Original Paper

Reconsidering Trust and Information Engagement and Unpacking the Role of Emotion in Public Responses During the Early Stage of a Public Health Crisis in China: Web-Based Survey Study

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Abstract

Background: The COVID-19 pandemic continues to offer valuable insights into crisis management and risk communication, particularly through retrospective analyses that allow a more comprehensive understanding. Emotional responses played a crucial role in shaping how individuals processed information and built trust in different objects in the early stages of the COVID-19 pandemic.

Objective: This study aimed to investigate how negative emotions influence online information engagement and trust in 4 distinct entities: government, scientists, health care providers, and other people (relatives, friends, family, and strangers).

Methods: A nationwide survey was conducted in China from January 31 to February 9, 2020, involving 1568 adult participants. The data collection was particularly valuable due to the limited access to national samples in China during the early stages of the public health crisis. Participants were asked questions related to negative emotions, engagement with online information, and their trust in 4 different entities (government, scientists, other people, and health care providers) during the pandemic. Mediation analyses were performed to test the associations between the examined variables. A 95% bootstrap CI approach was used to estimate the mediation effects.

Results: This study reveals that negative emotions not only had a direct effect on trust but also indirectly fostered trust in the government and scientists through increased information engagement. There was a positive association (B=0.219, SE 0.023; $P<.001$) between negative emotions and information engagement. In addition, individuals experiencing more negative emotions tended to trust more in the government (B=0.191, SE 0.022; $P<.001$) and scientists (B=0.184, SE 0.017; $P<.001$). However, this effect did not extend to trust in health care providers or interpersonal trust.

Conclusions: The research findings reveal that while negative emotions directly and indirectly enhanced trust in the government and scientists through increased information engagement, they did not significantly impact trust in health care providers or interpersonal relationships in the Chinese context. These findings highlight the different pathways through which emotions and information behaviors affect trust during public health crises, offering critical lessons for future public health emergencies and risk communication.

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KEYWORDS

risk communication; trust; negative emotions; information engagement; public health crisis

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Introduction

Background

The COVID-19 pandemic, spanning from its initial outbreak in December 2019 to its gradual containment, has left an indelible mark all over the world in various aspects of human lives [1,2]. A substantial body of research has continued to revisit the impacts, evaluate preventive strategies, and reflect on the effectiveness of risk communication approaches [3,4].

During the onset of the COVID-19 outbreak in China, the populace grappled with heightened negative emotions triggered by the uncertainties and challenges posed by the deadly virus [5,6]. Quarantine measures confined individuals to their homes, and their access to information and interaction with others was primarily online [7,8]. Such isolation not only altered how people obtained and used information but also influenced their perceptions of societal dynamics at large, fostering a climate characterized by such negative emotions as fear and anxiety [6,9].

While facing a highly contagious and deadly virus, people had to make critical decisions on whom and what to trust [3,10,11]. Thus, investigating how to foster trust is inevitable for risk communication and crisis management [1,3,12]. While previous studies have investigated the role of emotions and information use in a pandemic [5,9], this study, drawing upon the risk information seeking and processing (RISP) model [13], delves into the complex interplay between psychological states, information engagement behaviors, and their potential effects on trust toward different and significant entities including the government, scientists, health care providers, and other people to analyze the factors that influence trust in the initial outbreak of a crisis in China.

Literature Review

Trust and Its Consequences

Trust can be defined as the conviction (how) in the reliability of another person (who) regarding a specific issue (what) that arises in the face of uncertainties [14-16]. Trust plays a pivotal role in society, particularly in risk communication and crisis management, as it directly shapes behavioral compliance during times of uncertainty [17]. Public trust serves as a critical factor in facilitating or undermining cooperative intentions toward authorities while also sustaining confidence in institutional structures, governance systems, and response mechanisms [3,12]. Therefore, understanding the mechanisms and conditions under which trust is formed or eroded is essential for improving crisis response, designing more resilient communication strategies, and promoting behavioral compliance for future emergencies.

Research has revealed that trust can lead to cooperative beliefs and behaviors when faced with uncertainties [18,19]. Survey studies uncovered a positive connection between trust and social distancing and self-care behavior [3,10]. In addition an online survey from 11 countries found that people's evaluation of the severity of the COVID-19 pandemic was influenced by their trust in the news media and their perception of social media

bias [18]. During the COVID-19 pandemic in the United States, individuals who trusted right-leaning more than left-leaning media engaged in notably fewer preventive actions [19].

However, how trust in different entities develops and functions during the early stages of a public crisis varies across social settings and leads to diverse understandings. China—widely discussed in crisis management yet understudied regarding its social trust for the emerging phase of crisis when fear and ignorance prevail—presents both theoretical and practical significance for this investigation.

