

Communication-mediated psychological mechanisms of Chinese publics' post-crisis corporate associations and government associations

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Abstract

Through an online national survey in China, the study empirically examines the serial mediation effects of active communication behaviour and post-crisis corporate associations in the relationships between initial crisis perceptions of problem, constraint, and involvement recognitions and government associations. The study suggested that higher problem and involvement recognitions were positively associated with more active communication behaviour in crisis, and such active communication behaviour was in turn positively associated with more favourable post-crisis corporate associations. The findings also revealed connections between post-crisis corporate associations and government associations, suggesting publics' psychological associations of the company in crisis were extended to government associations in China.

KEYWORDS

China, communication behaviour, corporate associations, crisis, government associations, situational theory

1 | INTRODUCTION

In times of corporate crises, it is critical to understand publics' perceptions and evaluations of an in crisis company (i.e., corporate associations). Associations that publics have with a corporation may determine their future attitudes and behaviours (Dawar & Pillutla, 2000; Fediuk, Coombs, & Botero, 2010). A good deal of prior research has focused on the importance of corporate associations, investigating them either as pre-existing perceptions (Kim, 2013, 2014) or as crisis consequences (Coombs & Holladay, 2009; Lee, 2005).

Prior research, however, seemed to neglect the role of publics' psychological associations with other types of social institutions, such as governmental institutions, cultural values, and norms (Groenewegen, Spithoven, & Berg, 2010). When corporate crises remain in the corporate domain where main actors are companies and relevant stakeholders, a manager who understands the mechanism of publics' corporate associations might be sufficiently equipped to

manage the crisis (Heath & Palenchar, 2009; Kim, 2014). However, in the current social media era, corporate crises easily become salient and spill into the public domain (Coombs & Holladay, 2012; Jaques, 2012). Publics may evaluate not only the crisis-involved company but also institutional systems or cultural contexts where a crisis occurs (Li, 2016). If managers know little about publics' associations with social institutions, they may be missing out effective crisis management. Although publicly salient corporate crises are growing in number, researchers have produced few theoretical and empirical investigations of how publics' post-crisis corporate associations are related to other types of psychological associations. This study attempts to fill this gap, paying particular attention to the Chinese public's psychological associations regarding government, that is, government associations (Chen, 2007; Nee, Opper, & Wong, 2007).

As a way of examining the psychological mechanism of publics in corporate crises, this study proposes a serial mediation model of publics' government associations. In this model, the antecedents are publics' initial crisis perceptions of problem, constraint, and

involvement recognitions; the serial mediators are communication behaviours and corporate associations. This study differs from situational theories that have examined communication behaviours as outcome variables (Grunig, 1997; Kim & Grunig, 2011). It instead focuses on the mediating role that communication behaviours play in the relationships between initial crisis perceptions and post-crisis associations. Empowered by new technology, publics are far from being passive receivers; they actively seek out crisis information and exchange views with others (Palen, Vieweg, Liu, & Hughes, 2009; Procopio & Procopio, 2007). Publics revisit initial evaluations and re-shape their perceptions after engaging in communication behaviours (Kim, 2014, 2016; Palen et al., 2009). By testing the proposed serial mediation model, this study extends our understanding of communication behaviours and delineates the socio-psychological mechanism of Chinese publics during corporate crises.

2 | LITERATURE REVIEW

2.1 | Publics' psychological associations

Corporate associations refer to "publics' memory-based psychological associations and evaluations towards a firm" (Kim, 2014, 159), which comprise corporate ability (CA) and corporate social responsibility (CSR) associations (Biehal & Sheinin, 2007; Brown & Dacin, 1997; Kim, 2013, 2014). CA association indicates publics' associations with a corporation regarding its "expertise to produce high-quality products or services" (Kim, 2014, 159), whereas CSR association relates to a firm's virtue and socially responsible corporate behaviours (Brown & Dacin, 1997; Kim, 2011). Pre-crisis corporate associations are cultivated based on either direct or indirect experiences with a company before a crisis (Dawar & Pillutla, 2000; Kim, 2013). Such pre-crisis corporate associations may change—often negatively—after publics are exposed to negative crisis information about the company in crisis (Dean, 2004; Kim, 2014), and then form post-crisis associations. These post-crisis corporate associations tend to affect the formation of publics' future corporate attitudes and behaviours (Grappi & Romani, 2015; McDonald, Sparks, & Glendon, 2010).

Publics' corporate associations may, during crisis, extend to other types of psychological associations. Social psychology research has argued that individual's perceptions are intricately interrelated and cannot be fully understood without considering their relationships with socio-cultural contexts (McArthur & Baron, 1983; Zebrowitz, 1990). Public perceptions of social institutions in crisis situations are critically important. This is because social institutions, consisting of a set of formal and informal rules, provide the fundamental background against which individuals' or groups' actions take place and delimit the normative range within which behaviours or thoughts are considered legitimate (Campbell, 2004; Knight, 1992; North, 1990).

The relationship between publics' corporate associations and social institutional associations particularly comes to the fore in East Asian countries. As cultural psychologists have concluded, when East Asians face uncertainty, such as a crisis, they prefer a holistic

thinking style, engage in contextualized reasoning, and make external attributions. In contrast, Europeans and North Americans favour an analytical framework, extract an event from its context, and focus on one-to-one relationships (Hong & Chiu, 2001; Markus, & Kitayama, 1991; Morris & Peng, 1994). Given East Asians are more likely than their Western counterparts to perceive and evaluate the role that social institutions play in a corporate crisis, this study proposes that the integration of Chinese publics' social institutional associations into crisis communication research is necessary and meaningful.

2.2 | The prominent role of government in China

Social interactions between corporations and publics in China are largely shaped by government institutions (Amaladoss & Manohar, 2013; Wu, 2007). This is quite different from those interactions within democratic countries where multiple social institutions—industry unions, a participatory culture, activist groups, media, and legal institutions—play equally important or even more prominent roles in framing corporate behaviours (Campbell, 2006; Chen, 2007). In China, the central government possesses the political and cultural legitimacy to lead the market economy (Keith & Peerenboom, 2005; Wu, 2007). Even China's legal system reflects the intentions of the Chinese Communist Party (CCP) and the Chinese government to guide and closely monitor corporate behaviours (Hawes, 2008). Other sectors, such as nongovernment organizations, press system, and industry associations, lack the maturity to counterbalance China's corporate power or government control (Foster, 2002; Lu, 2007; Yang, 2013). Participatory civic culture is also absent in Chinese history (Tang & Li, 2009).

