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Timothy K.F. Fung

Po Yan Lai

Robert Griffin

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Communicating socially acceptable risk judgments: The role of impression information insufficiency in the risk information seeking and processing model

Timothy K. F. Fung[1] | Po Yan Lai[1] | Robert J. Griffin[2]

[1]Department of Interactive Media, Hong Kong Baptist University, Kowloon Tong, Hong Kong

[2]Diederich College of Communication, Marquette University, Milwaukee, Wisconsin, USA

Correspondence
Timothy K. F. Fung, Department of Interactive Media, Hong Kong Baptist University, Communication and Visual Arts Bldg, Kowloon Tong, Hong Kong.
Email: tfung@hkbu.edu.hk

Abstract

The COVID-19 pandemic has created uncertainty and controversy around risk-related issues such as vaccine mandates. People expressing their opinions on these issues to important others, such as employers, may face significant consequences, such as rewards or rejection. Therefore, people may try to find, avoid, or use information in a way that helps them express risk judgments that are socially acceptable in different social situations. This study investigated how people seek, avoid, and process risk information when they are concerned about their impression management. It also introduced the concept of *impression information insufficiency* (the perceived gap between the information one has and the information one needs to convey socially acceptable judgments and meet interpersonal needs in social situations) and examined its antecedents and outcomes within the risk information seeking and processing model. We conducted an online survey with 1673 Hong Kong adults during the COVID-19 pandemic. The results showed that fear and social norms related to greater impression information insufficiency, which thereby was associated with biased risk information seeking, avoidance, and processing.

KEYWORDS

impression management, impression motive, information avoidance, information processing, information seeking, policy mandates, risk communication, risk information seeking and processing model, risk information use behavior

INTRODUCTION

In response to public health emergencies, administrations in the public and private sectors often consider policy mandates as one of their intervention strategies to effectively curb any rapid surge in the number of infected cases and deaths. For example, during the COVID-19 pandemic, governments around the world and many organizations, profit and nonprofit, implemented policy mandates in various degrees regarding vaccination, isolation, infection testing, personal hygiene (e.g., facemasks), and restrictions on movement and access (An et al., 2021; Maurer, 2022). Even though many people might hold negative sentiments toward governmental and organizational policy mandates, surveys showed that nearly 99% of employees complied with the mandates (Farrington, 2021; Maurer, 2022). Of the myriad reasons people may have for deciding how to respond to policy mandates related to a health hazard, their concern for expressing socially acceptable risk judgments can be an important reason. Other than protecting themselves from the physical harm caused by a health hazard, interviewees indicated in news reports and other surveys that "going along with the stance of employers, parents, and children" (e.g., The de Beaumont Foundation, 2021), "being helpful and cooperative employees" (e.g., Yau & Magramo, 2021), and "being supportive of the government" (e.g., Tian, 2022) are their reasons for complying with policy mandates and for expressing socially acceptable judgments.

Policy mandates heighten individuals' concerns for expressing socially acceptable risk judgments when they are required to explicitly reveal their own risk judgments to others; expressing their personal judgments about policy mandates and related risk issues in social situations can result in important interpersonal consequences. For example, during the COVID-19 pandemic, companies that implemented vaccine and facemask mandates required people to wear a facemask and state whether they had fulfilled the vaccine requirement before entering the company's premises (Reuters, 2021). Employees who voice their opinions about the company's policy can convey to their supervisor a positive or negative impression which can affect their relationship as well as have implications for the employee's job security and advancement (Ellyatt, 2021; Henry et al., 2022). Refusing the company's vaccine mandate can convey to vaccinated colleagues an impression of being inconsiderate and irresponsible, which can result in workplace conflict (Ellyatt, 2021). In another situation, people who share news about vaccination, social distancing regulations, and personal protective equipment such as facemasks can thereby show care for their loved ones (e.g., parents, spouse, close friends), whereas expressing an opinion contradictory to their loved ones' views of COVID-19 related issues, such as the policy mandates, can lead to relational conflicts (Ellyatt, 2022). Therefore, expressing to others one's attitude and behavioral reaction toward policy mandates and related risk issues can have significant interpersonal consequences in professional and personal contexts.

Since expressing judgments in social situations can have significant effects on one's relationships, a person may want to convey judgments that are socially acceptable to fulfill their interpersonal needs. This can be a major motive for a person (Bohner et al., 1995) and is called "impression motive" (Eagly & Chaiken, 1993). By expressing judgments that they believe will be socially acceptable to their *evaluators* (e.g., employers, supervisors, colleagues, parents, in-laws, relatives, close friends) (Chaiken et al., 1989), impression-motivated people attempt to satisfy interpersonal needs such as obtaining material and social rewards from others or preventing rejection or isolation by others (Leary & Kowalski, 1990).

When people are impression-motivated, their goal is to express socially acceptable judgments that will result in positive relational outcomes in social situations. To achieve this goal they will endeavor to seek, avoid, and process risk information in a way that supports achieving that goal (Eagly & Chaiken, 1993; Griffin et al., 2013). That is, impression-motivated

people will selectively look for and assess risk information that is consistent with their evaluator's viewpoints and avoid that which is in opposition. Such strategic risk information selection helps them fulfill an impression-motivated informational goal (Griffin et al., 2013).

The risk information seeking and processing (RISP) model is a theoretical framework that illuminates individuals' decisional processes that drive their risk information use behavior (see Figure 1). RISP recognizes that people have different motives (i.e., impression, accuracy, and defense) that influence how they engage in different modes of risk information seeking, avoidance, and processing (Griffin et al., 2013). RISP's key concept of "information insufficiency" explicates the underlying process of how people seek,
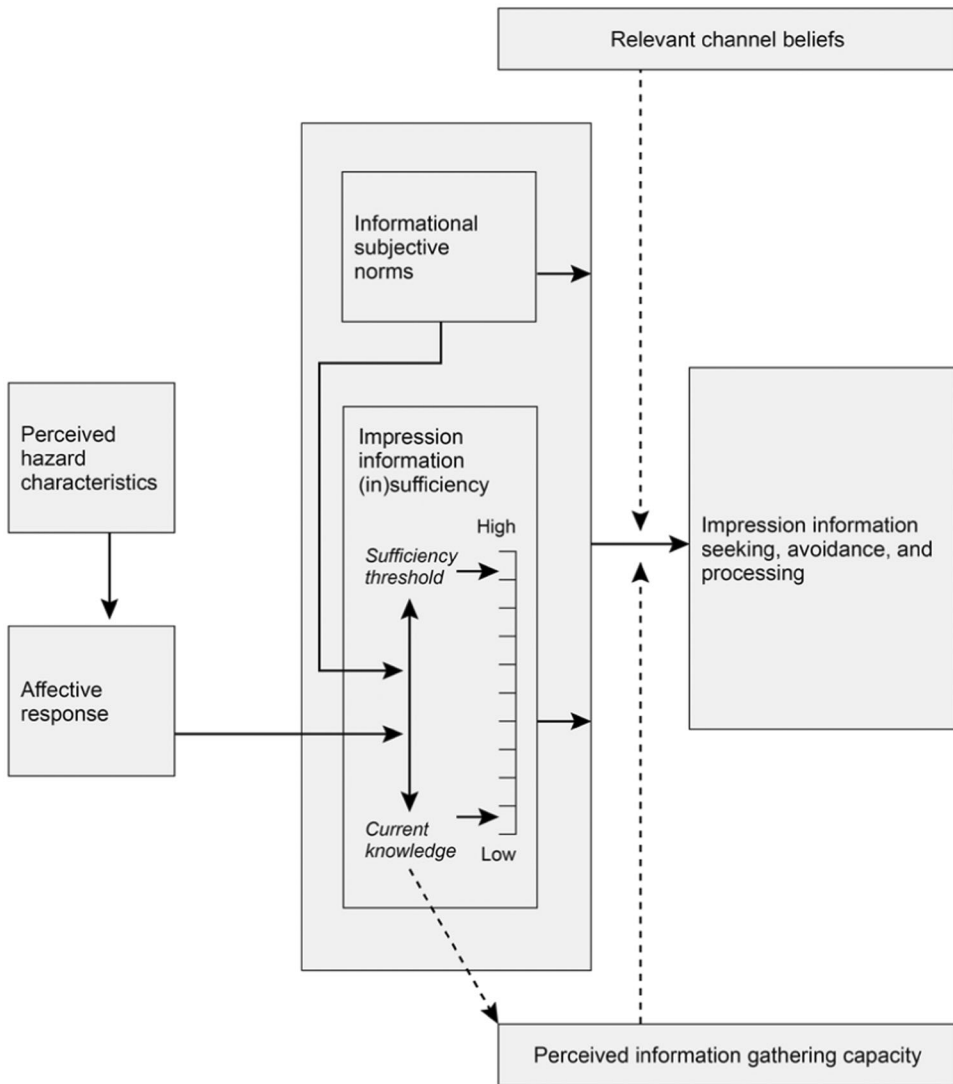
FIGURE 1 Based on risk information seeking and processing (RISP) model (Griffin et al., 2013). Based on Griffin et al. (2013), we added the impression information insufficiency into the full RISP model. Relationships represented by the dotted lines were not investigated in this study. Figure 1 does not show the "individual characteristics" block of the original model because this block is not the focus of the investigation. Yet, some individual characteristics are included as control variables in the analysis.

avoid, and process risk information in hopes of reaching various informational goals, including that of managing the personal impressions they give to others. Although the RISP model holds the potential to understand people's impression-motivated risk information use behavior and their potential impression-driven reaction to policy mandates and risk issues, no study, to date, has examined impression management as an informational goal within the RISP framework. Instead, research employing the RISP framework has, thus far, focused primarily on people's risk information use behavior for the accuracy goal of making valid judgments to protect themselves from the physical harm caused by a health hazard (Griffin et al., 2013). This study endeavors to fill this void in the RISP literature.

