

# Factors affecting COVID-19 health information sharing behaviors via social media: A comparison between South Korea and China

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## I. Introduction

On March 11, 2020, the World Health Organization (WHO) declared the coronavirus disease 2019 (COVID-19) outbreak a global pandemic, which has spread in more than two hundred countries, areas or territories around the globe, with nearly 6,991,829 deaths

worldwide on 5 January, 2024. At the 2020 Munich Security Conference, the WHO's director-general Tedros Adhanom Ghebreyesus once said: "we're not just fighting a pandemic; we're fighting an infodemic." According to WHO 2020 situation report in February, COVID-19 has created an infodemic, which refers to an overabundance of information—

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some accurate and some not—that makes it hard for people to find trustworthy sources and reliable guidance when they need it.

The definition of infodemic implies that, on the one hand, there exists abundant COVID-19 health-related information online, particularly with a significant amount of misinformation, which can lead to severe crises. On the other hand, with the rapid development of Internet environment and technologies, social media platforms have exerted a growing influence on individuals' daily lives and especially their health behaviors nowadays. Previous studies showed that social media platforms have emerged as prominent online venues for seeking and sharing health relevant information (Zhao and Zhang, 2017). As individuals increasingly rely on social media for information during public health crises like COVID-19, they encounter content from diverse sources, some of which may lack official or impartial credentials (Lin et al., 2020). Considering the distinctive features of social media platforms in contrast to traditional avenues, individuals have the liberty to generate or redistribute content by sharing information on these platforms. Moreover, there are minimal regulatory constraints on the dissemination of information, including health-related content, through different social media platforms. The rapid proliferation of such user-generated and user-redistributed information could exacerbate various issues.

Public health authorities observed a concerning amount of inaccurate misinformation, along with deliberate disinformation, related with COVID-19 circulating on social media platforms. Prior to the onset of the COVID-19 pandemic, studies have indicated that nearly 20% to 30% of the YouTube videos about emerging infectious diseases contain inaccurate or misleading information (Tang et al., 2018). Not to mention, researchers conducted an extensive analysis of social media activities to quantify the spread of misinformation on COVID-19, revealing that up to 25% of COVID-19 information on platforms like Twitter may encompass misinformation to some extent (Kouzy et al., 2020). Undoubtedly, the infodemic poses a serious challenge to public health because people in a pandemic need timely and accurate information and advice that guide them to protect each other and mitigate negative impacts. Immediate and widespread sharing of medical and other scientific information outside of expert circles before it has been thoroughly vetted can be dangerous, especially in a pandemic. The proliferation of such an infodemic may diminish the effectiveness of public health protocols, ultimately jeopardizing governments' capacity to halt the pandemic (WHO, 2020).

As noted earlier, the widespread dissemination of health information on social media brings forth various challenges, with

trust standing out as a paramount concern. Accumulated evidence indicates that trust in online health information is a pivotal factor influencing activities such as health information seeking and sharing. According to Pian et al. (2021), there are several main negative impacts of the infodemic, such as breakdown of trust, inappropriate protective measures, public psychological issues, panic purchase, and the global economy. The situation is extremely concerning because it undermines trust in government and health institutions. The infodemic has ruined the public trust in government and health institutions (Basu et al., 2020; Taylor, 2020). Editorial and commentaries from various journals, including *Lancet Infectious Diseases*, pointed out the avalanche due to the infodemic. Empirical studies also indicated that the infodemic and its manifestation—conspiracy beliefs—were negatively related to the trust in governments and organizations (Durodolu and Ibenne, 2020). As the COVID-19 pandemic continues to shape public health discourse, understanding social media users' information sharing behaviors has become imperative for gauging the impact of user-generated and user-redistributed content on the public and ultimately the effectiveness of health interventions.

Therefore, it is imperative to enhance the quality of information redistributed through users' sharing via social media. Understanding

how to improve the quality of such information offers a potential solution. Specifically, we aim to investigate the influence of three antecedent factors—trust in information source, trust in information content, and trust in social media platform—on users' trust in information quality and ascertain the relative significance of each factor in shaping this trust. To effectively address these challenges during public health emergencies such as COVID-19, and to regain public trust, it is essential to understand the decision-making process of users when sharing health information on social media platforms.

However, there remains a notable gap in the existing literature regarding empirical approaches to the factors influencing social media users' sharing behaviors of COVID-19 relevant health information, particularly in the context of countries like South Korea and China. Previous studies exploring the role of social media in public health have made significant strides. Some have focused on the effective utilization of social media platforms in public health initiatives and highlighted their positive impacts (e.g., Giustini et al., 2018), while others have examined the potential negative ramifications in this context (e.g., Islam et al., 2020). But few have specifically addressed the distinctive dynamics of COVID-19 health information dissemination within these two countries.

According to the World Bank, both South Korea and China have played significant roles

not only in Asia but also in the global economic landscape. Especially during the global public health crisis, these two countries have been among the best in coping with the COVID-19 pandemic. Despite being geographically close, the distinct political systems, cultural backgrounds, and social policies of two countries present an intriguing context for our study. Most importantly, the 2022 Edelman Trust Barometer implied that the global COVID-19 pandemic may have exacerbated the gap in trust levels between South Korea and China regarding the state of trust. Our literature review reveals a lack of comparative studies, particularly between South Korea and China, not to mention the differential effects of trust and its antecedents on social media users' sharing behaviors across diverse cultural contexts. In addition, we expect to offer empirical evidence that will be valuable for policy-makers in developing health-related strategies specifically tailored to the varied challenges faced by South Korea and China.

Therefore, our study aims to address these gaps by offering empirical insights into the determinants of COVID-19 health information sharing behaviors in South Korea and China. Specifically, we seek to identify potential cross-cultural variations in the impact of trust factors, including trust in information source, trust in information content, and trust in social media platforms. Accordingly, we have

formulated two specific research questions:

RQ1: What factors influence information sharing behaviors regarding COVID-19 health information via social media platforms?

