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## ARTICLE

# FACTORS INFLUENCING CITIZENS' WILLINGNESS TO TAKE PREVENTIVE MEASURES DURING THE COVID-19 PANDEMIC: EVIDENCE FROM CHINA

Jing Wen<sup>1</sup>, Dingyi Li<sup>2</sup>, Junzhu Zhao<sup>3,\*</sup>

<sup>1</sup>Humanities Department, The Open University of China, Beijing 100039, China.

<sup>2</sup>Institute of Journalism and communication, Chinese Academy of Social Sciences, Beijing 100021, China.

<sup>3</sup>Institute of Finance and Economics, Central University of Finance and Economics, Beijing 100081, China.

\*Corresponding Author Email: [zjzcu@126.com](mailto:zjzcu@126.com)

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## ARTICLE DETAILS

## ABSTRACT

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The factors that influenced the public's intention to take preventive measures and precautions during the COVID-19 pandemic are worthy of investigation as they could inform future prevention and intervention efforts during public health crises. Our study utilizes the cognitive mediation model as a theoretical framework to examine the variables that impact individuals' willingness to undertake preventive behaviours. An online questionnaire survey, conducted randomly and representing the whole country, was employed to examine the impact of guidance, news attention, news elaboration, and knowledge on citizens' inclination to adapt preventive measures during a pandemic. The results show that guidance has a positive impact on news attention and elaboration. Knowledge and behavioural intentions are positively impacted by news attention and elaboration, while behavioural intentions are positively impacted by knowledge. Based on the results derived from structural equation modelling, we emphasize that only joint efforts by policymakers, media service platforms, and the public can boost citizens' willingness to take precautions against an epidemic.

### KEYWORDS

Cognitive Mediation Model, News Attention, News Elaboration, Behavioral Intentions

## 1. INTRODUCTION

On May 4, 2023, the Director-General of the World Health Organization (hereafter referred as WHO) declared that COVID-19 had transitioned from being an international emergency pertaining to public health to a persistent health problem (WHO, 2023a). This represents an interim victory in the fight against the virus that not only triggered a global public health crisis that has overwhelmed national health systems, with more than 766 million confirmed cases and less than 7 million deaths thus far (WHO, 2023b), but also the largest economic crisis in over a century (World Bank, 2022). To deal with its impacts, countries took unprecedented emergency measures (e.g. mobility restrictions, limitations on public gatherings, travel bans, home-based study and work) that severely affected economic activity.

From initially detecting COVID-19 to recording the first cases and test results, China's prevention and control measures evolved along with an increased awareness of the disease. The white paper "Fighting Covid-19 China in Action", released by The State Council Information Office of the People's Republic of China (2020), chronicles the progression of the COVID-19 outbreak: on December 27, 2019, a case of pneumonia with an unidentified cause was confirmed at Wuhan Jiangnan Center for Disease Control and Prevention, subsequently identified as viral pneumonia; on January 12, 2020, "viral pneumonia of unknown cause" was officially designated as "pneumonia caused by the novel coronavirus"; during

the night of January 19, a national cadre of senior medical and disease control experts concluded through careful examination and deliberation that person-to-person transmission had occurred; on January 20, the Chinese government took decisive action by implementing travel restrictions from Wuhan—a pivotal step marking the initiation of efforts to safeguard Wuhan and Hubei from further disease dissemination. Shortly thereafter, extensive public health emergency measures were implemented throughout China. The official start of the country's most complete, stringent, and broad programs for epidemic prevention and control initially stopped the disease's progress.

