Article

How to Make an Industry Sustainable during an Industry Product Harm Crisis: The Role of a Consumer’s Sense of Control

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Abstract: Product harm crisis involving multiple products increasingly leads to an industry crisis. Yet previous researches have usually focused on the effectiveness of repair strategies under a single-company product harm crisis. Moreover, less is known about the effectiveness of repair strategies under an industry product harm crisis. This paper explores how firms should respond to an industry product harm crisis to make the industry sustainable. We used experimental methodology to examine the above effects. Across three experiments, this research finds that a consumer’s sense of control is a key variable that is found to mediate the effectiveness of a firm’s repair strategy. Results show that in general functional and informational repair strategies are more effective in restoring a consumer’s sense of control when compared with an affective repair strategy. The more control consumers feel they have, the higher their brand attitudes, and the more positive they rate a firm’s response appropriateness for an industry product harm crisis. However, for consumers who score high on an emotion-focused coping style, an affective repair strategy is more effective. The findings generate practical suggestions for firms in an industry product harm crisis to restore consumers’ sense of control to keep industry sustainability.

Keywords: industry product harm crisis; repair strategies; sense of control; industry sustainability

1. Introduction

It is not rare that a product harm crisis involves more than one brand. For example, the melamine contamination crisis in China involved 22 dairy brands in 2008. In addition, in 2011 six brands of mineral water in China were found to have unacceptable levels of bromate, which is a known carcinogen. In recent year, several brands, including Toyota, General Motors and nearly two dozen other automakers have had to recall millions of cars, due to out-of-control gas pedals or faulty airbags in the US [1].

Despite the importance of this topic, little is known about industry crises. The overwhelming majority of the studies in the literature focus on single-company product harm crises [2]. For example, Matos and Rossi [3] in their study focus on the reactions of consumers to a product recall of a particular type of car, due to issues with the brake system. The limited research into industry product harm crises has focused on spillover effects and guilt-by-association [4], which examined how a brand is blamed for a crisis in an industry. Chen [5] examined consumer behavior in industry-wide crises from an institutional perspective, by illuminating consumers’ perceptions and judgment of institutions and demonstrating their impacts on consumers’ trust and decision-making. Topaloglu and Gokalp [1] explored the impact of product recalls on firm performance outcomes from the perspective of branding.

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strategy by analyzing the data from the auto industry of the United States during the period from 2003 to 2014. It is much less clear how consumers react to an industry product harm crisis. Mechanisms through which a firm's repair strategy can influence a consumer’s evaluation of the brand in the context of an industry product harm crisis are still not known.

Differences between a single-firm and an industry crisis suggest that consumers are more likely to be encountered with environmental uncertainty and disorder, and tend to blame the circumstantial (external) factors during an industry crisis. Researchers have found that experiencing environmental uncertainty is negatively correlated with an individual’s sense of control [6]. In this article, we suggest that a consumer’s sense of control, defined as the perception that one can have control over outcomes in the life [7,8], may be playing a key role during an industry crisis when compared with a single-firm crisis.

Firm responses to crises play a role in restoring a brand’s image, and consumers’ perceptions of firm responses are more important than reality [9]. Research indicates that scrutinizing the appropriateness of certain account [10] or strategy can reflect the effectiveness of image restoration [11]. However, less is known about the relationship between a firm’s repair strategies and the perceptions of the appropriateness of a firm’s response during an industry product harm crisis.

Considering the abovementioned gaps in the literature, this research aims to examine the role of a sense of control during an industry crisis, and uncover the influence of a firm’s repair strategies in restoring a consumer’s sense of control and prompting the perceptions of the appropriateness of a firm’s response during an industry product harm crisis. Besides, this research will explore the boundary condition of the above effects from the perspective of consumers’ emotion-focused coping style. The remainder of the article is organized as follows. We first present our conceptualization and hypotheses development. Next, we discuss research methodology, describe the design of the studies, and report the results. The final section summarizes the findings and offers managerial implications.

2. Conceptualization and Hypotheses Development

2.1. Industry Product Harm Crisis And Sense of Control

A crisis is a sudden and unexpected event that threatens to disrupt an organization’s operations and poses both a financial and a reputational threat [12]. An industry product harm crisis is defined as “a crisis that involves several brands or firms in an industry”. It is triggered by corporate misconduct permeating an industry [5].