RQ2: Are there any differences in the three trust antecedent factors between South Korea and China?

In summary, our study underscores the significance of adopting a multifaceted approach to address the challenges posed by the infodemic, especially misinformation on social media, offering valuable insights both theoretically and practically.

## II. Theoretical Framework and Hypotheses

### 2.1 COVID-19 Health Information Sharing on Social Media

The COVID-19 pandemic has triggered an unprecedented surge in the dissemination of health information on social media platforms (Pennycook et al., 2020). Studies have highlighted the significant role of social media in facilitating users' sharing of COVID-19 relevant information (e.g., Depoux et al., 2020). Individuals turn to social media for various purposes during the pandemic, including seeking information, sharing personal experiences, expressing emotions, and engaging in discussions (Gao et al., 2020).

However, the proliferation of COVID-19 relevant information on social media has also raised concerns regarding the prevalence of infodemic such as misinformation, rumors, and conspiracy theories (Cinelli et al., 2020; Kouzy et al., 2020). Studies have shown that misinformation regarding COVID-19 spreads rapidly on social media platforms, leading to misconceptions, panic, and distrust in official health authorities (Pennycook et al., 2020; Pulido et al., 2020).

For instance, Chen et al. (2020) addressed the role of social media platforms in disseminating COVID-19 information and they tracked social media discourse about the pandemic. Depoux et al. (2020) highlighted the rapid spread of COVID-19 relevant panic on social media platforms and discussed such panic is likely to outpace the virus itself. Islam et al. (2020) assessed the impact of the COVID-19 infodemic on public health and analyzed how misinformation affects individuals' perceptions and behaviors. Similarly, Pulido et al. (2020) also examined the COVID-19 infodemic and its impact on public health. Moreover, they compared the redistribution behavior on social media platforms regarding the science-based and the misinformation. Likewise, existing studies analyzed the factors contributing to the spread of misinformation and the determinants of health-related information sharing behaviors as well. Zarocostas (2020) investigated that

factors like the virality of content, echo chambers, and the lack of fact-checking mechanisms contributed to the spread of misinformation during the COVID-19 pandemic. Vosoughi et al. (2018) examined the diffusion of true and false news stories on Twitter and investigated the characteristics of these news stories, users who shared them, and the pattern of diffusion. Mostly, they highlighted the importance of addressing the factors that contributed to the spread of false news, and suggested that to more studies should focus on promoting accurate information, debunking false claims, and fostering critical thinking skills among users in order to effectively mitigate the spread of misinformation.

Moreover, prior research has examined the determinants of individuals' engagement in sharing COVID-19 relevant health information on social media. Chou et al. (2020) investigated the effects of warning and debunking message on individuals' perceptions and behaviors regarding COVID-19 misinformation on social media platforms. Their findings calls for multi-faceted strategies to combat misinformation on social media platforms during public health emergencies like the COVID-19 pandemic. While Gao et al. (2020) explored how individuals' exposure to COVID-19 relevant information on social media platforms influences their mental health. Their study suggested the importance of

implementing strategies to mitigate the negative psychological effects of social media exposure and emphasized the role of individuals in managing social media use and adopting healthy coping strategies to protect their own mental health during crisis such as COVID-19. As noted previously, understanding these factors is essential for designing interventions aimed at promoting the dissemination of accurate and reliable health information while mitigating the spread of misinformation on social media platforms (Vraga and Bode, 2020).

Overall, the literature underscores the complex interplay between social media use, information sharing behaviors, and the spread of COVID-19 relevant health information (Pulido et al., 2020). Managing the challenges presented by infodemic, such as misinformation on social media, necessitates more multifaceted empirical approaches. To that end, utilizing the benefit-risk model as a framework, we incorporated social media users' trust in information quality as the primary mediator in our study. Additionally, we highlighted the pivotal roles of three antecedent factors: trust in information source, trust in information content, and trust in social media platforms.

## 2.2 Perceived Benefits and Perceived Risks

The study was based on the benefit-risk

model which addresses the assessment and evaluation of the benefits and risks associated with a particular intervention, product, or decision. Over the years, the benefit-risk model has been applied to a wide range of fields including healthcare, finance, and decision-making in general. Individuals are often faced with uncertainty or risk somehow in the process of their decision-making. However, individuals usually make decisions just because they can get certain benefits from the specific decision. Originated from the benefit-sacrifice analysis, the benefit-risk model was developed into valence framework by Peter and Tarpey (1975), which considers the perceived risk and perceived benefit as two fundamental aspects of individuals' decision-making (Yang et al., 2015). Perceived benefits posit that individuals tend to maximize the expected positive utility, while perceived risks posit that individuals are motivated to minimize any expected negative utility (Yang et al., 2012).

In the field of information system, the benefit-risk model has been a fundamental framework to help explain the adoption of a technology (e.g., Pei et al., 2015), the selection of a certain product (e.g., Chen and Zhang, 2023), the decision of doing a specific action (e.g., Cheung et al., 2015; Youn and Shin, 2020), etc. Before making a decision, individuals tend to evaluate the whole thing from either positive or negative side and trade-off between benefits and risks.

Perceived benefits reflect the positive utility, which has been proved to be a significant promoter to individuals' certain behaviors (e.g., Cheng et al., 2021; Cheung et al., 2015). Many researchers believe that the potential benefits that individuals perceive have become the main driver of information disclosure (Altman and Taylor, 1973). To obtain benefits, individuals are even willing to take the risk of disclosing private information, thus increasing information disclosure (e.g., Dinev and Hart, 2006; Dinev et al., 2013). Previous research in the information privacy literature also suggested that when social media users decide whether or not to disclose information, the benefits of disclosure are balanced with an assessment of the risks of disclosure (Xu et al., 2009). When perceived benefits are greater than perceived risks, individuals tend to disclose information (Li et al., 2020). In other words, when perceived risks are greater, individuals are unwilling to provide or share any information. The risk that individuals perceive can be a prominent barrier to their decisions or behaviors. Therefore, we hypothesize that:

*H1: Perceived benefits positively influence information sharing behavior.*

*H2: Perceived risks negatively influence information sharing behavior.*

### 2.3 Antecedents of Trust

Trust has been examined widely in various disciplines and defined in numerous ways. Mayer et al. (1995) defined trust as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.” However, trust is not only interpersonal but also interactional with intangible stuff such as technology and knowledge (Park et al., 2019). Taking account of different definitions of trust, we attempted to define the trust in our current study as the extent to which one believes that the quality of social media platform based health information is trustworthy.