Types and Objects of Trust

Factors such as different forms of information resources can influence *types* and *objects* of trust [20-22]. The object of trust can be another person, a group of people, an organization, an institution, a geopolitical region, or the entire world [23]. Two types of trust, *interpersonal* and *impersonal* trust are conceptualized differently [14,24,25]. *Interpersonal* trust which can be defined as trust in other persons, like familiar people like family members is important [26,27]. *Interpersonal* trust can shape people's inclinations to action, particularly during a crisis or a pandemic [28,29]. *Impersonal* trust is also known as institutional [30-32] or systems trust [20,33,34]. It can be characterized as the expectation or confidence that social systems or institutions would act morally and uphold norms [27]. People's attitudes toward health-related policies issued by social institutions (eg, the government) or systems (eg, health care authorities) largely depend on public trust in the entities that enact the policies [35-37].

Types of trust take on a different meaning and inclinations in a Chinese setting. The Chinese tend to have a higher level of trust in institutions and organizations, such as the government or authoritative figures such as scientists [37-40]. Research reveals that a high level of trust in authorities and experts can facilitate the acceptance of preventive measures, reduce panic, and enhance the effectiveness of risk communication strategies [35,36]. Conversely, distrust can lead to misinformation, resistance, and harmful behaviors [41]. However, the Chinese have a comparatively lower level of trust in interpersonal relationships, particularly with strangers, which hinders interpersonal cooperation as well as health-related behavior, particularly social distancing [41,42]. Both scientists (health experts) and health care providers can play a vital role in communicating health-related knowledge and information in everyday life [41,42]. However, when the public is confronted with a health crisis, the dynamics of trust in scientists versus health care providers can vary [43]. For instance, physicians who directly treat the public and offer suggestions are generally more trusted by Americans than scientists in related fields [44,45].

Emotions, Risk Information Seeking, and Trust

The RISP model provides a theoretical framework for understanding how individuals respond to crises and risks through cognitive (systematic) and affective (heuristic) processes [13]. It emphasizes that in the face of uncertainty, people engage in information-seeking and processing behaviors influenced by factors such as emotions, perceived risk, informational

insufficiency, and social norms [46,47]. This study builds upon and extends the RISP model, examining how negative emotions influence different objects of trust through information-seeking behavior during an emerging public health crisis.

The *psychological demand* (emotions) for information sufficiency serves as the primary driver behind the proactive search and methodological processing of risk information in the RISP model [48]. Research indicates that information-seeking and avoidance can be motivated by both positive and negative emotions [49-52]. Scholars revealed that people with positive emotions tend to have a holistic perception of seeking information more comprehensively during a pandemic [46].

Negative emotions, such as fear and anxiety, are common psychological reactions when facing a crisis such as the Middle East respiratory syndrome, H1N1 influenza, and H7N9 influenza [10,53,54]. In the early stage of the COVID-19 pandemic, the preventive measures imposed by the government exacerbated prevalent negative emotions such as frustration, hostility, and anger [55,56]. Previous research has examined the relationship between emotions and information use behavior, for instance, Bohner and Weinerth [57] demonstrated that while positive emotion reduces people's tendency to examine information, negative affect enhances it. Park et al [47] found that people's emotional reactions, such as worry and fear, were triggered by their perceived risk, and this exacerbated the perception of their own lack of information.

We suspect that negative emotions are positively associated with information engagement. Therefore, we formulated this hypothesis:

- H1: Negative emotions have a positive relationship with information engagement at the early stage of a pandemic.

The RISP model posits that affective responses and information insufficiency might enhance information-seeking and engaging behaviors that are related to one's trust [48,58]. Previous studies have investigated the impact of negative emotions, such as anger, sadness, and anxiety, on trust during public health crises [10,59,60]. A line of studies found that negative emotions decrease trust [61-63]. However, Zhang et al [64] found that negative emotions—particularly anger—could increase trust. Researchers have also examined the relationships between emotions, information seeking or engagement, and trust,

particularly regarding trust in government. For example, Ahn et al [65] made cross-cultural comparisons and concluded that early in the COVID-19 pandemic in South Korea, the United States, and Singapore, trust in the government was negatively related to and reduced by negative emotions (anger, fear, sadness, and anxiety), and positively related to hope. In addition, these emotions acted as a mediator in the relationship between trust and information seeking. Erhardt et al [66] discovered that negative emotions have an impact on public trust in the government during times of crisis. For instance, anger places the blame for unfavorable circumstances on the government. Khalifa [67] reported that among the Bahrainis, trust in the government during the COVID-19 pandemic was positively connected with the use of news websites, but negatively associated with dependency on television and social media. On the basis of the aforementioned theoretical frameworks and findings, this research aims to dive into the relationships between negative emotions, information engagement, and trust in the different key objects during the early stage of the COVID-19 pandemic in China.

