's perspective (Chung et al. 2020, 158–159).

On the basis of the literature review, this study presents two research questions.

> RQ1. What are the characteristics of inequality and inequality-related words in COVID-19-related news from the Korean media?
> RQ2. What is the semantic structure of inequality issues in COVID-19-related news from the local media?

## Methods

### *Analysis Target*

In this study, media reports from "BIG KINDS"—a news and big data crawling and analysis system from the Korea Press Foundation—were classified and analyzed according to keywords. BIG KINDS database provides news from 54 newspapers and broadcasters. In this work, textual analysis was limited to news from 49 media outlets. In the case of broadcasting, the volume is smaller than newspapers due to the purpose of delivering key information quickly and briefly. In addition, five broadcasters were excluded from the analysis of meanings of pure text because they provide additional information through video. For dates between January 19, 2020 and November 24, 2020, the search query, "COVID-19 (AND) Inequality (OR) Unfair" was entered. We analyzed 49 media companies, including 11 national newspapers, 28 local newspapers, eight economic newspapers, and two professional newspapers.

Since the BIG KINDS' database is a collection of articles from the websites of each press organ, we could not rule out the possibility that the same article might have appeared in each newspaper's sister publication (D. Park 2016). Among the 2,238 articles initially collected, the researchers identified and excluded articles with overlapping titles and contents. We also excluded articles on overseas subjects unrelated to domestic (Korean) inequality. After this refining process, 2,069 articles were used for the final analysis, as shown in Table 1.

**Table 1.** Composition of the News Corpus

| Type (number) | Name (number of articles in the corpus) |
|---|---|
| **National (11)** | Kyunghyang Newspaper (74), Kookmin Daily (81), Naeil Newspaper (43), Culture Daily (32), Seoul Newspaper (82), World Daily (115), Hankyoreh (42), Dong-A Daily (23), Chosun Daily (46), JoongAng Daily (75), Hankook Daily (79) |
| **Local (28)** | Gangwon Domin Daily (10), Gangwon Daily (10), Gyeonggi Daily (43), Kyongnam Domin Daily (15), Kyoungnam Newspaper (8), Kyongsang Daily (3), Gyeongin Daily (35), Gwangju Daily (3), Gwangju Maeil Neswpaper (11), Kukje Newspaper (19), Daegu Daily (4), Daejeon Daily (22), Maeil Newspaper (20), Mudeung Daily (11), Busan Daily (48), Yeongnam Daily (20), Ulsan Maeil (8), Jeonnam Daily (16), Jeonbuk Domin Daily (11), Jeonbuk Daily (14), Jemin Daily (7), Joogndo Daily (36), Joongboo Maeil (18), Joongboo Daily (37), Chungcheong Daily (16), Choogbook Daily (15), Chungcheong Today (14), Halla Daily (9) |
| **Financial (8)** | Maeil Buiness News (83), Seoul Economic (94), Money Today (156), Asia Business Daily (153), Aju Business Daily (122), Financial News (26), Korea Economy (80), Herald Economy (93) |
| **Professional (2)** | Digital Times (43), Korea IT News (44) |

*Data Collection Standards and Procedure*

BIG KINDS condenses each article in the form of a noun and provides it as an Excel file. The nouns provided by BIG KINDS are divided into "words" and "characteristic extractions." Words are the result of extracting words in all noun forms from the titles and bodies of the articles, while characterization extraction provides only the top 50 words that are relevant to the search word through a textrank algorithm. The textrank algorithm uses the form of a graph to determine the importance of a sentence or word and determines how connected it is to other words within the entire network (Mihalcea and Tarau 2004, 404). This study targeted the analysis of words generated by characterization extraction. While TF-IDF is also useful as an algorithm for extracting words from within a document, TF-IDF is more useful in short sentences, and it places a limit on the (relatively low) concurrent appearances of short bits of text (Li and Zhao 2016, 686).

The extracted words were refined using TEXTOM 4.0. TEXTOM can collect data from web and social media to leverage big data, generating text

mining and matrix data (Jun and Chung 2016; Jung and Shin 2020; Lee and Song 2020). In addition, we can perform word frequency and centrality analyses by uploading data held by researchers. In BIG KINDS, the selected word is characterized by using a texture to generate its frequency and matrix data. In this process, no separate morphemic analysis was performed; words with similar meanings were unified into one and the terms were excluded. For example, "FTC" and "Fair Trade Commission" were unified into "Fair Trade Commission" because they represent the same agency. Words that fall under a certain term include words that refer to an unspecified majority, such as the title of a politician or celebrity, the target person, and the person directly involved. This refinement resulted in 35,259 total words and 11,145 unique words.