Trust indicates a positive belief about the perceived reliability, dependability, and confidence in a person, an object, or a process (Rotter, 1980). On the one hand, prior studies found that trust positively affect perceived benefits in diverse contexts and settings (Kim et al., 2009; Lu et al., 2005). On the other hand, accumulated evidence suggested that trust is particularly important because it can reduce negative feeling such as fears and worries (Gefen et al., 2003; Kim et al., 2008), coping with the uncertainty and the risk involved (Lin and Lu, 2011). Thus, we hypothesize that:

*H3: Perceived trust in information quality positively influences perceived benefits.*

*H4: Perceived trust in information quality negatively influences perceived risks.*

*H5: Trust in information source positively affects perceived trust in information quality.*

*H6: Trust in information content positively affects perceived trust in information quality.*

*H7: Trust in social media platform positively affects perceived trust in information quality.*

In a word, the objective of our study was to investigate the factors that affect individuals' sharing behavior of health information via social media platforms. Based on the benefit-risk model, therefore, we developed a research model (See Figure 1) integrating social media users' perceived trust in information quality and its three antecedents, i.e., trust in information source, trust in information content, and trust in social

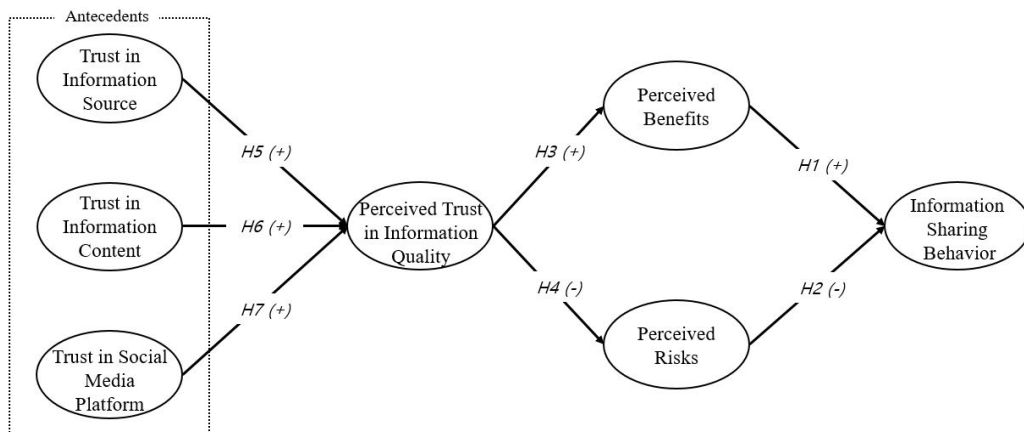
media platform, along with perceived benefits and risks, to explain the sharing behavior of COVID-19 relevant health information via social media platforms.

### III. Research Methodology

To accomplish our research purpose to investigate the factors that affect social media users' sharing behaviors of COVID-19 relevant health information, we conducted online surveys simultaneously in both South Korea and China to collect data to empirically validate our research model.

#### 3.1 Scale Development

Based on the benefit-risk model, we developed a research model to identify the factors that determine social media users' information sharing behaviors regarding



<Figure 1> Research Model



COVID-19 relevant health information. In the model, we integrated seven variables including perceived trust in information quality and its three antecedents, i.e., trust in information source, trust in information content, and trust in social media platform, perceived benefits, perceived risks, and information sharing behavior. Each variable was measured with multiple items adapted from previous studies to improve the validity of measuring instruments and a few amendments were made to adjust to our current research context.

To begin with, we adapted the measuring items of the antecedents of perceived trust in information quality from Part and Bao (2019) and Yang et al. (2015) to assess three different aspects of social media users' perceived trust in the quality of health information concerning COVID-19, that is, users' trust in the source of information, trust in the content of information, and their trust in the social media platforms that they are using. The items of perceived trust in information quality were adapted from Singh and Sinha (2020) to measure the extent to which social media users' trust in the quality of information. We adopted items of perceived benefits and risks from Park et al. (2019) and Yang et al. (2015) to reflect users' perception of the benefits and the risks regarding sharing COVID-19 relevant health information via social media platforms. The items of information sharing behavior were adapted from Liou et al. (2016) to

measure users' sharing behavior of COVID-19 health information via social media platforms.

All measurement items used in the study were measured with a seven-point Likert scale ranging from one (strongly disagree) to seven (strongly agree). Even though all measuring items used in the study were adopted from extant literature after evaluating definitions, measurement instruments, and research contexts of corresponding variables or similar ones, we asked several lecturers and colleagues from the university to review our initial questionnaire to avoid ambiguity and invalidity. Based on their feedback, we made a few changes in question wording and instructions for our final questionnaire.

### 3.2 Data Collection

To elucidate the factors that affect health information sharing behaviors via social media platforms and to do a comparative analysis between South Korea and China, we targeted social media users in two countries and conducted the entire survey in terms of COVID-19 relevant health information. To collect a wider range of data, we employed online survey tools and created QR codes directly linking to questionnaires for respondents to easily scan. Regarding online survey tools, we employed 'Google Forms' in Korea and 'Wenjuanxing,' one of the most popular professional platforms in China, to

collect data online. Our questionnaires started with short but necessary instructions and descriptions which assists respondents to well understand what is the survey about and thus minimize potential confusions, and proceeded to main survey questions followed by demographic questions. We utilized a convenience sampling method, targeting undergraduate and graduate students in both

countries. We sought assistance from colleagues, who are professors or lecturers in various cities within the two countries, to collect data for us. They distributed our online survey QR codes via e-mails and social media platforms, using methods including posts, sharing in personal and group chat rooms, direct messages, and other similar communication channels.