Consequently, Chinese corporations regard the government as their principal stakeholder group and strive to build positive relationships with and meet expectations of the government, while paying relatively less attention to other stakeholders such as domestic publics (He & Tian, 2008; Li & Zhang, 2010; Nee et al., 2007). For instance, state-owned enterprises and town-and-village enterprises naturally prioritize their relationships with the central or local government over other stakeholders due to their ownership structures and personnel appointments (Li & Zhang, 2010; Peng & Luo, 2000). Foreign companies also often emphasize building good corporate-government relationships in recognition of the enormous power the Chinese government has on policies and business permissions (He & Tian, 2008; Tang & Li, 2009).

Due to the government-embedded business environment (Chen, 2007; Wu, 2007), Chinese publics tend to make a connection between their psychological associations of the company and the government during a corporate crisis. These psychological dynamics are in line with the cultural dimensions suggested by Hofstede (1991) regarding the different public expectations of a hierarchy. People in East Asia, where a high power distance is evident, are likely to demand the top executives in a corporate hierarchy to be visible in a crisis and take charge of handling the crisis (Haruta & Hallahan, 2003). By the same token, as Chinese publics acknowledge the

strong power wielded by the government over the economic sector, they naturally expect it to get involved in a corporate crisis (Huang & Kim, 2018; Li, 2016; Lyu, 2012).

2.3 | Conceptualization of government associations in China

This study defines government associations as publics' perceptions and evaluations of the government. Social psychology literature suggests two universal dimensions of social cognition—morality and competence (Fiske, Cuddy, & Glick, 2007; Wojciszke, 2005). The morality dimension focuses on intention, the traits of which are related to helpfulness, trustworthiness, friendliness, and sincerity. The competence dimension pertains to ability (Wojciszke, 2005). Sociological and political analyses of government legitimacy underscore the roles of performance and moral legitimacy in maintaining the domination of the regime in contemporary China (Xu, 2013; Zhao, 2009). According to Lipset (1959), legitimacy involves people's perceptions regarding whether “the existing social institutions are the most appropriate ones for the society” (p. 64). Performance legitimacy, especially economic performance legitimacy, emphasizes whether a government is qualified to rule, possessing the capacity to develop the country's economy and defend its territory (Zhao, 2009). The government achieves a moral legitimacy to rule only when it fulfils the “moral responsibility for the people's well-being” and proves that its governance is “benevolent and empathetic” (Xu, 2013, 521).

This study considers government ability (GA) and government social responsibility (GSR) associations as two dimensions of government associations. GA association is defined as publics' psychological perceptions or evaluations of the government's overall governing capability, including but not limited to the ability to develop the economy, defend the territory, enhance the country's international position, maintain domestic safety, improve personal well-being, and govern various sectors (Brown & Dacin, 1997; Kim, 2011; Zhao, 2009). This study defines GSR association as publics' general perceptions or evaluations of the overall government fitness to benefit society. GSR includes the government's ethical responsibility to promote general welfare, human rights, public education, public health, environmental protection, and other commitments to social issues (Kim, 2011; Tong, 2011). GSR also includes the quality of the regulations established to compel ethical corporate practice to ensure the well-being of society (Xu, 2013). In theory, the government is supposed to serve the general public and to benefit society. However, massive news coverage of government corruption shows that governmental ethics and virtue are particularly under public scrutiny in corporate crises. Thus, we argue that it is necessary to define GSR associations separately.

2.4 | Communication-mediated psychological associations in crisis

Situational theories suggest that publics' initial perceptions of problematic situations are problem, constraint, and involvement

recognitions, and these predict their communicative action (Grunig, 1997; Kim & Grunig, 2011). Problem recognition refers to “one's perception that something is missing and that there is no immediately applicable solution to it” (Kim & Krishna, 2014, 11). Involvement recognition is defined as “a perceived connection between the self and the problem” (Kim & Krishna, 2014, 23). Problem recognition and involvement recognition positively facilitate publics' communication behaviours (Kim & Grunig, 2011). As people recognize more problems and become more involved with an issue, they tend to exert more active communication behaviours to change unfavourable situations. In contrast, constraint recognition refers to the degree to which publics believe their behaviours to be limited by factors beyond their control, and it negatively predicts communication behaviours (Kim & Grunig, 2011). If a problem solver perceives his or her efforts are of no use or are confined, then he or she is less likely to engage in communication behaviours.

Situational theorists treated publics' communication behaviour as an outcome variable of publics' initial perceptions in problematic situations (e.g., Grunig, 1997; Kim & Grunig, 2011). However, this study emphasizes the mediating role of communication behaviour between initial crisis perceptions and post-crisis associations. In today's networked world, publics rely heavily on user-generated information with a variety of opinions. Seeking and exchanging varied viewpoints help publics “grapple with ideas, elaborate arguments, and reflect upon the information acquired” (Ji, Zhou, & Kim, 2017; Valenzuela, Kim, & Gil de Zuniga, 2012, 165). Such reflective thinking is more likely to reshape associations publics hold of organizations and the government during a crisis (Kim, 2014, 2016; Palen et al., 2009), suggesting a potential mediating role of publics' communication behaviour.

Kim and Grunig (2011) conceptualized communicative action as a second-order factor with six sub-variables including both active and passive communicative actions of information acquisition, selection, and transmission. This study, however, considers communication behaviour to be a single construct with only active communication behaviours of information seeking and exchanging. This is because literature has suggested that negative and uncertain events motivate people to seek relevant information and exchange opinions (Berger & Calabrese, 1975; Cho & Ha, 2012). In addition, these two types of actions are more likely to update publics' psychological associations in crisis such as post-crisis corporate and government associations than information selection, which rather serves to enhance pre-existing perceptions (Knobloch-Westerwick, 2015). Moreover, due to the features of social media, such as user-generated content and connectedness, publics' information seeking and exchanging tend to become more integrated and symbiotic communication behaviours. Publics regard interactive opinion expression and discussion as important information sources (Chan, 2016; Valenzuela et al., 2012).