In the next step, we selected a constant number of words out of the 11,145 unique words to be included in the analysis and to construct a semantic network. Semantic network analysis was useful for identifying sub-issues using around 100 words (Jun and Chung 2016; Jung and Shin 2020; Lee and Song 2020). To this end, we performed a two-stage screening process. In Phase 1, 4,194 words that appeared more than twice—excluding two search words ('inequality' and 'unfair') and 6,949 words that appeared only once—were selected as preliminary words for semantic network construction. The second phase used mathematical formulas. The selection criteria were proposed by Sun (1992) by modifying Donohue's (1973) formula to distinguish between words with high frequency and words with low frequency.

$$N = \frac{-1 + \sqrt{1 + 4D}}{2}$$

In the above formula, N stands for the number of words subject to analysis of semantic connections and D stands for the 4,194 unique words (excluding the two search words and 6,949 words that appeared only once). Based on the above formula, the number of words subject to analysis is 64.26, which allows the analysis to consider the top 65 most frequent words. However, the frequency of the top 65th and 67th words was equal to 40, so 64 words were

finally determined as analytical units, not including the 65th word. Targeting the top 64 words by frequency, we extracted a 1-mode matrix file in Excel format representing the frequency and the relationship between certain words and other words. Word frequency refers to a prominent utilization of certain words throughout an entire document (Jun and Chung 2016, 6). The words "degree centrality," "eigenvector centrality," and "betweenness centrality" were also calculated using UCINET. UCINET is one of the most commonly used software programs for network analysis. Degree centrality is expressed as a percentage of the maximum number of edges that can be connected by the number of edges connected to a node (word) (Freeman 1978, 221). On the other hand, if degree centrality measures the number of connections itself, eigenvector centrality places more weight on the importance of other connected nodes. Therefore, a high level of eigenvector centrality means that nodes are connected to many other nodes with high scores on their own (Bonacich 2007, 561). Betweenness centrality refers to the degree to which a node is located *between* other nodes in the network (Freeman 1978, 221). When a particular node is located at the shortest distance between one node and another node, the betweenness centrality is high.

*Semantic Network Analysis*

The most efficient way to represent a relationship of simultaneous emergence between words is to construct a network (Yang et al. 2012, 662). An important factor in semantic network analysis is to observe the meanings formed through the integrated relationships between words with high frequencies of emergence (Jun and Chung 2016, 6). Consequently, considering the connections between words classified in a particular format, we can identify a larger context of meaning. In network analysis, each word becomes a node, and the simultaneous emergent relationships between each node are represented by the edge that connects them. We utilized UCINET's Netdraw to visualize concurrent emergence relationships as a network.

It can also be used to group nodes and discover specific issues. This study performed CONvergence of terrified CORrelations (CONCOR)

analysis to discover specific issues in semantic networks. It is necessary to simplify the structure because even networks that choose representative nodes make it difficult to identify specific meanings, given the complexity of connections. As a way of simplifying the structures, CONCOR is useful for identifying highly cohesive subgroups by iteratively calculating the correction coefficient between each node (Wasserman and Faust 1994, 368–369).

Although CONCOR analysis helps simplify semantic network structures, the interactions between identified subgroups are unknown (Ang and Zaphiris 2010, 600). Therefore, we checked the relationships between subgroups by referring to a density matrix extracted through CONCOR analysis. Specifically, we constructed a simplified subgroup network that considered only higher-level density values, taking the average density value of the entire network as a cut-point (Lee et al. 2018, 43).

## Results

### *Term Frequency and Centrality*

Overall, it can be seen that words with connotations linked to the economy are included along with the names of the president, government officials, and politicians. Democratic Party, which has the highest frequency of 64 words, is the ruling party in Korea, and is also the highest level of words such as degrees centrality, eigenvector centrality, and betweenness centrality. This is the most influential word in the network. Table 2 show the results in descending order based on the frequency of 64 words that are highly associated with inequality and inequality during the COVID-19 period.

High-ranking leaders, such as Lee Jae-myeong (9/5/4/14), Lee Nak-yeon (14/13/8/31), and Kim Jong-in (36/38/28/51), showed a higher level of connectivity, as the words identifying them had higher levels of connectivity than the level of direct connectivity. On the other hand, indirect connectivity levels, such as betweenness centrality, were low. These results are based on the traditional analysis of news sources (Brown et al. 1987); the statements of high-level leaders were used as the main source of news, so they cannot

be considered direct targets of inequality or unfairness.