This study uses the global COVID-19 pandemic situation in Hong Kong as a case study. The purpose is twofold: (1) to conceptualize and operationalize impression information insufficiency, the subjectively perceived gap between the amount of knowledge an individual currently possesses and the amount desired to achieve sufficient confidence to communicate risk-related judgments that will address interpersonal needs in social situations, and (2) to explicate the precursors that give rise to people's impression information insufficiency and their influences on people's risk information seeking, avoidance, and processing. To examine the role of impression information insufficiency, heightening people's concern for expressing socially acceptable risk judgments is essential. In our survey, we employed the priming technique, a proven psychological research technique commonly applied in studying people's motives (Lundgren & Prislin, 1998), to increase respondents' concerns about the interpersonal consequences associated with expressing their judgment about the risks of COVID-19 and related issues.

To our knowledge, this study is the first theory-building effort to systematically examine the concept of impression information insufficiency. Given that people's risk information seeking and processing behavior plays a vital role in their decision to express socially acceptable risk judgments, the findings of this study can provide practical insights to policymakers in regard to understanding people's decisions about how to react to policy mandates, which is critical to policy formulation for future public health emergencies. Furthermore, our findings can reveal the potential of using impression management as a persuasive strategy in risk message design for explaining policy mandates to the public.

IMPRESSION MANAGEMENT AND EXPRESSING SOCIALLY ACCEPTABLE JUDGMENTS TOWARD POLICY MANDATES AND RELATED RISK ISSUES

Policy mandates are likely to heighten people's concern for the consequences associated with expressing socially acceptable risk judgments because policy mandates render three types of social situations in which expressing socially acceptable risk judgments becomes particularly salient. First, there are people (e.g., employees, students) who must explicitly state their risk judgments (e.g., vaccination) because they are either legally bound by the public authority or contractually obligated by the private authority to do so. Second, there are people who communicate their judgments to others with whom they have a highly valued professional or personal relationship (e.g., employers, supervisors, colleagues, parents, in-laws, relatives, and close friends). The last situation occurs when expressing judgments to real or imagined salient audiences (e.g., Winter & Neubaum, 2016); for example, a politician who establishes a Facebook page has known (e.g., personal friends) as well as unknown followers (e.g., voters). Before expressing an opinion on the page about vaccination, the politician is likely to consider how the audience, personal friends (real), and voters (imagined) would think of him/her. In these three scenarios, policy mandates heighten

people's desire to convey a favorable impression by expressing socially acceptable judgments (Chaiken et al., 1989).

In social situations, impression management means considering the evaluator's views, attitudes, dispositions, and actions to communicate judgments that align with the evaluator's, and to project a favorable image by displaying the desired personal attributes for the evaluator to see (Bohner et al., 1995). Evaluators can be people in supervisory social roles (e.g., employers, managers), people with whom we have an intimate relationship (e.g., relatives, close friends) (Chaiken et al., 1989), or real or imagined salient audiences highly relevant to the focal topic (Winter & Neubaum, 2016). In the context of risk such as COVID-19, people may be prompted to express to their employers and supervisors (i.e., evaluators) a positive attitude toward the company's COVID-19 preventive measures and to demonstrate their supportiveness to the company (Yau & Magramo, 2021). To build a positive perception as a caring person for maintaining a harmonious relationship, people might discuss and share the news with their in-laws about how to protect themselves from the COVID-19 risks; conversely, they might be prompted to discuss the shortcomings of the policies with their in-laws who hold a negative attitude toward preventive measures. As such, impression-driven people are more likely to focus on their interpersonal needs to obtain tangible rewards (e.g., keep their job, advance their career, raise their salary), intangible rewards (e.g., better working and social relationships, good social standing), to avoid punishments (e.g., employment termination or suspension), or to avert social sanctions (e.g., rejection and isolation) from their evaluators (Leary & Kowalski, 1990). To manage one's impressions, gathering, and processing risk information that aligns with the evaluator's position on policy mandates and related risk issues enables individuals to express socially acceptable risk judgments.

Impression information insufficiency and the RISP model

The RISP model (Griffin et al., 1999, 2013) proposes that information insufficiency and informational subjective norms are the main motivational forces for individuals' risk information seeking, avoidance, and processing (see Figure 1). Specifically, the model proposes an array of perceived hazard characteristics that influence individuals' affective response toward a health hazard, which, in turn, influences information insufficiency. The model also suggests that informational subjective norms are another source of influence on information insufficiency. Subsequently, both informational subjective norms and information insufficiency are expected to influence risk information use behavior.

In the following, we conceptualize information insufficiency in the context of seeking to express to evaluators socially acceptable risk judgments (i.e., impression information insufficiency). Because the RISP model conceives both informational subjective norms and information insufficiency as motivators of risk information use behavior, in the section "Impression Information Insufficiency and Informational Subjective Norms," we further discuss how these two motivators are related in the context of seeking to express socially acceptable risk judgments.

The concept of information insufficiency originates from the three conceptual components of the sufficiency principle in the heuristic systematic model (HSM): motives, sufficiency, and judgmental confidence (Griffin et al., 2013). To explain people's choice of processing modes and manner of processing, HSM outlines the sufficiency principle: "People will exert whatever effort is required to attain a sufficient degree of confidence that they have satisfactorily accomplished their processing goals" (Eagly & Chaiken, 1993, p. 330, emphasis added). The sufficiency principle embodies the idea that people must strike a balance between achieving their processing goals and minimizing their processing effort.

Eagly and Chaiken (1993) argued that people can process information for different reasons, one of which[1] is the impression motive (the desire to express socially acceptable judgments to potential evaluators). Impression motive gives rise to the processing goal of assessing the acceptability of messages while considering the potential evaluator's attitudinal position (Bohner et al., 1995; Chaiken et al., 1989). Therefore, particularly in the social interaction context, the sufficiency principle maintains that people will exercise whatever amount of effort is necessary to achieve sufficient confidence to judge the acceptability of messages to potential evaluators (Chaiken et al., 1996).

Following the logic of the sufficiency principle, information insufficiency is conceptualized as the perceived amount of risk information people feel they need to have to reach a satisfactory level of judgmental confidence toward achieving their informational goals (Griffin et al., 2004). Consistent with the sufficiency principle formulation (Bohner et al., 1995; Chaiken et al., 1996), individuals' motive and the correspondent informational goal comprise an essential and inseparable constituent in the conceptualization of information insufficiency (Griffin et al., 2004). That is, information insufficiency incorporates the idea that people must make a tradeoff between attaining their informational goals and minimizing their efforts in seeking (avoiding) and processing information. Based on the multimotive perspective of the HSM (Chaiken et al., 1996), impression information insufficiency is defined as the amount of information a person feels they need to express socially acceptable judgments about risk, thereby confidently achieving desirable interpersonal outcomes in social situations.

Below we review the precursors and outcomes of impression information insufficiency and provide the rationale for hypotheses and research questions. We present the hypotheses and research questions in Figure 2.

Precursors of impression information insufficiency

The RISP model postulates that people will cognitively evaluate a set of characteristics of a hazard, and such evaluations influence how they respond emotionally to the hazard (Griffin et al., 2013). These perceived hazard characteristics include risk judgment, institutional trust, and personal control. Fear is a typically affective response when people face an imminent threat. The RISP model postulates that people's risk judgment—a subjective assessment of the likelihood of harm (i.e., perceived susceptibility) from exposure to a risk combined with one's assessment of the potential severity (i.e., perceived severity) of harm caused by the risk—will positively affect their level of fear toward the risk (Griffin et al., 1999). The rationale is that people consider that their physical health and well-being are subjected to greater threats when they perceive greater risk; as a result, they are likely to experience greater fear toward a risky issue (Loewenstein et al., 2001; Yang & Chu, 2016). Evidence from the RISP studies (e.g., ter Huurne et al., 2009; Yang et al., 2010), including those focused on the COVID-19 risk (Ahn & Noh, 2020; Zhou et al., 2021), provided support for the positive relationship between risk judgment and fear. During the pandemic, Hong Kong had 2.8 million confirmed cases and more than 13,000 citizens died (The University of Hong Kong, 2022). It is reasonable to expect that citizens who perceive a greater risk of COVID-19 are likely to experience greater fear toward COVID-19.