Because previous research has no consensus on the relationship between negative emotions, information engagement behavior, and trust, this study chose to propose the following 2 research questions (RQs):

- RQ1: How are negative emotions associated with trust in different objects?
- RQ2: How does trust in different objects relate to negative emotions and information engagement?

In our data, we have 4 different but significant objects of trust: the government, scientists, others (interpersonal trust), and health care providers. How each is operationalized is explained in the Methods section.

To summarize the assumptions of the relationships between negative emotions, information seeking, and trust in various entities, Figure 1 is the conceptual model that theorizes the relationships between these 3 variables. This study examines the potential mediating roles of media use, drawing on the media practice model, which conceptualizes media engagement and its outcomes as part of a reciprocal, cyclical process rather than a straightforward linear effect [68,69]. Specifically, we suspected that information engagement mediates the association between negative emotions and trust. Therefore, we created 4 mediation models, one with each object of trust, to be tested.

Figure 1. The proposed model of the relationships between variables.
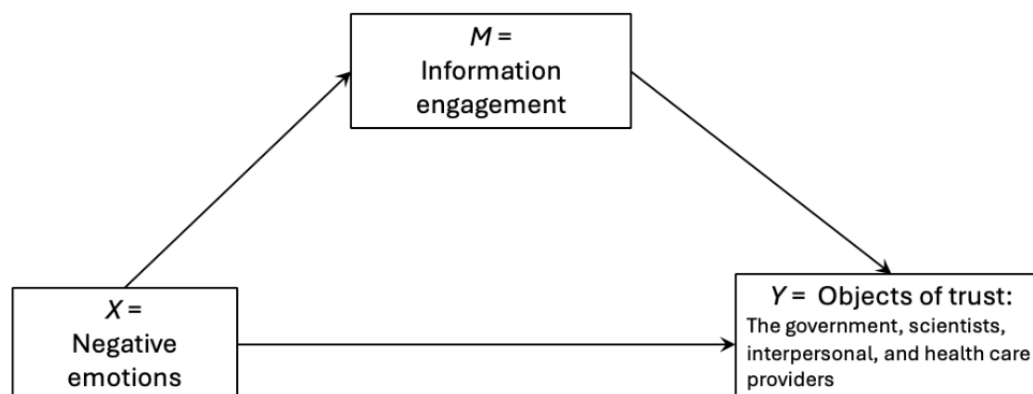
Methods

Data

An online survey was conducted during the early stage of the COVID-19 outbreak in China, from January 31, 2020, to February 9, 2020. The data collection was particularly valuable due to the limited access to national samples in China during the early stages of the public health crisis. Sojump, a professional Chinese internet survey company that is similar to SurveyMonkey, gathered the data. It first randomly selected 2840 people from its sample pool and then sent them an email invitation to participate. A total of 1656 people completed the survey, with a response rate of 58.3%. This sampling technique was a time-efficient way to investigate public emotions and opinions during the COVID-19 outbreak. Previous research conducted in China has taken this approach [70-72].

Participants who completed the survey (a questionnaire with 179 items) in fewer than 11 minutes [73] or failed the attention checks were excluded, ending with 1568 valid cases. A total of 31 provinces, municipalities, and autonomous territories in mainland China were included in the sample. With a mean age of 31.02 (SD 9.0), there were 789 (50.32%) male respondents and 779 (49.68%) female respondents. Furthermore, 18.11% (284/1568) of the participants had a monthly household income of ≤CN ¥5000; 31.12% (488/1568) of the participants earned between CN ¥5001 and CN ¥10,000; 21.17% (332/1568) of the participants earned between CN ¥10,001 and CN ¥15,000; 15.75% (247/1568) of the participants earned between CN ¥15,001 and CN ¥20,000; 12.4% (194/1568) of the participants earned between 20,001 and 50,000 CN ¥; and 1.47% (23/1568) of the participants earned >CN ¥50,000 CN ¥. On a 1-to-10-point scale of income, the mean is 6.29 (SD 1.96), which is in the category of CN ¥8001 to CN ¥10,000. Only 5.04% (79/1568) of the sample had completed high school or less, 16.07% (252/1568) were current or former technical school students, 69.07% (1083/1568) were college students or alumni, and 9.82% (154/1568) were postgraduates. On a 1 to 9-point scale of education, the mean was 6.76 (SD .92), which falls into the category of some or professional college.

Ethical Considerations

The instrument and data collection received approval from the Institutional Review Board of Zhejiang University (2020-056). Prior to completing the online survey, all participants provided voluntary informed consent. Each respondent received a compensation of CN¥ 12 (US $1.60) for their participation. The dataset was fully anonymized, with no personally identifiable information retained or linked to any participant.