<Table 1> Measurement Items

Variable	Measurement Item		Source
Trust in Information Source (TIS)	TIS1	I trust the source of COVID-19 relevant health information on social media.	Park et al. (2019)
	TIS2	I think the source of COVID-19 relevant health information on social media is reliable.	
	TIS3	I believe the source of COVID-19 relevant health information on social media is trustworthy.	
	*TIS4	I think I can trust the source of health information about COVID-19.	
Trust in Information Content (TIC)	*TIC1	I trust the health information about COVID-19 on social media to be secure.	Park et al. (2019)
	TIC2	I believe the content of COVID-19 relevant health information on social media is trustworthy.	
	TIC3	I think COVID-19 relevant health information on social media is reliable.	
	TIC4	I think I can trust the COVID-19 relevant health information on social media.	
Trust in Social Media Platform (TSMP)	*TSMP1	The social media platform that I use keeps its promises and commitments.	Yang et al. (2015)
	TSMP2	I think the social media platform that I use keeps users' best interests and well being in mind.	
	TSMP3	I believe I can trust the social media platform that I use.	
	TSMP4	I think the social media platform that I use is trustworthy.	

Perceived Trust in Information Quality (PTIQ)	PTIQ1	I trust that COVID-19 relevant health information is qualified to be shared with others on social media.	Singh and Sinha (2020)
	PTIQ2	I think the quality of COVID-19 relevant health information on social media is trustworthy.	
	PTIQ3	I think that COVID-19 relevant health information is reliable to be shared with others on social media.	
	*PTIQ4	I think it is safe to share COVID-19 relevant health information with others via social media.	
Perceived Benefits (PB)	PB1	Sharing COVID-19 relevant health information via social media can save lives.	Park et al. (2019); Yang et al. (2015)
	PB2	Sharing COVID-19 relevant health information via social media is helpful.	
	PB3	Sharing COVID-19 relevant health information via social media enhances the effectiveness of fighting the pandemic.	
	*PB4	Sharing COVID-19 relevant health information via social media is convenient.	
Perceived Risks (PR)	PR1	I'm afraid that it is risky to share COVID-19 relevant health information via social media.	Park et al. (2019); Yang et al. (2015)
	PR2	I'm worried about sharing COVID-19 relevant health information via social media.	
	PR3	I do not feel secure sharing COVID-19 relevant health information via social media.	
	PR4	I do not feel safe sharing COVID-19 relevant health information via social media.	
Information Sharing Behavior (ISB)	ISB1	I share COVID-19 relevant health information via social media.	Liou et al. (2016)
	ISB2	I post health information about COVID-19 via social media.	
	ISB3	I spend time on social media to share COVID-19 relevant health information.	
	*ISB4	I frequently update new information related to COVID-19 via social media.	

\* Dropped after the exploratory factor analysis

Prior to the final survey, we carried out a pilot test (N = 59) to revalidate the measuring instruments used in the study. The pilot test ran

for five days in August 2023. We conducted an Exploratory Factor Analysis (EFA) using SPSS 27 to analyze the results of our pilot test.

The analysis necessitated the elimination of certain measurement items to improve the reliability and validity of our scales. Specifically, we excluded items related to trust in information source (TIS4), trust in information content (TIC1), trust in social media platform (TSMP1), perceived trust in information quality (PTIQ4), perceived benefits (PB4), and information sharing behavior (ISB4). All measurement items used in the study are listed in <Table 1>, with those dropped as a result of the EFA during the pilot test being denoted with an asterisk (\*).

The final online surveys were available for two weeks in September 2023 and we obtained a total of 408 valid responses in both South Korean and China. Table 2 presented the descriptive statistics of respondents. As shown in the table, the final sample consisted of 209 males (51.23%) and 199 females (48.77%).

Among these, more than half were in their twenties (63.24%), and the majority were undergraduate students (87.25%) from South Korea (49.26%) and China (50.74%).

#### IV. Data Analysis and Results

In the study, we employed Partial Least Squared based Structural Equation Modeling (PLS-SEM) and specifically the two-step modeling approach proposed by Anderson and Gerbing (1988) to analyze the collected data. For the first step, in other words, using Confirmatory Factor Analysis (CFA) approach to assess the measurement model (Hair et al., 2020). Then, we examined the structural model to test our research hypotheses. In addition, we conducted t-test to assess the mean differences between South Korea and China regarding

<Table 2> Descriptive Statistics of Respondents

Demographic Variable		Frequency	Percent
Gender	Male	209	51.23%
	Female	199	48.77%
Age	10s	96	23.53%
	20s	258	63.24%
	30s	45	11.03%
	40s	9	2.21%
Educational Background	Undergraduate	356	87.25%
	Graduate	52	12.75%
Nationality	South Korea	201	49.26%
	China	207	50.74%
Total		408	100.0%

three antecedents of social media users' perceived trust in information quality, i.e., trust in information source, trust in information content, and trust in social media platform. For data analysis, we employed SmartPLS 4 and SPSS 27. Specifically, we conducted PLS-SEM using SmartPLS 4, while we performed EFA and independent t-tests with SPSS 27.