This study thus considers whether, during and after the crisis, change can be brought about in publics' post-crisis corporate associations by their crisis perceptions of problem, constraint, and involvement recognitions and active communication behaviours such as information seeking and exchanging. When publics

recognize that a crisis exists, they form negative associations towards the company involved in the crisis (Dawar & Pillutla, 2000). If publics perceive the crisis to be highly related to themselves, they also tend to consider the crisis to be very severe for them, generating negative post-crisis corporate associations (Coombs & Holladay, 2009). If publics perceive the crisis to be beyond their control, more negative corporate associations are likely to be formed (Kim, 2013, 2014). In updating and reshaping post-crisis associations, active communication behaviour of publics would function as a mediator in the relationship between initial crisis perceptions and post-crisis associations.

This study also proposes that Chinese publics' corporate associations are closely related, especially in a publicly salient corporate crisis, to their government associations. Chinese publics tend to consider their government to be either a regulator or a transgressor in crisis (Beetham, 2013; Kim & Ji, 2017). When publics perceive that the government is not heavily involved with the locus of a corporate crisis, they consider it to be a regulator rather than a transgressor (Wang, 2014). Chinese publics are likely to resort to the government's regulations to pressure corporations who have committed wrongful behaviours in crisis rather than relying on lawsuits or activism against the corporations (Kim & Ji, 2017). The shared assumption is that the government should discipline companies, effectively and in a timely manner (Kim & Ji, 2017). When a firm violates ethical standards or hurts publics' well-being, publics are inclined to make sense of corporate wrongdoing as a regulatory failure of the Chinese government (Wang, 2014). Thus, post-crisis corporate associations might bleed over into their government associations.

When publics consider the government to be heavily involved in a corporate crisis, they regard the government as a transgressor. Here, publics assume that the government favours the corporation by going against common interests (Beetham, 2013), and they tend to form negative government associations. Thus, this study posits that in both cases (i.e., the government being perceived as either regulator or transgressor), there will be a bleed-over effect of post-crisis corporate associations into government associations in a publicly salient corporate crisis. The bleed-over effect refers to the extension

or escalation of psychological associations of the company in crisis into the government.

Cultural psychologists contend that communication behaviour contributes to activating the cultural cues of individuals' cognition (Hong & Chiu, 2001). Individuals who have actively engaged in communication tend to better understand shared meanings and commit to culturally bound ideas and beliefs than those with less active communication behaviour (Lau, Chiu, & Lee, 2001; Sperber, 1996). In this regard, Chinese publics with active communicative behaviours are likely to recognize the importance of government in a corporate crisis and make a connection between corporate and government associations. Based on the discussion above, this study postulates the following hypotheses.

- H1:** Problem recognition is positively associated with (a) active communication behaviours but negatively with (b) post-crisis corporate associations.
- H2:** Constraint recognition is negatively associated with (a) active communication behaviours and (b) post-crisis corporate associations.
- H3:** Involvement recognition is positively associated with (a) active communication behaviours but negatively with (b) post-crisis corporate associations.
- H4:** The impacts of (a) problem, (b) constraint, and (c) involvement recognitions on government associations will be serially mediated by active communication behaviour and post-crisis corporate associations—active communication behaviour and post-crisis corporate associations will have mediating roles in the process.

The proposed hypotheses are presented in Figure 1.

3 | METHOD

This study employed an online survey to investigate the proposed hypotheses. As this study is concerned with the process of publics' communication behaviours during crisis and their post-crisis

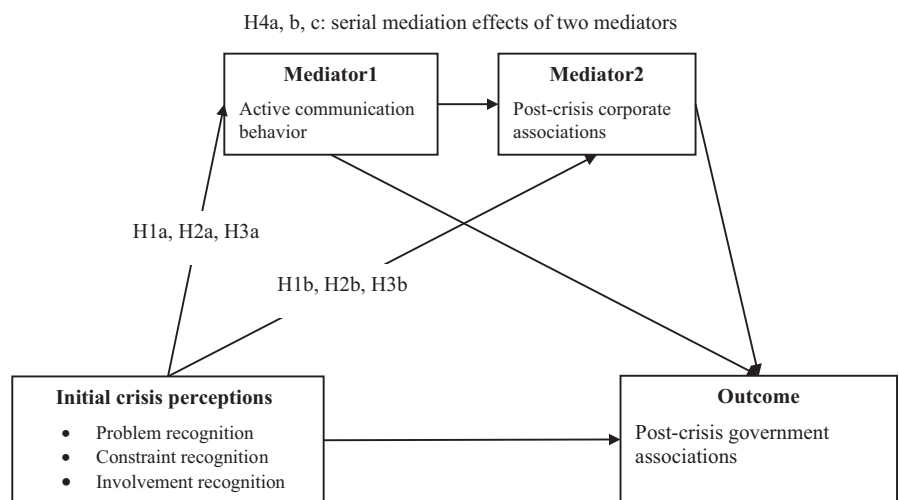


FIGURE 1 Proposed theoretical framework

psychological associations, we selected a real crisis—the May 2016 Baidu crisis in China—as a survey scenario.

3.1 | Case introduction

On 1 May 2016, Baidu¹ was subjected to an online firestorm of criticism in the wake of allegations that its search results led to the death of a student, Wei. Wei had tried a dubious cancer treatment offered by a military hospital that had shown up at the top of a search query list provided by Baidu and then died (BBC News, 2016). The outcry focused on Baidu's ranking search results which were based on the fees advertisers paid; advertisements could easily evade proper vetting or scrutiny by the company (BBC News, 2016).

On its Weibo² account, Baidu argued that no fake information showed up in Baidu's search results, hinting that the major transgressor was the hospital that provided the questionable cancer treatment (Baidu Promotion, 2016). Despite Baidu's defence, many online publics accused Baidu of putting forth too little effort to govern harmful and misleading medical information on the Internet and the government for being negligent on Internet governance (Huang, 2016; Wang, W., 2016; Wang, Y., 2016). That may be because, facilitated by government support and favouritism, Baidu has dominated China's search engine market (Xu, 2017). Chinese publics have limited options for quality Internet services that provide reliable and accurate information (Li, 2016).