A high level of betweenness centrality means a high control over communication within the network. Terms such as "Democratic Party" (1/1/1/1), "Moon Jae-in" (6/6/6/9), "online" (4/11/14/2), "small and medium enterprises" (15/22/23/3), "local government" (23/23/33/7), and "job" (16/16/16/10) have high betweenness centrality and high frequency. These words are remarkably prominent but also control communication with other words, and thus can be said to be highly influential on specific issues within the network.

**Table 2.** Results of Frequency and Centrality Analysis

| Term | Frq. | Rank | Deg. | Rank | Eig. | Rank | Bet. | Rank |
|---|---|---|---|---|---|---|---|---|
| Democratic Party | 460 | 1 | 0.180 | 1 | 0.427 | 1 | 2.893 | 1 |
| Small business owner | 359 | 2 | 0.146 | 2 | 0.340 | 3 | 1.587 | 4 |
| Emergency Coronavirus relief funds | 288 | 3 | 0.123 | 3 | 0.362 | 2 | 1.100 | 13 |
| Online | 264 | 4 | 0.078 | 11 | 0.116 | 14 | 2.883 | 2 |
| Worker | 228 | 5 | 0.091 | 4 | 0.236 | 5 | 1.382 | 6 |
| Moon Jae-in | 201 | 6 | 0.088 | 6 | 0.223 | 6 | 1.280 | 9 |
| Consumer | 193 | 7 | 0.080 | 8 | 0.130 | 12 | 1.331 | 8 |
| Fair Trade Commission | 192 | 8 | 0.064 | 12 | 0.070 | 27 | 1.530 | 5 |
| Lee Jae-myeong | 191 | 9 | 0.091 | 5 | 0.273 | 4 | 1.089 | 14 |
| Blue House | 164 | 10 | 0.086 | 7 | 0.223 | 7 | 1.249 | 11 |
| Incheon International Airport | 151 | 11 | 0.080 | 9 | 0.165 | 9 | 0.355 | 39 |
| Ministry of Food and Drug Safety | 140 | 12 | 0.080 | 10 | 0.053 | 37 | 0.055 | 62 |
| Owner | 136 | 13 | 0.048 | 17 | 0.079 | 25 | 0.870 | 20 |
| Lee Nak-yeon | 125 | 14 | 0.061 | 13 | 0.214 | 8 | 0.576 | 31 |
| Small and medium enterprises | 122 | 15 | 0.041 | 22 | 0.082 | 23 | 1.610 | 3 |
| Job | 122 | 16 | 0.050 | 16 | 0.110 | 16 | 1.273 | 10 |
| Commission | 118 | 17 | 0.051 | 14 | 0.108 | 18 | 0.590 | 29 |
| Facebook | 103 | 18 | 0.051 | 15 | 0.155 | 10 | 0.929 | 17 |
| Real estate | 98 | 19 | 0.033 | 31 | 0.081 | 24 | 0.509 | 34 |
| United Future Party | 94 | 20 | 0.040 | 24 | 0.093 | 22 | 0.442 | 35 |
| Choo Mi-Ae | 94 | 21 | 0.036 | 27 | 0.109 | 17 | 0.406 | 38 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Hoarding** | 93 | 22 | 0.047 | 18 | 0.037 | 42 | 0.209 | 52 |
| **Local government** | 91 | 23 | 0.041 | 23 | 0.056 | 33 | 1.372 | 7 |
| **National Tax Service** | 88 | 24 | 0.035 | 28 | 0.031 | 47 | 0.619 | 26 |
| **Unfair business practices** | 86 | 25 | 0.030 | 35 | 0.043 | 40 | 1.112 | 12 |
| **Ministry of Justice** | 79 | 26 | 0.034 | 30 | 0.079 | 26 | 0.624 | 25 |
| **Youth** | 79 | 27 | 0.043 | 20 | 0.094 | 21 | 0.806 | 22 |
| **Permanent job** | 77 | 28 | 0.047 | 19 | 0.106 | 19 | 0.170 | 55 |
| **Student** | 75 | 29 | 0.017 | 53 | 0.030 | 49 | 0.419 | 37 |
| **Confirmed case** | 71 | 30 | 0.011 | 63 | 0.019 | 63 | 0.855 | 21 |
| **Citizen** | 67 | 31 | 0.018 | 47 | 0.054 | 36 | 0.915 | 18 |
| **Temporary job** | 65 | 32 | 0.042 | 21 | 0.095 | 20 | 0.185 | 53 |