Crisis responsibility can either be attributed to the person or organization embroiled in the event (internal), or to circumstantial (external) factors [13]. When forming an impression of an individual, perceivers make more trait judgments [14]. Reversely, they emphasize group-level features (i.e., social forces) to form an impression of a group [15]. Base-rate information which describes the frequency of crises or recalls in an industry influences consumers’ attribution of a product harm crisis [16]. An industry product harm crisis, referring to a high base-rate over circumstances would not lead to attribution to single brand’s internal factors, but to the external circumstances [16]. Based on the above, an industry crisis is more likely to be attributed to circumstantial (external) factors than a single-company crisis. Therefore, it is not enough to show brands’ sincerity which is very important in the context of a single-firm crisis to cope with an industry product harm crisis. Instead, it is more effective to help consumers get control of the environment, that is, get a kind of sense of control.

Sense of control is often considered as a critical element in our daily lives [17,18]. The belief that we have control over outcomes in our lives is a primary motivator of behavior [8]. Individuals have a basic need to restore control when it is disrupted [19].

In the context of an industry product harm crisis, compared to a single-firm product harm crisis, consumers experience high levels of uncertainty [4]. Previous researches proposed that experiencing uncertainty [6] or disorder [20] is negatively correlated with an individual’s sense of control. Due to the uncertain nature of an industry product harm crisis, a consumer’s sense of control will be threatened as a result of the situation. Individuals have a basic need to restore control when it is disrupted [19].
Therefore, consumers will attempt to regain a sense of control during an industry product harm crisis. Based on the above, it is hypothesized that:

**Hypothesis 1 (H1).** Consumers’ perceptions of a loss of control during an industry product harm crisis will be greater than a single-firm product harm crisis.

Losing a sense of control causes anxiety [21], which in the context of a product harm crisis translates into more negative attitudes towards the company. Since the perception of a loss of control is greater in an industry product harm crisis when compared with a single-firm product harm crisis, the damage will be greater to the company during an industry product harm crisis.

Critcher and Dunning [15,22] proposed that people are more negative in assessments of collectives than specific individuals, even when people have essentially no information about the individual or collective, they are judging. A straw shows which way the wind blows. As brands immersed in an industry product harm crisis are without doubt all responsible for their misconduct, consumers will evaluate the company plunged into an industry product harm crisis and the collectives more negatively than the counterpart into a single-firm product harm crisis. Based on the above, it is hypothesized that:

**Hypothesis 2 (H2).** Consumers’ sense of a loss of control will mediate the relationship between an industry product harm crisis and negative brand attitudes.

### 2.2. Repair Strategies and Restoring a Consumer’s Sense of Control

A firm’s choice of a repair strategy can play an important role in its recovery. For example, Van der Meer and Verhoeven [23] suggest that rebuild strategies (offering an apology or compensation) are more effective than diminish strategies (justification or providing excuses) in repairing brand reputation.

According to prior research, there are three key types of repair strategies available to companies: affective repair strategy, functional repair strategy, and informational repair strategy. Affective repair strategy involves expressions of apology, remorse, and compassion. Financial compensation and managerial steps to avoid reoccurrence of the crisis are components of a functional repair strategy. Finally, an informational repair strategy refers to the communication of crisis-related information [24,25].

Roschk and Gelbrich [26] suggest that recovery is most likely to occur when compensation represents a resource similar to the failure it is supposed to offset. Therefore, when a consumer’s sense of control is threatened, it is best to restore his or her sense of control in an area they feel a deficiency. In these situations, an informational or functional repair strategy is most effective. This is because an informational repair strategy provides consumers with updated information about the crisis, which they feel they are lacking, and a functional repair strategy provides consumers with compensation which can reduce their losses. These strategies can, therefore, increase consumers’ perceptions of security and controllability. On the other hand, an affective repair strategy involving expressions of apology, remorse, and compassion is too illusory to make people feel at ease. Based on the above, it is hypothesized that:

**Hypothesis 3 (H3).** A functional or informational repair strategy is more effective than an affective repair strategy in improving a consumer’s sense of control during an industry product harm crisis.

Previous research has found that high levels of personal control attenuates anxiety [21], which can positively impact consumers’ emotional and behavioral response [27]. For example, Cutright [21] found that, consumers in a high personal control situation rated a poor-fit brand extension higher than consumers in a low personal control situation. Based on the above, a repair strategy which increases a consumer’s perceived control will have a positive impact on the consumer’s evaluation of a firm’s response appropriateness during an industry product harm crisis. Therefore, it is hypothesized that:
Hypothesis 4 (H4). The more control consumers feel they have, the more positive they will rate a firm’s response appropriateness for an industry product harm crisis.

2.3. The Moderating Effect of Consumers’ Emotion-Focused Coping Style

Emotion-focused coping is about regulating distress emotion [28] and adjusting oneself to the environment. It entails efforts to manage an individual’s emotional responses to a cause of stress, such as avoiding thoughts about undesirable outcomes, letting negative emotions out to feel better, or reappraising the situation [29].