Institutional trust refers to an individual's willingness to rely for protection on those institutions and agencies that have the responsibility to make decisions and to take action to manage risks (Griffin et al., 2008). The RISP model hypothesizes a negative relationship between people's institutional trust and fear toward a risk (Griffin et al., 1999). When responsible institutions fail to carry out their duties, such as taking the lead in managing the risky situation, and caring for people's interests (Hall et al., 2001), people are likely to feel nervous about the risk (ter Huurne & Gutteling, 2009) because the risk level of the threat is
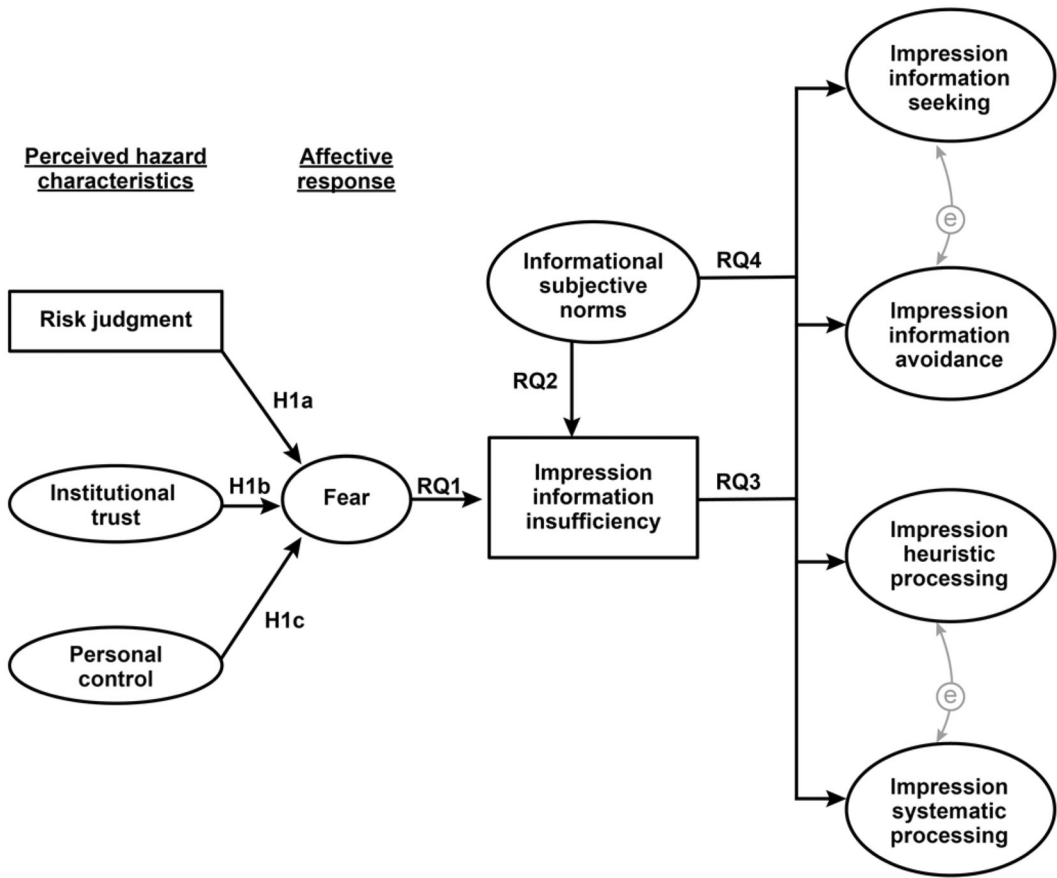
FIGURE 2 Hypothesized model. See endnote [2] for details about the residual correlations. e, correlation between error terms; H, hypothesis; RQ, research question.

heightened (Slovic, 1999). At the onset of the COVID-19 pandemic, public trust toward the government was at a historic low in Hong Kong (Wan et al., 2020). During the pandemic, some people doubted whether the government's measures to address the viral risks were effective, and they were discontent with regulatory measures (Barron, 2020). Therefore, we expected that people who had low institutional trust would experience a higher level of fear toward the COVID-19 risk.

Personal control refers to individuals' evaluation of their ability to protect themselves from a risk (Yang et al., 2014). The RISP model hypothesizes a negative association between personal control and fear, and evidence supports it (e.g., Ahn & Noh, 2020). People are more likely to experience fear toward a risk when they perceive themselves as lacking the ability to cope with it (Lazarus, 1991). As a newly emerged disease, people probably did not know much about the coronavirus at the early stage of the pandemic. When danger is imminent and people's perceived level of control is low, they are likely to experience a greater level of fear toward the danger and thus engage in controlling that fear (Witte, 1992). Panic buying to secure daily necessities and personal protective equipment at the early stage of the pandemic is consistent with individuals sensing a low level of personal control and having a high level of fear (Lufkin, 2020). We expect that the lower the perceived personal control, the higher the level of fear toward the COVID-19 risk. Based on the above, we posited the following hypotheses:

Hypothesis 1. (a) Risk judgment will be positively related to fear toward the COVID-19 risk; however, (b) institutional trust and (c) personal control will be negatively related to fear.

In the context of seeking to satisfy interpersonal needs in social settings, we argue that such a positive relationship is also applicable between fear of a risk and the impression of information insufficiency. That is, the more that people experience fear of the COVID-19 risk, the more likely they are to sense a greater need for risk information to let them express socially acceptable risk judgments and fulfill related needs in interpersonal social settings. The rationale is that to address their fear, fearful people are likely to have a stronger affiliative need with others who are undergoing the same fear-invoking situation and with those who could assist them to get through the fearful situation (Casale & Flett, 2020; Schachter, 1959). Fear is associated with low certainty (Ellsworth, 1991; Smith & Ellsworth, 1985). Fearful people have a greater need for information about how others respond to the threat because that provides a frame of reference to make sense of their own reactions toward the threat (e.g., the attitude they have and the emotions they experience toward the threat) (Darley, 1966; Gerard & Rabbie, 1961). To enhance affiliation with others, such frames of reference are important means for individuals to evaluate and determine socially appropriate reactions. Another reason is that fear-provoking situations increase individuals' need to receive social support such as emotional support and tangible and intangible aid (Casale & Flett, 2020). To receive social support from others, an individual must maintain smooth interactions and relationships. With both reasons combined, fearful people are more likely to have a greater need for risk information to support their communicating socially acceptable judgments for building and maintaining harmonious interactions and relationships with their evaluators.

During the COVID-19 pandemic, the social distancing policy radically reduced face-to-face social interactions, which may have increased people's sense of isolation. Fear toward the COVID-19 risk most likely raised the level of alertness that people had (Casale & Flett, 2020; Whitley, 1992). Furthermore, their fear likely heightened their affiliative tendency, which inclines people to learn how others respond to risks and to make sense of their own decision to do what is socially acceptable in social settings (Gerard & Rabbie, 1961). As a result, Fearful people are sensitive to how others respond to the risk (e.g., "am I alone in my fear?"), and how others might respond to their comments about the risk and their fear of it (e.g., "If I tell others, and they don't share my fear, how will they respond to me? Will they think I am oversensitive, weak?"). To foster affiliation with others and to receive social support, fearful people are more likely to take into account others' opinions of COVID-19-related issues (particularly the evaluator's opinions) and more likely to be subject to the influence of the others' opinions (Darley, 1966). Therefore, fearful people may have greater risk information need to support their expressing to their evaluators socially acceptable COVID-19-related judgments. However, no empirical study to date has examined that relationship. Therefore, we posed the following research question.

RQ1: *How does fear toward COVID-19 risk relate to impression information insufficiency?*

Impression information insufficiency and informational subjective norms

In addition to impression information insufficiency, the RISP model conceives informational subjective norms as another motivator of how people approach and employ risk information

(Griffin et al., 2013). Derived from Ajzen's (1988) notion of normative beliefs and subjective norms, informational subjective norms are defined as individuals' perceptions about what others, particularly those who are important to them, expect them to know (or not to know) about a risk topic. Such perceived social pressure stems from an individual's beliefs about whether their important others expect that he or she should (or should not) learn about a risk topic.

Both impression information insufficiency and informational subjective norms account for how social environment influences risk information use behavior, and both reflect people's desire to be liked and accepted through appeasing others. However, impression information insufficiency and informational subjective norms are conceptually different, and each tap into different aspects of social influence. Based on normative beliefs (Fishbein & Ajzen, 2011), informational subjective norms are characterized as individuals' own beliefs about what their important others prescribe or proscribe to do with risk information. The term *subjective* emphasizes that the beliefs people hold may or may not reflect what their important others actually do or actually think should be done with risk information (Fishbein & Ajzen, 2011). Moreover, the behavioral prescription and proscription of informational subjective norms function as rules and regulations to govern people's action (or inaction) to deal with risk information. As such, the underlying influence process of informational subjective norms on people's risk information use behavior is through compliance (Trafimow, 2020).

Impression information insufficiency, stemming from impression motive (Leary & Kowalski, 1990), depicts people's desire for risk information to manage the information, selectively and to use that selected information to present themselves favorably in social interactions, which serves to influence their evaluator's reactions to them. Because self-presentation is a tactical act, impression-motivated people are consciously attentive, during social encounters, to social cues related to their evaluator's attitudinal position on the risk-related issue (Leary & Kowalski, 1990). The desire for risk information among impression-motivated individuals is purposive and calculated, which could enable them to present themselves favorably in the eyes of their evaluator. Namely, their desire is for only certain types of risk information that would enable them to choose the information that expresses their judgment in alignment with their evaluator's attitudinal position on the risk-related issue. Therefore, the underlying influence process of impression information insufficiency on individuals' risk information use behavior is selecting relevant risk information for their self-presentation to achieve the impression management goal (Chaiken et al., 1989; Griffin et al., 2013).

According to the RISP model, informational subjective norms not only directly influence people's risk information use behavior but also influence information insufficiency (Griffin et al., 2004). That is, as perceived by an individual, important others' expectations that the individual will stay informed about a risky issue can induce in the self a greater need for risk information (ter Huurne et al., 2009). In the context of impression goal, we argue that informational subjective norms would positively influence impression information insufficiency, because informational subjective norms may widen the perceived gap between desired and actual levels of knowledge. Specifically, people's normative beliefs about what their important others (e.g., relatives, friends, employers, and colleagues) expect them to know about COVID-19-related issues and about the knowledge level their important others hold about COVID-19 issues can be inferred as social cues of their important others' COVID-19-related beliefs and attitudes.

