

# A Cross-Cultural Analysis of COVID-19 Coverage in American, German and Japanese Daily Newspapers: Actors, Topics, and Values

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**Abstract.** Throughout the COVID-19 pandemic, the news media played a crucial role in disseminating information to the public and influencing public opinion, such as governmental responses to the outbreak. The way the pandemic and pandemic-related news were handled varied across different countries and regions. This study analyzes a random selection of newspaper articles from three different sources: the German Bild, the Japanese Yomiuri Shimbun, and the American USA Today. The aim is to shed light on how these newspapers reported on COVID-19 during its initial stages, from January to March 2020. The study presents initial findings from comparing the coverage of these three newspapers with respect to (1) mentioned actors, (2) depicted regions, and (3) mentioned themes. In addition, we compare the results of our analysis with cultural values and discuss how the cultural context influences the coverage. Japan's Yomiuri Shimbun places more emphasis on the government's response to the pandemic, while Germany's Bild and America's USA Today focus more on how the pandemic has affected the lives of citizens and the individual measures taken to deal with the virus. The results show the contrast between the cultural values of individualism and uncertainty in the media coverage of the pandemic.

**Keywords.** COVID-19 and news media, cross-cultural analysis, computer assisted text analysis, cultural values.

## 1. Introduction

The global trend shows a decline in new cases and deaths of COVID-19, with the virus now being considered endemic in many countries [1]. However, as of August 2023, the National Institute of Infectious Disease of Japan reported a rise in new cases since April and that the numbers could rise due to the weakening immunity [2]. Despite Japan downgrading COVID-19's status to be on par with influenza and measles in May 2023 [3], the increasing numbers indicate that COVID-19 still poses various challenges to

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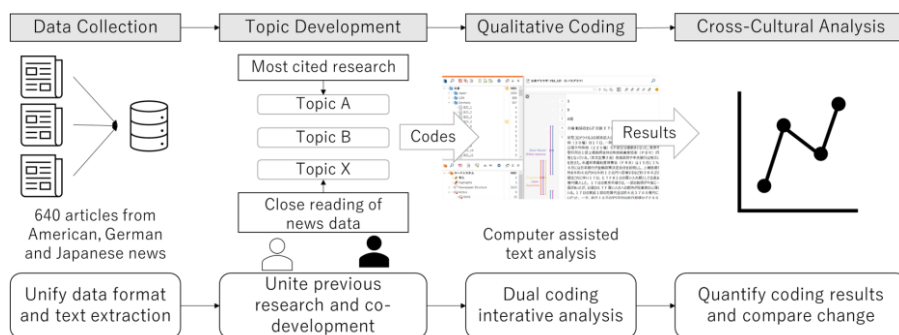
society. This has resulted in uncertainty within Japan, leading to instances of discrimination against foreigners and the continuation of antivirus measures, such as wearing face masks [4].

Following the WHO's official designation of COVID-19 as a global pandemic in 2020, many countries, including Japan, implemented non-pharmaceutical interventions (NPIs) to control or prevent the spread of the virus [5]. On May 18th, the WHO designated Public Health and Social Measures (PHSM) such as mask-wearing, restrictions on social gatherings, closure of schools and businesses, limitations on domestic and international travel, as well as testing and quarantine, as a global guideline for NPIs [6]. Simultaneously, governments worldwide introduced policies to combat the virus, while individuals adapted to these new rules and guidelines, or autonomously adopted new behaviors meant to safeguard themselves and their communities. The current situation in Japan highlights the ongoing challenges in finding solutions for a society prone to COVID-19, as well as calming citizens' anxieties.

Countries and their citizens responded to the virus's spread with varying measures, influenced by differences in political and economic systems, legal frameworks, and cultural norms [7]. For instance, in countries like South Korea and Japan, the use of face masks in public, a pre-existing practice, faced little resistance. In contrast, many Western nations witnessed protests against mask mandates, leading to a decline in mask usage once guidelines were relaxed [8]. Travel restrictions also exhibited significant disparities, with some countries keeping borders open and others imposing diverse forms of quarantine, testing, vaccination, or complete bans on international travel [9].