Evidence indicates that an informed and aware public is of utmost importance in implementing measures to effectively protect public health. This implies that fundamental health information and services are available for the public to access, absorb, and comprehend to make informed health decisions (Ratzan, 2009). The Chinese government has given the COVID-19 epidemic top priority and moved swiftly to address it. Furthermore, almost 1.4 billion Chinese people have demonstrated incredible solidarity and tenacity in building a solid defence that highlights their power throughout this crisis. The first activity citizens performed each morning was to check the latest data and news to keep abreast of the pandemic; they spent approximately 1–4 h per day browsing pandemic-related information. The most attention was paid to the overall dynamic changes of the pandemic, followed by information related to their own safety or interests, including pandemic prevention

and the delayed resumption of work and school (Zhao et al., 2020). Even farmers and herders in the Inner Mongolia Autonomous Region could obtain information about the pandemic through TV and mobile phones, allowing them to take preventive measures to reduce the infection rate (Xie and Wen, 2021). China's efforts to tackle this infection included a unique combination of citizen participation, strong government, stringent regulations, strict community monitoring, and the prudent use of big data and digital technology (Hua and Shaw, 2020). Against this background, the current study aims to explore the factors influencing the public's acceptance of preventative measures in the case of a widespread health emergency.

Our understanding of how news attention and elaboration may mediate the effect of guidance on people's level of COVID-19-related knowledge and intention to take precautions is based on the cognitive mediation model (Eveland Jr, 2001). This model has mainly been applied in political settings in previous research (Beaudoin and Thorson, 2004; Eveland Jr, 2001, 2002), although some studies have explored non-political subjects in other nations (Ho et al., 2013; Yang et al., 2017). By assessing the cognitive mediation model's (hereafter referred as CMM) applicability in the context of COVID-19, the current study contributes to and complements the literature. In addition, research must consider the likelihood that, over time, the public will be willing to continue following the measures necessary to stop COVID-19's spread (Barari et al., 2020). This study uses data from the later stages of the pandemic to explore Chinese people's willingness to take preventive measures two years after the outbreak. Outcome variables based on behavioural intention during the COVID-19 pandemic are utilized. Moreover, China has experienced several pandemic-level infectious diseases, such as a dog-associated primary pneumonic plague (Wang et al., 2011), SARS (Zhong, 2004), and H7N9 (Fang et al., 2013). This emphasizes the issue's complexity, as the climatic differences between northern and southern China can affect the frequency and extent of infectious diseases (Xu et al., 2011). Based on China's unique geographical and cultural context, this study is expected to not only provide a new trajectory for research in other countries but also enrich the current literature on health communication.

## 2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

### 2.1 A Brief Introduction to CMM

According to the CMM, learning from news is determined through a causal process in which an individual's learning goals govern how they process information, and information processing significantly impacts the extent to which learning occurs (Eveland Jr, 2001). Studies have highlighted how the cause-and-effect relationship works in this context (Beaudoin and Thorson, 2004; Eveland Jr, 2001, 2002; Eveland Jr et al., 2003). Specifically, attention to news media is driven by surveillance gratification, and elaborative processing is the result of this attention; these coupled cognitive processes boost political knowledge. With the confluence of theory and research in the fields of cognitive psychology, educational psychology, utility and gratification, and news information processing, motivation to learn and information processing emerge as the two core variables of the CMM (Eveland Jr, 2001, 2002).

Motivation is the reason why people initiate and perform voluntary behaviour, which expresses the meaning of human behaviour, reveals a person's values, and frequently influences a person's perception, cognition, emotion, and behaviour (Reiss, 2004). Information processing refers to the general act of movement or manipulation in memory, and plays a pivotal role in the CMM (Eveland Jr, 2002). According to the CMM, motivation influences information processing (Eveland Jr, 2002).

### 2.2 Guidance Motivation, News Attention, and News Elaboration

Motivation can take many forms, such as the desire to recognize, comprehend, evaluate, and make decisions. In this study, we focused on guidance as a key motivation for COVID-19 information processing. Guidance is defined as the motivation to use mediated information for decision-making (Beaudoin and Thorson, 2004). It has two dimensions: affective guidance and behavioural guidance (Lometti et al., 1977). Affective guidance entails seeking information on how individuals feel about an issue, whereas behavioural guidance focuses on seeking help in deciding what to do.

Information processing is often measured through attention and elaboration (Eveland Jr, 2002). Attention is a covert mental activity (Chaffee and Schleuder, 1986), whereas elaboration refers to the process of relating new information to the information already stored in one's memory, such as prior knowledge, personal experiences, or innovative connections between two new pieces of information (Eveland Jr, 2001).