As a response to publics' online call and heated discussions (Abkowitz, 2016; Li, 2016), on 2 May 2016, Chinese government agencies established a committee to investigate Baidu (CAC, 2016). On 9 May, the committee announced that the search results of the Baidu search engine appeared to have influenced Wei's selection of cancer treatment. Baidu was then asked to make several major changes regarding its search engine services (BBC News, 2016). On 10 May, Baidu posted a letter on social media to convince the general public of the company's determination to be socially responsible (Samadi, 2016).

The Baidu crisis was selected for the study for several reasons. First, this crisis was preventable, which means that Baidu was considered a transgressor (i.e., publics attributed substantial amount of responsibility to Baidu; Coombs, 2007; Wang, W., 2016; Wang, Y., 2016). In such a crisis, publics tend to pay more attention to the company and actively participate in communication behaviours. Second, the Baidu crisis can be considered a publicly salient corporate crisis in the social media era, as it triggered extensive online public outcry and became a high-profile social issue (BBC News, 2016; Lim, 2017; Sung & Hwang, 2014). Third, this case presented a typical corporate crisis where the government is deeply embedded in the business environment and possesses the authoritarian power to govern corporate practice (Huang & Kim, 2018; Lyu, 2012).

3.2 | Data collection and sample

Data were collected from a national probability sample through an online survey from 12 May to 18 May 2016, right after the crisis,

using consumer panel pools provided by a market research firm (Wenjuan.com). The study screened survey respondents based on their identification as significant publics in the Baidu crisis through the questions of whether they were actual users of Baidu's services and whether they were aware of this crisis. Of a total of 1,237 targeted respondents, 450 responses were obtained (response rate: 36.38%). Participants were provided monetary rewards (US\$2.50 each) in exchange for their participation. Of the total sample, males accounted for 53.3% ($n = 240$). The average age was 33, ranging from 16 to 64 ($SD = 10.49$). The respondents with at least a college degree consisted of 70.6% ($n = 318$). The individual monthly income of 277 respondents (61.5%) was above 767 USD³.

3.3 | Measures

Measurements of problem recognition ($M = 4.14$, $SD = 0.52$, Cronbach's $\alpha = 0.71$), constraint cognition ($M = 2.50$, $SD = 0.78$, $\alpha = 0.74$), involvement recognition ($M = 3.73$, $SD = 0.76$, $\alpha = 0.73$), and active communication behaviour ($M = 3.52$, $SD = 0.74$, $\alpha = 0.81$) were adapted from the situational theory scales in previous studies (Kim, Ni, Kim, & Kim, 2012). Measures of active communication behaviour included five items measuring active information seeking and exchanging behaviours. Post-crisis corporate associations were measured with six items measuring both CA ($M = 3.16$, $SD = 0.88$, $\alpha = 0.89$) and CSR ($M = 3.32$, $SD = 0.86$, $\alpha = 0.79$) associations (Kim, 2011, 2013). The measurements have been translated into Chinese and then edited to ensure the comprehension of Chinese respondents (see Appendix 1 for detailed measurements).

This study developed a scale of government associations with two dimensions in reference to the previous qualitative literature on socialist market economy in China (Hawes, 2008; Wu, 2007), the quantitative scale of politics and economy attitudes (Hahn & Logvinenko, 2008), the role of government (ISSP, 2015), and corporate associations (Kim, 2011, 2013). Altogether, 12 items were developed and measured, consisting of six items for each dimension. Finally, eight items—five for GA and three for GSR—were reserved based on the results of an exploratory factor analysis, a confirmatory factor analysis (CFA), and reliability examination. Table 1 presents the detailed items, their factor loadings, and reliability scores. All these variables were measured on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

3.4 | Construct validity tests

A CFA was performed including all variables to examine discriminant and convergent validities. CA and CSR associations were treated as second-order factors of corporate associations ($\beta = 0.99$, $p < 0.001$ for CA associations; $\beta = 0.92$, $p < 0.001$ for CSR associations). GA and GSR associations were also treated as second-order factors of government associations ($\beta = 0.92$, $p < 0.001$ for GA associations; $\beta = 0.86$, $p < 0.001$ for GSR associations). The measurement model test revealed a good model fit: $\chi^2/df = 1.47$, comparative fit index (CFI) = 0.97, Tucker-Lewis index (TLI) = 0.96, incremental fit index

TABLE 1 The scale of government associations

Factors and measures	Factor loadings	M (SD)
Composite variable: Government associations (Cronbach's $\alpha = 0.88$)		3.47 (0.75)
Factor 1: GA associations (Cronbach's $\alpha = 0.86$)		3.28 (0.84)
I consider ...		
governmental regulation towards corporations is timely.	0.82	3.08 (1.14)
government is highly efficient.	0.81	3.18 (1.08)
government always makes correct decisions.	0.73	3.26 (1.00)
governmental regulation towards corporations is proper.	0.72	3.35 (0.98)
government is capable.	0.71	3.52 (1.03)
Factor 2: GSR associations (Cronbach's $\alpha = 0.80$)		3.79 (0.81)
I consider...		
government regulation towards companies benefits the well-being of society.	0.87	3.88 (0.96)
government regulation towards companies benefits the interest of people.	0.83	3.82 (0.96)
government's decisions benefit the society.	0.68	3.67 (0.95)

Note. $N = 450$; A principal components factor analysis using varimax rotation was conducted; GA explained 54.56% variance and GSR explained 13.48% variance.

(IFI) = 0.97, root mean square error of approximation (RMSEA) = 0.03 (Hu & Bentler, 1999). Corporate associations and government associations revealed satisfactory discriminant and convergent validities (Hair, Black, Babin, Anderson, & Tatham, 2006). However, problem, constraint, and involvement recognition and active communication behaviour did not obtain satisfactory construct validities⁴. Despite these, this study retained the situational theory variables considering the situational theory scales had been substantially examined in literature⁵ (Grünig, 1989, 1997; Kim & Grünig, 2011).