Measurements

The dependent variables (Y) measure one's trust in four distinct entities: (1) the local government in terms of its response to the pandemic (Cronbach α=0.85); (2) scientists studying and battling the virus (Cronbach α=0.79); (3) interpersonal actors (family, relatives, friends, and strangers regarding the disclosure of their health conditions and travel histories; Cronbach α=0.66); and (4) the health care providers who treated COVID-19 infections (Cronbach α=0.75).

In the initial stage of a crisis, individuals often experience a constellation of negative emotions [47,74]. To capture the overall emotional response during the early stage of the public health crisis, the independent variable (X) is a combination of 5 negative emotions—fear, anxiety, anger, frustration, and hostility (Cronbach α=0.79). This approach follows prior research that conceptualizes emotional arousal as a general affective state influencing information processing and behavioral intention [10,53]. The mediator (M) is a scale of how often people engaged with different information-related activities in the context of COVID-19, such as posting an original message or liking, commenting on, or forwarding or sharing messages that they had encountered (Cronbach α=0.72).

Similar research has studied the same variables [75-78]. Control variables are typical demographics in mass and health communication research, including sex, age, income, and education [79]. Table 1 summarizes these variables. The PROCESS Macro (Model 4, version 4.1) proposed by Hayes [80] for SPSS was used to analyze the data, with 5000 bootstrap samples. Continuous variables were mean-centered before analysis. We created a mediation model for each of the 4 objects of trust. Only models with statistical significance are reported.

Table 1. A summary of dependent, independent, and control variables.

Variables and wording	Mean (SD)	Cronbach α
Dependent variable 1: trust in the government[a]		.85
How do you rate the performance of the local government of where you live? (average scale)	3.90 (0.70)	
1. I have confidence in the ability of local government departments in terms of controlling the pandemic.	4.02 (0.79)	
2. Relevant local government departments will fully consider the benefits of the people in the context of the pandemic.	3.85 (0.89)	
3. Relevant local government departments show fairness when dealing with the pandemic.	3.80 (0.91)	
4. Relevant local government departments are transparent when conveying information about the pandemic.	3.80 (1.0)	
5. Overall, relevant local government departments are trustworthy in their handling of the pandemic.	4.03 (0.84)	
Dependent variable 2: trust in scientists[a]		.79
How do you rate the scientists who are on the front line fighting COVID-19? (average scale)	4.35 (0.56)	
1. They deserve my trust.	4.36 (0.64)	
2. Their professional qualifications are trustworthy.	4.38 (0.70)	
3. They put people's health as a topic priority.	4.30 (0.80)	
4. I trust them.	4.37 (0.71)	
Dependent variable 3: trust–interpersonal[b]		.66
When you ask the following people about their recent travel histories and health conditions, how much do you trust their answers? (average scale)	3.63 (0.55)	
1. Family	4.53 (0.71)	
2. Relatives	3.80 (0.84)	
3. Friends	3.85 (0.75)	
4. Strangers	2.35 (0.81)	
Dependent variable 4: trust in health care providers[a]		.75
How much do you agree with the following statements? (average scale)	3.51 (0.75)	
1. The confirmation rates of COVID-19 in hospitals are low (reverse-coded).	3.91 (0.76)	
2. Hospitals can treat patients effectively because they are overcrowded and have a shortage of supplies (reverse-coded).	2.94 (1.11)	
3. Physicians do not have enough knowledge about COVID-19 and are prone to misdiagnosis (reverse-coded).	3.93 (0.95)	
4. Hospitals are prone to misdiagnosis because they do not have enough COVID-19 test kits (reverse-coded).	3.32 (1.19)	
5. Hospitals cannot effectively isolate COVID-19 patients, which will likely cause cross-contamination (reverse-coded).	3.45 (1.22)	
X: negative emotions[a]		.79
The country is extremely concerned about the current COVID-19 pandemic. How much do you exhibit or feel each of the following emotions during this outbreak? (average scale)	3.73 (0.82)	
1. Fear	2.91 (1.03)	
2. Anxiety	2.97 (1.16)	
3. Anger	2.43 (1.27)	
4. Frustration	2.16 (1.03)	
5. Hostility	1.69 (0.96)	
M: engagement with information[c]		.72

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Variables and wording	Mean (SD)	Cronbach α
When you are exposed to online information related to the COVID-19 pandemic, how do you respond to the information? (average scale)	2.85 (0.77)	
1. Give a like	2.83 (2.20)	
2. Post original message	1.91 (1.07)	
3. Comment	2.68 (1.14)	
4. Forward or reshare	3.11 (1.18)	
5. Search further for related information	3.75 (1.03)	
Control 1		
Age (range 16 to 67 years)	31.02 (9.0)	__d
Control 2		
Sex (male: 50.3%; female: 49.7%); dummy-coded male	—	—
Control 3		
Education (1-9 scale; 1=no schooling; 9=doctorate)	6.76 (0.92)	—
Control 4		
Monthly income (1-10 scale; 1=no income; 10= ≥CN ¥50,001 [e])	6.29 (1.96)	—

[a]1=totally disagree, 2=disagree, 3=neither disagree nor agree, 4=agree, and 5=totally agree.