During the initial phase of the pandemic, news media played a crucial role in disseminating information about COVID-19 and government measures, while also shaping the national and international discourse on pandemic response [10]. Media coverage not only influenced public understanding but also had an impact on the decision-making processes of politicians, corporations, and scientists [11]. Given the proliferation of diverse media outlets and the rapid spread of false or misleading information, referred to by the WHO as an "infodemic"[12], people (re)turned to traditional news sources like television and newspapers for reliable information[13]. To comprehend the varying responses to COVID-19 across countries, and to contrast different methods of disseminating information during crises like the current pandemic, it is essential to analyze how the media portrayed the pandemic and related measures, recognizing the disparities between countries and media outlets.

Previous comparative studies on the media coverage of COVID-19 tend to focus either on quantitative (monolingual) comparisons [10, 14, 15] or have narrow thematic scopes [16-18] often neglecting changes in coverage over time. In contrast, this study examines how COVID-19 was portrayed in the most widely circulated national newspapers in Germany, Japan, and the United States of America (see Figure 1) in their respective original languages. We analyze the period from January to March 2020 to elucidate differences in newspaper coverage both within each selected newspaper and over time.



**Figure 1.** Overview of research

In our study, we first concentrated on the highest-circulated newspapers in Germany, Japan, and the USA. We gathered a random sample of newspaper articles ( $n=600$ ) containing the term COVID-19 or its synonyms from Bild (Germany), Yomiuri Shimbun (Japan), and USA Today (USA) for January, February, and March 2020. By combining categories derived from prior studies and conducting thorough examinations of the collected data, we established 45 categories to discern (1) who, (2) where, and (3) what is mentioned in the news articles, and how this evolves from January to March 2020. Through a comparative analysis of mentioned or cited actors, observed locations, and discussed subjects in the newspaper articles, we gain insight into the distinct national discourses surrounding the pandemic, its portrayal in the media, and the dissemination of information and opinions from various sources. This offers valuable perspectives on how disparities in media coverage reflect (or influence) diverse responses to the pandemic and contributes to discussions on the effective communication of public health and policy-related information. Additionally, we juxtapose our analysis results with previously examined cultural values and consider how the unique cultural contexts of Germany, Japan, and the USA influence the reporting in news media during the pandemic. This paper serves as an initial step in a broader project towards a comparative analysis of discourses and cultural difference in global crises.

## 2. Background

As of January 2023, there are more than 5 million research articles on COVID-19 indexed on Google Scholar, with more than 2 million also including the term “news”. While unsurprisingly, Kousha and Thelwall [19] identify clinical and medical studies on COVID-19 as the most cited research items in the beginning of the pandemic, COVID-19 has provided an incentive for research in various fields.

Researchers’ focusing on media content in specific countries have investigated how news related to the virus are framed in different types of media [14, 20-23], what kind of health, medical, and political information the media covered [24-27], the sentiment of the news [15], as well as a quantitative analysis of online news coverage through text mining, topic analysis, and sentiment analyses [10]. Others analyzed the coverage of COVID-19 in relation to specific themes, such as “tourism”, “digital contact tracing”, “residential care” or “older people” [16-18, 28]. Analyzed languages and regions include English (USA, UK, Canada, New Zealand, Australia), Chinese, German (Germany,

Austria, Switzerland), Korean and Spanish. Most studies focus on one or two regions/languages, while broader comparative studies either are limited to English material or focus on a narrow topic, such as the portrayal of German chancellor Angela Merkel, and former and current Presidents of the United States Donald Trump and Joe Biden [10, 20]. Through these approaches key themes to examine the coverage on COVID-19 have become evident.