Despite being less effective in most situations, an affective repair strategy can be beneficial when dealing with consumers with an emotion-focused coping style. A preference for an affective repair strategy by consumers with an emotion-focused coping style is in line with Han, Duhachek, and Agrawal [29] who found that consumers with an emotion-focused coping style are more persuaded by messages presented at higher levels of construal. In other words, abstract information is more effective for consumers with an emotion-focused coping style. An affective repair strategy involves expressions of apology, remorse and compassion. Compared to a functional or informational repair strategy, an affective repair strategy is more likely to express a firm’s emotion, which is more abstract and, therefore, presents a cognitive processing priority for consumers with an emotion-focused coping style [30]. Hence, the more consumers are inclined to use an emotion-focused coping style, the more effective the affective repair strategy will be to restore a consumer’s sense of control during an industry product harm crisis. Based on the above, it is hypothesized that:

Hypothesis 5 (H5). An affective repair strategy is more effective than a functional or informational repair strategy in improving a consumer’s sense of control when consumers are more inclined to use an emotion-focused coping style.

3. Research Methodology

Across three experiments, consumer reactions to an industry product harm crisis are examined. The purpose of study 1 was to examine whether during an industry product harm crisis, a consumer’s sense of control will be threatened more than a single-firm product harm crisis, and whether this will have a more negative influence on consumers’ brand attitudes. The purpose of study 2 was to explore the effectiveness of a firm’s repair strategy on a consumer’s sense of control. Finally, the purpose of study 3 was to examine the moderating role of a consumer’s emotion-focused coping style on the effectiveness of a firm’s repair strategy. Figure 1 provides an overview of the studies and the proposed conceptual model for this research.
3.1. Study 1

During study 1, it was examined whether an industry product harm crisis (vs. a single-firm product harm crisis) has a more negative influence on consumers’ brand attitudes. We then examined the mediating effect of sense of loss of control and eliminated another explanation.

Previous research has found that perceived severity and consumer affect influence consumer reactions [31,32]. According to previous researches [12,33], consumers will experience an emotional reaction to a crisis, which in turn shapes the evaluations of the organization’s recovery efforts [34] and organizational reputation [35]. In addition, Cox et al. [36] proposed that positive affect does have an influence on consumers’ response to drug product risk information. Therefore, to examine whether perceived severity and consumers’ positive or negative affect might have contributed to our results, we included items that measured these constructs.

3.1.1. Method

A single factor 3 (crisis type: Single-firm crisis vs. industry crisis vs. no crisis) between-subjects experimental design was used. 74 participants were recruited online and completed this computer-based survey. Of these, approximately 64% were female, and ages ranged from 18 to 35 (M_{age} = 25.4). The brand used in this study was a real and relatively unfamiliar bottled water brand: Nerea. Participants in the industry and single-firm product harm crisis condition were shown a fictitious product harm crisis news article involving this brand.

At the beginning of the study, all participants were asked to read a neutral news report about Nerea and evaluate the news (i.e., perceptual fluency and perception of reading difficulty) and the brand (i.e., brand reputation and brand attitude). Brand reputation was measured using the following three items adopted from Veloutsou and Moutinho [37] (trustworthy, reputable, honesty; α = 0.911). To assess brand attitudes four items were used from a scale by Kokkinaki and Lunt [38] (like/dislike, appealing/unappealing, attractive/unattractive, desirable/undesirable; α = 0.928). The participants
were then directed to the main study which consisted of two parts. In part one, participants were presented with the manipulation for the type of crisis. They were randomly assigned to one of the three conditions. We included a neutral condition to test the hypothesis that people’s baseline level of loss of control is low [18]. They read a news report about a crisis (vs. no crisis). In the industry product harm crisis condition, participants read a news report stating that six commercially available bottled water brands, including Nerea had been found to contain carcinogens. In the single-firm product harm crisis condition, participants read a news report which stated that a commercially available bottled water brand, Nerea was found to contain carcinogens. In the non-crisis condition, participants read an ordinary news report about food.

In part two, participants completed an eight-item scale which measures a sense of loss of control [37] (Frazier et al., 2011; α = 0.872). Frazier et al. [39] first developed a new measure of perceived past, present and future control over stressful life events. They proposed that present control beliefs are likely to reflect more general beliefs about one’s ability to control important outcomes. Hence, we adopted the items of present control as the measure of sense of control. In order to compare the extent of loss resulted from the crises, we expressed the measure items of sense of control reversely as the measure items of sense of loss of control. This included items, such as “There isn’t much I can do to help myself feel better about the event”; “I don’t have much control over my emotional reactions to the event”; “My reaction to the event is not under my control”.