[b]1=totally trust, 7=totally distrust.

[c]1=none, 2=selfdom, 3=several times, 4=often, and 5=very frequently.

[d]Not available.

[e]CN ¥1=US $0.14.

Results

The first hypothesis posits that the more negative emotions one has, the more they are likely to engage with information. The mediation model shown in Table 2 indicates that there was a positive association (B=0.219, SE 0.023; $P<.001$) between negative emotions and information engagement. Therefore, H1 was supported.

RQ1 asks about the relationship between negative emotions and trust in different objects. Higher levels of negative emotions were linked to *more* trust in the government, scientists, and interpersonal trust, but *less* trust in health care providers.

RQ2 asks whether information engagement has a mediating effect on the path between negative emotions and trust in 4 different entities. The answer to RQ2 is that information engagement had a mediating effect between negative emotions and trust in the government and scientists, but *not* in health care providers or interpersonal trust.

The trust-in-the-government mediation model was supported, as Table 2 and Figure 2 demonstrate. The a_1-path from negative emotion to information engagement (X predicting M) was significant (B=0.219, SE 0.023; $P<.001$), suggesting that individuals experiencing more negative emotions such as fear, anger, and anxiety tended to be more information-engaging. There was also a significant and positive coefficient (B=0.074, SE 0.023; $P=.001$) for the b_1-path from information engagement to trust in the government (M predicting Y). Also notable was the c'_1-path coefficient (X predicting Y), which reflects the direct effect of negative emotions on trust in the government

(B=0.191, SE 0.022; $P<.001$). The total effect from X (negative emotions) to Y (trust in the government) was 0.207, SE 0.021; $P<.001$. The indirect effect from X (negative emotions) to Y (trust in the government) was 0.016, SE 0.01, 95% CI 0.01-0.027. Because 0.01 and 0.027 are both on the same side of zero, this indirect impact was validated. This set of findings suggests that an individual's trust in the government was positively associated with their level of negative emotions. In addition, experiencing *more* negative emotions encouraged people to engage with *more* information, which *raised* their level of trust in the government.

Figure 3 and the data in Table 2 show that the trust-in-the-scientists mediation model stood. Evidence of the connection between negative emotions and information engagement (X predicting M) is found in the a_2-path (B=0.219, SE 0.023; $P<.001$). The b_2-path from information engagement to trust in scientists (M predicting Y) had a significant and positive coefficient (B=0.054, SE 0.018; $P=.003$). Another significant relationship between negative emotions and trust in scientists was the c'_2-path (X predicting Y) coefficient (B=0.184, SE 0.017; $P=.003$). The total effect from X (negative emotions) to Y (trust in scientists) was 0.196; SE 0.017; $P<.001$. The indirect effect from X (negative emotions) to Y (trust in scientists) was 0.012; SE 0.01; 95% CI 0.004-0.02. Because 0.004 and 0.02 are both on the same side of zero, the indirect effect through mediation was confirmed. This implies that a person's degree of negative emotions rose with their degree of trust in scientists. Furthermore, feeling *more* negative emotions motivated people to engage with *more* information, hence *increasing* their level of trust in scientists.

Table 2. Trust in the government and scientists regression models generated by PROCESS Model 4.

Variables	B (SE; 95% CI)	P value
Predicting information engagement[a]		
Negative emotions	0.219 (0.023; 0.174 to 0.265)	<.001
Age (years)	−0.006 (0.002; −0.010 to −0.001)	.02
Gender	0.006 (0.038; −0.069 to 0.080)	.88
Education	0.038 (0.022; −0.006 to 0.081)	.09
Income	0.045 (0.012; 0.024 to 0.066)	<.001
Predicting trust in the government[b]		
Negative emotions	0.191 (0.022; 0.148 to 0.233)	<.001
Information engagement	0.074 (0.023; 0.029 to 0.120)	.001
Age (years)	0.005 (0.002; 0.001 to 0.010)	.001
Gender	0.024 (0.035; −0.044 to 0.092)	.49
Education	−0.026 (0.020; −0.066 to 0.014)	.21
Income	0.015 (0.010; −0.005 to 0.035)	.13
Predicting trust in scientists[c]		
Negative emotions	0.184 (0.017; 0.150 to 0.218)	<.001
Information engagement	0.054 (0.018; 0.018 to 0.090)	.003
Age (years)	−0.002 (0.002; −0.005 to 0.001)	.26
Gender	−0.009 (0.027; −0.062 to 0.045)	.75
Education	−0.009 (0.016; −0.040 to 0.022)	.57
Income	−0.008 (0.008; −0.023 to 0.007)	.29

[a]R^2=0.070; $F_{5,1562}$=23.46.