#### 4.1 Measurement Model

First, we examined the measurement model

by testing the reliability and validity. As shown in Table 3, all Cronbach's alpha ( $\alpha$ ), composite reliability (CR), and outer loading coefficients were above the recommended level of 0.7 and the average variance extracted (AVE) values were all greater than the acceptable level of 0.5, which confirmed the reliability and convergent validity (Hair et al., 2020). Next, we analyzed the discriminant validity by comparing the square root of the AVE of each construct with its correlation coefficients with

<Table 3> Testing Results for Reliability and Convergent Validity

Variable	Item	Mean	Std. Deviation	Outer loading	T statistics	$\alpha$	CR (rho_a)	CR (rho_c)	AVE
Trust in Information Source (TIS)	TIS1	4.87	1.422	0.827	19.315	0.829	0.879	0.896	0.741
	TIS2	4.94	1.463	0.848	20.455				
	TIS3	5.16	1.350	0.905	39.946				
Trust in Information Content (TIC)	TIC2	4.31	1.725	0.863	3.731	0.851	0.900	0.906	0.763
	TIC3	4.29	1.734	0.905	3.970				
	TIC4	4.05	1.787	0.851	3.724				
Trust in Social Media Platform (TSMP)	TSMP2	3.58	1.085	0.865	12.674	0.841	0.870	0.903	0.756
	TSMP3	3.34	1.230	0.858	13.329				
	TSMP4	3.12	1.266	0.886	11.625				
Perceived Trust in Information Quality (PTIQ)	PTIQ1	3.62	1.995	0.707	14.466	0.847	0.925	0.907	0.768
	PTIQ2	3.37	1.654	0.953	13.228				
	PTIQ3	3.10	1.491	0.947	17.092				
Perceived Benefits (PB)	PB1	4.90	1.402	0.813	25.580	0.826	0.845	0.896	0.741
	PB2	4.97	1.455	0.877	44.635				
	PB3	5.13	1.388	0.891	54.995				
Perceived Risks (PR)	PR1	5.39	1.485	0.747	17.361	0.879	0.934	0.913	0.724
	PR2	5.38	1.411	0.852	35.356				
	PR3	5.14	1.692	0.887	58.023				
	PR4	5.38	1.435	0.909	71.421				
Information Sharing Behavior (ISB)	ISB1	3.73	1.546	0.828	39.726	0.747	0.773	0.852	0.658
	ISB2	3.68	1.565	0.838	33.403				
	ISB3	2.77	1.446	0.765	23.642				

<Table 4> Testing Results for Discriminant Validity

	ISB	PB	PR	PTIQ	TIC	TIS	TSMP
Information Sharing Behavior (ISB)	<b>0.811</b>						
Perceived Benefits (PB)	0.303	<b>0.861</b>					
Perceived Risks (PR)	-0.403	-0.191	<b>0.851</b>				
Perceived Trust in Information Quality (PTIQ)	0.344	0.210	-0.198	<b>0.876</b>			
Trust in Information Content (TIC)	0.005	0.023	0.078	0.073	<b>0.873</b>		
Trust in Information Source (TIS)	0.278	0.316	-0.135	0.206	0.024	<b>0.861</b>	
Trust in Social Media Platform (TSMP)	0.200	0.038	-0.215	0.159	-0.062	-0.011	<b>0.870</b>

other constructs (Fornell and Larker, 1981). Table 4 indicated that the square roots of the AVE for each construct were larger than inter-construct correlation coefficients, which validated discriminant validity.

#### 4.2 Structural Model

Then, we assessed the structural model by testing the model fitness and research hypotheses. We examined R square statistics to estimate the explanatory power of the

structural model. Based on Cohen (1988), R square values of 0.26, 0.13, and 0.02 are described as substantial, moderate, and weak, respectively. As for the dependent variable of our study, information sharing behavior, more than 21% change in it (R square adjusted = 0.212), between 0.13 (moderate) and 0.26 (substantial), could be explained by perceived benefits and perceived risks, suggesting a relatively high explanatory power of our structural model (See Figure 2).

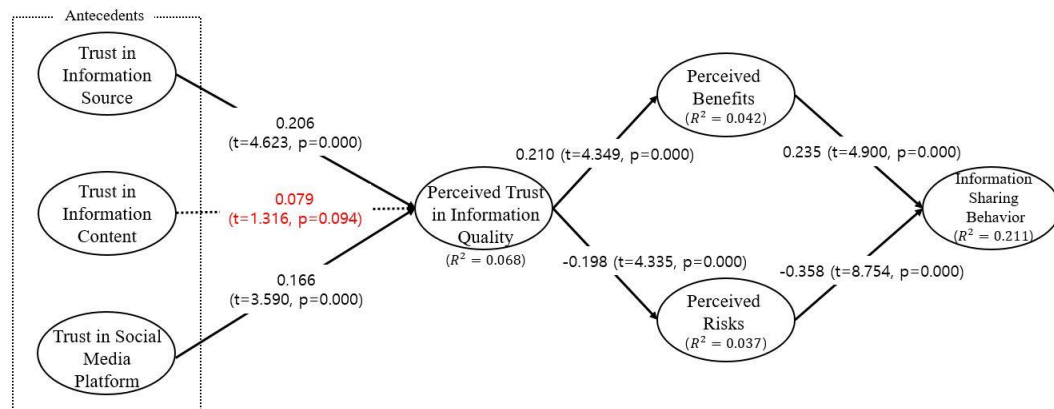
In addition, we tested effective size F square

<Table 5> Effect Size (F Square)

	ISB	PB	PR	PTIQ
Information Sharing Behavior (ISB)	—	—	—	—
Perceived Benefits (PB)	0.068	—	—	—
Perceived Risks (PR)	0.157	—	—	—
Perceived Trust in Information Quality (PTIQ)	—	0.046	0.041	—
Trust in Information Content (TIC)	—	—	—	0.007
Trust in Information Source (TIS)	—	—	—	0.046
Trust in Social Media Platform (TSMP)	—	—	—	0.030

<Table 6> Construct Crossvalidated redundancy (Q Square)

	SSO	SSE	$Q^2(1-SSE/SSO)$
Information Sharing Behavior (ISB)	1,224.000	1,062.336	0.132
Perceived Benefits (PB)	1,224.000	1,185.936	0.031
Perceived Risks (PR)	1,632.000	1,591.866	0.025
Perceived Trust in Information Quality (PTIQ)	1,224.000	1,162.748	0.050
Trust in Information Content (TIC)	1,224.000	1,224.000	—
Trust in Information Source (TIS)	1,224.000	1,224.000	—
Trust in Social Media Platform (TSMP)	1,224.000	1,224.000	—



<Figure 2> Results of Hypothesis Testing Analysis

(See Table 5) and predictive relevance Q square values (See Table 6). According to Cohen (1988), F square values of 0.02, 0.15, and 0.35 show the effect sizes are small, medium, and large, correspondingly. Regarding the dependent variable, i.e., information sharing behavior, the effect size of perceived benefits ( $F^2 = 0.068$ ) was small (0.02) to medium (0.15) and the effect size of perceived risks ( $F^2 = 0.157$ ) was medium (0.15) to large

(0.35). Besides, all Q square values were greater than zero, implying that our structural model is well constructed and has significant predictive relevance.