Some studies have found that motivation shapes media attention and information processing (Eveland Jr et al., 2003). Guidance is not only the main motive for visiting political websites (Kaye and Johnson, 2002) but also the strongest motivation for engaging with political blogs (Kim and Johnson, 2012). A study exploring public response to the H1N1 pandemic in Singapore found that news attention and elaboration were positively associated with guidance (Ho et al., 2013). According to a study based on a 2000 telephone survey of a Midwest community in the US, guidance is positively correlated with news reliance in a single-motivation model (Beaudoin and Thorson, 2004). Therefore, we put forward the subsequent hypothesis:

H1: Guidance is positively associated with COVID-19 news attention.

H2: Guidance is positively associated with elaboration of COVID-19 news.

Several studies have shown that news attention can enhance people's elaboration of news. A study examining the factors impacting public knowledge of nuclear energy in Singapore finds that attention to TV, website, and social media news has spurred news elaboration (Ho and Chuah, 2022). Elaboration has been positively influenced by the attention to newspapers and television (Lee et al., 2016) and to traditional and online media (Ho and Yang, 2018). Therefore, we put forward the subsequent hypothesis:

H3: COVID-19 news attention is positively associated with the elaboration of COVID-19 news.

### 2.3 News Attention, Elaboration, and Knowledge Of COVID-19

News attention has a positive effect on knowledge of political communication (David, 2009; Eveland Jr, 2001, 2002), but it has significant effects in other areas; for example, newspaper attention is an important source of scientific knowledge about biotechnology (Brossard and Nisbet, 2007). A study that analysed individuals' knowledge acquisition process while they watched COVID-19 videos found that individuals' attention positively influenced the knowledge acquired from COVID-19 videos (Liu et al., 2023). Thus, we put forward the subsequent hypothesis:

H4: Attention to COVID-19 news is positively associated with knowledge of the COVID-19 pandemic.

Empirical studies demonstrate that news elaboration is positively related to factual knowledge of politics (Park and Kaye, 2019), climate change (Ho and Yang, 2018), and nanotechnology (Yang et al., 2017). A study exploring the pathways through which social media use is linked to health knowledge finds that information elaboration is positively associated with health knowledge (Jiang, 2024). Therefore, we put forward the subsequent hypothesis:

H5: Elaboration of COVID-19 news is positively associated with COVID-19 pandemic knowledge.

### 2.4 Cognitive Mediation Model Extended to Behavioural Intentions

Behavioural intention refers to an individual's motivation to perform a behaviour (Sheeran, 2002), and is quantified by how strongly they want to carry out that behaviour (Maffei et al., 2012). Behaviour is influenced by behavioural intentions (Kim et al., 2013), meaning that an individual's intention is the most immediate predictor of usage behaviour (Lee and Lehto, 2013). Therefore, in the expanded CMM, behavioural intention should be a reliable indicator of actual behaviour.

Using the health belief model, Kim and Cooke (2021) investigated how empathy influences beliefs and behavioural intentions toward ocean health, and found that media attention positively influences behavioural

intentions (e.g. willingness to buy a fuel-efficient automobile). Ho et al. (2015) revealed that civic engagement behavioural intentions were positively correlated with attention to pro-environmental messages on Internet media. Therefore, we put forward the subsequent hypothesis:

H6: Attention to COVID-19 news is positively associated with intention to take COVID-19 preventive measures.

Walsh et al. (2014) conducted a study to evaluate how an advertising campaign influenced consumers' intention to engage in certain behaviours across different countries. They discovered that when consumers thought deeply about the campaign, it had a favourable impact on their desire to engage in the advertised behaviours. According to Yu et al. (2017), reported that online purchase intention could be positively influenced by imagery elaboration online purchase intention can be enhanced using imagery elaboration that is triggered by online product encounters on apparel websites. There is a positive relationship between the level of imagery elaboration and the intention to make online purchase. Thus, we put forward the subsequent hypothesis:

H7: Elaboration of COVID-19 news is positively associated with intention to take COVID-19 preventive measures.