For example, Hubner [23] categorized 10 news source categories by recording individuals and their organizations, along with 27 news topics, each supported by 5 to 6 keywords, in American news media. Gozzi et al. [29] compared the differences in multiple topics on Reddit and traditional media. Ophir et al. [22] presented 12 topic labels along with top 10 key words by investigating COVID-19 in Italian media. Mach et al. [27] conducted a cross-cultural study of news on public health and policy information by comparing 5 major topics in American, British and Canadian news media. However, while the development of labels to understand the news coverage on COVID-19 is a necessary endeavor to clarify what is reported in the news and how, these categories are usually not connected or utilized for further, in particular cross-regional comparative research. As such, this paper reports on a comparative content analysis to clarify how topics in the COVID-19 related news coverage vary in different regions, by investigating news articles in national daily national newspapers, from Germany, Japan, and the USA in their original language. In a previous report [30], Sato shows that the threat of the virus was downplayed in the three newspapers in early January. By extending the scope of analysis until March 2022, we can examine and compare the changes in news coverage with the growing awareness of the extent of the virus' spread.

Furthermore, the relation between news coverage and cultural values was largely disregarded in previous research. However, differing cultural values can precipitate differing perspectives on events, differing reactions, and solutions, as well as differing modalities of reporting. To begin addressing this gap in research, we aim to explore how previously established dimensions of cultural values at a national level can be applied and elucidated within the findings of our analysis. We draw upon Hofstede's widely used six cultural dimensions [31], which are based on an extensive analysis of 74 countries and regions. These dimensions consist of:

- Small Power Distance vs. Large Power Distance: the difference in how organizations and institutions accept and expect power distribution.
- Weak Uncertainty Avoidance vs. Strong Uncertainty Avoidance: the difference in how a society tolerates ambiguity.
- Individualism vs. Collectivism: the difference in how individuals integrate into groups.
- Masculinity vs. Femininity: the extent to which a culture supports a traditional view of masculine and feminine traits.
- Long-Term vs. Short-Term Orientation: whether a culture is rather oriented towards the future, or the past/present.
- Indulgence vs. Restraint: whether a culture endorses or disapproves of the free gratification of needs.

### 3. Method

We collected all newspaper articles including the term COVID-19 or a synonym published in the German Bild, the Japanese Yomiuri Shimbun, and the American USA Today between January 1 to March 31, 2020. In consideration of feasibility, we then drew a simple random sample for each newspaper and month (see Table 1) for the analysis. The three newspapers were chosen to represent each region, as, at the time of data collection in April 2022, they were the most widely circulated daily national newspapers in Germany, Japan, and the USA respectively [32-34]. Data was collected from Nexus Uni and the Yomiuri Database Service and compiled into a spreadsheet. We utilized the search query “covid OR coronavirus OR (corona AND virus)” in English and German, and “‘corona uirusu’ [in Japanese characters] OR COVID” in Japanese. Data collected includes the year, month, and day it was published, page number, section, author, title and sub-title, and finally the article’s main text. We chose the period from January to March 2020 to examine how the media covered the spread of the virus from the initial outbreak in January 2020, up until the WHO declared COVID-19 a “Global Pandemic” in March 2020.

**Table 1.** Overview of the collected data

Newspaper		<b>Bild</b>	<b>Yomiuri Shimbun</b>	<b>USA Today</b>	
Country		Germany	Japan	USA	TOTAL
No. of articles	1/2020	11	129	13	153
	2/2020	52	801	45	898
	3/2020	247	1,778	445	2,470
	Total	310	2,708	503	3,521
Random Sample	1/2020	11	70	12	93
	2/2020	39	127	35	201
	3/2020	94	139	113	346
	Total	144	336	160	640

The articles were imported into the qualitative data analysis software MAXQDA. MAXQDA is a tool for conducting computer-assisted qualitative and mixed-method data analysis, that enables researchers to intuitively create, assign, organize, and count codes and categories representing a segment of text (see Figure 2). It also provides an environment for collaboration between researchers during the coding of data.