Here comes the hypothesis testing. As shown in Figure 2, we presented path coefficients, t-values, one-tailed p-values, and R square adjusted values. When setting the significance level (p-value) to 0.05, all research hypotheses except for H6 (trust in

<Table 7> Results of Independent Sample T-Test

	Nationality	N	Mean ± Std. Deviation	t	p
Trust in information content	China	207	4.07 ± 1.40	-1.737	0.042
	South Korea	201	4.33 ± 1.65		
Trust in information source	China	207	5.03 ± 1.23	0.284	0.389
	South Korea	201	5.00 ± 1.20		
Trust in social media platform	China	207	3.18 ± 1.05	-2.976	0.002
	South Korea	201	3.48 ± 1.02		

information content → perceived trust in information quality) were supported. Dashed lines represent nonsignificant paths.

Last but not least, we used t-test to examine the differences between South Korea and China in terms of social media users' trust in information source, trust in information content, and trust in social media platform. As shown in Table 7, the independent t-test revealed significant differences between South Korea and China regarding the trust in information content ( $t = -1.737$ ,  $p = 0.042$ ) and trust in social media platform ( $t = -2.976$ ,  $p = 0.002$ ), but there is no statistically significant difference regarding the trust in information source ( $t = 0.284$ ,  $p = 0.389$ ). For one thing, specifically, social media users in South Korea (Mean = 4.33, Std. Deviation = 1.65) showed more trust in information content than those in China (Mean = 4.07, Std. Deviation = 1.40). For another, we found that users in South Korea (Mean = 3.48, Std. Deviation = 1.02)

also had more trust in social media platform than users in China (Mean = 3.18, Std. Deviation = 1.05).

## V. Conclusions

### 5.1 Summary of Findings

Our study investigated the factors affecting health information sharing via social media platforms during the COVID-19 pandemic. Based on the benefit-risk model, we conceptualized a research model suggesting that social media users' sharing behaviors of COVID-19 health information are influenced by their perceived benefits and risks of such actions. At the core of our model was the mediating role of users' perceived trust in the quality of health information, which was subsequently determined by three pivotal factors: users' trust in information source, trust



in information content, and trust in social media platform itself. Through a cross-country survey conducted in South Korea and China, we discovered that perceived risks had a more substantial impact on information sharing behaviors than perceived benefits. In other words, the more risks users perceive, the less they are willing to share health information on social media platforms. Notably, our findings also identified significant differences in trust levels towards information content and social media platforms between the two countries. Specifically, we found that Korean social media users exhibited higher trust in both the information content and the social media platforms compared to Chinese users.

## 5.2 Contributions and Limitations

Theoretically, our study extended the benefit-risk model in the context of health information sharing on social media during the global health crisis such as COVID-19, suggesting that perceived risks outweighed perceived benefits in affecting social media users' sharing behaviors of health information. In addition, we integrated the mediating role of users' trust in the quality of health information, together with three pivotal antecedent factors: trust in information source, trust in information content, and trust in social media platform. This contributes to a broader comprehension on trust in digital environments, especially in

critical contexts like COVID-19 pandemic. By incorporating a cross-cultural perspective between South Korea and China, our study offers new insights and empirical evidence on how cultural differences impact trust levels and enriches the existing literature on health information sharing behaviors on social media platforms.

Practically, our findings offer empirical evidence for public health authorities and policy-makers on utilizing social media as a powerful tool for health communication. Specifically, our study indicated that users are less inclined to share health information on social media platforms when they perceive higher risks, regardless of potential benefits. This highlighted the critical importance of trust and the need to mitigate perceived risks associated with health misinformation, providing novel insights for crafting more effective health communication strategies and developing targeted interventions to enhance the credibility of health information on social media. Moreover, the notable differences in trust levels observed between Korean and Chinese users present a new perspective for health practitioners, suggesting employing culturally specific communication strategies to build trust and thereby encourage the sharing of reliable health information. Our study underscores the necessity of cross-cultural considerations in the development of public health campaigns.

Despite the valuable insights our study provides, it is accompanied by a few limitations. Firstly, the use of convenience sampling method may limit the generalizability of our findings. Future research could employ alternative sampling techniques to secure a more representative sample. Secondly, trust, the core concept of our study, is multifaceted. The way in which we operationalized trust in the study may not encompass all its dimensions, with the antecedents specifically confined to social media context. Future studies are encouraged to explore additional aspects of trust or examine trust in other specific contexts to achieve a more comprehensive understanding. Thirdly, given the scope and objectives of our study, we concentrated exclusively on two countries, conducting a comparative analysis between South Korea and China using t-tests. In the future, we aim to engage in more advanced comparative analyses, such as multi-group analysis, to achieve a more profound understanding of the complexities inherent in cross-cultural studies. Additionally, including more countries in future research could broaden our understanding of global variations in social media users' trust and online sharing behaviors.