| **Assemblyman** | 64 | 33 | 0.020 | 43 | 0.051 | 39 | 1.037 | 15 |
| **Civil servant** | 61 | 34 | 0.012 | 60 | 0.026 | 53 | 0.586 | 30 |
| **Store** | 60 | 35 | 0.035 | 29 | 0.025 | 54 | 0.097 | 61 |
| **Kim Jong-in** | 58 | 36 | 0.024 | 38 | 0.068 | 28 | 0.224 | 51 |
| **Ruling party, government and presidential office** | 55 | 37 | 0.039 | 25 | 0.144 | 11 | 0.280 | 44 |
| **Tax investigation** | 55 | 38 | 0.016 | 55 | 0.022 | 58 | 0.230 | 50 |
| **Homepage** | 54 | 39 | 0.018 | 48 | 0.023 | 56 | 0.573 | 32 |
| **Contract** | 54 | 40 | 0.031 | 34 | 0.067 | 29 | 0.237 | 49 |
| **Delivery app** | 54 | 41 | 0.021 | 42 | 0.032 | 46 | 0.999 | 16 |
| **Agent** | 53 | 42 | 0.037 | 26 | 0.120 | 13 | 0.253 | 46 |
| **Monopoly** | 53 | 43 | 0.017 | 54 | 0.021 | 59 | 0.105 | 60 |
| **Special employment** | 53 | 44 | 0.028 | 37 | 0.063 | 31 | 0.251 | 47 |
| **Subcontract** | 50 | 45 | 0.013 | 58 | 0.026 | 52 | 0.247 | 48 |
| **Conglomerate** | 49 | 46 | 0.018 | 49 | 0.028 | 51 | 0.755 | 23 |
| **Ahn Cheol-soo** | 48 | 47 | 0.032 | 32 | 0.114 | 15 | 0.293 | 43 |
| **Kim Tae-nyeon** | 48 | 48 | 0.019 | 44 | 0.039 | 41 | 0.127 | 58 |
| **Fair Trade Act** | 47 | 49 | 0.024 | 39 | 0.064 | 30 | 0.172 | 54 |
| **Shopping mall** | 47 | 50 | 0.019 | 45 | 0.029 | 50 | 0.615 | 27 |
| **Competitiveness** | 47 | 51 | 0.012 | 62 | 0.020 | 61 | 0.422 | 36 |
| **Approval rating** | 47 | 52 | 0.012 | 61 | 0.019 | 62 | 0.153 | 56 |
| **People's Party** | 45 | 53 | 0.018 | 50 | 0.037 | 43 | 0.109 | 59 |
| **Hand sanitizer** | 45 | 54 | 0.018 | 51 | 0.031 | 48 | 0.602 | 28 |
| **Medication** | 45 | 55 | 0.029 | 36 | 0.020 | 60 | 0.128 | 57 |
| **Gapjil** | 45 | 56 | 0.032 | 33 | 0.025 | 55 | 0.055 | 63 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Petition** | 45 | 57 | 0.023 | 40 | 0.053 | 38 | 0.317 | 40 |
| **Community** | 44 | 58 | 0.019 | 46 | 0.061 | 32 | 0.309 | 41 |
| **Franchise** | 43 | 59 | 0.016 | 56 | 0.035 | 45 | 0.257 | 45 |
| **Political sphere** | 42 | 60 | 0.015 | 57 | 0.036 | 44 | 0.879 | 19 |
| **Minimization** | 42 | 61 | 0.018 | 52 | 0.056 | 35 | 0.511 | 33 |
| **Ministry of Health and Welfare** | 41 | 62 | 0.013 | 59 | 0.023 | 57 | 0.736 | 24 |
| **Ministry of Education** | 41 | 63 | 0.022 | 41 | 0.056 | 34 | 0.028 | 64 |
| **Baedal Minjok (Baemin)** | 41 | 64 | 0.009 | 64 | 0.010 | 64 | 0.300 | 42 |

*Semantic Network Analysis and CONCOR Analysis*

Figure 2 is a visualization of the results of semantic network analysis applied with CONCOR analysis. Depending on their levels of frequency in the semantic network, high-frequency words were greatly resized. The location theory of semantic network analysis is categorized into one group when the relationship of the same pattern is shared with other nodes (Lorrain and White 1971; Thorlindsson 1982). Sixty-four words were categorized into eight sub-groups, as shown in Figure 1.