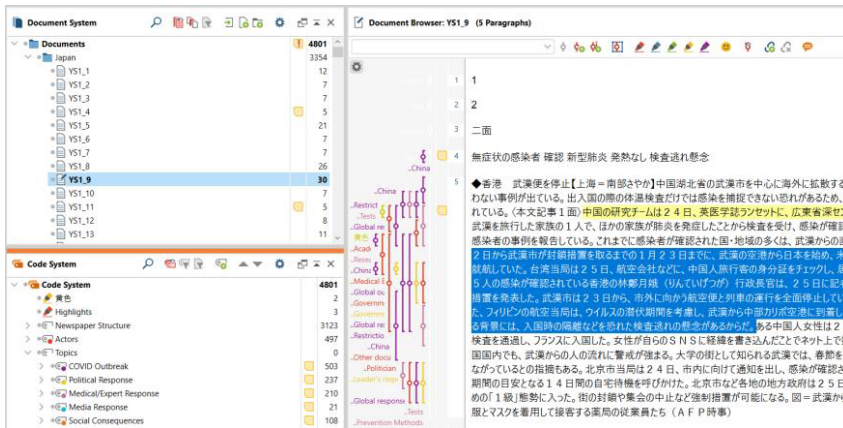


Figure 2. An overview of MAXQDA’s interface we utilized for this paper.

Through a first round of close readings of the articles in the sample and based on a synthesis of previous studies [22, 23, 27, 29] we then developed a set of 45 categories to analyze (1) which actors (see Table 2) are mentioned in the articles, (2) which regions are discussed in the articles (see Table 3) and (3) what topics are mentioned (see Table 4). The authors, fluent in English, German and Japanese then assigned these categories to each news article in a second round of close readings. Discussion between the authors ensured that the same criteria were used to code all articles during the analysis, revising the code system when necessary. Similar to content analysis [35], we then counted the frequency with which each category was applied to the articles, counting each category only once per article.

Table 2. Overview of actor categories.

Actor Category	Definition
WHO	The World Health Organization and its staff
Media	Media organizations
Academica	Researchers, scholars, and experts with affiliation to academic institutions
Politicians	Politicians not directly part of the government
Government	Government, ministries, and their staff
Industry	Companies, industry organizations, their staff
NGOs	Think tanks, public interest groups, foundations
Medical Experts	Persons affiliated with medical institutions
Health Officials	Public health agencies or institutions
Sports	Sport clubs, sport-related organizations (e.g., UEFA) and their staff
Celebrities	Celebrities, e.g., actors, singers, etc., including royalty
Citizens	Ordinary citizens

Table 3. Overview of location categories.

Region Category	Definition
Response Reports	Regional responses reported in the news articles
Japan	Responses in Japan
USA	Responses in the USA
Germany	Responses in Germany
China	Responses in China
WHO	Responses by the WHO
Others	Responses in other countries

<b>Outbreak Reports</b>	<b>Reports on the COVID-19 outbreaks</b>
Japan	Outbreak in Japan
USA	Outbreak in the USA
Germany	Outbreak in Germany
China	Outbreak in China
Cruise Ship	Outbreaks on cruise ships
Others	Outbreaks in other countries

**Table 4.** Overview of topic categories.

<b>Topic Category</b>	<b>Definition</b>
<b>Cases and deaths</b>	Infection numbers and deaths, portrayal of cases
<b>Restrictions</b>	Travel restrictions and lockdowns
<b>Political Response</b>	<b>Responses of the government and political leaders</b>
Leaders' Response	Actions of political leaders directed at the person (e.g., Angela Merkel)
Governmental Response	Actions of governmental departments and staff
Financial Support	Governmental financial support plans and actions
<b>Medical/Health</b>	<b>Medical handling of COVID-19</b>
Preventing Spread (Official)	Political actions to prevent COVID-19
Preventing Spread (Personal)	Wearing masks, washing hands, social distancing
COVID Tests	Virus tests on COVID-19
Treatment	Treatments of patients in hospitals and patients
Research	Research on virus and vaccines
<b>Role of the Media</b>	<b>Function of the Media during the pandemic</b>
Explaining COVID	Providing information on symptoms, how the virus spreads, etc.
Chinese Censorship	Chinese governmental control of information
Information Accuracy	Issues on accurate information and misinformation
<b>Social Effects</b>	<b>Effects on the society</b>
Public Events	Cancellation or restrictions on social events
Work	Effects on working and workplace
Education	Effects on education
Olympics	Issues regarding the Tokyo Olympics
Daily Lives	Effects on daily lives of the people
<b>Economic Effects</b>	<b>Economic effects of COVID-19</b>
Economy	Effect on economy
Business	Effect on industry and companies
Stock Markets	Effect on financial markets

