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Media Information and People's Self-motivated Behaviour during the COVID-19 Pandemic

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[Working paper] Media Information and People's Self-motivated Behaviour during the COVID-19 Pandemic¹

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Abstract

This paper quantitatively examines the impact of media information on people's self-motivated behaviour during the COVID-19 pandemic. Using a framework based Extended Parallel Process Model and data collected from Japan in 2021 (n=2660), it is found that fear appeals of COVID-19 from television news increase people's perceived threat of COVID-19 infection and perceived efficacy of COVID-19 prevention measures. These perceptions mediate the effects of the fear appeals on people's intention to follow voluntarily COVID-19 prevention measures requested by the Japanese government. The results also show that while hard news and soft news programmes have similar effects, hard news appears to have stronger effects on the fear appeals than that of soft news.

¹ An earlier version of this research was presented by the authors at the 46th JSICR conference held on 25 Jun 2022 in Tokyo (Seo et al., 2022) and included in a book chapter (Mitomo et al., 2022).

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1 Introduction

The objective of this study is to examine how media information affects people's behaviour during the COVID-19 pandemic. Since the beginning of the COVID-19 outbreak in Japan in early 2020, the Japanese government had declared multiple full- and quasi-state of emergencies³ to try to curb the rapidly spreading novel coronavirus. In Tokyo, the capital city with a population of more than 13 million, between April 2020 and September 2021, there were four full state of emergency declarations, which in total lasted for 262 days (Cabinet Secretariat, n.d.).

Similar to most people in many other countries, under the state of emergency, people in Japan faced various restrictions on their social activities and daily lives. However, unlike many other countries, Japan was one of the few that adopted a 'soft' approach that was coined by the media as the 'Japanese model' (Harding, 2020). While the government had closed the border, cancelled public events, and restricted the opening hours of shops and restaurants, it had not imposed any hard/legal restrictions on individuals throughout the pandemic. Instead, the government 'requested' people to follow voluntarily their prevention 'advice,' such as stay at home, adopt telework, refrain from travelling and social gathering, and wear a mask.

³ In Japan, a full-state of emergency includes measures imposed at prefectural or national levels, such as school closure, cancellation of public events, requesting residents to stay at home, restricting shop opening hours and bars and restaurants from serving alcohols. A quasi-state of emergency includes measures imposed at district or regional levels focusing mainly on business, bar and restaurant restrictions (Cabinet Secretariat, 2021).

Initially, this approach was successful in containing the virus while respecting individual rights. According to University of Oxford's COVID-19 Government Response Tracker database (Hale et al., 2021), from 2020 to 2021, Japan maintained the lowest average number of COVID-19 infections per million and also the lowest government containment and closure policy stringency level⁴ among all measured countries. Japan also reported one of the world's lowest COVID-19 death rates (Matsuyaya & Mayger, 2022). However, as the pandemic prolonged, the government's soft approach was also criticised for being too lax (Wright, 2021). People were also confused by ambiguous information from authorities (Borovoy, 2022).

With little information to provide clear clues for making decisions, people turned to the mass media, the most trusted and used information source during the pandemic (Ministry of Internal Affairs and Communications, 2020), for clues in deciding what to do. In Japanese mass media, on top of conventional fact-based 'hard news' programmes, opinion-based 'soft news' programmes (known as 'wide-show' on Japanese TV) are also highly popular. During the pandemic, especially at the beginning of the outbreak, there were very few confirmed facts based on interviews or official sources. Most of these wide-show programmes relied on opinions and thoughts by panels of so-called experts and pundits from various fields, from doctors, scientists, journalists, politicians, to idols and celebrities. While these infotainment programmes have always been popular in Japan,

⁴ 'The index records the strictness of 'lockdown style' policies that primarily restrict people's behaviour. It is calculated using all ordinal containment and closure policy indicators, plus an indicator recording public information campaigns' (University of Oxford, n.d.).

during the pandemic, they were being criticised for providing inconsistent information and arousing fear and anxiety (J-Cast News, 2020; Kuwahara et al., 2023).