Complying with the important others' expectation and emulating their stance can help people adopt to others' attitudes, and likely get approval. Therefore, to facilitate expressing to their important others socially acceptable COVID-19-related judgments, people's perceived normative pressure could increase their desired knowledge level about COVID-19-related issues. However, no empirical evidence exists to examine the relationship between informational subjective norms and impression information insufficiency. Therefore, we posed the following research question.

RQ2: *How do informational subjective norms relate to impression information insufficiency?*

Goal-directed risk information seeking, avoidance, and processing

Risk information seeking refers to a deliberate process of choosing to attend messages from selected information channels to achieve desired informational goals (Griffin et al., 2013); whereas risk information avoidance is defined as a volitional process of attaining desired informational goals by averting information channels and choosing not to attend some messages embedded on a particular channel (Griffin et al., 2013). Grounded in the HSM (Chaiken et al., 1996), risk information processing involves two complementary modes (Griffin et al., 2013): Heuristic processing relies on superficial cues to judge the acceptability of a message (e.g., an attractive or celebrity spokesperson, and/or one whom the individual already perceives to be like the self or possessing similar ideas and backgrounds), and systematic processing involves more engagement of one's critical faculties based on the ideas in the argument itself.

As part of the integral conceptual components of impression information insufficiency, what roles do people's impression motive[3] and its corresponding informational goal play in determining the modes and manner of information seeking and processing? According to the multimotive perspective of HSM (Bohner et al., 1995), motives can set and shift individuals' actual and desired judgmental confidence. To establish sufficient confidence for judgment, the RISP model asserts that people subjectively contrast the amount of information they have (i.e., current knowledge) and the amount of information they feel they need (i.e., sufficiency threshold) that would be enough for them to meet their goals. The size of the perceptual gap between information held and that needed for a judgment, "information insufficiency," determines the extent to which people are motivated to seek (avoid) and process risk information, superficially or effortfully.

The RISP model postulates that the larger the information insufficiency gap the more likely people are to engage in more effortful seeking and processing of risk information. An individual's motive, such as impression motive, can enlarge (reduce) the perceptual gap either by raising (lowering) the level of sufficiency threshold for expressing socially acceptable judgments or by weakening (strengthening) the level of actual confidence. As such, a person's motive determines the mode of RISP by maneuvering the size of the subjective gap between current knowledge and the sufficiency threshold. In the domain of satisfying interpersonal needs in social settings, the RISP model proposes that impression-motivated people will expend minimal effort for risk information processing when impression heuristic processing can achieve sufficient confidence to satisfy the impression-oriented goal (Chaiken et al., 1996; Griffin et al., 2013). In this sense, impression heuristic processing is the default processing mode, which involves using simple rules, such as "agreement facilitates liking" and "go along to get along," to guide the selection of risk information for processing. However, when impression heuristic processing is unable to provide sufficient confidence to satisfy interpersonal needs in a social situation, impression-motivated individuals would exercise greater effort to engage in impression systematic processing. That is, the impression-oriented goal is accomplished through selective and extensive consideration of risk information based on one's perception of the evaluator's opinion.

In addition to determining the mode of information seeking and processing, impression motive determines the manner in which people seek (avoid) and process risk information. Built on the HSM's sufficiency principle (Chaiken et al., 1989) and active audience research tradition (Perse & Courtright, 1993), the RISP model views risk information use as goal-

directed behavior (Griffin et al., 1999). That is, regardless of the amount of effort invested in seeking, avoiding, and processing risk information, people employ these three forms of behavior to serve their informational goals. In the domain of satisfying interpersonal needs in social settings, people's informational goal is to communicate to their evaluator socially acceptable risk judgments. To achieve this impression-oriented informational goal, impression-motivated individuals would take into account their evaluator's attitudinal position on the risky issue, and then selectively seek, avoid, and process risk information in a biased manner to match or complement their evaluator's attitudinal position. For example, impression-motivated people whose goal is simply to get approval may selectively look for risk information that supports their evaluator's attitudinal position on COVID-19-related issues, or avoid what disconfirms their evaluator's position.

Research in psychology (e.g., Chen et al., 1996; Jonas et al., 2005; Lundgren & Prislin, 1998; Nienhuis et al., 2001), political communication (e.g., Winter, 2019), and risk communication (e.g., Kim & Paek, 2009) provide empirical support, within the HSM framework, that impression motive and its corresponding goal influence people to engage in biased information searching and processing to form attitudes that align with their social needs. Therefore, it is valuable to explore impression information insufficiency within the RISP framework. Thus far, no study has examined the relationship between impression information insufficiency and impression-based risk information use behavior. Hence, we posed the following research questions.

> **RQ3**: *How does impression information insufficiency relate to (a) impression information seeking, (b) impression information avoidance, (c) impression heuristic processing, and (d) impression systematic processing?*

We proposed that informational subjective norms are likely to have a positive influence on impression-based information seeking, avoidance, and processing because an evaluative standard is embedded in informational subjective norms, which encourages people to seek, avoid, and process heuristically and systematically, with bias and selectivity, to align with their evaluator's attitudinal position. Informational subjective norms involve an evaluative standard that characterizes what people should do (Christensen et al., 2004). Norms exert influence on people's behavior through reward and punishment associated with conforming to or violating the evaluative standard (Cialdini & Trost, 1998). For example, in the case of the COVID-19 pandemic, restaurant servers might believe their important others, such as employers, would stay informed about the government's policy on the vaccine mandate and on the digital contact tracing mobile app for restaurant entry, which implies the employers' evaluative judgment to adhere to the policy. The servers would anticipate their potential rewards by complying with the employers' expectations and their potential sanctions if they do not stay up to date about adhering to government's policy. As such, to comply with their belief about the employers' expectations to stay informed about adhering to the policy, they are likely to seek supportive information about the vaccine mandate and the contact tracing mobile app mandate and avoid contradictory information.

The evaluative standard embedded in informational subjective norms also serves as an evaluative standard to process risk messages systematically. Following from the above hypothetical example, in the case of the COVID-19 pandemic the servers' perception of employers' expectations would function as an evaluative standard for restaurant servers to scrutinize risk messages. Such standards are likely to lead servers to examine risk messages selectively to fit their perception of employers' expectations. Informational subjective norms also encompass beliefs about what the important others properly do. The actions of the important others (e.g., evaluators) thus also provide a heuristic cue for information processing and decision making (Cialdini, 2001). Therefore, informational

subjective norms are likely to relate to impression heuristic processing. Given that no study has examined the relationship between informational subjective norms and impression-based risk information use behavior, we posed the following research questions.

> **RQ4**: *How do informational subjective norms relate to (a) impression information seeking, (b) impression information avoidance, (c) impression heuristic processing, and (d) impression systematic processing?*

Study context: Hong Kong's sociopolitical context during the pandemic

We chose Hong Kong as the research site because the city provided an appropriate context to examine impression information insufficiency. Specifically, Hong Kong's sociopolitical environment affords the three social situations induced by policy mandates as specified above.

Supporting our choice of study context is that Hong Kong's stringent COVID-19 policy and regulation require people to express their risk-related judgments to employers, supervisors, colleagues, relatives, and friends. Hong Kong adopted the zero-COVID policy (Yu & Mahtani, 2021), thereby employing intensive testing, tracing, travel curbs, and quarantines to control and suppress virus transmission and thus eradicate outbreaks (Li & Meng, 2022; Rodríguez-Giralt et al., 2020). Because these measures were legally binding and mandatory (The Government of the Hong Kong Special Administrative Region [HKSAR Government], 2021), Hong Kong citizens encountered ample social situations requiring them to communicate their COVID-19-related judgments. One example was the government's policy of using a digital contact tracing mobile app to record individuals' whereabouts (Choy, 2020). When people dined out with their relatives or colleagues, they had to record the restaurant's identification and their visiting time by using the app before entering. Because people had to express their decision to use or not use the app, which could influence their group's acceptance or denial to enter, their decision whether or not to use the tracing app could cause relational consequences with relatives and colleagues. The policy in regard to students' taking daily rapid antigen tests is another example: To attend classes in person, children (from kindergarten through high school) were required to conduct the test daily, and their parents had to confirm whether their child had completed the test (HKSAR Government, 2022). As such, parents might have been concerned about expressing doubts about the testing policy because that could have conveyed a negative impression to the principal, the teachers, and to the other students and their parents about what kind of parents they are, which, in turn, could affect how their child was treated at school. The last example is the facemask mandate, which required Hong Kong citizens to wear surgical masks wherever they went (Reuters, 2020). Expressing their judgment about wearing the facemask might reflect to others the type of person they are, thus affecting their daily social encounters, e.g., with neighbors and colleagues.

Another reason for choosing Hong Kong as an appropriate context for the study is that individuals' expressed opinions about the government's zero-COVID policy became a focus for evaluating how supportive and patriotic a person is to their mother country (Tian, 2022). As such, people's judgmental expression about the COVID policy to salient audiences in public situations was likely to imply their political stance; therefore, the expression became an attempt at impression management (Chan, 2021; Tong, 2020). At the onset of the pandemic, Hong Kong had undergone yearlong political unrest; the city's polarization and government distrust were at a historic high (Wan et al., 2020). Although the outbreak of the COVID-19 pandemic

had put a forceful stop to the political unrest, political controversies persisted during the formulation and implementation of the pandemic policies (e.g., Ho, 2020). Because of the political instability, China passed a national security law for Hong Kong in 2020, and enforced the "patriots-governing Hong Kong" principle (Leung, 2022; Regan, 2020), which meant that people who hold public offices are expected to subscribe to the core values of "love the country and love Hong Kong." As Hong Kong's COVID response policy aligned with China's zero-COVID approach, people's judgmental position toward Hong Kong's COVID policy symbolized their support for the government and their patriotism. Therefore, people who publicly expressed their judgment of Hong Kong's COVID policy were likely to consider what impression they would be conveying to others within social situations.