A three-item scale measure for perceived severity adopted from Craighead, Karwan, and Miller [31] (a major problem, significant, severe; α = 0.778). A five-item measure for negative affect (e.g., hopeless; nervous; worthless; α = 0.705) and a five-item measure for positive affect (e.g., cheerful; full of life; satisfied; α = 0.969) from Mroczek and Kolarz [40].

Participants then completed the brand attitude (α = 0.952) scale described previously. Participants indicated the extent of their agreement on a 7-point scale (from 1 = “strongly disagree” to 7 = “strongly agree”). A manipulation check for the crisis type included five questions, such as “whether the brand ‘Nerea’ was mentioned in the news report?” “What kind of information was mentioned?” “Only one firm has been detected with carcinogens?” and “The product harm crisis involves only one firm?” At the end of the experiment respondents were debriefed and thanked for their participation. All the participants correctly answered the questions for the manipulation check.

3.1.2. Results

An independent-sample T test revealed that there are significant differences in participant responses between the industry product harm crisis condition and the single-firm product harm crisis condition in terms of the sense of loss of control (t(46) = 4.53, p < 0.001, Mindustry = 4.1, Msingle-firm = 2.86) and negative affect (t(46) = 2.03, p < 0.05, Mindustry = 4.34, Msingle-firm = 3.4), but not on perceived severity (t(46) = 0.73, Mindustry = 4.92, Msingle-firm = 4.67, n.s.) or positive affect(t(45) = -0.355, Mindustry = 2.62, Msingle-firm = 2.77, n.s.)

Furthermore, the data were analyzed using a one-way ANCOVA on posttest brand attitude, sense of loss of control and negative affect separately. Prior attitudes toward the brand and brand reputation served as covariates. Consistent with hypothesis 1, evaluations of sense of loss of control revealed a significant main effect, F(2,71) = 15.8, p < 0.01(η² = 0.31). Participants reported lower sense of control in the context of industry crisis (M = 4.1) compared to single-firm crisis (M = 2.86) or no crisis (M = 2.68). In addition, evaluations of negative affect revealed a significant main effect, F(2,71) = 11.3, p < 0.01(η² = 0.24). Participants reported more negative affect in the context of industry crisis (M = 4.36) compared to single-firm crisis (M = 3.4) or no crisis (M = 2.31). Posttest brand attitude revealed a significant main effect, F(2, 69) = 19.24, p < 0.01(η² = 0.399). Participants reported lower brand attitude in the context of industry crisis (M = 1.97) compared to single-firm crisis (M = 2.54) or no crisis (M = 3.41).

Hayes’s [41] PROCESS macro for SPSS was used to explore whether or not a sense of loss of control and negative affect mediate the effects of crisis types on posttest brand attitude (model 4).
After controlling for prior brand attitudes and brand reputation, a bootstrapping test confirmed that sense of loss of control mediated the relationship between crisis type and posttest brand attitude (95% LLCI = 0.05, ULCI = 0.37; 5000 resamples). No mediation effect of negative affect was found (95% LLCI = −0.04, ULCI = 0.18; 5000 resamples). Thus, an industry product harm crisis (vs. a single-firm product harm crisis) has a more negative effect on consumer brand attitudes, by decreasing a consumer’s sense of control. Therefore, H2 is supported.

3.2. Study 2

In this study, different firm repair strategies were examined to assess their effectiveness in helping a company during an industry product harm crisis. In Study 2 and 3, response appropriateness was used as the dependent variable to enhance the robustness and the external validity of the study. First, different from study 1, study 2 and 3 used a fictitious brand as stimulus material. Therefore, it is not proper to measure brand attitude. Second, as Blumstein et al. [10] proposed, a successful account is one honored by the demander. Implementing an inappropriate strategy leads to significant financial and moral reputational loss to a firm [42]. It is appropriate to examine the construct of response appropriateness to reveal the impact of the effectiveness of firm repair strategies. Finally, consumers’ perception of response appropriateness is an important index which reflects the effectiveness of image restoration [10,11].

We also examined the mediating effect of sense of control on this relationship of firm’s repair strategies and response appropriateness and eliminated some other explanation. As Xie and Peng [43] proposed, perceived sincerity is a mediating variable that influences consumer reactions to company repair strategies during a single-firm product harm crisis. It is possible that our results were driven by the perceived sincerity. Therefore, to examine whether perceived sincerity might have contributed to our results, we included items that measured this construct.