According to Gao et al. (2016), customers' behavioural intentions toward green hotels and restaurants were favourably influenced by their internalized views, such as personal values, environmental knowledge or awareness, attitudes, and perceived benefits. A further investigation examined the notion of ecotourism, specially focusing on tourism at the Wuyi Mountain Duanyuan Ecological Tourism Zone in China. The study discovered a positive relationship between individuals' understanding of the environmental and their actions towards preserving it (Zheng et al., 2018). Therefore, we put forward the subsequent hypothesis:

H8: Knowledge of the COVID-19 pandemic is positively associated with the intention to take COVID-19 preventive measures.

Based on these hypotheses, we propose an extended CMM in this study, as depicted in Figure 1, to investigate intentions to take COVID-19 preventive measures.

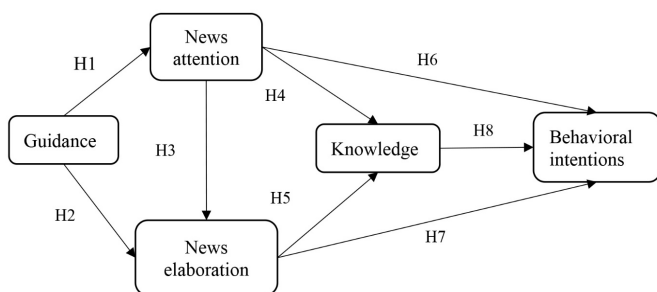


Figure 1: Theoretical framework

### 3. MATERIAL AND METHODS

#### 3.1 Data Collection

An online survey panel was used to collect data. The web-based questionnaire was administered via Beijing PowerCX Co., Ltd., a professional survey platform with more than four million real users and trusted by over 1,000 customers (e.g. universities, JD.com, and Unilever) in academic and market research (PowerCX, 2023). The online agency requested participants' consent prior to starting the questionnaire, and questionnaire completion was considered consent to participate in the study. A random sample of 1,000 respondents was chosen in May 2022 from the Beijing PowerCX panel's available pool.

In order to address the constrains of solely Internet users and to guarantee a comprehensive representation at the national level, a quota system was implemented based on factors such as sex, age, education, monthly income, location, and occupation. This ensured that the sample closely resembled the distribution of these demographic factors as reported in the China Internet Network Information Center's (hereafter referred as CNNIC) 47<sup>th</sup> Statistical Report on China's Internet Development (CNNIC,

2021). The report was jointly carried out by relevant Internet entities organized by the CNNIC, which was authorized by the Ministry of Industry and Information Technology of the People's Republic of China. Since 1997, the CNNIC has released a total of 46 reports. These studies serve as valuable resources for Chinese government departments, local and foreign industrial organizations, as well as experts and scholars, enabling them to gain insights into China's Internet development and shape appropriate policies. In terms of demographic information, 49% and 51% of the respondents were female and male, respectively. Their ages varied from 16 to 70 years ( $M = 36.28$ ,  $SD = 12.96$ ), and were categorized into five age groups: under 19, 20–29, 30–39, 40–49, and  $\geq 50$  years. The level of education is assessed across five categories, ranging from the lowest to the highest: primary school and below, junior high school, senior high school, junior college, bachelor's degree and above.

Monthly income was measured as a continuous variable ( $M = 4100.42$ ,  $SD = 3266.98$ ) and divided into five groups according to the National Bureau of Statistics (2023) calculations. All respondents were ranked by per capita income from low to high, and divided into the five groups. The median monthly income ranged from 5601–8400 yuan (approximately USD \$ 823.68–\$ 1235.29).