We acknowledge that those who speak their minds about the COVID-19 policy in Hong Kong might well do so regardless of how other people might view them. However, our study focuses on the scenarios in which people's concern for expressing COVID-19-related issues was salient. To make people's impression concern more salient than other concerns, we employed the priming technique in our survey (see the measure of impression information insufficiency for details). The sociopolitical context in Hong Kong provided an appropriate study context.

METHODS

Data collection and sample

We conducted an online survey of adults aged 18 or above in Hong Kong from late December 2020 to early February 2021. The participants were recruited from a non-probabilistic online panel maintained by an independent, nonpartisan public opinion research organization. An email invitation was sent to all panel members yielding 1677 completed responses. However, four questionnaires were discarded in the analysis because the answers were not valid (e.g., had a fixed pattern of responses). The participants took around 20 min to complete the questionnaire. Table 1 presents the demographic characteristics of the sample.

Measures

Table 2 presents the question items, measurement scales, descriptive statistics, and reliability coefficients of the variables. All measures used a 7-point scale unless otherwise specified. Table 3 presents the correlations among the variables.

Risk judgment was an aggregated variable constructed by multiplying respondents' perceived susceptibility to, and perceived severity of, COVID-19 (Griffin et al., 2004). *Institutional trust*, a three-item measure, assessed respondents' belief in the government's ability to manage the pandemic (Poortinga & Pidgeon, 2003). *Personal control*, measured by three items, examined respondents' perception of their own ability to handle COVID-19-related risks (Griffin et al., 2004). *Fear*, the affective response of interest in this study, was measured by three items in which respondents indicated their level of fear of COVID-19 risks. *Informational subjective norms*, measured by three items, tapped into respondents' perceived normative pressure from their significant others to stay on top of COVID-19-related issues (Yang, 2012).

Impression information insufficiency was an aggregated variable constructed with the current knowledge and sufficiency threshold variables. This variable captured the respondents' perceived gap between the amount of information they currently possessed and the amount of information they needed to confidently express COVID-19-related

TABLE 1 Sample demographics and relevant hazard characteristics.

Variables	Sample percentage (n)	Variables	Sample percentage (n)
Gender		Education (highest level attended)	
Male	48.5% (811)	Primary school	0.4% (6)
Female	51.5% (862)	Secondary education	14.2% (238)
Age group		Postsecondary education:	16.0% (268)
19 or below	1.3% (22)	nondegree qualifications	
20–29	17.3% (289)	Postsecondary education:	40.3% (675)
30–39	25.3% (424)	degree courses	
40–49	23.3% (389)	Postgraduate education	27.0% (452)
50–59	19.4% (324)	Prefer not to say	2.0% (34)
60 or above	11.5% (192)	Political orientation	
Prefer not to say	2.0% (33)	Pro-Beijing camps	0.6% (10)
Monthly household income in HKD[a]		Moderate groups	3.2% (54)
Less than $10,000	3.9% (65)	Prodemocracy camps	44.5% (744)
$10,001 to $30,000	17.8% (298)	Advocates of Hong Kong's autonomy and	41.8% (700)
More than $30,000	61.2% (1024)	local lifestyles	
Prefer not to say	17.1% (286)	None/neither/impartial	9.8% (165)

Note: N = 1673.

[a]US$1 = HK$7.80.

judgments that will satisfy their impression goal. To increase the salience of the interpersonal implications of expressing one's views on COVID-19-related issues, we used a priming technique[4] adapted from previous studies on multimotive HSM (Chen et al., 1996; Lundgren & Prislin, 1998). We primed the respondents with a scenario of having a future interaction with their important others and the possibility of sharing their views on COVID-19-related issues with them. We selected the important others as the target of the priming because they are highly valued by the respondents and their feedback on the respondents' views can cause positive or negative impacts on the relationship through various forms of tangible or non-tangible rewards and sanctions (Chaiken et al., 1989).

Thus, we first explained to the respondents that important others are those whose relationships they highly value and those who could exert significant positive and negative impact on their physical, emotional, sociopsychological, mental, and financial well-being. We then asked the respondents to think of an important other and we proposed to them that they are likely to encounter that important other in the near future and plausibly communicate their judgment about COVID-19-related issues with that important other. To ensure an important other had been primed in the respondents' minds before they answered the questions related to current knowledge and sufficiency threshold of COVID-19 information, we designed two questions for manipulation check. We first asked the respondents to indicate which important others they had in mind from one of six categories (see Table 2 for details). Then we asked the respondents to indicate whether their important other's overall attitude toward COVID-19-related issues was consistent with theirs (measured in three categories: consistent with their

TABLE 2 Descriptive data for key variables.

Concepts (*M*, SD, reliability[a])	Measures and scales
1. Risk judgment[b] (*M* = 24.30, SD = 20.22)	[Perceived susceptibility] If a new wave of COVID-19 outbreak occurred in the community, in your estimation, how likely is it that you will be contracted with COVID-19? (0–100 scale: 0 = absolutely no chance whatsoever to 100 = certain to) [Perceived severity] If you become ill after contracting with COVID-19, how serious do you think your condition would be? (0–100 scale: 0 = not severe at all to 100 = as severe as it can possibly be).
2. Institutional trust (*M* = 1.44, SD = 0.82, α = 0.73)	(Item1) The Hong Kong government is doing a competent job of handling the COVID-19 pandemic. (Item2) The Hong Kong government is acting in the interest of the Hong Kong people. (Item3) The Hong Kong government made fair and impartial policies regarding COVID-19 based on good reasons and evidence.
3. Personal control (*M* = 4.65, SD = 1.34, α = 0.89)	(Item1) My immediate family and I are competent to avoid contacting diseases caused by COVID-19 in our life. (Item2) I could protect myself and my immediate family from the risks of COVID-19. (Item3) I have enough resources (e.g., protective gear and sterilizers) to control the risks of COVID-19 for myself and my immediate family.
4. Fear (*M* = 3.63, SD = 1.77, α = 0.97)	To which extent do you have the following feelings when facing the COVID-19 risks? (Item1) Fearful; (Item2) frightened; (Item3) dreadful
5. Informational subjective norms (*M* = 3.93, SD = 1.58, α = 0.87)	(Item1) People whom I value expect me to stay on top of the information about COVID-19. (Item2) My family and friends expect me to have a good understanding of the COVID-19 outbreak. (Item3) People who are important to me think I should seek information about COVID-19.
6. Impression information insufficiency	
a. Important other	Important others are those relationships with whom you place a high value. Their evaluation of you can often have a (positive or negative) impact on your physical, emotional, psychological, mental, and financial well-being. Now, think of one of your important others whom you are likely to encounter in the near future, and with whom you would possibly communicate your attitude toward COVID-19-related issues (e.g., vaccine mandate, contact tracing mobile app, vaccine pass for public access). Which important other did you think of? (Employer/Supervisor, Parent, Spouse, Adult Child, Close Friend, Others, please specify: ___)
b. Important other's attitude toward COVID-19-related issues	Does your important other's overall attitude toward COVID-19 related issues agree, or oppose yours? (Similar, Opposing, Unknown)
c. Current knowledge (*M* = 61.18, SD = 27.41)	How much do you think you currently know about COVID-19 to confidently express judgments that will be acceptable to that important other? (0–100 scale: 0 = knowing nothing 100 = knowing everything you could possibly know about this topic)

(Continues)

TABLE 2 (Continued)

Concepts (*M*, SD, reliability[a])	Measures and scales
d. Sufficiency threshold (*M* = 49.95, SD = 33.49)	Using the same scale, how much COVID-19-related knowledge do you think you would need to confidently express related judgments that will be acceptable to that important other? (0–100 scale: 0 = needing nothing more 100 = needing everything you could possibly know about this topic)
7. Impression information seeking (*M* = 2.78, SD = 1.77, α = 0.98)	(Item1) To communicate judgments that will be approved by my important other, I find COVID-19-related information consistent with his/her views. (Item2) To have smooth interactions and relationships with my important others, I selectively search for COVID-19-related information that aligns with his/her views. (Item3) To express judgments that will be acceptable to my important others, I selectively look for COVID-19-related information that supports my important others' attitude.
8. Impression information avoidance (*M* = 2.25, SD = 1.48, α = 0.95)	(Item1) To avoid putting myself in a negative light, I avoid COVID-19 information that is contradictory to my important other's attitude. (Item2) I tune out COVID-19 information that can cause relational tension with the person who is important to me. (Item3) To avoid getting myself into difficult social situations, I keep away from COVID-19 information that is unacceptable to my important others.
9. Impression heuristic processing (*M* = 2.49, SD = 1.46, α = 0.90)	(Item1) As a guide to selectively skim through the COVID-19-related information, I rely on the viewpoints of the person who is important to me. (Item2) When reading the COVID-19 messages to make a decision on COVID-19-related issues, I simply base it on the important other's attitude. (Item3) When I encounter information about COVID-19, I selectively pay attention to the portions that can help me to get along with my important others.
10. Impression systematic processing (*M* = 3.12, SD = 1.65, α = 0.90)	(Item1) When I encounter information about COVID-19, I carefully examine what ideas would be accepted or rejected by my important other. (Item2) From what I read about COVID-19, I tried to relate the information to my important other's attitude. (Item3) When reading the COVID-19 messages to decide which issues will be acceptable to my important others, I carefully follow the COVID-19-related information that my important other pays attention to.