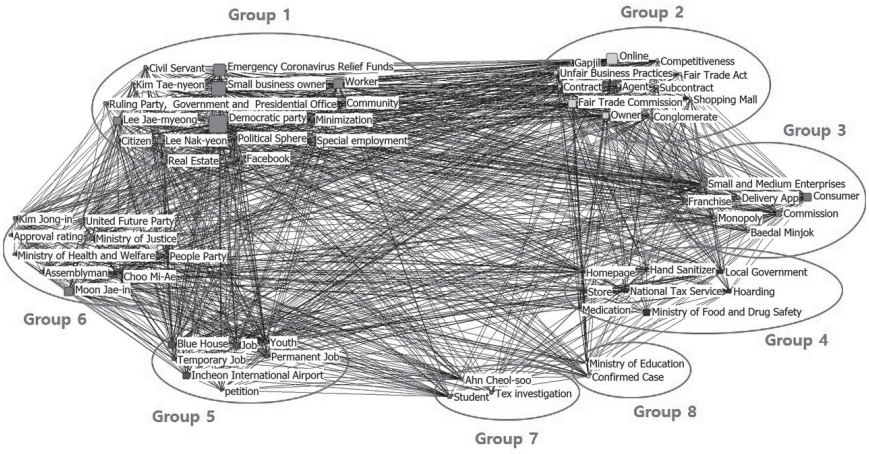


**Figure 1.** Results of CONCOR Semantic Network Analysis

Of the eight subgroups, groups 7 to 8 consist of fewer than three words, making it difficult to infer the contextual meaning and therefore difficult to see these words as referring to a particular issue. In addition, group 6 consists mostly of the names of politicians and high-ranking government officials, and as described above, it can be seen as a mediating node when these individuals' remarks are frequently cited as major sources of information on the news. Therefore, issues concerning inequality and

**Table 3.** Results of Representative Titles and Equivalent Terms by CONCOR Analysis

| Type | Representative titles and equivalent terms |
|---|---|
| Group 1 | **Discussion of Emergency Coronavirus Relief Funds (ECRF)** |
| | Democratic party / Small business owner / Emergency / Coronavirus relief Funds / Worker / Lee Jae-myeong / Lee Nak-yeon / Facebook / Real estate / Citizen / Civil servant / Ruling party, Government and presidential office / Special employment / Kim Tae-nyeon / Community / Political sphere / Minimization |
| Group 2 | **Unfair trade practices in online/offline contexts** |
| | Online/Fair Trade Commission / Owner / Unfair business practices / Contract / Agent / Subcontract / Conglomerate / Fair Trade Act / Shopping mall / Competitiveness / Gapjil |
| Group 3 | **Commission issues in the monopolistic market** |
| | Consumer / Small and medium enterprises / Commission / Delivery app / Monopoly / Franchise / Baedal Minjok |
| Group 4 | **Crackdown on illegal hoarding** |
| | Ministry of Food and Drug Safety / Hoarding / Local government / National Tax Service / Store / Homepage / Hand sanitizer / Medication |
| Group 5 | **Incheon International Airport Corp.'s (IIAC) decision to change worker status from "temporary" to "permanent"** |
| | Blue House / Incheon International Airport / Job / Youth / Permanent job / Temporary job / petition |
| Group 6 | Excluded from discussion |
| | Moon Jae-in / United Future Party / Choo Mi-Ae / Ministry of Justice / Assemblyman / Kim Jong-in / Approval rating / People's Party / Ministry of Health and Welfare |
| Group 7 | Excluded from discussion |
| | Student / Tax investigation / Ahn Cheol-soo |
| Group 8 | Excluded from discussion |
| | Confirmed case / Ministry of Education |

unfairness under COVID-19 fall under groups 1–5. The topics for the five subgroups and the words included are given in Table 3.

The five issues related to inequality and unfairness that the media noted during COVID-19 were all related to economic activities. Group 1 is related to the "emergency disaster assistance fund," a welfare policy aimed at supporting citizens, small business owners, and special employment workers affected by COVID-19 in Korea. Group 2 is related to unfair trade practices that occur in online and offline transactions and is mainly linked to overusing exclusive status for unfair trade between franchises, dealerships, and companies. Group 3 concerns raising fees for the food delivery app Baedal Minjok (Delivery Nation), which has maintained its monopoly position in the delivery market in Korea due to the problem of rising fees in the monopoly market. Group 4 is related to the hoarding of personal quarantine items during the early COVID-19 epidemic due to the crackdown on cornering the market by the Ministry of Food and Drug Safety and local governments in Korea. Group 5 is related to Incheon International Airport Corporation's (IIAC) conversion of non-regular security inspectors to regular workers within its subsidiary in charge of security. After these measures, many young people wishing to join IIAC felt deprived and filed a petition calling for the withdrawal of the transition to non-regular workers.