3.2.1. Pretest

A separate pretest was conducted to determine whether participants perceive a firm strategy as an affective, functional or informational repair strategy. 101 undergraduate students (78.2% females, Mage = 20.2) from a business course at a large university in Southern China participated in exchange for course credit. Consistent with previous research [43], an apology was used as part of an affective repair strategy, financial compensation was used as part of a functional repair strategy, and the communication of updated and latest information was used as part of an informational repair strategy. After randomly being assigned to one of three repair strategies, participants were asked to answer questions for a manipulation check. Participants rated their agreement with three statements to assess whether they viewed the strategy as an affective repair strategy (“The company has made an obvious apology”, Consumers received affective compensation”, “The company has taken into account consumers’ emotions in responding to the negative publicity”; $\alpha = 0.773$). They also rated their agreement with three statements to assess whether they viewed the strategy as a functional repair strategy (“Consumers received concrete compensation”, “The company has made functional efforts in responding to the negative publicity”, “The company has made economic compensation for losses in the negative publicity; $\alpha = 0.923$). Finally, participants rated their agreement with two statements to assess whether they viewed the strategy as an informational repair strategy (“Consumers were informed about corporate responses to the negative publicity”, “The company has provided necessary information about corporate responses to the negative publicity”; $\alpha = 0.900$) [43].

Consistent with expectations, in the case of an affective repair strategy (N = 33), participants had significantly higher evaluations on a firm’s affective efforts. ($M_{affective} = 4.99(\text{SD} = 1.25)$ vs. $M_{functional} = 4.44(\text{SD} = 1.41)$, t(32) = 3.05, $p < 0.01$; vs. $M_{informational} = 4.35(\text{SD} = 1.60)$, t(32) = 3.70, $p < 0.01$). In the case of functional repair strategy (N = 35), participants had significantly higher evaluations on firm’s functional efforts ($M_{functional} = 5.35(\text{SD} = 1.32)$ vs. $M_{affective} = 4.51(\text{SD} = 1.52)$, t(34) = 4.46, $p < 0.01$; vs. $M_{informational} = 4.74(\text{SD} = 1.59$, t(34) = 2.95, $p < 0.01$). In the case of
informational repair strategy (N = 35), participants had significantly higher evaluations on a firm’s informational efforts $M_{\text{informational}} = 5.45(\text{SD} = 1.36)$ vs. $M_{\text{affective}} = 4.40(\text{SD} = 1.61)$, $t(32) = 4.61$, $p < 0.01$; vs. $M_{\text{functional}} = 4.33(\text{SD} = 1.15)$, $t(32) = 5.22$, $p < 0.01$). The data were analyzed using an independent-sample T test. Thus, the manipulation of repair strategies was successful.

3.2.2. Method

A 2(crisis type: Industry vs. single-firm) × 3(repair strategy: Affective vs. functional vs. informational) between-subjects experimental design was used. 169 undergraduate students (69.8% females, Mage = 19.1) from a business course at a large university in Southern China participated in exchange for course credit.

The crisis scenario was changed in this study to a fictitious clothing brand to enhance the generalizability of the results, and the crisis type was manipulated at the beginning of the study. In the industry product harm crisis condition, participants read a news report stating that several well-known commercially available clothing brands, including “A” brand, have been found to contain carcinogens. In the single-firm product harm crisis condition, participants read a news report stating that a commercially available clothing brand “A” has been found to contain carcinogens. Participants then completed the manipulation check for the crisis type and sense of loss of control similar to study1. After the manipulation checks were completed, participants received the firm’s repair strategy manipulation, and were asked to answer questions for the manipulation check. Participants were then asked to rate the degree of their sense of control, using an eight-item scale [39] ($\alpha = 0.905$). The measure items of prior sense of control are reverse coded items (similar to study 1) (reversed the score data of prior sense of loss of control into a positive score), and this can engage participants more to the test and reduce acquiescence bias. The difference between posttest and a prior sense of control is calculated as the variation of sense of control.

Participants then completed a nine-item measure for perceived sincerity [20] ($\alpha = 0.942$). This included items, such as “I believe the corporate response is honest”, “I believe the corporate response has a great deal of integrity. Judging from the corporate response, I believe sound principles guide the company’s behaviors”, “Judging from the corporate response, I believe the company has a great deal of benevolence”, “Judging from the corporate response, I rely on the company to favor the customer’s best interest”. We also measured participants’ assessments of the firm’s response appropriateness by their agreement with the following statement: “I believe the firm’s response is (appropriate believable/sincere/adequate/acceptable)”, using a five-item scale [10, 44] ($\alpha = 0.886$). Participants indicated the extent of their agreement to all these items on a 7-point scale (from 1 = “strongly disagree” to 7 = “strongly agree”). At the end of the experiment the respondents were debriefed.