At the time this research was conducted, in October 2021, there was no sign that the pandemic would end soon, and many people began to feel frustrated with and exhausted from self-restraining (The Mainichi, 2021; Yomiuri Shimbun, 2021). Against this background, this study aims to investigate the effects of hard and soft news on people's intentions to continue to follow the COVID-19 prevention measures 'requested' by the government. Specifically, based on Witte's (1992) Extended Parallel Process Model (EPPM), we sought to answer two research questions:

- (RQ1) How does media information affect people's crisis management reactions in the face of the threat of the COVID-19 pandemic?
- (RQ2) Are there differences in the effects of hard and soft news on people's crisis management reactions?

2 Theoretical model

Based on Protection Motivation Theory (Rogers, 1975), Extended Parallel Process Model (EPPM) (Witte, 1992) explains how individuals respond to fear appeals—public communication messages that are designed to persuade people to take action by arousing fear.

EPPM (Figure 1) suggests that in the face of a fear appeal, people will respond with either a fear control or a danger control process. In the fear control process, people take defensive actions against the fear appeal, for example, rejecting or ignoring it. On the other hand, under the danger control process, people take protective actions, such as

risk mitigation or behavioural change. Whether a person takes defensive or protective actions is determined by a cognitive process of weighing their perceived threat of the risk conveyed in the fear appeal and their perceived efficacy of available countermeasures. In the case of a fear appeal that encourages people to take preventive actions against infectious disease, the perceived efficacy would be perceived response efficacy (e.g., are the suggested actions useful in preventing infection) and perceived self-efficacy (e.g., can I take the suggested actions). In parallel, the perceived threat would be perceived susceptibility (e.g., how likely I will get infected) and perceived severity (how severe will the consequences be if I am infected) (Popova, 2012 and Witte, 1992).

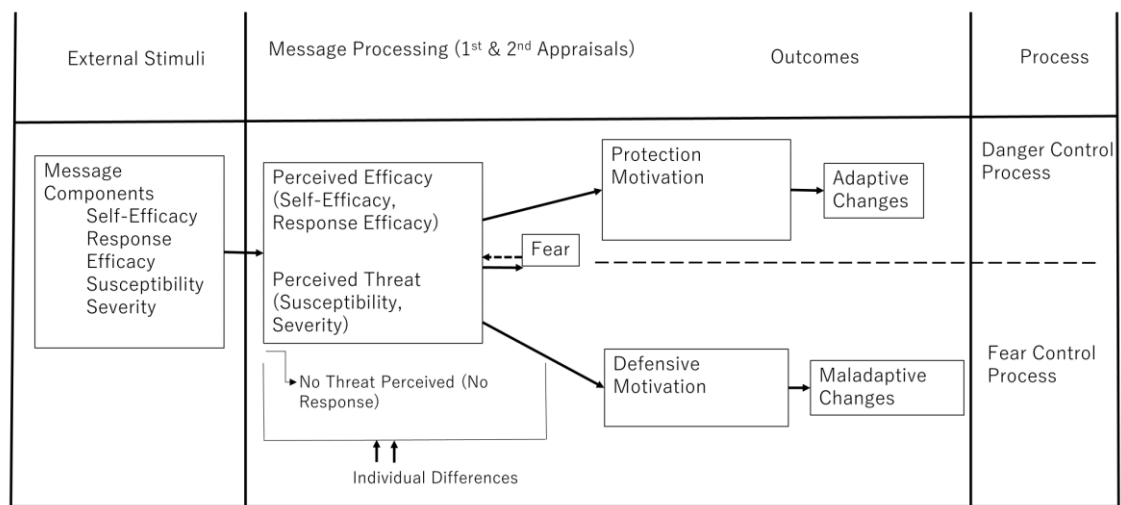
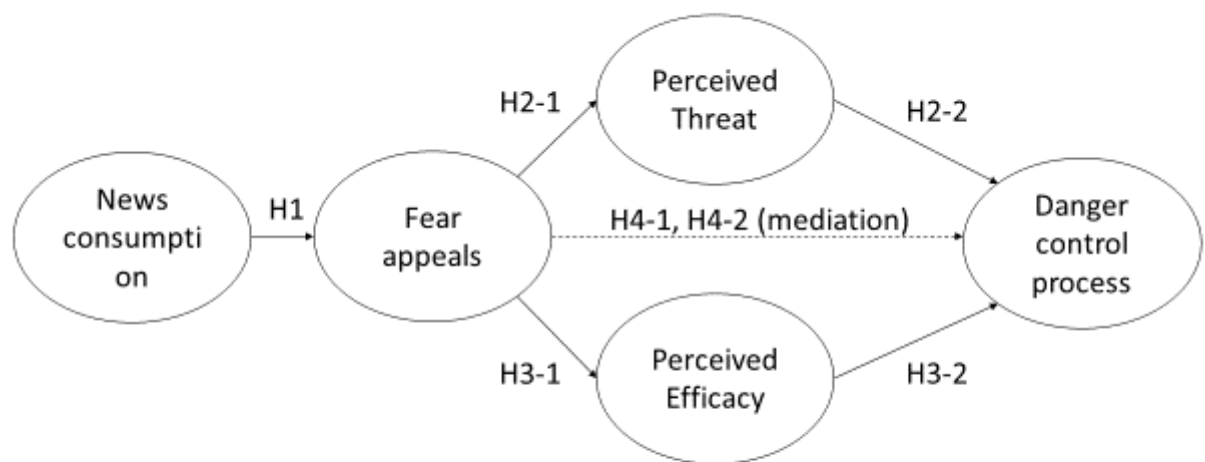