4 | RESULTS

This study tested the serial multiple mediation model using Hayes' (2013) PROCESS (model 6 with two mediators; 10,000 bootstrap samples for bias-corrected bootstrap, 95% bootstrap confidence intervals [CIs]). That is because the PROCESS provides bootstrap CIs and model estimations for multiple serial mediation analyses (Hayes, 2013). Although PROCESS does not provide model fit, Hayes, Montoya, and Rockwood (2017) argued that "the popular models built into PROCESS are saturated, so fit by some measures would be perfect when these models are estimated using SEM" (p. 80).

The hypotheses for problem recognition posited a positive direct relationship with active communication behaviour (H1a), a negative direct relationship with post-crisis corporate associations (H1b), and the serially mediating roles of active communication behaviour and post-crisis corporate associations between problem recognition and government associations (H4a). PROCESS results suggested that the direct impact of problem recognition on active communication behaviour was positively significant ($coeff. = 0.55, p < 0.001$), while its

direct impact on post-crisis corporate associations was negatively significant ($coeff. = -0.35, p < 0.001$). The results thus supported H1a and H1b, indicating that when publics recognized problems in a corporate crisis, they tended to reveal increased active communication behaviour and formed more negative post-crisis perceptions of the corporation. Regarding H4a proposing the serial mediations, the results also revealed that the effects of problem recognition on government associations were serially mediated by active communication behaviour and post-crisis corporate associations. The indirect effects were significant and positive, and CIs were entirely above zero (see Table 2, $Effect = 0.07, SE = 0.02, CIs = [0.04, 0.10]$), supporting H4a. This suggested that problem recognition increased publics' active communication behaviours, and in turn improved positive post-crisis corporate associations, and, finally, increased positive government associations.

As seen in Table 2, in a serial mediation model with two mediators, PROCESS also estimated the indirect effects of an independent variable on the dependent variable through a single mediator. To obtain more insights regarding the underlying mediation mechanism, this study further looked into the indirect effects via a single mediator. The results showed that the indirect effect of problem recognition on government associations only through post-crisis corporate associations was negatively significant with the CIs below zero (see Table 2, $Effect = -0.16, SE = 0.04, CIs = [-0.24, -0.10]$). That said, without active communication behaviour, problem recognition increased negative post-crisis corporate associations, and in turn, negatively affected government associations. The results also suggested that the indirect effect of problem recognition on government associations through active communication alone was not statistically significant, as CIs did include zero ($Effect = 0.04, SE = 0.03,$

TABLE 2 Serial mediation tests of active communication behaviour (M_1) and post-crisis corporate associations (M_2)

Model information	Indirect effects of X on Y			
	Effect	SE	LLCI	ULCI
X_1 : Problem recognition (PR)				
Indi1: $X_1 \rightarrow M_1 \rightarrow Y$	0.04	0.03	-0.01	0.09
Indi2: $X_1 \rightarrow M_1 \rightarrow M_2 \rightarrow Y$	0.07***	0.02	0.04	0.10
Indi3: $X_1 \rightarrow M_2 \rightarrow Y$	-0.16***	0.04	-0.24	-0.10
X_2 : Constraint recognition (CR)				
Indi1: $X_2 \rightarrow M_1 \rightarrow Y$	-0.04	0.03	-0.09	0.01
Indi2: $X_2 \rightarrow M_1 \rightarrow M_2 \rightarrow Y$	0.01	0.02	-0.03	0.03
Indi3: $X_2 \rightarrow M_2 \rightarrow Y$	-0.13***	0.03	-0.20	-0.07
X_3 : Involvement recognition (IR)				
Indi1: $X_3 \rightarrow M_1 \rightarrow Y$	0.04***	0.02	0.01	0.08
Indi2: $X_3 \rightarrow M_1 \rightarrow M_2 \rightarrow Y$	0.04***	0.01	0.02	0.06
Indi3: $X_3 \rightarrow M_2 \rightarrow Y$	-0.03	0.02	-0.08	0.02

Note. M_1 : active communication behaviour; M_2 : post-crisis corporate associations; Y: post-crisis government associations. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

CI = [-0.01, 0.09]). In other words, without the function of post-crisis corporate associations, active communication behaviour failed to directly mediate the impact of problem recognition on government associations. In sum, the indirect effects of problem recognition on government associations took place either serially through two mediators or only through post-crisis corporate associations (see Table 2 & Figure 2a).

For the constraint recognition variable, the hypotheses proposed negative direct relationships with active communication behaviour (H2a) and post-crisis corporate associations (H2b) and the serial mediation effects of active communication behaviour and post-crisis corporate associations (H4b). Results suggested that direct effects of constraint recognition on both active communication behaviour ($coeff. = -0.52$, $p < 0.001$) and corporate associations ($coeff. = -0.29$, $p < 0.001$) were negative, supporting H2a and H2b.

The results also revealed that the serial mediation from constraint recognition—via active communication behaviour and corporate associations—to government associations was not significant (see Table 2, $Effect = 0.01$, $SE = 0.02$, CI = [-0.03, 0.03]), as 95% CI included zero. H4b was thus not supported. The indirect effect of constraint recognition on government associations mediated by active communication behaviour alone was also not significant ($Effect = -0.04$, $SE = 0.03$, CI = [-0.09, 0.01]). That is, when mediated by active communication behaviour, the indirect effects of constraint recognition on government associations were not significant. However, the indirect effect of constraint recognition on government associations only through corporate associations was negatively significant ($Effect = -0.13$, $SE = 0.03$, CI = [-0.20, -0.07]). This indicated that constraint recognition during the crisis increased negative post-crisis corporate associations, and in turn increased negative post-crisis government

associations. In conclusion, active communication behaviour did not mediate constraint recognition; the only mediator between constraint recognition and government associations was post-crisis corporate associations (see Table 2 & Figure 2b).