3.2.3. Results

(1) Manipulation check. The manipulation checks confirmed the effectiveness of the manipulations by using an independent-sample T test. Planned contrasts revealed that in the case of an affective repair strategy condition, participants had significantly higher evaluations on a firm’s affective efforts ($M_{\text{affective}} = 4.01(\text{SD} = 1.22)$ vs. $M_{\text{functional}} = 2.17(\text{SD} = 1.06)$, $t(61) = 13.6$, $p < 0.01$; vs. $M_{\text{informational}} = 2.31(\text{SD} = 1.60)$, $t(61) = 9.79$, $p < 0.01$). In the case of a functional repair strategy, participants had significantly higher evaluations on a firm’s functional efforts ($M_{\text{functional}} = 5.79(\text{SD} = 0.96)$ vs. $M_{\text{affective}} = 4.32(\text{SD} = 1.45)$, $t(55) = 7.52$, $p < 0.01$; vs. $M_{\text{informational}} = 4.58(\text{SD} = 1.44)$, $t(55) = 6.52$, $p < 0.01$). Finally, in the case of an informational repair strategy, participants had significantly higher evaluations on a firm’s informational efforts ($M_{\text{informational}} = 4.89(\text{SD} = 1.42)$ vs. $M_{\text{affective}} = 3.20(\text{SD} = 1.19)$, $t(50) = 7.36$, $p < 0.01$; vs. $M_{\text{functional}} = 2.90(\text{SD} = 1.36)$, $t(50) = 10.73$, $p < 0.01$).

(2) Main effects in the context of an industry product harm crisis. As anticipated, an analysis of variance (ANOVA) test revealed that the effects of a firm’s repair strategies on the variation of sense of control are significant, F (2, 80) = 10.7 $p < 0.01$ ($\eta^2 = 0.211$). ($M_{\text{functional}} = 0.83$, $M_{\text{affective}} = −0.46$, $M_{\text{informational}} = 0.24$).
informational = 0.38). That is, functional or informational repair strategy (vs. affective repair strategy) is more effective in improving a consumers’ sense of control, thus, H3 is supported.

(3) Mediational analysis in the context of an industry product harm crisis. Additional tests were conducted to determine whether a sense of control mediated the effect of firm repair strategies on firm’s response appropriateness (model 4 in Hayes’s [41] PROCESS macro for SPSS). We used a prior sense of loss of control as a covariate. The results showed evidence of mediation through a sense of control (LLCI = 0.0088, ULCI = 0.2527). But not through perceived sincerity (LLCI = −0.004, ULCI = 0.6047). That is, a sense of control has a positive effect on participants’ evaluations of a firm’s response appropriateness, thus, H4 is supported.

(4) Meditational analysis in the context of a single-firm product harm crisis. Additional tests examined whether a perception of sincerity and a sense of control mediated the effect of firm repair strategies on firm’s response appropriateness (model 4 in Hayes’s [41] PROCESS macro for SPSS). The indirect effect of firm repair strategies on firm’s response appropriateness through a perception of sincerity was significant (LLCI = 0.0078, ULCI = 0.4665), but not for the variation of sense of control (LLCI = −0.0193, ULCI = 0.1112). In other words, in the context of a single-firm product harm crisis, a firm’s repair strategies influence consumers’ evaluations through a perception of sincerity, which is consistent with previous findings in the literature [43].

The results demonstrate that during an industry product harm crisis, a firm’s repair strategy influences a firm’s response appropriateness through a sense of control.

3.3. Study 3

This study was to explore the moderating role of a consumer’s emotion-focused coping style on the effectiveness of a firm’s repair strategy in restoring a consumer’s sense of control. Specifically, when consumers are more likely to adopt an emotion-coping style, which repair strategy is more effective? Study 3 tested the interaction effect of emotion-focused coping and repair strategies.

3.3.1. Method

This study tested H5 with a two-factor design: (1) Consumers’ emotion-focused coping style and (2) a firm’s repair strategies (affective, functional, informational). 107 undergraduate students (79.4% female, Mage = 20.1) were recruited to participate in this study in exchange for a small present worth RMB2 (USD0.3).

Participants first read a news report about an industry product harm crisis identical to the one used in study 2. Afterwards, they completed measures for a sense of loss of control and brand attitudes. Next, participants rated the degree to which they used emotion-focused coping [45]. The emotion-focused coping scale consists of four items, and one item (“I deal with problem by wishing it would go away, that everything would worked itself out”) was deleted because of a low factor loading (“I tell myself that everything will be all right”, “I think about the things that I am learning from the situation, or something good that will come from it”, “I realize that I just have to live with things the way they are”, “I keep my mind off this problems by doing some other things”; α = 0.656). Participants then received the firm’s repair strategy manipulation identical to study 2, and were asked to answer questions for the manipulation check. After that, participants completed the measure for a sense of control and the firm’s response appropriateness. All of the items were measured on a 7-point scale.