Figure 1 EPPM (Witte, 1992, p. 338) (reproduced by the authors).

According to Witte (1992), as long as perceived efficacy is higher than perceived threat, people will accept the fear appeal and take protective actions (the danger control process in Figure 1). On the other hand, at some critical point, when perceived threat

exceeds perceived efficacy, either because the perceived threat is too high or the perceived efficacy is too low, people will become defensive towards the fear appeal (the fear control process in Figure 1).

In response to our research questions, we developed a model based on EPPM to examine how people respond to fear appeals of COVID-19 from media (Figure 2).



Control: Age, Gender, Education, News consumption (Internet media), News consumption (SNS), COVID-19 impact (income), COVID-19 impact (health), Fear of COVID-19

Figure 2 Theoretical model

For RQ1, the effects of media information on people's reactions, first, knowing that during COVID-19, most people in Japan obtained COVID-19-related information from mass media (Ministry of Internal Affairs and Communications, 2020), we assume that consumption of hard and soft TV news increases fear appeals of COVID-19 from media (H1).

Second, we hypothesise that the fear appeals from hard and soft news consumption increase people's perceived threat of COVID-19 infection (H2-1), which in turn affects their intention to adopt the danger control process (H2-2). Similarly, we assume that the fear appeals increase people's perceived efficacy of COVID-19 prevention measures (H3-1), which in turn also affects their intention to adopt the danger control process (H3-2).

Third, we hypothesise that the effects of the fear appeals on people's intention to adopt the danger control process are mediated by their perceived threat (H4-1) and efficacy (H4-2).

Last, we include social demographic factors (age, gender, and education), usage of internet media and social media for obtaining COVID-19 information, financial and health impact from COVID-19, and fear of COVID-19 as control variables.

For RQ2, the differences between the effect of hard news and soft news, we compare the results of the models with inputs from hard news and soft news programmes independently.

3 Data and methods

Data were collected from an online questionnaire survey conducted in October 2021⁵, right after the fourth state of emergency in Tokyo, which lasted 80 days, was lifted. The survey was administered by a professional survey company, in which we collected responses from 3,100 adults living in the Greater Tokyo Area. The samples were selected from the survey company's panel using quota sampling with equal numbers of male and

⁵ The survey of this study was supported by Mitomo Lab at Waseda University.

female respondents and equal numbers of respondents in each of the ten age groups (20 to 69 in five-year-steps). We employed structural equation modelling (SEM) to test the hypotheses using IBM SPSS and AMOS version 27.

3.1 News consumption

For news consumption, we first explained to respondents the definitions of hard and soft news TV programmes with examples. Then we asked them on average, on a 9-point scale (1=never, 9=more than once per day), how frequently they had watched these hard news and soft news TV programmes in the past year.

3.2 Fear appeals of COVID-19 from media

For the fear appeals of COVID-19 from news media, we asked respondents, on a 5-point scale (1=not at all, 5=very much), how much they agree with 18 specific impacts caused by the COVID-19 pandemic on six different aspects that we collected from hard and soft news programmes. They include issues related to the economy (three items), the medical system (three items), health (three items), society (three items), COVID-19 vaccinations (three items), and overseas countries (three items). We asked the questions separately for hard news and soft news TV programmes. The items are listed in Table 1.