Note: 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*) was used unless otherwise specified.

[a]Cronbach's alpha (α).

[b]For analysis purpose, the score of perceived susceptibility and that of perceived severity was first divided by 10, before being multiplied together to construct the variable.

own attitude, inconsistent with their own attitude, and do not know the important other's attitude; see Table 2). The reason for asking respondents whether they were aware of their important other's overall attitude toward COVID-19-related issues is that people are more sensitive to expressing judgments that align with the important others' view when knowing their important other's attitude than not knowing it (Chaiken et al., 1996; Chen et al., 1996).

TABLE 3 Correlations of the variables.

	1	2	3	4	5	6	6a	6b	7	8	9	10
1	1											
2	−0.09***	1										
3	−0.39***	0.08**	1									
4	0.45***	−0.13***	−0.27***	1								
5	0.03	0.05*	0.08***	0.14***	1							
6	0.21***	−0.05*	−0.14***	0.19***	0.13***	1						
6a	0.05*	0.03	0.03	0.05*	0.30***	–	1					
6b	0.21***	−0.03	−0.11***	0.19***	0.26***	–	0.48***	1				
7	0.14***	0.05	0.03	0.16***	0.39***	0.32***	0.28***	0.42***	1			
8	0.08**	0.06*	0.02	0.16***	0.24***	0.20***	0.10***	0.22***	0.49***	1		
9	0.05	0.07**	0.04	0.15***	0.33***	0.20***	0.14***	0.24***	0.47***	0.47***	1	
10	0.05*	0.05*	0.02	0.14***	0.45***	0.21***	0.21***	0.28***	0.46***	0.39***	0.59***	1

Note: Two-tailed test. $N = 1673$. 1 = risk judgment, 2 = institutional trust, 3 = personal control, 4 = fear, 5 = informational subjective norms, 6 = impression information insufficiency, 6a = current knowledge (impression information insufficiency), 6b = sufficiency threshold (impression information insufficiency), 7 = impression information seeking, 8 = impression information avoidance, 9 = impression heuristic processing, 10 = impression systematic processing.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

We subsequently asked respondents to indicate the level of knowledge they *currently possess* about COVID-19 specifically to *confidently express related judgments that will be accepted by that important other* (i.e., current knowledge); finally, we asked the respondents to indicate the level of knowledge they *would need* about COVID-19 to *confidently express related judgments that will be accepted by that important other* (i.e., sufficiency threshold). The impression information insufficiency variable was created using the residual approach by regressing the sufficiency threshold values on current knowledge estimates (Cronbach & Furby, 1970; Griffin et al., 2004).

Measures of *impression heuristic processing* and *impression systematic processing* assessed respondents' depth of processing and how they process risk information in service of their impression informational goal. Each processing strategy was measured by three items. As noted in the literature review, people's informational goals and the manner in which people engage in risk information seeking, avoidance, and processing should be reflected in the operationalizations. The impression-oriented informational goal primarily centers on considering the interpersonal consequences resulting from expressing their risk judgments, and their ways of seeking, avoiding, and processing information would be marked by selective bias. Thus, we developed a measure of the goal-driven processing strategy based on the idea that information selection and goal pursuit are the key features of this strategy. We adapted the heuristic and systematic processing scale from Griffin et al. (2008), Kahlor et al. (2003), and Neuwirth et al. (2002) by incorporating characteristics of selective processing and goal pursuit. Specifically, we measured impression heuristic processing by assessing how much the respondents superficially examine COVID-19-related information by relying on heuristic cues (e.g., important others' attitude toward COVID-19, "go along to get along") to process COVID-19-related information with the goal of meeting their social needs (e.g., gaining the approval of important others). Similarly, we measured impression systematic processing by assessing how much the

respondents carefully scrutinized the COVID-19-related information with the goal of meeting their social needs (see Table 2 for details).

Measures of *impression information seeking* and *impression information avoidance* tapped respondents' level of agreement with a series of statements related to COVID-19 information seeking and avoidance. Each variable was measured by three items. When operationalizing the concepts of impression information seeking and avoidance, we emphasized selectively searching and avoiding COVID-19 information to serve the goal of getting accepted by their important others. We modified the measures based on Griffin et al. (2008) and Yang and Kahlor (2013) (see Table 2 for details).

Control variables included demographic characteristics (see Table 1 for details). The demographic questions asked respondents about their gender, age group, education level, and monthly household income. The informational goal of impression-motivated individuals is to align with their evaluator's issue position; therefore, we controlled for the respondents' political orientation, and the consistency of the overall attitude toward COVID-19-related issues between the respondents and their important others. We controlled for political orientation because it relates to people's stance on COVID-19-related policy issues (Inmediahk, 2023; Kerr et al., 2021).

RESULTS

To examine the model fit of the data, we used a maximum likelihood estimation with robust standard errors in Mplus 8.3. We found missing data only in demographic variables, which we handled by using listwise deletion. The aggregate variables (risk judgment and impression information insufficiency) were treated as observed variables by fixing the error variance at zero. All other variables were treated as latent variables. We used one-tailed tests for directional hypotheses and two-tailed tests for answering research questions (Hayes, 2009).

As shown in Table 4, the measurement model achieved a good fit and the structural model also achieved an acceptable fit. Figure 3 presents the structural model.

Impression information insufficiency and its precursors

Hypothesis H1a, which proposed a positive relationship between risk judgment and fear, was supported ($\beta = 0.39$, $p < 0.001$). Institutional trust was found negatively related to fear ($\beta = -0.11$, $p < 0.001$); therefore, H1b was supported. Results also supported H1c, which predicted a negative relationship between personal control and fear ($\beta = -0.09$, $p < 0.01$).

RQ1 and RQ2 asked whether fear and informational subjective norms were related to impression information insufficiency. The analysis revealed that both fear (RQ1: $\beta = 0.17$, $p < 0.001$) and informational subjective norms (RQ2: $\beta = 0.12$, $p < 0.001$) were positively associated with impression information insufficiency.

Consequences of informational subjective norms and impression information insufficiency

RQ3 was interested in how impression information insufficiency was related to impression information seeking (RQ3a), impression information avoidance (RQ3b), impression heuristic processing (RQ3c), and impression systematic processing (RQ3d). Findings revealed that

TABLE 4   Model fit statistics for measurement model and structural model.

Model fit statistics	Measurement model	Structural model
χ^2	556.56*** (224, $N = 1673$)	1181.54*** (411, $N = 1673$)
χ^2/degrees of freedom (df)	2.48	2.87
Root mean square error of approximation (RMSEA)	0.030, 90% CI [0.027, 0.033]	.037, 90% CI [0.035, 0.039]
Comparative fit index (CFI)	0.99	0.97
Standardized root mean squared residual (SRMR)	0.03	0.05

Note: The model fit guidelines (Hu & Bentler, 1995) recommend that a value of the RMSEA below 0.06 indicates a good fit and a value less than or equal to 0.08 is considered an adequate fit with the upper bound of the 90% RMSEA confidence interval less than 0.10. A value of CFI greater than 0.90 suggests an adequate fit, and a value greater than 0.95 is considered as a good fit. The value of an SRMR of less than 0.08 would be acceptable. A nonsignificant χ^2 distributed test statistic is a good fit; however, this statistic is sensitive to sample size (Hu & Bentler, 1995). Thus, χ^2/df was reported, and a value less than 5 is considered a good fit (Kline, 2005).
Abbreviation: CI, confidence interval.
***$p < 0.001$.
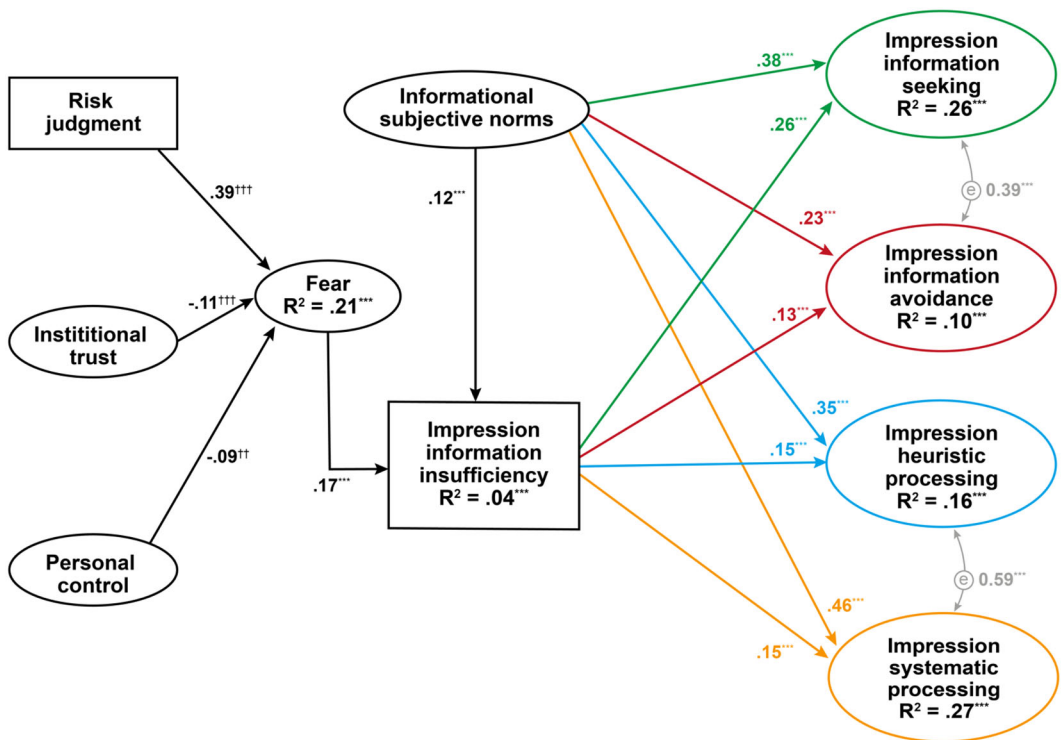
FIGURE 3   Structural model. $N = 1673$. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$, two-tailed test. [†]$p < 0.05$, [††]$p < 0.01$, [†††]$p < 0.001$, one-tailed test. See endnote 2 for details about the residual correlations. e, correlation between error terms.