#### 3.2 Analytical Approach

A two-step analytical approach was adopted: first, the measurement model was estimated using confirmatory factor analysis, and then the significance of all pattern coefficients and the model fit were tested by structural equation modelling (hereafter referred as SEM) (Anderson and Gerbing, 1988). The model fit was evaluated using a variety of goodness-of-fit indices, including chi-square, relative chi-square (chi-square/ $df$ ), comparative fit index (CFI), Tucker-Lewis index (TLI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA). A small ratio of chi-square/ $df$  (around 5 or less) represented a good model fit (Wheaton et al., 1977). CFI and TLI  $> 0.95$  were considered acceptable, and SRMR  $< 0.08$  and RMSEA  $< 0.06$  were considered a relatively good fit (Hu and Bentler, 1999).

#### 3.3 Measures

The measurement of guidance, news attention, and elaboration were derived from Ho et al.'s previous study (2013). On a 10-point scale, with 1 represented strong disagreement and 10 for strong agreement, participants were asked to rate their degree of agreement. Guidance was conducted using three items, for example, "I stay updated on COVID-19 news to assess the level of risk posed by COVID-19 and determine if it is a cause for concern." News attention was conducted using three questions to rank how much attention participant paid to COVID-19-related news in newspapers, on television, and online. Elaboration was conducted using three items, such as "when consuming news about COVID-19, I engage in a meticulous analysis of the material presented". In all measurements, the mean of the responses was calculated to form a scale, with higher scores reflecting greater engagement levels in guidance, attention to news, and depth of elaboration when processing COVID-19 information.

Knowledge of the COVID-19 pandemic and intentions to take COVID-19 preventive measures were assessed using items derived from "Prevention of COVID-19, Questions and Answers to Protection Knowledge (Pocket book)" and "China CDC Teaches You How to Take Good Personal Protection (updated version)," respectively, published by the Chinese Center for Disease Control and Prevention (hereafter referred as China CDC) (2020, 2021). Under the National Health Commission, China CDC is a national-level technical organization with a focus on public health, disease control, and prevention. Every day during the pandemic, this organization disseminated necessary information to the public through press conferences and its official website. Ten questions were derived from the information published on the website, as these items could effectively reflect the knowledge of COVID-19 that was spread through the media.

Respondents were asked to answer yes or no to the following two statements (1 = yes, 2 = no) to gauge their level of knowledge: (1) COVID-19 is a coronavirus that can infect people, and patients can exhibit a variety of clinical symptoms, from mild lung infections to

common respiratory symptoms; and (2) At present, the main route of transmission is through respiratory droplets and contact transmission, the population is generally susceptible, etc. The answers were recoded as "0" for wrong and "1" for right, and a combined scale was formed by the sum of the scores. The higher the score, the higher levels of COVID-19 knowledge ( $M = 8.59$ ,  $SD = 1.21$ ).

Behavioural intentions (China CDC, 2021) were measured by asking respondents whether they were likely to take COVID-19 precautions in the upcoming month, using the following examples: (1) wear a medical mask properly during daily life activities and when traveling around; and (2) wear a mask and keep hands clean during daily life activities and when traveling around. The questions were evaluated on a 10-point

scale. A scale was developed by averaging the 10 items, and higher values corresponded to more aggressive behavioural intentions.

## 4. RESULTS

### 4.1 Assessment of the Measurement Model's Validity

The fit of the measurement model was assessed using a confirmatory factor analysis. Both construct validity and reliability indices are shown in Tables 1 and Table 2. Based on the model fit analysis, the following values were deemed satisfactory: SRMR = 0.036, RMSEA [90% CI] = 0.053 [0.048, 0.058], CFI = 0.972, and TLI = 0.967.

**Table 1: Reliability of measurements**

	Guidance	News attention	News elaboration	Behavioural intentions
Alpha	0.807	0.776	0.933	0.960
CR	0.810	0.800	0.933	0.961
AVE	0.587	0.580	0.823	0.710

Note: Alpha: Cronbach's alpha; CR: composite reliability; AVE: average variance extracted.

The factor load of the measured variable, which was a component of the latent variable, was determined to be at least 0.60 after the construct validity and reliability of the variables were assessed. Additionally, for every variable, both the composite reliability and Cronbach's alpha were above 0.70. Finally, all the variables' average extracted variance was larger than 0.50, suggesting good reliability.