[b]R^2=0.073; $F_{6,1561}$=20.41.

[c]R^2=0.089; $F_{6,1561}$=25.38.

Figure 2. The mediating role of information engagement in the relationship between negative emotions and government trust.
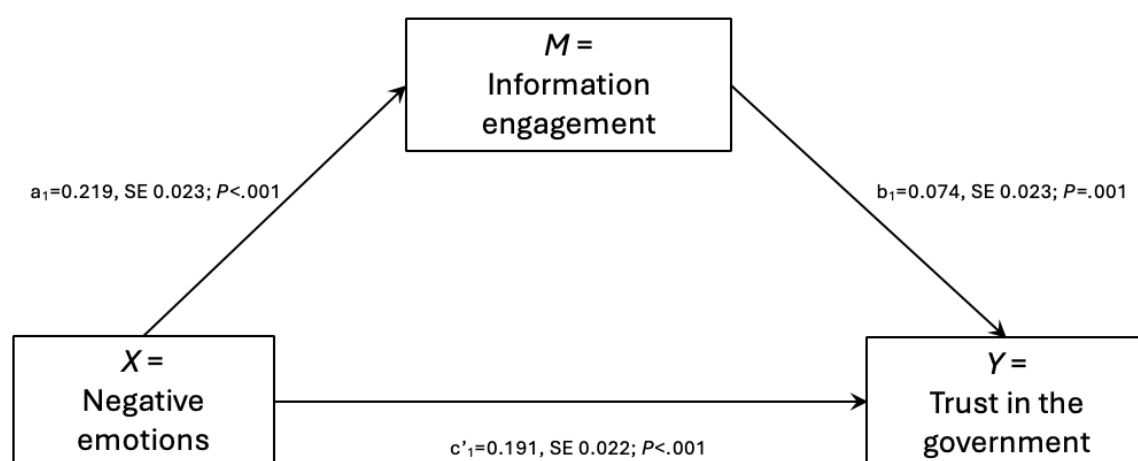
Figure 3. The mediating role of information engagement in the relationship between negative emotions and trust in scientists.
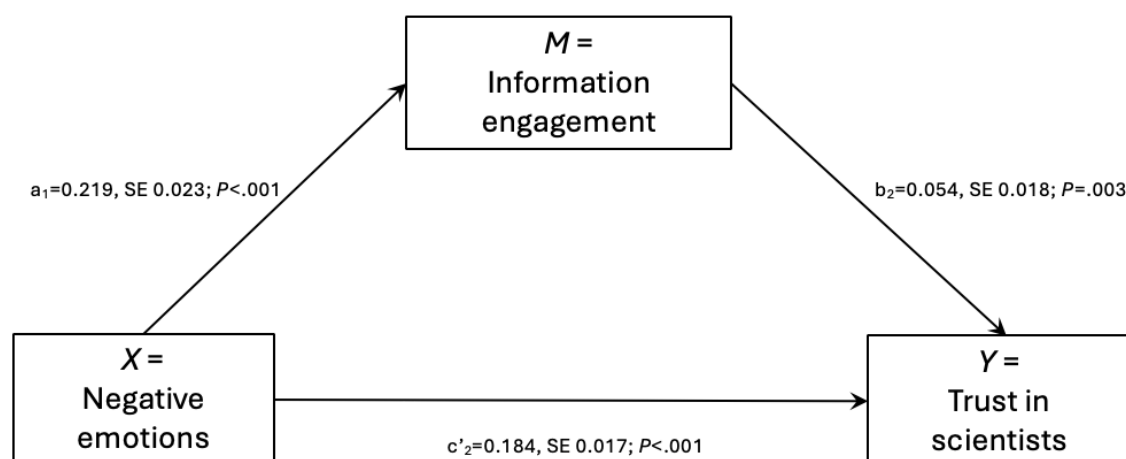
Discussion

Principal Findings

This research reveals that individuals' negative emotions are both directly and indirectly (through information engagement) positively associated with their trust in government and scientists. However, these negative emotions do not affect respondents' trust in others (relatives, friends, family, and strangers) or health care providers. These discrepancies with previous findings [65] call for further investigation into factors that influence public responses during health crises and risks, particularly in the initial stages of a public health emergency [47].

The Objects of Trust

Although negative emotions tend to encourage a higher level of engagement with information, echoing previous findings [46,57,65], the consequent effect on trust relies heavily on the specific entities involved. The fact that negative emotions and information engagement are positively associated with trust in the government and scientists, but have no connection with trust in others (interpersonal trust) or health care providers, underscores the necessity for a more intricate understanding of the interplay between the dynamics of trust.