#### 4. Results

Below, we detail the results of our analysis. Figures 3-5 depict heat maps, based on the frequency of assigned categories per newspaper and month. The heatmaps are calculated per column, that is, red indicates a high frequency of a category within that particular newspaper and month. Overall, a higher number of articles in the Japanese Yomiuri Shimbun, particularly in January and February, reflects a greater geographical proximity to the original outbreak of the virus.

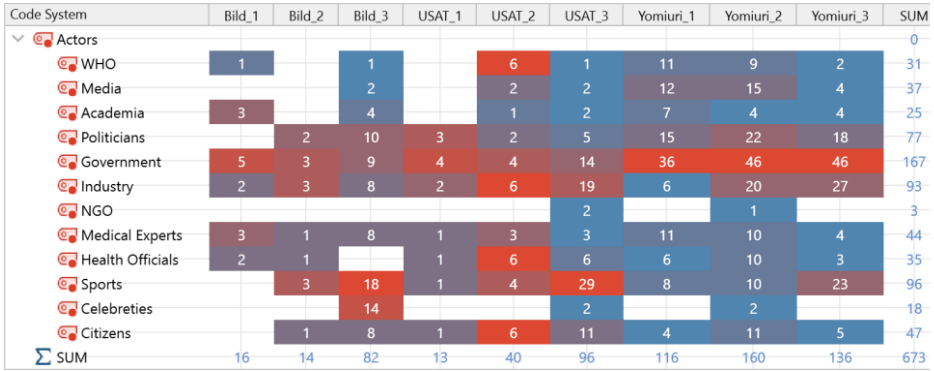


Figure 3. Heatmap depicting frequencies within the categories for “actors”, between the Bild, USA Today, and Yomiuri Shimbun, from January (1) to March (3).

Figure 3 depicts the frequency with which a particular actor was mentioned in the news coverage per newspaper and month. In all three newspapers, mentioning governmental institutions was most frequent in the Japanese Yomiuri Shimbun, as members of the government are often cited when reporting on the spread of the virus and possible and actual countermeasures. Politicians aside from members of the government are also frequently mentioned in the same light. While industry actors were mentioned in all three newspapers, usually in concert with depicting the economic outfall of the pandemic, this was comparatively more frequent in the USA Today, especially in March. In contrast, the categories “Sports” and “Celebrities” were most frequent in the German Bild, possibly indicating a stronger focus on human interest stories. Health officials are not mentioned frequently in the Bild, although academics are mentioned in a similar function to the mention of health officials in the other two newspapers, that is to provide expertise on the spread of the virus. In March 2020, the USA Today mentions the WHO comparatively frequently, regarding the designation of COVID-19 as a global pandemic.

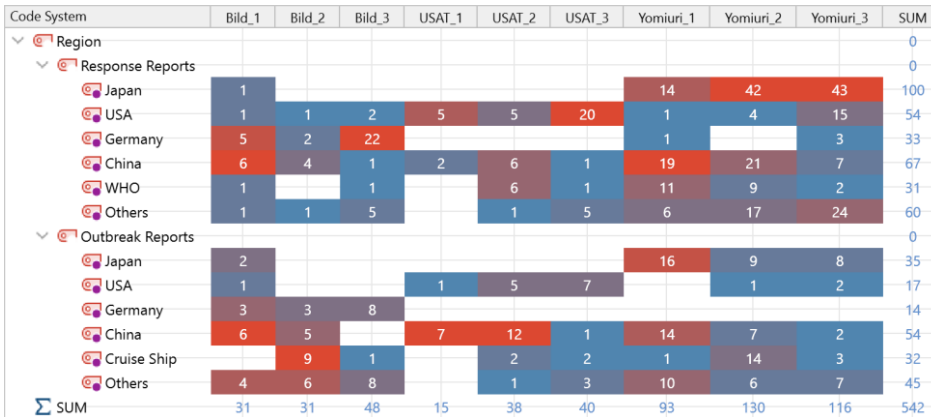


Figure 4. Heatmap depicting frequencies within the categories for “regions”, between the Bild, USA Today, and Yomiuri Shimbun from January (1) to March (3).