As such, five sub-issues that can imply contextual meaning through CONCOR analysis are issues that can affect individuals, society, and the economy. Of course, issues of inequality and unfairness related to the economy are not limited to Korea. Worldwide, COVID-19 is known to have a more negative impact on young workers, low-income earners, the self-employed, and workers with less secure working conditions (Ahmed et al. 2020; Blundell et al. 2020; Marmot and Allen 2020; Witteveen 2020).

Table 4 is the result of converting the five major sub-issues identified by the CONCOR analysis into a density matrix of 5X5. This simplified density matrix helps to simplify the network, allowing us to understand the overlap between issues (Uhm et al. 2017; Yang et al. 2012). That is, the density matrix allows us to compare the density levels between groups to determine how much each group's topics are shared with the others. The density matrix

**Table 4.** Results of Density Matrix between Groups

| | Group1 | Group2 | Group3 | Group4 | Group5 |
|---|---|---|---|---|---|
| **Group1** | 1 | 0 | 1 | 0 | 1 |
| **Group2** | 0 | 1 | 0 | 0 | 1 |
| **Group3** | 1 | 0 | 1 | 0 | 0 |
| **Group4** | 0 | 0 | 0 | 1 | 0 |
| **Group5** | 1 | 1 | 0 | 0 | 1 |

is expressed as 0 and 1, allocating 1 to the density values between groups higher than the average density value of the entire network (5.953).

Figure 2 shows a network of connectivity relationships and the degrees of density of a density matrix simplified by 0 and 1. The higher the density values between groups, the thicker the connecting line. As a result, the proximity of groups 1 and 3 (7.821) was the highest, followed by that of group 2 and group 5 (7.429) and that of group 1 and group 5 (7.143). However, Group 4 was classified as a standalone issue that was distant from the other issues.

In other words, it can be deduced that the emergency disaster support funds distributed by the ruling party in Korea are most commonly discussed in the context either of helping citizens in the local economy, such as small

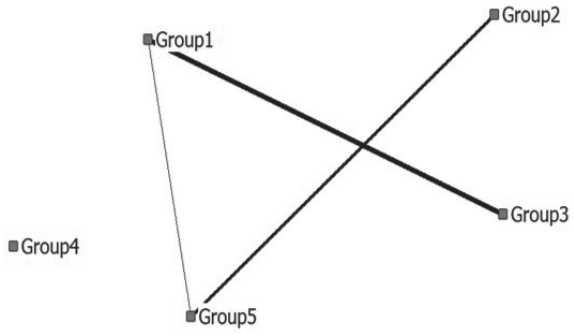


**Figure 2.** Network analysis of density matrix

business owners and special employment workers (group 1), or of interest in unfair trade and contract activities in the monopoly market (group 3). Of course, the issue of emergency disaster support (group 1) shows the IIAC's above-average proximity to the issue of worker conversion described above (group 5), but it was not subject to close discussion compared to group 3. Nevertheless, the closeness between group 2 and group 5 is an unfair case that must be improved to realize a fair economy, which is a recurring social problem in Korean society.

## Conclusions and Discussion

The 64 words subject to analysis included a number of keywords related to the economy. In particular, the mediated centrality of phrases such as "governments" and "local governments," "small and medium-sized businesses," and "jobs" was high, indicating that these phrases were keywords that made up sub-issues. The semantic network analysis with CONCOR analysis was categorized into eight subgroups. Of these, five groups, excluding two groups containing no more than three words and one composed only of the names of politicians, have been shown to constitute sub-issues related to inequality and unfairness. The sub-issues were related to the government's emergency disaster assistance fund (group 1), unfair trade practices online and offline (group 2), the issue of raising fees for delivery people (group 3), hoarding of personal quarantine items (group 4), and the conversion of non-regular workers at Incheon International Airport (group 5). An analysis of the proximity of these five issues revealed a pattern of connections between group 1 and group 3, group 1 and group 5, and group 2 and group 5, with group 4 being set aside from the others. Among the connections between each issue, the interest in emergency disaster support funds and unfair trade and contract actions in the monopoly market showed the highest level of proximity.