impression information insufficiency was positively related to impression information seeking (RQ3a: $\beta = 0.26$, $p < 0.001$), impression information avoidance (RQ3b, $\beta = 0.13$, $p < 0.001$), impression heuristic processing (RQ3c: $\beta = 0.15$, $p < 0.001$), and impression systematic processing (RQ3d, $\beta = 0.15$, $p < 0.001$).

Lastly, RQ4 asked whether informational subjective norms would be related to impression information seeking (RQ4a), impression information avoidance (RQ4b), impression heuristic processing (RQ4c), and impression systematic processing (RQ4d). We observed significant positive relationships between informational subjective norms and impression information seeking (RQ4a: $\beta = 0.38$, $p < 0.001$), impression information avoidance (RQ4b: $\beta = 0.23$, $p < 0.001$), impression heuristic processing (RQ4c: $\beta = 0.35$, $p < 0.001$), as well as impression systematic processing (RQ4d: $\beta = 0.46$, $p < 0.001$).

DISCUSSION

This study develops the concept explication of impression information insufficiency and explores its antecedents and apparent effects on risk information seeking, avoidance, and processing. By conceptualizing impression information insufficiency, this research contributes a significant theoretical advancement to the RISP model. The conceptualization expands the explanatory capacity of the model in the domain of satisfying interpersonal needs in social settings. It also advances our understanding of how impression motive and its correspondent informational goal could influence people's choice and manner of risk information seeking, avoidance, and processing. Furthermore, this study makes an important theoretical contribution to developing a measurement of impression information insufficiency. Furthermore, this study makes an important theoretical contribution to developing a measurement of impression information insufficiency. In our study's survey, employing the HSM's priming technique (Winter, 2019) shows promise as a means of prompting respondents' concerns about interpersonal consequences when expressing, to their evaluator, their COVID-19-related judgments. In addition, our proposed measurement items broaden the roles of risk information seeking, avoidance, and processing in the RISP model to reflect people's impression goals and impression-oriented selectivity. The findings support the usefulness of our proposed measurement items.

Explication of the impression insufficiency concept lays important groundwork for understanding people's use of risk information beyond the accuracy goal. This study's findings provide empirical support to impression information insufficiency as an important motivational force that drives people's risk information seeking, avoidance, and processing. Our findings corroborate the RISP model's assertions that people seek, avoid, and process risk information for different purposes, and that people's risk information use behavior serves their informational goals: in this case that people are likely to employ risk information selectively to express socially acceptable risk judgments in social settings to satisfy their interpersonal needs. Driven by the impression motive and its correspondent informational goals, people seek, avoid, and process risk information in a selective and biased manner. As such, impression information insufficiency not only delineates *how much* effort people are motivated to invest in seeking and processing risk information but also describes *why* the people are so engaged.

Our findings on impression information insufficiency add to the RISP literature by providing several nuanced understandings of how impression-motivated risk information use behavior differs from accuracy-motivated risk information use behavior. First, the RISP literature (Griffin et al., 2013; Yang et al., 2014) shows that, in the domain of protecting themselves from the physical harm posed by a health hazard (i.e., accuracy motive—a motive (see endnote 1) commonly studied in the RISP literature), people's informational goal is to make valid and impartial decisions that square with relevant facts and evidence about the hazard. To achieve this accuracy-oriented informational goal, accuracy-motivated people will objectively assess the validity of risk information to distinguish well-founded from specious arguments when seeking, avoiding, and processing it. It is not surprising that, in

the context of seeking to express socially acceptable risk judgments, our findings show that impression information insufficiency is positively related to impression risk information seeking. When pursuing an impression goal, people search for COVID-19 information in a biased manner. Second, the RISP literature (Griffin et al., 2013) shows that, in the context of seeking protection from physical harm caused by health hazards (i.e., accuracy goal), the RISP model posits a negative relationship between information insufficiency and information avoidance.[5] However, in the context of seeking to express socially acceptable risk judgments, our findings show a positive relationship between impression information insufficiency and impression information avoidance, which is reasonable because people avoid COVID-19 information incongruent with their evaluator's opinion. Avoiding those kinds of contradictions serves people's impression goal. Third, our findings reveal a difference in heuristic processing behavior when pursuing the informational goal of impression and accuracy. The RISP literature suggests that, when pursuing to make valid judgments about risk, people who have greater information insufficiency are less likely to rely on heuristic processing (Griffin et al., 2013). However, our study shows that, when pursuing to convey a favorable impression to important others, people who have greater information insufficiency, are more likely to rely on heuristic processing. This finding makes sense because impression-motivated people employ their important others' issue stance as a heuristic cue for processing. Finally, consistent with the HSM literature (Chen et al., 1996), our findings show that people concurrently engage in biased and selective heuristic and systematic processing when they perceive a higher need for information to express socially acceptable risk judgments. When the heuristic processing mode (e.g., based on cues such as "agreement facilitates liking," "following my interaction partner's opinion") cannot provide one with sufficient confidence to express socially acceptable risk judgments, people are more likely to devote more effort to process risk messages systematically, guided by their beliefs about their evaluator's opinions. As such, the essence of heuristic and systematic processing between the contexts of seeking to protect from harms caused by risk and seeking to express socially acceptable risk judgments remain the same, but the purpose and manner of heuristic and systematic processing shift according to people's informational goals (Chaiken et al., 1989).

Our findings show that informational subjective norms are a significant, positive predictor of impression information insufficiency. That is, people who perceive stronger normative pressure to stay informed about the COVID-19 risk are likely to perceive a greater need to communicate, to their evaluator, socially acceptable COVID-19-related judgments. Our results support that informational subjective norms may influence impression information insufficiency by raising the level of desired confidence to express, to their evaluator, socially acceptable COVID-19-related judgments (i.e., sufficiency threshold). Although informational subjective norms and impression information insufficiency correlate ($r = 0.13$, $p < 0.001$), it is not a strong correlation, which suggests that the two concepts do not substantially overlap. Therefore, to account for the influence of the social environment, it is valuable to include both of these two variables in the RISP model.

Consistent with the RISP model's premises, our findings show that, in the impression goal context, informational subjective norms appear to be a significant, positive motivational force related to individuals' impression-oriented risk information seeking, avoidance, and processing. In the accuracy goal context, informational subjective norms have a proven record of explanatory power related to people's risk information use behavior in the RISP literature (Liu et al., 2022; Yang et al., 2014). The findings of this study show that the evaluation standard embedded in informational subjective norms could lead people to seek, avoid, and process systematically in a biased and selective manner. Furthermore, their perception of important others' behavior to keep up with COVID-19-related issues may serve as heuristic cues that guide people to process risk messages in a biased and selective

manner, according to what important others appear to consider appropriate regarding COVID-19.

The measures of the informational subjective norms in this study not only possess consistency with those measures being used in the accuracy goal context from the RISP literature for comparing the findings but also show consistent and fairly strong relationships with all four seeking and processing measures. Nonetheless, their explanatory value and even the strength of the relationships could be improved by adjusting the informational subjective norms measures to clearly tie to the context of seeking to express socially acceptable risk judgments (e.g., "People whom I value expect me to stay on top of the information about COVID-19 that is consistent with their attitude toward COVID-19").

The findings also show that fear of the COVID-19 risk is another significant predictor of impression information insufficiency. That is, to express socially acceptable COVID-19-related judgments to their evaluator, people who experience a higher level of fear toward the COVID-19 risk are more likely to perceive a greater need for risk information. Consistent with the RISP model's predictions, our findings show that higher risk judgments, lower institutional trust, and lower personal control induced higher levels of fear toward COVID-19 risk.

Policy implications

Our research shed insights for policymakers on formulating policy mandates in future public health emergencies. Our findings show that people may seek, avoid, and process risk information for impression management purposes. Therefore, to gain compliance with policy mandates during public health emergencies, policymakers and health officials should render support for the mandates from evaluators in social roles (e.g., employers, corporate administrators, managers, school principals, and teachers) (Chaiken et al., 1989), because their employees and subordinates might attempt to align with their attitude toward the risky issues for impression purpose. Support for the mandates can take different forms ranging from a soft approach, such as encouraging compliance or providing incentives, to a hardline approach, such as terminating employment. Regardless of its form, evaluators' support is important because it can heighten people's concern for the interpersonal consequences associated with expressing risk judgments. Furthermore, our findings show informational subjective norms are a good predictor of impression information insufficiency, impression risk information seeking, avoidance, and processing. Informational subjective norms contain normative information about what the evaluators consider as the right thing to do (Cooper & Voronov, 2021). Therefore, to develop the norms, policymakers, and health officials should seek support for policy mandates from as many evaluators as possible. As such, the norms are likely to exert influence on people to engage in risk information use for impression purposes.