The hypotheses for involvement recognition postulated a positive direct relationship with active communication behaviour (H3a), a negative direct relationship with post-crisis corporate associations (H3b), and that the process was serially mediated by active communication behaviour and post-crisis corporate associations (H4c). PROCESS results revealed that the direct effect of involvement recognition on active communication behaviour was positively significant ($coeff. = 0.40$, $p < 0.001$), whereas its direct effect on post-crisis corporate associations was negative but not statistically significant ($coeff. = -0.07$, $p > 0.05$). Thus, H3a was supported, but H3b was not. The results explicated that publics' involvement levels were not necessarily directly translated into negative post-crisis corporate associations.

The serial mediation effects from involvement recognition—via active communication behaviour and corporate associations—to government associations were significant (see Table 2, $Effect = 0.04$, $SE = 0.01$, CI = [0.02, 0.06]). Thus, H4c was supported. This indicated that involvement recognition promoted active communication behaviour, and in turn upgraded positive post-crisis corporate associations, and, then, improved positive government associations. The indirect effect of involvement recognition on government associations only through active communication behaviour was also positively significant (see Table 2, $Effect = 0.04$, $SE = 0.02$, CI = [0.01, 0.08]). That is, involvement recognition positively affected government associations through active communication behaviour alone without being mediated by post-crisis corporate associations. In contrast, the indirect effect of involvement recognition on government associations through corporate associations was insignificant ($Effect = -0.03$, $SE = 0.02$, CI = [-0.08, 0.02]), suggesting post-crisis corporate associations failed to function as a mediator alone. In short, the indirect effects of involvement recognition on government associations can occur along two different paths—serially mediated by both mediators and mediated by only active communication behaviour (see Table 2 & Figure 2c).

5 | DISCUSSION

This study found that Chinese publics' problem recognition and involvement recognition of the Baidu crisis significantly increased their active communication behaviour; such behaviour was decreased by constraint recognition. This result is in line with the findings of previous situational theory research (Grunig, 1997; Kim & Grunig, 2011), which confirmed similar relationships in the context of corporate crises in China.

The intriguing findings of the study are the mediating role active communication behaviour plays in publics' psychological dynamics. The direct impacts of problem recognition on post-crisis corporate associations were negative. Those who had higher levels of problem recognition tended to form more negative associations

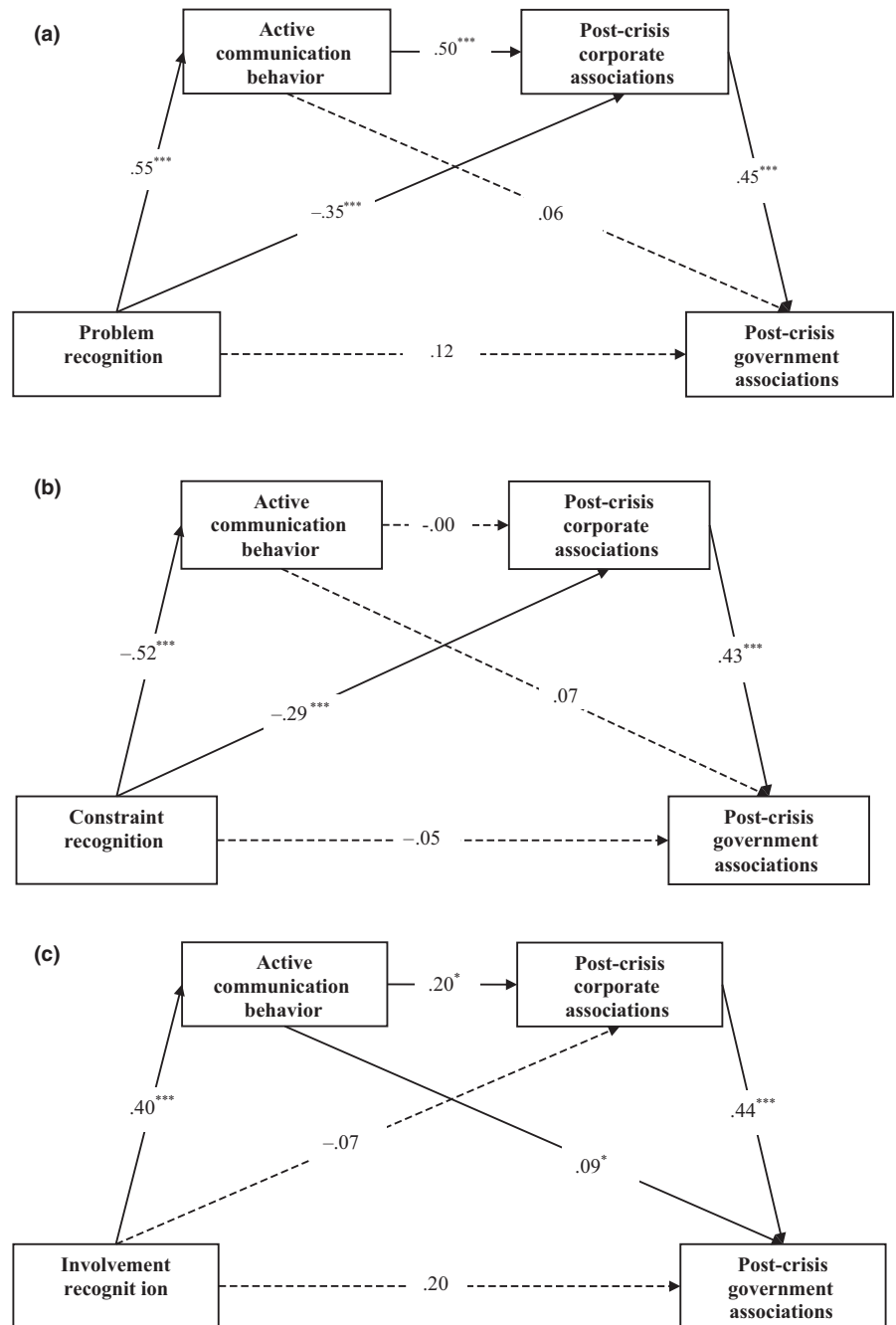


FIGURE 2 Estimated coefficients among the constructs in the serial mediation models. $N = 450$; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; the solid line indicates a significant path while the dashed line refers to an insignificant path

of the company. This portion of the finding agrees with the existing knowledge—that is, when publics perceive a crisis to be more of a problem, they tend to believe the crisis is more severe, and thus they may attribute more crisis responsibility to the company, generating more negative corporate evaluations (Coombs, 2007; Kim & Grunig, 2011). However, the indirect effects of problem recognition on post-crisis corporate associations became positive when mediated by active communication behaviour. When publics actively participated in communication behaviour, they tended to form more positive post-crisis corporate associations. This result was similar for involvement recognition. Initially, its direct effect on post-crisis corporate associations was not significant, but when mediated by active communication behaviour, the indirect impact on post-crisis

corporate associations became positive. Active communication behaviour during a crisis certainly played a mediating role, rendering positive post-crisis corporate associations.