**Table 2: Measurement model fit analysis results**

Fit index	Measurement model fit	Recommendation
Chi-square	555.738	N/A
Degree of freedom ( <i>df</i> )	146	N/A
<i>p</i> -value	<0.001	>0.05
Chi-square/ <i>df</i>	3.806	<5.00
CFI	0.972	≥0.95
TLI	0.967	≥0.95
SRMR	0.036	≤0.08
RMSEA [90% CI]	0.053	≤0.06

Note: CFI: comparative fit index; TLI: Tucker-Lewis index; SRMR: standardized root mean square residual; RMSEA: root mean square error of approximation; CI: confidence interval.

### 4.2 Test of the Structural Model

To evaluate the significance of both path coefficient and model fit, SEM was applied. To check suitability, we first calculated the TLI, CFI, SRMR, and RMSEA scores. The chi-square value was divided by the degrees of freedom to get the model fit value, which was less than the standard value. Furthermore, we verified that TLI (0.904), CFI (0.910), RMSEA (0.054), and SRMR (0.065) results supported a reasonable model fit. As a result, this model was a good fit for SEM analysis (Table 3).

**Table 3: SEM model fit analysis results**

Fit index	SEM model fit	Recommendation
Chi-square	708.202	N/A
Degree of freedom ( <i>df</i> )	163	N/A
<i>p</i> -value	<0.001	>0.05
Chi-square/ <i>df</i>	4.345	<5.00
CFI	0.963	≥0.95
TLI	0.957	≥0.95
SRMR	0.054	≤0.08
RMSEA [90% CI]	0.058	≤0.06

Note: SEM: structural equation modelling; CFI: comparative fit index; TLI: Tucker-Lewis index; SRMR: standardized root mean square residual; RMSEA: root mean square error of approximation; CI: confidence interval.

Table 4 presents the simple correlation matrix. The findings demonstrate a positive association between guidance and news attention ( $\beta = 0.308$ ,  $p < 0.001$ ; H1) and a statistically significant relationship between guidance and news elaboration ( $\beta = 0.100$ ,  $p = 0.008$ ; H2), such that guidance positively influenced news attention and news elaboration (Table 5). As predicted, news attention increases news elaboration ( $\beta = 0.199$ ,  $p < 0.001$ ; H3). There is statistically significant correlation between news attention ( $\beta = 0.347$ ,  $p < 0.001$ ; H4) and news elaboration ( $\beta = 0.124$ ,  $p < 0.001$ ; H5) in terms of knowledge. The findings show that our analysis supports the original CMM (see Figure 2).

Furthermore, the effects of news attention ( $\beta = 0.207$ ,  $p < 0.001$ ; H6), elaboration ( $\beta = 0.345$ ,  $p < 0.001$ ; H7), and knowledge ( $\beta = 0.156$ ,  $p < 0.001$ ; H8) on behavioural intentions are statistically significant; that is, news attention and elaboration positively affect behavioural intentions, while knowledge increases behavioural intentions. Figure 2 shows that all eight hypotheses are strongly supported.

**Table 4: Correlation analysis results**

	1	2	3	4	5
1. Guidance	1				
2. News attention	0.251***	1			
3. News elaboration	0.142***	0.219***	1		
4. Knowledge	0.406***	0.357***	0.195***	1	
5. Behavioural intentions	0.233***	0.312***	0.401***	0.301***	1

Note: \*\*\* $p < 0.001$ .



Table 5: Path analysis results					
Path	Standardized estimate	Estimate	S.E.	C.R.	P
Guidance→News attention	0.308	0.348	0.045	7.760	***
Guidance → News elaboration	0.100	0.165	0.063	2.639	0.008
News attention → News elaboration	0.199	0.290	0.055	5.304	***
News attention → Knowledge	0.347	0.324	0.033	9.884	***
News elaboration → Knowledge	0.124	0.080	0.020	3.928	***
News attention → Behavioural intention	0.207	0.267	0.045	5.980	***
News elaboration → Behavioural intention	0.345	0.306	0.028	11.053	***
Knowledge → Behavioural intention	0.156	0.216	0.043	5.022	***

Note: \*\*\*  $p < 0.001$ .