As the analysis showed, the inequality and unfairness issues related to COVID-19 that the Korean media paid attention to were concentrated in the economic sector. In particular, during the pandemic period, high interest

in emergency disaster assistance and a support policy for the vulnerable who are struggling economically could be confirmed. Moreover, these emergency assistance funds showed a high level of proximity to the issue of unfair trade in the monopoly market. The reason the two issues showed the highest level of proximity is that the targets of emergency disaster support funds and unfair transactions by monopolistic companies are the same: common people and small business owners. In particular, the most notable example of unfair trade during the pandemic period was the controversy over the reorganization of fees for the food delivery app Baemin. This controversy—centered around the impact of a fee hike on self-employed people and users of companies with an overwhelming market share at a time when the restaurant industry is in trouble—has also drawn keen attention from political circles. Moon Jae-in enacted a review of measures for public app-based delivery. In addition, the Gyeonggi Provincial government proposed measures to solve unfair problems by creating a public delivery app (W. Lee 2020).

The proximity of unfair trade issues online and offline (group 2) and the issue of converting non-regular security inspectors at subsidiaries of IIAC into regular workers (group 5) also exceeded the average. These examples highlight the relationship between the two parties in Korean society and their stakeholders, mainly through one-sided contracts relying on proprietary status. Although this is not a direct case of inequality and unfairness caused by COVID-19, it is an example highlighting the economic difficulties facing employees during the pandemic period. South Korea's President Moon Jae-in also stressed that he would closely examine life-friendly policies to ensure that the government made policy efforts for a fair society in response to online trading and the IIAC issue (Jung and Yoo 2020).

The sale of personal quarantine products, such as hand sanitizers and masks, which were controversial in Korea during the pandemic period, is a new issue in the COVID-19 era (group 4). As COVID spread in Korea, the public's anxiety increased, demand for personal quarantine products increased, and hoarding caused many difficulties in supply and demand. Since the outbreak, Korea has implemented a policy of stabilizing supply

and demand through a five-part mask system, thus regaining stability. The hoarding of personal quarantine products and the government crackdown were not observed to be close to other issues, but this was also reported as a major factor in health inequalities that threatened the health of the public.

The results of this study revealed new types of issues, including inequality and unfairness, which were latent in existing Korean society. The economic difficulties caused by COVID-19 are causing great damage to socially disadvantaged individuals and small business owners. This social disaster poses a harsher challenge for the weak. In October 2020, for example, President Moon Jae-in discussed COVID in a Cabinet meeting, noting the inequality that would lead to new issues and harsher conditions. Beyond temporary support, he ordered the implementation of a complementary institutional supplementation (H. Park 2020). Specifically, Moon offered continuous support for special employment workers and freelancers, for whom it is difficult to estimate income (relative to ordinary self-employed people), support for non-regular female workers, and care for infants and education. Addressing these areas of inequality was presented as an important task.

Looking at current economic inequalities caused by COVID-19 worldwide, it can be seen that the damage to low-income people, women and ethnic minorities, and high-income male workers is high (Ahmed et al. 2020; Blundell et al. 2020; Marmot and Allen 2020; Witteveen 2020). Prior studies on the economic inequality caused by COVID-19 pointed out that this type of inequality is a recurring issue in the event of a social disaster. However, COVID-19 also produced a new type of social inequality. For example, in groups with difficulty telecommuting or child-rearing families, there is a high probability of experiencing inequality (Byun and Slavin 2020, 670–672; Witteveen 2020, 300–309). This has also resulted in educational gaps and education methods that were relocated online due to school closures (Blundell et al. 2020, 309–310; Byun and Slavin 2020, 673–674). These examples may be a reason for continuous monitoring and acknowledging that existing inequalities and new types of inequalities can be strengthened in combination.