The heatmap in figure 4 depicts the frequency with which a particular region was mentioned in the news coverage of each newspaper in each month. Broadly speaking,



aside from reporting on the outbreak and response within the country they are based in, each newspaper also reported on the original outbreak in China and the response of the Chinese government. The USA Today in particular mentions the outbreak in China in reports on US citizens stranded there. In comparison to the Bild and USA Today, the Japanese Yomiuri Shimbun reported more frequently on how other countries responded to COVID-19, including Germany and the USA. As citizens of the respective country were involved, the Yomiuri and Bild more frequently mentioned COVID-19 outbreaks in cruise ships.

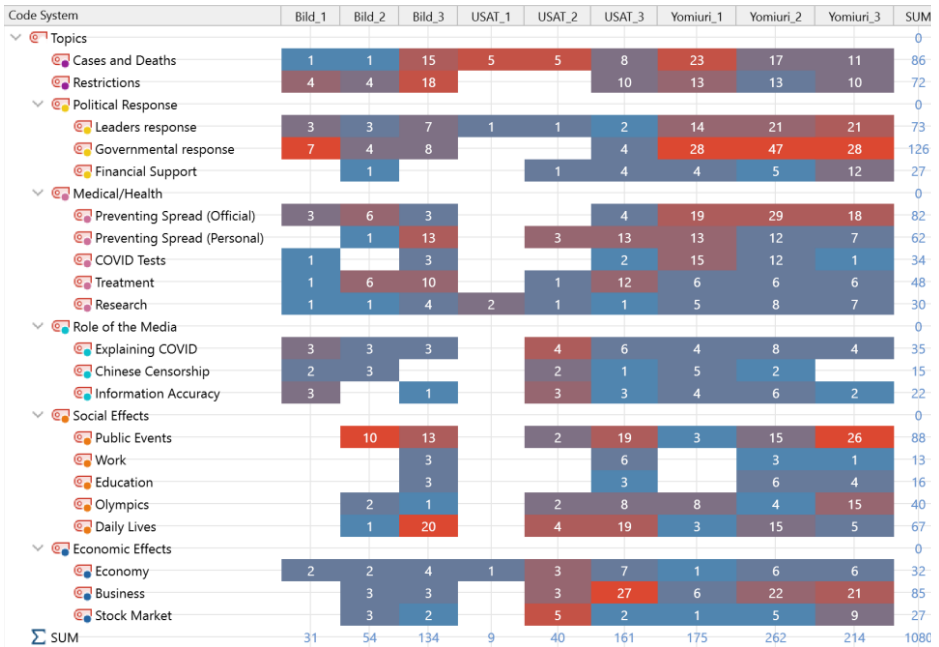


Figure 5. Heatmap depicting frequencies within the categories for “topics”, between the Bild, USA Today, and Yomiuri Shimbun from January (1) to March (3).

Figure 5 shows the code frequencies of three newspapers in the Topic category from January to March. Common topics throughout the three periods and newspapers were reports on the number of infections and deaths, as well as research on the virus and its effect on the economy. Restrictions, discussed and gradually put in place over the early stages of the pandemic, were frequently mentioned in Germany, especially in March, whereas they were not mentioned in the USA Today and comparatively less frequently in the Yomiuri Shimbun. The effects of the pandemic on work and education did not receive widespread attention until March. In comparison to the Bild, the Yomiuri and USA Today more frequently mentioned the fallout of the pandemic in respect to the overall economy, specific businesses, and the stock market. Each newspaper shows a specific tendency to focus on particular topics throughout the three months observed. The Bild frequently reported on public events and the restrictions placed on them, as well as the daily lives of citizens during the pandemic. The USA Today less frequently mentions official efforts to prevent of the virus, but in turn, more frequently reports on how to prevent a further spread or infection through personal measures such as wearing

a mask or disinfection. The *Yomiuri* focuses more strongly the response of the Japanese government and officially introduced methods of prevention.