3.3 Perceived efficacy

Based on Popova (2012) and Witte (1992), we defined perceived efficacy as perceived self-efficacy and perceived response efficacy. For perceived self-efficacy, we asked respondents, on a 5-point scale (1=never, 5=always), whether they could adopt 14 specific COVID-19 prevention measures suggested by the Japanese government, such as utilise

online shopping, adopt telework, avoid crowds, and refrain from travelling and social gathering. And for perceived response efficacy, we asked respondents, on a 5-point scale (1=not at all, 5=very much), whether they thought the same 14 measures are effective in preventing COVID-19 infection.

3.4 Perceived threat

Similar to perceived efficacy, also based on Witte (1992) and Popova (2012), we defined perceived threat as perceived severity and perceived susceptibility. For perceived severity, we asked respondents, on a 5-point scale (1=not at all, 5=very much), how they rate the severity of COVID-19 infection (three items, e.g., one may die from COVID-19 infection), and their susceptibility to COVID-19 infection (three items, e.g., I will get infected by COVID-19).

3.5 Danger Control Process

Danger control process was represented by the intention to follow nine specific COVID-19 prevention measures requested by the Japanese government, such as refrain from travelling and social gathering, adopt telework, get vaccinated, and avoid crowded spaces. Specifically, we asked respondents to rate whether they intend to adopt these measures following the government's requests (5) or their own decisions (1).

4 Results

To compare the effects between hard and soft news, we selected the 2660 respondents who consumed both hard and soft news from the 3100 samples. Overall, the results (Figure 3) are in line with EPPM even after controlling for the effects of social demographic factors, usage of internet media and social media, health and financial

impact from COVID-19, and fear of COVID-19.

First, consumption of hard and soft news increases fear appeals of COVID-19 (H1, $\beta=0.157^{***}$). Second, fear appeals increase perceived threat of COVID-19 infection (H2-1, $\beta=0.517^{***}$) and perceived efficacy of COVID-19 prevention measures (H3-1, $\beta=0.526^{**}$). Third, while perceived threat slightly reduces intention to adopt the danger control process (H2-2, $\beta=-.076^{**}$), perceived efficacy has a strong positive effect on the intention (H3-2, $\beta=0.210^{***}$). Fourth, using an AMOS plug-in by (Gaskin, n.d.), we found that both perceived threat (H4-1, $\beta=-0.087^{*}$) and perceived efficacy (H4-2, 0.337^{***}) mediate the effects of fear appeals on intention to adopt the danger control process.