As argued earlier, the objects of trust can be roughly divided into 2 camps: persons versus institutions or systems [14,24,30]. The analysis reveals that the negative emotions and information engagement are positively associated with trust toward *institutional* or *impersonal* entities in our models, namely the government and scientists who supposedly possessed more knowledge about how to combat the deadly virus. These 2 entities are not individual "everyday people" and they tend not to have direct contact with the general population. The government is associated with formal roles and responsibilities that impact the broader community yet may not have direct personal interactions with most individuals. Scientists were the authoritative heroes in a far way laboratory figuring out how to battle the virus. So both the government and scientists were

impersonal to our survey participants, and they were the ones that our survey respondents likely looked up to and trusted.

In addition, trust in government in the Chinese context is multilayered and dynamic, often differing across levels (central vs local) and shaped by both political culture and past governance performance [81]. Previous studies suggest that local governments in China typically receive less trust than central authorities, particularly during uncertain times [82]. However, this study examines how local government trust and digital engagement interact during unique circumstances where negative emotions can drive information-seeking behavior that enhances—rather than weakens—institutional trust.

Conversely, findings suggest that during the early stage of the COVID-19 pandemic in China, individuals' negative emotions and information engagement were not associated with their trust in the types of persons that they had *direct and tangible contact* with in their daily lives. Family members and friends are within everyday social interactions and health care providers are the ones in the hospital who can be reached when necessary. COVID-19 is a contagious virus that spreads among people and interpersonal trust in China has been decreasing [83]. Any person could be a virus carrier or transmitter. People either did not know whether they had the virus or had an incentive to lie about their health conditions or travel histories so that they would not be quarantined. Therefore, other people were less likely to be trusted in this context, leading to an insignificant outcome in our analysis. In addition, during the initial stage of this pandemic, health care providers likely knew about the virus and how to treat infections as little as ordinary citizens. Therefore, trust in health care providers is not a significant factor in our findings.

The Effects of Information Engagement

In the initial stage of the COVID-19 pandemic in China, the pervasive sense of fear, anger, and anxiety likely triggered a heightened state of negative emotions among the populace. Faced with a novel and rapidly evolving crisis, individuals probably sought out information that could provide them with a sense of security, reassurance, and guidance. Selective and

avoidance exposure originated from the theory of cognitive dissonance, which holds that people experience discomfort or dissonance when they are exposed to facts or situations that contradict their personal beliefs [84,85]. Selective exposure—a psychological strategy used to reduce feelings of dissonance—involves deliberately avoiding information that contradicts one's views and seeking out information that supports existing beliefs.

When the public is faced with uncertainty and lacks the competence to make decisions, trust in scientists plays a crucial role in science-related decisions [27,86]. Following the COVID-19 pandemic outbreak, particularly after January 20, 2020, when Zhong Nanshan, a highly regarded Chinese expert was sent to Wuhan by the National Health Commission to investigate the situation and confirm the human-to-human transmission of SARS-CoV-2, a unique form of collaboration between the government and representative scientists emerged [87]. The government created a communication matrix for scientists, and scientists acted as vital microphones for the government to inform the public of important information [87,88]. The communication matrix accompanied by the highly centralized media system made Chinese news media the major information source. The media focused on the government's and scientists' responses to the pandemic, highlighting preemptive steps and decisive acts, which could increase public confidence in their capabilities [89]. Consequently, the government and scientists, as primary sources of information and guidance during the crisis, gained prominence in the media and public discourse [11,40,90].

Individuals experiencing heightened negative emotions were likely to selectively expose themselves to information disseminated by trusted governmental and scientific authorities. The lack of direct personal involvement with these authoritative figures might have contributed to a more idealized perception of their capabilities and intentions. In contrast, during the early stage of the pandemic, the public knew that hospitals were overwhelmed, leading to the likely perception that health care providers could not handle the situation adequately.

Sociocultural Factors

While earlier studies, notably Ahn et al [65], suggested a *negative* correlation between negative emotions and trust, our study revealed a *positive* relationship, namely negative emotions *fostering* an increase in trust toward governmental authorities and scientists.

Cultural frameworks contribute to explaining variations in belief and behavior patterns across nations. China is collectivist with a greater power distance [91-93]. In other words, Chinese culture emphasizes collective harmony and societal order. Therefore, Chinese people—in comparison with citizens in individualist cultures—would respect and trust the government as well as authority figures such as scientists more [40,94], particularly in uncertain times. To preserve societal stability and cohesiveness, the cultural tendency of deference to authority and hierarchy may encourage people to believe in the government and scientists, particularly in the face of negative emotions.