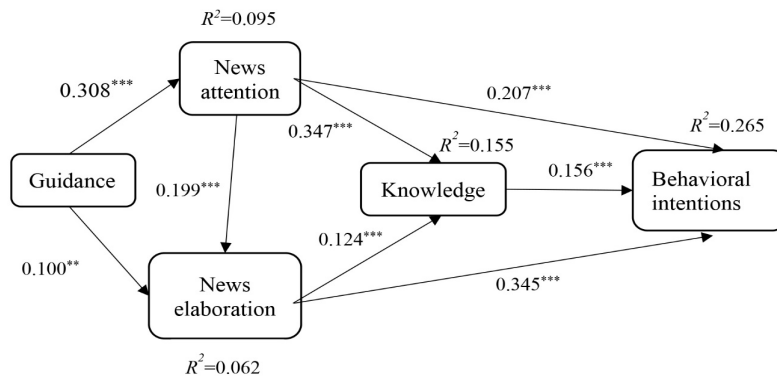


Figure 2: Results of path analysis

## 5. DISCUSSION

In this study, we modified the method of testing the CMM (Eveland Jr, 2001, 2002; Eveland Jr et al., 2003) in two ways: (1) instead of surveillance gratification, we used an index of guidance as motivation; and (2) we created another outcome of the model—willingness to take preventive measures—in addition to acquiring knowledge on COVID-19.

Guidance is strongly related with both news attention and elaboration. This finding is consistent with that of Ho et al. (2013), who discovered that during the H1N1 pandemic in Singapore, news attention and elaboration were positively correlated with motivation, such as guidance. Both scenarios occurred in Asia, suggesting that the CMM is also applicable to non-U.S. populations. Future studies should explore the relationship between different motivations and information processing in various contexts.

In our study, COVID-19-related knowledge was strongly influenced by news attention and elaboration. This finding is in line with Liu et al. (2023) who reported that both individuals' attention and elaboration positively influenced the knowledge they acquired from COVID-19 videos. Research has found that news attention is positively correlated with news elaboration (Li and Bautista, 2021; Wei and Lo, 2008), indicating that news elaboration functions as a mediator between news attention and knowledge. This supports the result that substantial indirect relationships exist between attention to newspapers, television, and factual knowledge through elaboration (Lee et al., 2016). Thus, the public's ability to access and process information plays a pivotal role in pandemic awareness.

Furthermore, we found that behavioural intentions were significantly predicted by news attention, elaboration, and knowledge. The more the public paid attention to information from different sources, the more inclined they were to take precautions; the finding echoed the results reported by Jiang et al. (2022) that individuals who paid greater attention to COVID-19-related news had a greater intention to maintain social distance. The more the public elaborated on relevant information, the more likely they were to take actions; this finding also resonated with Walsh et al. (2014) who found that message elaboration affects behavioural intention more strongly in countries with a stronger

normative/moral pillar. The higher the levels of COVID-19 knowledge about public gains, the more likely people were to take preventive actions, which supported the results of McCaffery et al. (2003); that is, increasing knowledge might positively influence the public's screening participation intention. The public's readiness to take preventative action can be influenced by their perception of the disease, their ability to acquire and digest information, and their willingness to actively participate in attempts to stop the spread of infectious diseases.

### 5.1 Limitations and Future Studies

Despite its limitations, this study offers some significant findings by extending CMM to behavioural intentions within the COVID-19 framework in China. Firstly, the study contains methodological constraints due to the use of cross-sectional data. Although the cross-sectional design is one of the most common study designs used by epidemiologists, the data represented occurrences at a single moment in time (Olsen and St George, 2004). The cross-sectional method also failed to adequately address the possibility that the investigated relationships may vary systematically over time (Bowen and Wiersema, 1999). Therefore, analytical methods that use pooled time series should be adopted in future studies, and panel and experimental data would be good choices for future research. For example, panel data may be able to replicate human behaviour more accurately than time series data or a single cross-section (Hsiao, 2005).