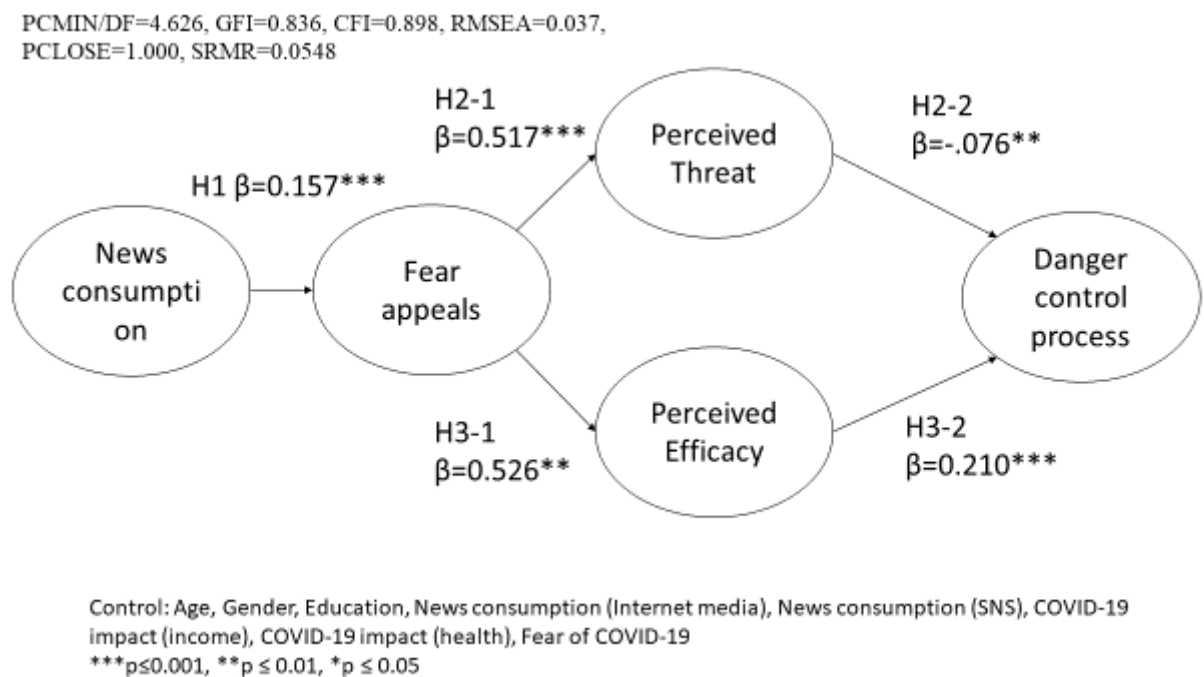


Figure 3 RQ1 results

For RQ2, we tested the model for hard news and soft news separately. For example, for hard news, we used only the consumption of hard news TV programmes for news consumption and the fear appeals from these programmes for fear appeals, and repeated the same procedure for soft news. The results (Figure 4) show that consumption of hard and soft news has similar effects on fear appeals, perceived threat, perceived efficacy, and intention to adopt the danger control process.

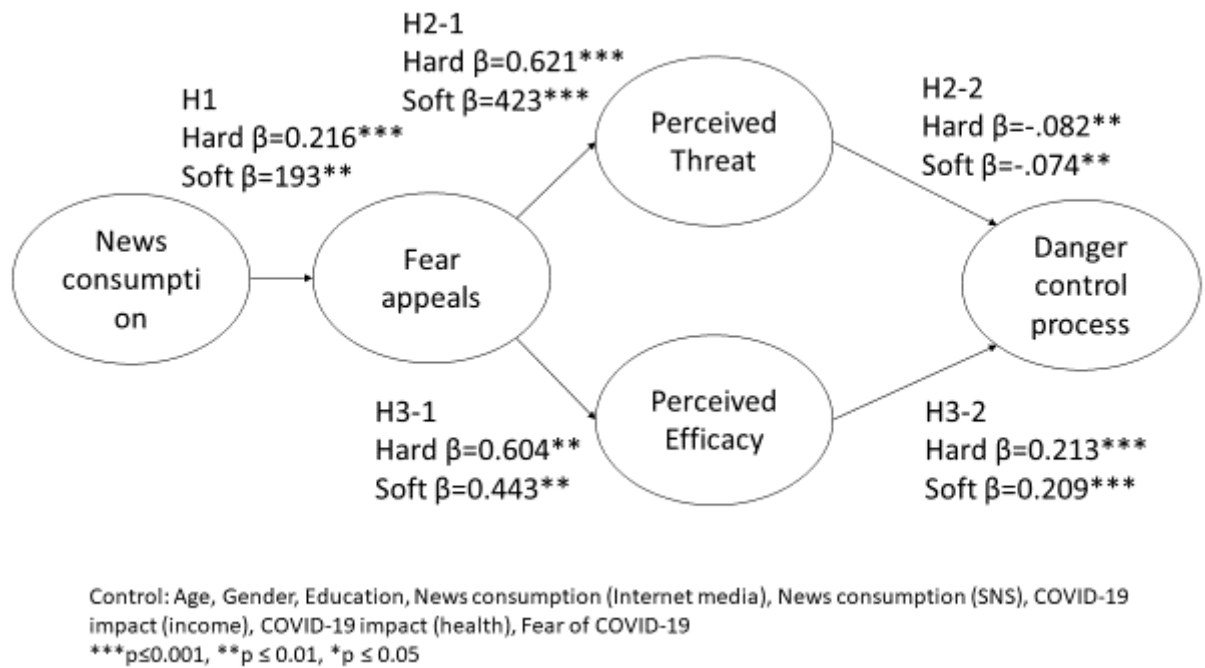


Figure 4 RQ2 model results

In addition, we also compared the effects of hard and soft news on the different fear appeals using a paired-t test. The results (Table 1) show that overall, hard news has stronger effects on the fear appeals than soft news.