This changed direction in the role of active communication behaviour may be explained by the characteristics of active information seekers and communicators. Active communicators may be better informed of various aspects of crisis information (Kim, 2016), and the well-informed publics may be better equipped with rational and holistic assessments of the crisis (Popkin & Dimock, 2000). Possessing adequate knowledge and understanding of the crisis situation, they may make a fuller range of reasonable evaluations of the in crisis company than those passive information seekers (Galston, 2001). Given Baidu consistently claimed that the bigger issue was

China's problematic healthcare system (Borak, 2017), active communicators who were possibly better informed of Baidu's claim may have reached a viewpoint similar to that of Baidu's. In addition, previous studies found that publics who actively engage in information seeking and sharing may also be crisis solvers with higher levels of commitment, effort, and cognitive information processing (Kim, 2016; Kleut, et al., 2018; Ni & Kim, 2010). Crisis solvers are willing to invest higher levels of cognitive processing, searching for more information to make sense of crisis situations and to reduce uncertainties (Seeger, Sellnow, & Ulmer, 2003). Thus, these active communicators in the Baidu crisis may also have attributed crisis responsibility to other parties such as the hospital or medical healthcare system (Huang, 2016; Li, 2016).

We should be cautious though when trying to claim that active communication behaviour during the crisis will generate more positive post-crisis corporate associations. Rather, the relationship may depend on how good the company's crisis responses and management were. Dean (2004) has suggested that a company with a relatively bad relationship history (e.g., consumers having unsatisfactory experiences with a company) tends to be evaluated to a greater degree on the appropriateness of their crisis response than a company with a good relationship history. Thus, future research should investigate more thoroughly how the relationship between publics' active communication behaviour and post-crisis corporate associations changes depending on the company's crisis responses or its previous relationship history.

The serial mediations from problem and involvement recognitions to post-crisis government associations via communication behaviour and post-crisis corporate associations also advanced in a positive direction. Regressing in a negative direction was only the significant simple mediation from constraint recognition to government associations via post-crisis corporate associations. This indicated active communication behaviour played a significant mediating role in problem recognition and involvement recognition, while it played no mediating role in constraint recognition. The results seem reasonable. After all, publics tend to become reluctant to participate in active communication behaviour when they perceive higher constraints in solving problematic situations (Kim, & Grunig, 2011). Thus, the impact of active communication behaviour seemed to fade when constraint recognition was negatively affecting post-crisis corporate and government associations.

Another important finding of this study is the relationship between post-crisis corporate associations and government associations. The study found that when publics formed negative corporate associations after the crisis through problem and constraint recognitions, they extended their negative corporate associations to the government. In the Baidu crisis, publics considered the government as a regulator rather than a transgressor (Li, 2016; Wong, 2016), as the government was not heavily and directly involved in the causes of the crisis. Even in such situations, there seemed to be a very strong bleed-over effect of negative corporate associations into government associations. Cultural psychology research (e.g., Hong & Chiu, 2001) and pan-culture theory (e.g., Hofstede, 1991) suggest

that Chinese publics have a strong tendency to engage in contextualized reasoning, external attribution, and to expect a high power distance. These culturally and contextually sensitive aspects of Chinese people and society may provide the underlying explanations for why post-crisis corporate associations were extended to their psychological associations with a larger or more powerful social institution such as the government. This bleed-over effect can also be explained using the lens of attribution theory (Coombs, 2007; Kim, 2013). Attribution theory suggests that one of the important factors for publics' blame attributions is perceived controllability (Coombs, 2007; Kim, 2013). Controllability in a crisis indicates whether publics think the cause of the crisis was controllable or not. The higher the perceived controllability, the more negatively publics evaluate the relevant parties (Kim, 2013). Due to the government's well-known regulatory role in a socialist market system (Pearson, 2005; Wu, 2007), Chinese publics may believe that the government has controllability over corporate crises (Beetham, 2013; Chen, 2007).

Another possible explanation is that the bleed-over effect may occur when a corporate crisis becomes salient in the public domain. Previous studies have found that if publics are informed of a crisis through consensus heuristics such as trend words on social media, they may overestimate the crisis's negativity (Hsueh, Yogeewaran, & Malinen, 2015; Kim & Sundar, 2014). Due to such biased statistical inferences, publics tend to believe a high-profile crisis posits greater threats to social well-being than it actually does (Lim, 2017; Sung & Hwang, 2014). Thus, in such high-profile corporate crises, publics may extend their negative corporate associations into government associations as the government shoulders the responsibility of vouchsafing the well-being of a society (Tong, 2011; Xu, 2013).

5.1 | Theoretical and practical implications

This study serves as an exploratory effort to discover Chinese publics' socio-psychological mechanism during a corporate crisis. By proposing and examining active communication behaviour as a mediator, the study extends the existing understanding of communication behaviours in the public relations and crisis management fields (e.g., Coombs, 2007; Dean, 2004; Kim & Grunig, 2011). Situational theory, as a well-documented theoretical approach, has considered communication behaviour to spring out of publics' psychological dynamics (Grunig, 1997; Kim & Grunig, 2011). The findings of this study not only support such a relationship but also suggest communication behaviours further link publics' initial crisis perceptions and subsequent evaluations as a mediator. The current study thus demonstrates the applicability of a communication-mediated perspective for understanding publics' psychological mechanism in crisis (Hong & Chiu, 2001; Lee, 2005).

