
Wageningen University

Master Thesis

**Product-harm crisis spillover effects to
competitors in China**

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Product-harm crisis spillover effects to competitors in China

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1. Introduction

With the fast growth of market and rapid development of mass media, business crisis happens increasingly frequent and serious (Chen, 2011). In recent decades, Chinese businesses face with a large amount of product-harm crisis, regardless of type, size and product provided, for example the SK-II was detected with heavy metal exceeding, KFC chicken was contaminated with Sudan red and Shuanghui was reported to using clenbuterol in their ham. All these crisis incidents result in serious consequences in different degrees. Some of the most common consequences of crisis are decrease in sales and market shares or widespread negative publicity (Vassilikopoulou, 2009). Sometimes, the competitors could be benefit from the affected company's crisis, but mostly product-harm crisis has strong negative spillover effects to competitors. *"...the spillover of the product-harm crisis might affect not only the affected company's brand portfolio but the entire product category due to the associations that exist in consumer perceptions regarding the products of the affected company and competitor brands..."* (Siomkos, Triantafillidou, Vassilikopoulou, & Tsiamis, 2010) (Roehm & Tybout, 2006). Once product-harm crisis happens, the whole industry could be negatively influenced. Even the innocent competitors would be negatively involved in and loose the consumers' trust.

One such example of a product-harm crisis affecting a whole industry is the Sanlu melamine incident. In 2008, the whole Chinese dairy industry was rocked by the Sanlu product-harm crisis, one of the top dairy companies at that time. The infant formula milk powder from Sanlu was found contaminated with melamine, a substance that can lead to the danger of kidney stones and kidney failure. In the same year, Sanlu went bankrupt soon but the nightmare of the whole Chinese dairy industry did not end. Although, Sanlu was the only company found with this melamine contamination, its incident leads to consumers' distrust on the whole Chinese dairy industry. Till now, most Chinese people still do not really trust domestic dairy product, especially the infant formula milk powder. They prefer to buy imported milk powder, even though the price is almost double of Chinese domestic milk powder.

From the above examples, the significant drop of consumers' trust and negative impact of spillover effects can be seen in a product-harm crisis. Even if the competitors are innocent, they might be involved in. Based on the given background and an analysis of the current situation, the *problem* has been defined as: *Product-harm crisis has a strong negative impact on the innocent competitors and*

leads to serious consumers' distrust on the whole industry. The defined problem can be seen as part of the general industrial consequence of negative spillover effects of product-harm crisis.

"...Product-harm crises, which are connected to defective or even dangerous products, are among the most common threats to a company. They can be defined as a sudden break in a product life cycle, variously caused by such problems as the manufacturer's negligence or product misuse..." (Vassilikopoulou A. , Lepetsos, Siomkos, & Chatzipanagiotou, 2009) (Dawar & Pillutla, 2000) (Siomkos & Kurzbard, 1994).

Most product-harm crisis research has been done on the affected company itself. These researches build up theoretical frameworks to explain the product-harm crisis and how affected companies manage the crisis from different perspectives, for example, the attribution perspective (Kleina & Dawar, 2004), brand equity perspective (Dawar & Pillutla, 2000) and consumer perspective (Cleeren, Dekimpe, & Helsen, 2008). There are also some literature focus on the spillover effects from one attribute to another of the same brand (Ahluwalia, Unnava, & Burnkra, 2001) or from one product to another within a brand family (Balachander & Ghose, 2003). Furthermore, Roehm and Tybout (2006) extend prior work to the spillover effects in one product category. Although almost all these researched state that product-harm crisis will influence the whole industry and it is obvious that competitors would be affected in the spillover effects, to my knowledge, there are hardly any researches on how to manage the negative spillover effects to competitors. In addition, to my knowledge, merely any research on product-harm crisis spillover effects addresses to Chinese market. Since Chinese market is a volatile market which has a different culture with western society, some conclusion drawn on by researches in the west is likely not suitable for Chinese context (Gao, Knight, Zhang, & Mather, 2013). Besides, some researches argue that there are some differences between Chinese and western consumers because of the quite different cultural backgrounds (Vaughan & You, 2006) (Lai & Zaichkowsky, 1999).

Hence, to tackle out the problem and fill in the gap, the **objective** of this present research is to help the competitors affected in product-harm crisis spillover effects in China to gain back consumers' trust by testing if the existing product-harm crisis managing strategies are also effective in the spillover effects.

Based on the given background and the aim to fill in the knowledge gap, this present research will focus on the affected competitors in product-harm crisis spillover effects. The resulting **main research question** will be:

Which product-harm crisis managing strategies are also effective for those competitors involved in the negative spillover effects?