The results of this study also provide practical suggestions for risk communicators on risk information dissemination and risk message design. When designing risk messages, risk communicators could frame the advocated position and behavior of a risky issue as a way to be socially accepted and liked by important others. For instance, risk communicators should emphasize in messages that vaccination can convey an impression to others (e.g., colleagues, child's teachers) as a caring, considerate, and responsible person (Ellyatt, 2021). Furthermore, persuasive messages related to policy mandates can be distributed by evaluators (e.g., employers, corporate administrators, managers, school principals, teachers). As such, employees and subordinates are more likely to be aware of their evaluator's stance on the mandate for impression management purpose.

Limitations and future research

When interpreting the findings, it is important to point out the limitations of this study. First, the findings of this study may not be generalizable to other communities. Using the COVID-19 pandemic as a case study, this investigation was conducted in Hong Kong where the survey respondents were recruited through an online panel based on a nonrandom sampling procedure. Future research should consider conducting surveys based on probabilistic samples and conducting similar surveys on impression motives in other societies.

Second, the RISP model proposes that the effects of informational subjective norms and information insufficiency on risk information seeking, avoidance, and processing would be moderated by perceived information gathering capacity and relevant channel beliefs. Neither of these RISP variables was included in this analysis. Further research should examine the moderating effects of perceived information-gathering capacity and relevant channel beliefs. Finally, this study had not taken individual differences in responsiveness to social situations into account. HSM research on impression motive suggests that people with a high self-monitoring trait are more prone to social influence. Thus, future research should examine individual differences in impression information insufficiency.

ETHICS STATEMENT

Ethical approval was obtained from the Hong Kong Baptist University Research Ethics Committee (REC/20-21/0077) and all participants provided informed consent before data collection.

ORCID

Timothy K. F. Fung [ID] http://orcid.org/0000-0003-2710-0282
Po Yan Lai [ID] http://orcid.org/0000-0002-8610-5836

ENDNOTES

[1] The other two types of motives (Chaiken et al., 1996) are accuracy motive (the desire to form judgments that square with relevant facts), and defense motive (the desire to defend a particular judgmental position).

[2] We specified two sets of correlations between error terms in the hypothesized path model (see Figures 2 and 3): (1) error terms between impression information seeking and impression information avoidance and (2) error terms between impression heuristic processing and impression systematic processing. Methodologists (Jöreskog & Sörbom, 2006) advised that correlating error terms should be based on meaningful interpretation from a theoretical perspective. In this study, impression information seeking and impression information avoidance are two types of impression information use behaviors. Meanwhile, impression heuristic processing and impression systematic processing are two modes of impression information processing. Therefore, we argued that specifying, in advance, these two sets of error terms correlation are theoretically meaningful and empirically explainable.

[3] Some may consider treating people's impression motive as a moderator. However, we argue that conceptualizing impression motive as an integral part of the information insufficiency concept is more

theoretically sound in the RISP framework. First, motives and their corresponding informational goals are inseparable constituents in the concept of information insufficiency because they form a person's perceived levels of current knowledge and sufficiency threshold. In the domain of achieving positive relational outcomes in social situations, consider this hypothetical example of the social environment of some restaurant employees. Restaurant employees' impression motive may be related to a desire to express a judgment consistent with their employer's negative attitude toward the COVID lockdown restriction. Such a desire would set the employee's perceived level of knowledge they *actually have* (i.e., current knowledge) and the desired level of knowledge (i.e., sufficiency threshold) about lockdown restriction and social distancing. As such, the employee's impression motive would also set the perceived amount of information about lockdown restriction and social distancing they feel they need to have to confidently express a negative judgment that aligns with their employer's attitude (i.e., information insufficiency—the perceptual gap between current knowledge and sufficiency threshold). Therefore, conceptualizing motives and its corresponding goals as an integral part of the information insufficiency concept is theoretically more appropriate.

Furthermore, conceptualizing impression information insufficiency as one of the three types of information insufficiency (i.e., accuracy information insufficiency and defense information insufficiency) is theoretically substantial, because a person's perceived need to make satisfactory judgments for risk information is derived from a specific motive, and only certain types of information would satisfy that informational goal. In the case of impression motive, a person's desire is to express socially acceptable risk judgments to achieve positive relational outcomes in a social situation. Therefore, their perceived need for risk information is drawn from such a desire. Using the restaurant employee as an example, their impression-motivated need for information related to lockdown restriction and social distancing derives from the motive of presenting themselves in a positive light, from the employer's perspective. As a result, only the risk information that opposes the lockdown restriction and social distancing (e.g., drawbacks of the lockdown restriction on the economy) can satisfy the employee's impression-oriented informational goal. In contrast, if the restaurant employee is driven by the accuracy motive (i.e., the desire to make valid judgments to protect from COVID-19 harm), the employee only needs facts and evidence to satisfy their accuracy-oriented informational goal to judge the validity to contain the spread of COVID-19 through lockdown restriction and social distancing. Hence, differentiating impression information insufficiency from accuracy and defense information insufficiency allows this study to examine how impression information insufficiency influences risk information use behavior, and to see the differences in risk information use behavior in previous studies that employed accuracy information insufficiency. Other researchers can examine how the accuracy information insufficiency and defense information insufficiency influence risk information use behavior in future research. In short, differentiating information insufficiency into three types is conceptually more appropriate.

[4] The priming technique has been commonly used by HSM researchers to examine how different motives influence people's heuristic and systematic processing behavior (Lundgren & Prislin, 1998). The technique has proven to be effective in activating people's impression motive for information processing (e.g., Kim & Paek, 2009; Winter, 2019). When designing the impression information insufficiency priming instructions for the respondents, we referred to the priming procedure as described in previous relevant studies. To ensure the priming technique works as intended, we employed two strategies. First, we defined what "important others" means and explained how important others can exert positive and negative impacts on the respondents. Then, we used two questions as manipulation checks: one asked the respondents to indicate which important other they imagined expressing, in a near future social encounter, their COVID-19-related risk judgments; the other asked the respondents to indicate whether their important other's overall attitude toward COVID-19 related issues was consistent with theirs. To guide the respondents to consider the potential interpersonal consequences, we provided the vaccine mandate, the vaccine pass for public access, and the contact tracing mobile app as examples for the respondents to contemplate what potential interpersonal consequences are likely to occur after expressing their judgments about the policy mandates and its related issues.

Second, to ensure the respondents consider the heightened interpersonal consequences resulting from expressing their risk judgments to important others, we conducted a pretest of the priming technique with 15 Hong Kong adult residents. Following the priming instructions, all participants were able to verbally describe the potential consequences associated with expressing their risk judgments about the policy mandates and their related issues when imagining voicing those judgments to their important other. They also indicated that they had considered those verbally described consequences, with their important other, when answering the survey questions related to impression information insufficiency. Referring to the participants' pretest feedback, to improve clarity for fielding the survey, we modified the wording in the explanations and questions.

To emphasize, our primary focus of the priming technique is to increase the respondents' concern for the potential consequences associated with expressing COVID-19-related judgments. Some may argue that the concerns for expressing risk judgments to parents and to employers are different. Although their

concerns may differ from one important other to another, that is not the focus of this study. What is significant is that our priming technique increased respondents' concerns when expressing the policy mandates judgments to their important other.

⁵ In the context of seeking protection from physical harm caused by health hazards (i.e., accuracy goal), for two reasons the RISP model hypothesizes a negative relationship between information insufficiency and information avoidance (Griffin et al., 2013). One, when people consider they already know enough about a given risk, they are likely to avoid additional information; two, people will avoid risk information if they anticipate it will produce fear or worry that they cannot handle (Witte, 1992).

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AUTHOR BIOGRAPHIES

Timothy K. F. Fung (PhD, University of Wisconsin–Madison) is an associate professor in the Department of Interactive Media at Hong Kong Baptist University. With a focus on health, environmental, and science issues, his research delves into the intricate ways in which individuals seek, process, and respond to information. His work has been published in *Health Communication*, *Science Communication*, *Journal of Health Communication*, *International Journal of Public Opinion Research*, and *Mass Communication and Society*. His research has been honored with Top Faculty Paper Awards and the Article of the Year Award from the Association for Education in Journalism and Mass Communication's Division of Communicating Science, Health, Environment, and Risk.

Po Yan Lai (MS, KAIST) was a research assistant in the Department of Interactive Media at the Hong Kong Baptist University. She is interested in media and communication research, especially in using a data-driven approach to investigate the connections which lie between communication technology and society.

Robert J. Griffin (PhD, University of Wisconsin–Madison) is a professor emeritus in the Diederich College of Communication at Marquette University in Milwaukee, Wisconsin, United States. He is one of the founders of the risk information seeking and processing model. He focused much of his teaching and research on communication about environment, energy, health, science, and risk. He is an elected Fellow of the American Association for the Advancement of Science and the Society for Risk Analysis. He served on the US National Science Foundation's Decision, Risk, and Management Sciences

program and on the National Research Council's Committee on Emerging Issues and Data on Environmental Contaminants (part of the US National Academy of Sciences).