### 5.3 Conclusion

In conclusion, our study underscored the

complex dynamics of health information sharing on social media during the COVID-19 pandemic, highlighting the critical interplay between perceived risks, benefits, and trust. We provided empirical evidence that perceived risks significantly deter users from sharing health information, suggesting the pivotal role of trust in mitigating these effects. Our findings on the different trust levels between Korean and Chinese social media users offers novel insights for the development of culturally sensitive public health communication strategies. Our study enhances the comprehension of the factors influencing health information sharing on social media platforms, providing valuable perspectives for crafting more effective public health interventions in the digital age.

## References

- Anderson, J. C., and Gerbing, D. W.,  
“Structural equation modeling in practice: A review and recommended two-step approach,” *Psychological Bulletin*, Vol. 103, No. 3, June 1988, pp. 411-423.
- Basu, A., Chatterjee, M., and Chakrabarti, D.,  
“Analyzing the potential impact of infodemic on the effectiveness of COVID-19 pandemic control measures in India,” *Journal of Travel Medicine*,

- Vol. 27, No. 5, 2020, taaa100.
- Chen, C., and Zhang, X., "Effects of mobile shopping interface design on user satisfaction and purchase intention," *Electronic Commerce Research*, 2023.
- Chen, E., Lerman, K., and Ferrara, E., "Tracking social media discourse about the COVID-19 pandemic: Development of a public coronavirus Twitter data set," *JMIR Public Health and Surveillance*, Vol. 6, No. 2, 2020, e19273.
- Cheng, Z., Yang, Y., He, Y., and Yu, Y., "Understanding the influence of perceived value on continuous use of mobile payment services: A comparative analysis of Alipay and WeChat Pay," *Telematics and Informatics*, Vol. 61, 2021, 101580.
- Cheung, C. M. K., Lee, M. K. O., and Thadani, D. R., "The impact of electronic word-of-mouth communication: A literature analysis and integrative model," *Decision Support Systems*, Vol. 74, 2015, pp. 132-145.
- Chou, W.-Y. S., Budenz, A., and Croyle, R. T., "Correcting misinformation in real time: The delayed effects of warning and debunking messages during the COVID-19 pandemic," *Big Data & Society*, Vol. 7, No. 2, 2020, 2053951720966787.
- Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L., Zola, P., Zollo, F., and Scala, A., "The COVID-19 social media infodemic," *Scientific Reports*, Vol. 10, No. 1, 2020, pp. 1-10.
- Cohen, J., *Statistical power analysis for the behavioral sciences*, 2nd ed., Lawrence Erlbaum Associates, 1988.
- Depoux, A., Martin, S., Karafillakis, E., Preet, R., Wilder-Smith, A., and Larson, H., "The pandemic of social media panic travels faster than the COVID-19 outbreak," *Journal of Travel Medicine*, Vol. 27, No. 3, 2020, taaa031.
- Dinev, T., and Hart, P., "An extended privacy calculus model for e-commerce transactions," *Information Systems Research*, Vol. 17, No. 1, 2006, pp. 61-80.
- Dinev, T., Hart, P., and Mullen, M. R., "Internet privacy concerns and their antecedents—measurement validity and a regression model," *Behaviour & Information Technology*, Vol. 32, No. 2, 2013, pp. 147-159.
- Durodolu, O. O., and Ibenne, O. J., "Fake news and COVID-19 pandemic in Nigeria: A test of the risk perception attitude framework," *Journal of Public Affairs*, 2020.
- Fornell, C., and Larcker, D. F., "Structural equation models with unobservable variables and measurement error:

- Algebra and statistics,” *Journal of Marketing Research*, Vol. 18, No. 3, 1981, pp. 382-388.
- Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., Wang, Y., Fu, H., and Dai, J., “Mental health problems and social media exposure during COVID-19 outbreak,” *PLoS ONE*, Vol. 15, No. 4, 2020, e0231924.
- Gefen, D., Karahanna, E., and Straub, D. W., “Trust and TAM in online shopping: An integrated model,” *MIS Quarterly*, Vol. 27, No. 1, 2003, pp. 51-90.
- Giustini, D., Ali, S. M., Fraser, M., and Boulos, M. N. K., “Effective uses of social media in public health and medicine: a systematic review of systematic reviews,” *Online journal of public health informatics*, Vol. 10, No. 2, 2018.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., and Sarstedt, M., “A primer on partial least squares structural equation modeling (PLS-SEM),” 3rd ed., Sage, 2020.
- Islam, M. S., Sarkar, T., Khan, S. H., Kamal, A.-H. M., Hasan, S. M. M., Kabir, A., Yeasmin, D., and Islam, M. A., “COVID-19-related infodemic and its impact on public health: A global social media analysis,” *The American Journal of Tropical Medicine and Hygiene*, Vol. 103, No. 4, 2020, pp. 1621-1629.
- Kim, D. J., Ferrin, D. L., and Rao, H. R., “A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents,” *Decision Support Systems*, Vol. 44, No. 2, 2008, pp. 544-564.
- Kim, Y., Han, K., and Park, J. W., “The role of web site trust in e-commerce relational exchange: A unified model,” *Information & Management*, Vol. 46, No. 1, 2009, pp. 57-64.
- Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M. B., Karam, B., Adib, E., Zarka, J., Traboulsi, C., Akl, E. W., and Baddour, K., “Coronavirus goes viral: Quantifying the COVID-19 misinformation epidemic on Twitter,” *Cureus*, Vol. 12, No. 3, 2020, e7255.
- Li, D., Browne, G. J., and Wetherbe, J. C., “Why do consumers disclose private information? The roles of risk propensity, social capital, and privacy concern in online shopping,” *Information & Management*, Vol. 57, No. 2, 2020, pp. 103-115.
- Lin, J. C., and Lu, H. P., “Why people use social networking sites: An empirical study integrating network externalities and motivation theory,” *Computers in Human Behavior*, Vol. 27, No. 3, 2011, pp. 1152-1161.
- Lin, L. Y., Sidani, J. E., Shensa, A., Radovic, A., Miller, E., Colditz, J. B., ... and Primack, B. A., “Health information