Compelling practical implications may be derived from the significant mediating role of active communication behaviours. Our findings suggest that publics' active communication behaviour could either magnify the negative influences of undesirable crisis information or enhance positive effects of effective crisis communication (Kim, 2016). Since active communication behaviour

of publics is inevitable in today's social media era (Palen et al., 2009), crisis managers should consider publics' active communication behaviour as an opportunity rather than an obstacle. As found in this study, publics' perceptions of the company and the government could be turned in a positive direction depending on active crisis communication efforts. When corporations strategically engage in publics' active communication behaviour during crisis (e.g., making information available and accessible to publics), they may be able to minimize the damage inflicted by the crisis (Kim, 2016).

This study also provides empirical evidence on the intricately interrelated nature of public perceptions towards different social institutions in a corporate crisis. The connection found between corporate associations and government associations adds new insight into the understanding of publics' socio-psychological responses to corporate crises. This psychological extension could be either culture-specific, originating from Chinese cultural characteristics (Hong & Chiu, 2001), or universal, for the corporate crises that swell beyond the corporate domain and become social concerns (Heath & Palenchar, 2009). Although the underlying reasons for such extension are still uncertain, the detected phenomenon itself can offer some valuable implications for international crisis communication practice, especially regarding the Chinese contexts. Practitioners in both for-profit and government organizations in China should work closely together in managing corporate crises because negative corporate associations could easily spill over to government associations. Furthermore, corporate practitioners should better prepare potential government intervention while government practitioners closely monitor publics' perceived controllability of the government in corporate crises and deliver timely crisis responses to minimize potentially negative bleed-over effects. Considering corporate crises are increasingly becoming high-profile social issues in today's global markets, companies should blend their issue management and crisis management functions within their organizational structure (Heath & Palenchar, 2009; Jaques, 2012).

6 | FUTURE RESEARCH AND CONCLUSION

Although this research provides meaningful implications, it is limited in several aspects. Government associations with the two dimensions of GA and GSR associations are here newly conceptualized and tested in the Chinese context. We call for future research to examine the applicability of this construct in other social contexts and further refine its measurements. Additionally, this study used an online survey immediately following the real Baidu crisis. Thus, researchers should be cautious when interpreting causal relationships among the constructs. Moreover, Baidu is a publicly listed company, and the government was not heavily involved in the locus of the Baidu crisis thus being perceived as a regulator. We call for future studies to examine whether the bleed-over effect of corporate associations into government

associations still exists in other types of crises in China. Future research should also investigate whether this bleed-over effect is culture-specific or general by investigating corporate crises in other countries. Furthermore, the situational variables used in our study, adapted from the situational scales (Grunig, 1997; Kim & Grunig, 2011; Kim et al., 2012), revealed insufficient construct validities. Future research should be more rigorous in testing and reporting the validity issues of the situational variables.

All in all, this exploratory study contributes to current crisis communication scholarship by providing theoretical insights into a communication-mediated socio-psychological mechanism and Chinese publics' psychological connections between corporate associations and government associations. The study offers useful insights into how corporate crises unfold in the Chinese context and certainly add culturally sensitive perspectives to existing crisis communication research.

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ENDNOTES

¹Baidu operates a search engine that controls 80% of the domestic market in China (Oliver, 2016).

²Weibo, a Chinese equivalent of Twitter, is the largest social networking site in China (according to Alexa website ranking).

³The gender ratio of Chinese netizens is 53.6% for males; the average age is around 29; a little less than half (48.8%) had at least a college degree. With regard to monthly income, those making US\$460–766 made up the largest portion (23.4%; CNNIC, 2016). Respondents for this study were older with higher education and monthly income levels than general Chinese netizens.

⁴The average variance extracted (AVE) values for problem (0.30), constraint (0.49), involvement (0.47) recognitions, and communication behaviour (0.45) were less than 0.50, which indicated unsatisfactory convergent validities. The AVE values of problem recognition (MSVs = 0.54), involvement recognition (MSVs = 0.54), and active communication behaviour (MSVs = 0.47) were smaller than maximum shared variances of each variable (MSVs). The square root of the AVE for problem recognition, involvement recognition, and active communication behaviour was smaller than inter-construct correlations.

⁵Using database search for published articles with key words of situational theory, we extracted a total of 500 articles. Of the 500 articles, 40 focused on the major variables of situational theory either qualitatively (13 articles) or quantitatively (27 articles). Among the 27 articles that adopted and empirically tested the situational variables (i.e., problem recognition, constraint recognition, involvement recognition, and communicative action) and the relationships among the variables, none reported discriminant and convergent validities of these variables. Of the 27 articles, only eight tested the relationships in countries other than the United States (three for South

Korea; one for Taiwan, one for Nepal, one Swiss, one Singapore, and one China [a comparative study with United States]).

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APPENDIX 1

Problem recognition

- I considered a serious problem of the Baidu was presented in this case.
- I paid attention to the problem of Baidu a lot.
- I considered something needs to be done to solve this problem of Baidu.
- I considered a serious problem of Internet and business regulatory administration was presented in this issue.
- I paid attention to the problem of the Internet and business regulatory administration a lot.
- I considered something needs to be done to solve this problem of Internet and business regulatory administration

Constraint recognition

- I considered I could make a difference in the problem at Baidu to some extent.
- I considered I could take actions to alleviate the problem at Baidu.
- I considered my opinions on the problem at Baidu mattered to those who were addressing it.

Involvement recognition

- I considered a strong tie with the problem of Baidu.
- I considered that the problem of Baidu affected my life.
- I considered that the problem of Baidu had serious consequences on my life and someone close to me.

Active communication behaviour

- I actively searched for information on the problem of Baidu.
- I contacted others about the problem of Baidu.
- I actively started a conversation on the problem of Baidu with others.
- I posted my view on the problem of Baidu.
- I helped others to recognize the importance of the problem of Baidu.

Corporate ability associations

- I think Baidu provides high-quality products and services.
- I think Baidu has expertise for its products and services.
- I think Baidu provides innovative products and services.

Corporate social responsibility associations

- I think Baidu is a reliable corporation.
- I think Baidu behaves responsibly regarding business ethics.
- I think Baidu fulfils its social responsibilities.