Second, the multidimensional nature of news attention was not considered in this study. Li and Bautista (2021) proposed that news attention could be tested separately in three dimensions—newspapers, television, and the Internet—and that only news attention on the Internet had a positive effect on news elaboration. When news attention was measured as a multidimensional variable, each dimension was found to have a different influence on news elaboration. Mohanty et al. (2009) showed that using multidimensional scale measurements can reduce errors when a variable is multidimensional. Future studies could explore the dimension of news attention by dividing it into different channels for better accuracy and reliability.

### 5.2 Theoretical Contributions

The study makes several theoretical contributions. First, it extends the applicability of CMM beyond political communication, which was its original use until Eveland Jr (2001) pointed out the benefits of testing the model in another context. Our findings respond to this suggestion, reflecting the health knowledge and behavioural intentions of Chinese citizens during the COVID-19 crisis.

Second, our study explores motivations other than surveillance gratification. Eveland Jr (2001) believed the model could also benefit from the inclusion of additional motivation dimensions. One motivation for the public to collect pandemic-related information through multiple channels is to form a subjective cognition of risks and guide individual behaviour (Li and Sun, 2021). Accordingly, many countries use various applications to inform and guide the public (Fattahi et al., 2022).

Finally, the Chinese citizens who participated in this study were recruited in the context of COVID-19, thus proving that CMM is applicable to other cultural contexts. It is essential to replicate the research in different cultures and explore the factors that influence the public to take preventive measures in a crisis. A previous study reported that culture is a significant predictor of behavioural responses to pandemic influenza (Goodwin et al., 2009); national, religious, and traditional aspects of culture can have a positive or negative impact on how people behave in society (Fattahi et al., 2022).

### 5.3 Practical Implications

Policymakers should mobilize public participation and establish the idea that everyone is responsible for their own health during the pandemic. When focal events occur, citizens will actively seek relevant information in a short period and policymakers must provide them with clear suggestions to take action to avoid risk (Bento et al., 2020). Public participation provides decision-makers with ready access to "citizen's wisdom," constituting lessons distilled from their life experiences on how best to deal with unforeseen disasters (Schoch-Spana et al., 2007).

Media service platforms should provide timely, accurate, and comprehensive pandemic-related information to the public. Individuals who use social media, mobile social networking apps (MSNs), and social live-streaming services (SLSSs) to consume information during an infectious disease outbreak could increase their preventive behaviours (Liu, 2020). Therefore, when a media service platform meets the public's demand for information, it helps users take effective preventive measures.

Moreover, it is essential for the general population to enhance their understanding and knowledge about health. According to Hewitt and Hernandez (2014), the ability to obtain, evaluate, and grasp basic health information and services required to make informed decisions about one's health is referred to as health literacy. Enhancements can be achieved by comprehensive community campaigns, interventions in educational environments, training in mental health first aid, and the provision of information websites (Jorm, 2012). If the public is aware of the necessary actions for prevention, early intervention, and treatment, they can implement suitable preventative measures.

## 6. CONCLUSIONS

Mobilizing the public to participate in the response to a disease outbreak through preventive measures can help reduce risk, morbidity, and mortality (Maibach and Flora, 1993). However, various factors may affect public willingness to follow preventive measures when facing a pandemic risk. In this study, we demonstrate that CMM provides a useful conceptual framework to study behavioural intentions in the context of COVID-19. Using Chinese provincial data, we investigate how guidance, news attention, news elaboration, and knowledge influence citizens' willingness to take preventive measures during a pandemic. We find that guidance has a beneficial impact on news attention and elaboration, and that these factors in turn have a positive impact on knowledge and behavioural intentions. COVID-19-related knowledge has a positive influence on behavioural intentions. The SEM results suggest that the combined efforts of policymakers, media service platforms, and the public are needed to increase the willingness to take precautions against COVID-19.

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## DATA AVAILABILITY STATEMENT

The participants of this study did not give written consent for their data to be shared publicly. Data cannot be made available due to the sensitive nature of the research.

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