Table 1 Fear appears from hard and soft news (paired-t test)

| Topic | Feal appeals | Hard news (m) | Soft news (m) | Difference | pair t-test (Sig-2 tail) |
|----------|---|---------------|---------------|------------|--------------------------|
| Economy | Unemployment has increased rapidly because of the pandemic | 3.6 | 3.54 | 0.06 | 0.000 |
| Economy | Many tourist companies are bankrupted because of the pandemic | 3.84 | 3.62 | 0.22 | 0.000 |
| Economy | Largest drop in GDP since WW2 because of the pandemic | 3.57 | 3.37 | 0.2 | 0.000 |
| Medical | Insufficient health workers to look after the large number of COVID-19 patients | 3.85 | 3.66 | 0.19 | 0.000 |
| Medical | The medical system will collapse because of the large number of COVID-19 patients | 3.91 | 3.73 | 0.18 | 0.000 |
| Medical | Health workers are exhausted from looking after the large number of COVID-19 patients | 3.99 | 3.77 | 0.22 | 0.000 |
| Health | After-effects of COVID-19 infection | 3.36 | 3.35 | 0.01 | 0.456 |
| Health | The number of serious case of COVID-19 infection is increasing | 3.58 | 3.52 | 0.06 | 0.000 |
| Health | Many people are having mental diseases because of the pandemic | 3.29 | 3.3 | -0.01 | 0.477 |
| Social | Poverty has increased because of the pandemic | 3.73 | 3.62 | 0.11 | 0.000 |
| Social | Wealth gap has widened because of the pandemic | 3.68 | 3.52 | 0.16 | 0.000 |
| Social | Number of suicide has increased because of the pandemic | 3.37 | 3.33 | 0.04 | 0.009 |
| Vaccine | Side effects of COVID-19 vaccines | 3.78 | 3.65 | 0.13 | 0.000 |
| Vaccine | Medical incidents caused by COVID-19 vaccines | 3.28 | 3.32 | -0.04 | 0.038 |
| Vaccine | Insufficient supplies of COVID-19 vaccines | 3.5 | 3.49 | 0.01 | 0.560 |
| Overseas | Racial discrimination caused by COVID-19 in overseas countries | 3.41 | 3.39 | 0.02 | 0.229 |
| Overseas | Large number of deaths caused by COVID-19 in overseas countries | 3.67 | 3.47 | 0.2 | 0.000 |
| Overseas | Protests against government COVID policies in overseas countries | 3.37 | 3.29 | 0.08 | 0.000 |

6 Discussion and conclusion

This study used EPPM to examine how media information influenced people's intention to follow voluntarily COVID-19 prevention measures requested by the Japanese government.

Answers to RQ1 show that the Japanese news media was effective in motivating people to follow the measures. Specifically, the results show that fear appeals of the pandemic from consumption of hard and soft TV news programmes increase people's perceived threat of COVID-19 infection and perceived efficacy of prevention measures, which in turn mediate the effects of the fear appeals on their intention to adopt the danger control process; thus, to follow the government's advice in this case.

That said, it is worth noting that while the perceived efficacy has a strong positive effect on the danger control process, the perceived threat has a mild negative effect. This may be explained by 'the critical point' in EPPM. According to Witte (1992), when

perceived threat is too high, exceeding perceived efficacy, the fear control process will take over and people will become defensive and avoid or ignore the fear appeals (e.g., I will get infected anyway and there is nothing I can do to prevent it). Another possible reason, in particular in the case of COVID-19, is that the threat was not coming from infection but also from economic and social pressure. A 24-country (including Japan) study by Nisa et al. (2021) found that perceived economic risk is a more consistent predictor of people adopting protective behaviours against COVID-19 than perceived health risk. In other words, it is possible that people intended to follow the government's advice because of other threats.

The implication of these findings is that as most media reports during the pandemic focused on the threats of the virus, overemphasising the threats may have a backfire effect if these fear appeals are not accompanied by messages about the efficacy of countering measures. This proposition is beyond the scope of this study and calls for further research.

As for RQ2, the results show that even though hard news appears to have stronger effects on the fear appeals than that of soft news, the patterns of their effects on the fear appeals and the subsequent perceived threat and efficacy are similar. In other words, while reports from soft news TV programmes on COVID-19 were being criticised, these programmes could have a positive interaction effect with hard news programmes, considering their popularity. The interaction between hard and soft news TV programmes also calls for further research.

That being said, we acknowledge that it is difficult to measure the influences from hard and soft news separately, as most people in Japan consume both. Similarly, another limitation of this study is that even though we have controlled for the effects of the usage

of internet media and social media, we could not eliminate influence from other information sources like interpersonal communication and local communities.

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