## **5. Discussion and Conclusion**

This study conducted an analysis of news articles from three major newspapers: the German *Bild*, the Japanese *Yomiuri Shimbun*, and the American *USA Today* and compared the mentioned actors, localities, and topics. The analysis aimed to clarify the differences across newspapers and over time during the beginning of the pandemic from January to March 2020.

During this period, all three newspapers reported extensively on the COVID-19 outbreak. The Japanese *Yomiuri Shimbun* placed a significant emphasis on conveying the actions and measures taken by the Japanese Government. In contrast, the German *Bild* and the American *USA Today* focused more on the pandemic's impact on individual citizens' lives. Notably, the *USA Today* even provided advice to its readers on how to navigate the challenges posed by the pandemic.

When arguing within the framework of Hofstede's cultural dimensions, these differing levels of attention on government responses in the *Yomiuri Shimbun* compared to the other two newspapers can be attributed to cultural values, particularly the contrast between Individualism and Collectivism [31]. Western countries place greater value in individual self-sufficiency, whereas Japan, problems are often delegated to groups that provide protection in exchange for loyalty. Additionally, the topic analysis revealed that the Japanese *Yomiuri* and the German *Bild* reported more extensively on official responses compared to the *USA Today*. This discrepancy reflects the variance in cultural values related to Uncertainty Avoidance [31], with Japanese and German-speaking regions exhibiting higher levels of uncertainty avoidance, as uncertainty is viewed negatively, that is as a threat that requires the formulation of rules and a strong authority to enforce them.

Moreover, in contrast to *Bild*, both *USA Today* and *Yomiuri Shimbun* frequently address the pandemic's impact on businesses. In contrast, *Bild* leans more towards human interest stories. This discrepancy can be attributed to the different target audiences and editorial approaches of these newspapers. *Bild*, being a tabloid, places a stronger emphasis on the social repercussions of the pandemic, while particularly *Yomiuri Shimbun* caters more to a business-oriented readership.

In general, despite confirmed cases of COVID-19 in each country by March 2020, newspapers tended to focus less on the specific health risks associated with the pandemic. Instead, there was a greater emphasis on the economic and societal consequences. Additionally, even as the virus continued to spread, the frequency of articles providing the public with concrete information regarding the virus's transmission, potential symptoms, and available treatments did not noticeably change over time.

## **6. Limitations, Further Work and Reflections on Methodology**

This paper presents initial findings from a cross-regional analysis of COVID-19 news coverage in three prominent newspapers: the German *Bild*, Japanese *Yomiuri Shimbun*, and the American *USA Today*. We randomly selected articles from the period of January to March 2020, which, though providing valuable insights, does impose some limitations

on the depth of our analysis. Our approach affords us the opportunity to identify prominent disparities in news coverage, yet it may not fully capture the quantitative aspects of our coding analysis. Furthermore, by focusing on the most widely circulated newspaper in each country, our sample of articles may be narrower due to differences in journalistic approach, target audience, and political leaning.

The next step in our study involves expanding our analysis to encompass all articles published throughout 2020 and incorporating a broader selection of newspapers. This expansion aims to provide a comprehensive and quantitatively interpretable comparison of COVID-19 news coverage. Our initial step of using a random sample and qualitative analysis was pivotal in establishing foundational codes and thematic categories. This groundwork will serve as the basis for implementing automatic coding, wherein a set of search terms linked to codes and categories will be applied to the entire corpus. Subsequently, we will conduct a qualitative in-context analysis of these automatically coded text segments, integrating both qualitative and quantitative approaches. Unlike text mining or topic modeling, our method allows for a more theoretically grounded and interpretable examination of textual data, with applicability beyond the context of newspaper articles.

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