3.3.2. Results

(1) Manipulation check. The manipulation checks confirmed that the manipulations were effective. Planned contrasts reveal that in the case of affective repair strategy, participants had significantly higher evaluations of a firm’s affective efforts (M_{affective} = 5.48, M_{functional} = 3.88, t(35) = 12.01, p < 0.01; M_{informational} = 3.68, t(35) = 13.4, p < 0.01). In the case of a functional repair strategy, participants had significantly higher evaluations of a firm’s functional efforts (M_{functional} = 5.47, M_{affective} = 4.04, t(32) = 7.28, p < 0.01; M_{informational} = 4.09, t(32) = 6.71, p < 0.01). Finally, in the case of informational

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repair strategy, participants had significantly higher evaluations on a firm’s informational efforts (M_{informational} = 5.53, M_{affective} = 3.32, t(37) = 14.5, p < 0.01; M_{functional} = 4.0, t(37) = 6.65, p < 0.01). The data were analyzed using an independent-sample T test. Thus, the manipulation of repair strategies was successful.

(2) The interaction effects on a firm’s response appropriateness. A regression analysis revealed that the interaction effects of firm repair strategies (affective repair strategy group was coded as 0, functional repair group coded as 1, and informational repair group coded as 2) and consumers’ emotion-focused coping style on a firm’s response appropriateness was marginally significant (β = −0.269, t = 1.941, p = 0.05 < 0.1).

(3) The interaction effects on Sense of Control. To Test H5, the interaction effects of firm repair strategies and consumers’ emotion-focused coping style on consumers’ sense of control were conducted using the moderated regression procedures recommended by Aiken and West [46].

Data preparation included (1) mean-centering the continuous variables emotion-focused coping style; (2) coding the dummy variables. According to Aiken and West [46], two dummy variables were needed. Based on the hypotheses, the functional repair group was designated as the comparison group. In this coding system, the first dummy variable (D1) compared the affective repair group with the functional repair group which was assigned a value of 0. The second dummy variable (D2) compared informational repair group with the functional repair group which was assigned a value of 0. The functional repair group was assigned a value of 0 in all dummy variables. The affective repair group was assigned a value of 1 for D1 and a value of 0 for D2. The informational repair group was assigned a value of 1 for D2 and a value of 0 for D1.

A regression analysis was conducted to examine the interaction effects on Sense of Control. As expected, A two-way interaction between emotion-focused coping style and D1 on a consumer’s sense of control was significant (β = 0.31, t = 2.64, p < 0.01). A two-way interaction between an emotion-focused coping style and D2 on a consumers’ sense of control was not significant (β = 0.07, t = 0.526, n.s.) (see Table 1). The results show that the higher the scores on emotion-focused coping, the more effective a firm’s affective repair strategy (vs. informational or functional repair strategy) (see Figure 2). Thus, H5 is supported.

Table 1. Regression results for effects of emotion-focused coping and firm’s repair strategies on posttest sense of control.

|                                | β Coefficient | t Ratio |
|--------------------------------|---------------|---------|
| Posttest loss of control       | −0.424 **     | −5.181  |
| D1                             | 0.081         | 0.837   |
| D2                             | −0.087        | −0.904  |
| Emotion-focused coping         | 0.079         | 0.511   |
| D1×emotion-focused coping      | 0.312 **      | 2.642   |
| D2×emotion-focused coping      | 0.068         | 0.526   |

Model R² = 0.306. **p < 0.01.

Figure 2. The interaction effect of emotion-focused coping and repair strategies.
(4) Mediation analysis. Hayes’s [41] PROCESS macro for SPSS was used to examine whether a perception of control mediates the interaction effects of emotion-focused coping style and a firm’s repair strategy on a firm’s response appropriateness (model 8). After controlling for the prior sense of loss of control, a bootstrapping test confirmed that perception of control mediates the relationship between the interaction effects of an emotion-focused coping style and a firm’s repair strategy on evaluations of the firm’s response appropriateness (95% LLCI = 0.027, ULCI = 0.47; 5000 resamples).

4. Discussions and Conclusions

4.1. Conclusions

This research finds that in general functional and informational repair strategies are more effective in restoring a consumer’s sense of control when compared with an affective repair strategy. However, when a consumer has an emotion-focused coping style, an affective repair strategy is more effective.

The current research extends the previous theorizing on a sense of control, and more generally contributes to our understanding of how a firm’s response strategies and consumers’ emotion-focused coping style influence a sense of control in the context of an industry product harm crisis.