The alienation of certain groups is further strengthened through social

distancing, limiting access to scarce public resources, including economic inequality (Waller et al. 2020, 244). In addition, this reinforcement of social inequality is sometimes influenced by misunderstandings and misinformation (Ali et al. 2020, 416). On the other hand, closed decision-making methods centered on civil servants and experts, excluding the victims in Korean society, cannot predict all the situations that might arise in people's lives. Following existing policies or pushing for some supplementation in situations where they have not experienced a long-term pandemic such as COVID-19 makes it difficult to respond immediately to new scenarios. Therefore, it is necessary to establish local community-based bottom-up policy governance that can actively reflect the opinions of private experts and people in the development of government support plans (Chae et al. 2018, 371; Blundell et al. 2020, 316). Bottom-up policy governance can provide realistic information to correct possible misunderstandings and misinformation in the closed decision-making process (Chae et al. 2018, 358). In this process, the media should be more faithful to the role of informants who can provide information to help overcome a crisis remind people of the social interests at stake. However, what is encouraging is that during the pandemic, the media, policy interests and active responses to the hoarding of quarantine goods, which can be directly linked to the health of the people, have emerged on the public agenda. Also, the focus on problems in the delivery industry demonstrates how power-using culture in Korean society might be further expanded during the pandemic. That is, it shows the need for government oversight in industries that experienced a relative boom during the pandemic.

In summary, according to the evidence presented here, it is clear that the COVID-19 pandemic exacerbated existing inequalities and brought to the fore other inequalities that were not feared before the pandemic. This shows that the economic impact associated with COVID-19 is spreading further through interaction with other factors. But even new patterns of inequality caused by the COVID-19 pandemic were directly or indirectly related to the economy. On the other hand, the newly emerging inequalities in closed environments, such as parenting and education, have not received significant attention. Of course, these results do not mean that there has

been no government policy effort at all. It means that inequalities have not been actively discussed as a public agenda item beyond economic-related policies, and that there has been a lack of media attention to serve as a venue for social discussion.

Several studies have pointed out the need for improvement in areas indirectly or directly linked to the economy. However, regarding the Korean media, we can say that it has been relatively lax in pointing out problems and improvements in other industrial and policy sectors, except for when they are directly linked to the government's disaster assistance and the economic sector. At this point in the post-COVID environment, designing long-term post-COVID-19 reconstruction will need to involve sophisticated modifications to current policy responses. For example, it will be necessary to establish clear guidelines for different industry-specific constraints at a time when social distancing is prolonged and collective restrictions continue. In addition, the criteria for selecting recipients of the government's payment of emergency disaster support funds need to be revised to actively reflect the opinions of policy subjects. In this process, the media can provide basic data to ensure a fair and efficient allocation of resources by serving to evaluate the government's support policies and convey them to the public. But if the media continues to focus on specific areas, it will be unable to actively respond to new types of social disasters.

Since the first confirmed case of COVID-19, Korea has, through active inspections and monitoring, kept confirmed cases to a relatively low level compared to other countries. At the same time, the Korean government has actively attempted to respond to recession fears and to recover the pre-pandemic economy. Nevertheless, social disasters in modern society are having unpredictable repercussions due to the interaction of complex causal factors. Clearly, Korea's economic support policy was implemented relatively quickly (B. Kim 2020). The media also reported the government's response and provided information to the public. The information contained in media narratives serves to heighten public interest in particular risks. Information not included in the media narratives, on the other hand, is kept from public scrutiny (Miles and Morse 2007, 367). The role of the media in disaster situations is to contribute to strengthening community resilience by

reporting what has affected disaster response and what is meaningful to the affected people and communities (Houston et al. 2012, 619). In fact, as the results of this study suggest, the issues that the media paid attention to were largely familiar inequalities in the economic sector. Furthermore, to overcome the crisis by strengthening social cohesion, positive changes can be expected when the media defines fundamental problems and proposes solutions beyond socio-economic discourse (Miles and Morse 2007, 372).

This study examined Korean newspaper articles to discern discussions of issues regarding social inequalities and unfairness during the COVID-19 pandemic. It typified major news coverage through core keyword analysis. Based on these results, it was suggested that changes in the government's policy response and media reporting behavior were needed. Nevertheless, this study has the following limitations: First, inequality and unfairness were used as keywords in collecting newspaper articles, but other types of collection keywords were not considered. Therefore, it is difficult to say that media coverage of all types of inequalities and unfair practices have been collected. In subsequent studies, a list of search keywords needs to be added by typifying examples from various fields through literature review. Second, cases of inequality and unfairness can occur in various ways, depending on demographic characteristics, such as region, income level, and gender (Ahmed et al. 2020; Blundell et al. 2020; Marmot and Allen 2020; Witteveen 2020). Therefore, it is necessary to compare and analyze inequalities and cases of unfairness presented by the media from a demographic standpoint. Third, in contemporary society, the media no longer holds the supreme position in terms of informing and forming public opinion. In subsequent studies, it will be necessary to compare media and social network services or to analyze them from an integrated perspective.

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