- seeking behaviors on social media during the COVID-19 pandemic among American social networking site users: Survey study,” *Journal of Medical Internet Research*, Vol. 22, No. 11, 2020, e24380.
- Liou, J. J. H., Chang, C. M., and Chen, H. G., “Exploring the influencing factors of behavioral intention to use mobile learning: An empirical study,” *Computers in Human Behavior*, Vol. 55, Part A, 2016, pp. 121-132.
- Lu, J., Yao, J. E., and Yu, C. S., “Personal innovativeness, social influences and adoption of wireless internet services via mobile technology,” *Journal of Strategic Information Systems*, Vol. 14, No. 3, 2005, pp. 245-268.
- Mayer, R. C., Davis, J. H., and Schoorman, F. D., “An integrative model of organizational trust,” *Academy of Management Review*, Vol. 20, No. 3, 1995, pp. 709-734.
- Park, H., Reber, B. H., and Chon, M. G., “Tweeting as health communication: Health organizations’ use of Twitter for health promotion and public engagement,” *Journal of Health Communication*, Vol. 24, No. 2, 2019, pp. 166-178.
- Part, C. A., and Bao, Y., “Understanding patients’ acceptance of electronic medical records: An empirical test of a comprehensive model,” *Health Information & Libraries Journal*, Vol. 36, No. 3, 2019, pp. 237-249.
- Pei, L., Wu, X., and Xue, L., “Understanding mHealth acceptance: A study based on trust and risk mitigating beliefs,” *Wireless Personal Communications*, Vol. 82, No. 1, 2015, pp. 477-489.
- Pennycook, G., McPhetres, J., Zhang, Y., Lu, J. G., and Rand, D. G., “Fighting COVID-19 misinformation on social media: Experimental evidence for a scalable accuracy nudge intervention,” *Psychological Science*, Vol.31, No. 7, 2020, pp. 770-780.
- Pian, W., Zheng, Q., and Ji, L., “The impact of infodemic on COVID-19 panic buying behaviors: A multi-dimensional perspective,” *Journal of Retailing and Consumer Services*, Vol. 61, 2021, 102593.
- Pulido, C. M., Villarejo-Carballido, B., Redondo-Sama, G., and Gómez, A., “COVID-19 infodemic: More retweets for science-based information on coronavirus than for false information,” *International Sociology*, Vol. 35, No. 4, 2020, pp. 377-392.
- Rotter, J. B., “Interpersonal trust, trustworthiness, and gullibility,” *American Psychologist*, Vol. 35, No. 1, 1980, pp. 1-7.
- Singh, V., and Sinha, P., “An integrated model

- for trust and perceived information quality in e-government,” *Information Systems Frontiers*, Vol. 22, No. 3, 2020, pp. 625-643.
- Tang, L., Bie, B., Park, S. E., and Zhi, D., “Social media and outbreaks of emerging infectious diseases: A systematic review of literature,” *American Journal of Infection Control*, Vol. 46, No. 9, 2018, pp. 962-972.
- Taylor, D. B., “The coronavirus pandemic’s other big problem: A global misinformation epidemic,” *The New York Times*, 2020. Retrieved from <https://www.nytimes.com/2020/03/08/technology/coronavirus-misinformation-social-media.html>
- Vosoughi, S., Roy, D., and Aral, S., “The spread of true and false news online,” *Science*, Vol. 359, No. 6380, 2018, pp. 1146- 1151.
- Vraga, E. K., and Bode, L., “Defining misinformation and understanding its bounded nature: Using expertise and evidence for describing misinformation,” *Political Communication*, Vol. 37, No. 4, 2020, pp. 501-516.
- World Health Organization, “Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation,” 2020. [https://www.who.int/news/item/23-09-2020-managing](https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation)
- the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation
- Xu, H., Teo, H. H., Tan, B. C. Y., and Agarwal, R., “The role of push-pull technology in privacy calculus: The case of location-based services,” *Journal of Management Information Systems*, Vol. 26, No. 3, 2009, pp. 135-174.
- Yang, Q., Hu, L., and Cao, G., “An analysis of user acceptance of online social networks for health information sharing,” *Information Development*, Vol. 29, No. 5, 2012, pp. 467-473.
- Yang, Z., Cai, S., Zhou, Z., and Zhou, N., “Development and validation of an instrument to measure user perceived service quality of information presenting Web portals,” *Information & Management*, Vol. 52, No. 3, 2015, pp. 333-346.
- Zarocostas, J., “How to fight an infodemic,” *The Lancet*, Vol. 395, No. 10225, 2020, pp. 676.
- Zhao, Y., and Zhang, J., “Consumer health information seeking in social media: A literature review,” *Health Information & Libraries Journal*, Vol. 34, No. 4, 2017, pp. 268-283.

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<Abstract>

## **Factors affecting COVID-19 health information sharing behaviors via social media: A comparison between South Korea and China**

Kim, Jong Ki · Wang, Jian Bo

### **Purpose**

This study aims to investigate the factors influencing social media users' sharing behaviors of COVID-19 health information. Specifically, we seek to examine the impact of three key antecedents—trust in information source, trust in information content, and trust in social media platform—on users' trust in information quality and determine whether their effects vary between South Korea and China.

### **Design/methodology/approach**

To fulfill our research objectives, we conducted an online survey across two countries, collecting 408 valid responses (South Korea: N = 201; China: N = 207) for our analysis. We employed Partial Least Squared based Structural Equation Modeling (PLS-SEM) with SmartPLS 4 and performed Exploratory Factor Analysis (EFA) and independent t-tests with SPSS 27.

### **Findings**

The study revealed that perceived risks significantly inhibit users from sharing health information, highlighting the critical role of trust in countering these effects. We also identified variances in the levels of trust in information content and trust in social media platform between the two countries, which offers fresh perspectives for designing culturally tailored public health communications and interventions.

**Keyword:** Health Information Sharing, COVID-19, Social Media, Benefit-Risk Model, Trust

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