Results across three experiments provide support for the notion that a firm’s repair strategies impact a consumer’s evaluation of brand and firm responses by influencing a consumer’s sense of control during an industry product harm crisis. Furthermore, the effects above are moderated by a consumer’s emotion-focused coping style. Study 1 suggests that compared to a single-firm product harm crisis, during an industry product harm crisis, consumer brand attitude drop more by threatening a consumer’s sense of control. Then we find that functional and informational repair strategies are more effective than an affective repair strategy for rebuilding a consumer’s sense of control (study 2). However, study 3 shows that an affective repair strategy is more effective than functional and informational repair strategies when consumers rate high on emotion-focused coping.

4.2. Contributions

Our results have several theoretical implications for research on industry product harm crisis and a firm’s repair strategies. First, we theoretically contribute to the minor research on industry product harm crisis. Prior studies have focused on the impact of an industry-wide crisis to competitors [4], consumers’ reactions [5] and firm performance [2]. However, little is studied at present about the effectiveness of a firm’s repair strategies during an industry product harm crisis. This research examined consumers’ reaction to an industry-wide product harm crisis and mechanisms through which a firm’s repair strategy can influence a consumer’s evaluation during an industry product harm crisis.

Second, we demonstrate that consumers’ sense of control underlies the impact of firm’s repair strategies on consumers’ evaluation during an industry product harm crisis. Whereas previous research identified perceptions of sincerity as being a key variable in assessing a consumer’s reactions to a firm’s repair strategies for a single-firm product harm crisis [41] and for trust violation [20], this research has found that enhancing a sense of control is a key factor in the success of a firm’s repair strategy during an industry product harm crisis.

Third, our research spotlights the condition under which a firm’s affective repair strategy is more effective. This research finds that the effectiveness of the different types of repair strategies during an industry product-harm crisis is moderated by a consumer’s coping style. This extends previous research that identifies moderating variables that influence a firm’s repair strategies in the context of a single-firm product harm crisis which found that the effectiveness of a firm’s strategy depends on the channel of communication [47,48], the timing of the response [49] and the person implementing the strategy [50]. The current research suggests that a consumer’s coping style should also be considered before deciding on the appropriate repair strategy.
This research has important managerial implications. Across the three studies in our research, consumer’s sense of control has been identified as an impactful factor during an industry product harm crisis. Though firms immersed in an industry product harm crisis have taken actions to repair image, trust and reputation, they need to consider restoring consumers’ sense of control. For example, firms can offer compensation or updated information about the crisis to consumers as part of their response continuously. As Hui and Bateson [27] revealed, providing the consumer with a choice will result in a higher sense of control, firms can provide different forms of compensation, such as cash and coupon. They can also provide different channels for consumers to get updated information. In addition, industry management apartment should also help consumers find the boundary of the crisis. For example, they should announce the list of related brands immersed in the crisis.

In addition, it is important to consider a consumer’s coping style in order to determine which repair strategy to use during an industry product harm crisis. This research finds that functional and informational repair strategies are more effective than an affective repair strategy for rebuilding a consumer’s sense of control. However, if consumers are more likely to adopt an emotion-focused coping style, the most effective strategy is an affective repair strategy. Previous research has found that people in collectivistic cultures [51] and older consumers [52] are more likely to use an emotion-focused coping style. Accordingly, the culture environment of an industry product harm crisis should be emphasized. Affective repair strategy, such as apology, is essential in an individualistic culture. Besides, while the industry immersed in a crisis targets the elderly consumers, it is essential for firms to adopt an affective repair strategy to pacify the jittery mood.

4.3. Research Limitations and Future Study

There are other interesting areas for future research. First, the participants in this research ranged in age from 18 to 35. That is, they are in their youth or are middle aged, not including an elderly group. Since consumer perceptions and behaviors may change with age, and these changes influence coping style [52]. As such, future research should consider replicating research on both young and elderly population for generalizations.

Future research should also explore other boundary conditions that influence the effect of crisis type and the effectiveness of a firm’s repair strategies during an industry product harm crisis, such as the moderating effects of situation and industry characteristics. For example, the differences between industry brands and the substitutability of industry products, industry brand attributes (e.g., gambling industry). These factors can affect consumers’ sense of control during an industry-wide crisis.

Additionally, this research focused on one firm’s response during an industry crisis, while other firm responses were not considered. Since several firms are involved in an industry product harm crisis, the strategies that other firms use can influence the effectiveness of the strategies of the target firm. Therefore, future research should examine the impact of competitors’ response strategies on the effectiveness of a target firm’s response strategy.

Previous research has paid little attention to the ways firms should respond during an industry product harm crisis. The current research makes important progress in this area and finds that the key to dealing with an industry product harm crisis is to restore a consumer’s sense of control.

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