Moreover, a greater sense of dependence on government-led initiatives and outlets occurred among the Chinese during times of crisis due to its highly centralized governmental structure, and a tradition of information control [95,96]. At the early stage of a public health crisis, even in the face of unpleasant emotional experiences, citizens may view the government and scientific authorities as important sources of direction and assistance, particularly when facing difficulties.

Implications

This study offers important theoretical contributions to the fields of risk communication and crisis management. The RISP model [13,48], which highlights the role of emotions in shaping trust and information engagement during crises, provides the foundation for this research, which extends the literature by examining how negative emotions differentially influence trust toward various entities, including the government, scientists, health care providers, and interpersonal networks. By demonstrating that negative emotions primarily fostered trust in governmental and scientific institutions but not in health care providers or social relations, the findings underscore the need for a more nuanced understanding of trust formation processes. Moreover, this study emphasizes the importance of incorporating sociocultural factors into analyses of emotion-trust dynamics. The findings contradict previous studies [65] showing that revealed negative emotions and trust in the government are typically negatively associated in the face of a crisis. This research calls for a more nuanced, context-sensitive approach in theorizing about emotion, information engagement, and trust during public health crises.

Practically, the findings of this study offer valuable insights for future risk management and communication strategies during public health emergencies. Understanding that negative emotions can selectively reinforce trust in certain institutions highlights the need for targeted communication efforts that recognize the differential credibility assigned to various sources [12]. Risk communicators and policy makers should design emotion-sensitive strategies that not only acknowledge public emotional states but also actively guide information engagement toward credible institutions to strengthen societal resilience [1]. Furthermore, by recognizing the influence of sociocultural contexts on trust dynamics, practitioners can better tailor their interventions to the specific cultural and institutional environments in which crises unfold [65]. These lessons provide a critical foundation for developing more effective, culturally adaptive risk communication frameworks that can better manage uncertainty, foster trust, and promote collective action in the face of future crises.

Limitations and Suggestions for Future Research

This study has several limitations that should be acknowledged. First, the sample is not fully representative of the broader population, and the data collection period is relatively brief. With 69.07% (1083/1568) of the respondents being current university students or graduates, and 9.82% (154/1568) being postgraduates, highly educated people are overrepresented. This skewness is a common attribute observed in online nonprobability survey samples, potentially limiting the generalizability of the findings [97]. Nevertheless, given the

unique circumstances of the crisis's initial outbreak and infeasibility to access the representative sample, this method represented the most effective approach for the data collection. Second, while the RISP model includes key constructs such as perceived risk, this variable was not incorporated into our model. Instead, this study focused on how negative emotions influence trust in different entities, offering a theoretical extension by emphasizing the object-specific nature of trust. In addition, because this research gathered data in China, its findings may have limited generalizability to other populations.

Notwithstanding these limitations, we believe this research has yielded valuable knowledge. We have learned about how people deal with emotions, information engagement, and trust at the earliest stage of a national or global crisis. This timing provided a unique opportunity to examine the Chinese public's trust dynamics and emotional responses during crisis management at an early stage when uncertainty was at its peak and society faced unprecedented unknowns.

Future research should use a more representative survey sample and ask questions about trust across different levels of the government as well as the use of additional types of information sources. Including open-ended questions would help reveal why respondents trust or distrust specific entities. In addition, researchers should investigate distinct dimensions of interpersonal trust—between close ties and strangers—to develop a more nuanced understanding of its nature.

Conclusions

This study revisited the early stage of the COVID-19 pandemic in China to examine the complex interplay between negative emotions, information engagement, and trust in different actors. The findings revealed that while negative emotions directly and indirectly enhanced trust in the government and scientists through increased information engagement, they did not significantly impact trust in health care providers or interpersonal relationships. This study has contributed to a deeper understanding of the Chinese context, in comparison with other countries and cultures. The observed positive relationship between negative emotions, information engagement, and trust in the government and authoritative scientists likely signifies a distinctive pattern specific to the Chinese sociocultural context, diverging from the trends identified in previous studies conducted in different national settings, such as in the United States, Korea, Singapore [65], and Bahrain [67]. In addition, there is an observed difference between scientists and health care providers as trustees in the face of a pandemic. These noteworthy distinctions underscore the influence of unique cultural and societal norms when the chips are down in shaping individuals' perceptions and responses, highlighting the importance of contextual factors in shaping trust dynamics within diverse sociocultural landscapes.

This study offers valuable lessons for designing future strategies for public health crisis and risk communication. Recognizing the selective nature of trust formation and tailoring communication efforts to emotional and cultural contexts can enhance the effectiveness of crisis response. As the world continues to face emerging public health threats, this type of retrospective analysis provides vital insights for developing more resilient and effective public health communication systems.

Conflicts of Interest

None declared.

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Abbreviations

RISP: risk information seeking and processing
RQ: research question