Here, effective means that the strategies will also be successfully applied to gain back consumers' positive attitude and belief, and increase consumer purchase intention.

And the *sub-questions*:

- Based on the literature, what are the existing product-harm crisis managing strategies?
- Based on the literature, which existing strategies are supposed to be effective in managing the negative spillover effects to competitors?
- Based on the investigation result, which supposed managing strategies for product-harm crisis spillover effects to competitors are practically work?

The present research will first show an integrative review on how to manage product-harm crisis. And then screen some possible strategies which are considered to be effective in the competitive spillover effects. Furthermore, an empirical investigation will be conducted to examine if those propositions can be supported. Finally, based on the investigation results, I will provide some managing implications for the companies involved in negative spillover effects of product-harm crisis.



2. Literature review

Currently, researches on product-harm crisis and its spillover effects divide from many different perspectives. This chapter will give an integrative review of both Chinese and English literatures based on attribution perspective, brand equity perspective and management approaches. Then based on the literature review, the hypotheses will be developed.

2.1 Product-harm crisis

2.1.1 Concept and classification

Consist with current researches (Siomkos & Kurzbard, 1994) (Dawar & Pillutla, 2000) (Heerde, Helsen, & Dekimpe, 2007), the present research defines product-harm crises as those widely publicized occasional events wherein products are found to be defective or even harmful. The crisis has two main characteristics: (1) negative publicity will be transmitted through the medium rapidly and widely; (2) once happening, the crisis will have more notable impact on brands and prestige of enterprises besides the loss of value.

According to Vassilikopoulou et al.(2009), although product-harm crises happen in a low probability, the severe consequences for a company should be brought to the forefront. Many definitions include that a crisis may even threaten the survival of a company. Some of the most common consequences are decrease in sales and market shares or widespread negative publicity, which in turn affects consumers' attitudes, beliefs and future purchases (Vassilikopoulou A. , Lepetsos, Siomkos, & Chatzipanagiotou, 2009). Therefore, many scholars are interested in researching on product-harm crisis.

One of these researches (Coombs & Holladay, Helping Crisis Managers Protect Reputational Assets: Initial Tests of the Situational Crisis Communication Theory, 2002) illustrates that the crisis type or situation influence the selection of crisis response strategies. Hence, scholars must identify the range of possible crisis types and crisis responses and explain how crisis types affect the selection of crisis responses.

Coombs and Holladay (2002) believe that *"crises can be grouped according to their underlying structural similarity"* and then define product-harm crisis into three distinct clusters: the victim cluster, the accidental cluster, and the preventable cluster. The victim cluster involves crisis types in which harm is inflicted on the organization as well as on stakeholders. For example, natural disasters, rumours, workplace violence and product tampering. The accidental cluster involves unintentional actions by an organization. For example, challenges, mega damage, technical breakdown–accidents, and technical breakdown–recalls. In these crisis types the organization does not intend for the crisis to occur; rather, the crisis

situation results from a danger associated with the organization's operation. The preventable cluster involves intentionally placing stakeholders at risk, knowingly violating laws or regulations, or not doing enough to prevent an accident or a defective product from reaching the market. This cluster includes human breakdown accidents, human breakdown recalls, organizational misdeeds—management misconduct, organizational misdeed with no injuries, and organizational misdeeds with injuries.

Another interesting research (Fang & Yang, 2009) defines product-harm crisis into defensible cluster and indefensible cluster based on whether the defect breaks the law or safety standards. The defensible product-harm crisis happens when the negative publicity can be explained, or there are no substantial defects according to the safety law (e.g. rumours and misunderstanding). On the contrary, indefensible product-harm crisis happens when the negative publicity cannot be explained, or there are exactly substantial defects according to the safety law (e.g. products contaminate by harmful substance). Furthermore, this research gives optional responses and optimal responses to different types of product-harm crisis. Since this present research will focus on product-harm crisis spillover effects to competitors in China, Fang and Yang's (2009) definition of classification will fit more in Chinese marketing situation.

The researches on product-harm crisis can be mainly divided into two clusters: attribution perspective, which focus on the consumer blame attribution approaches; and brand equity perspective, which focus on the company's intangible assets such as consumer pre-loyalty and commitment. The following will give review on both two perspectives.

2.1.2 Attribution perspective

Attribution perspective is one of the approaches that product-harm crisis has been researched. Attribution refers to *"perceptions of the causality or the perceived reasons for a particular event's occurrence"* (Weiner, 1985). The attribution theory widely use attribution model conceptualizing three causal dimensions of attribution that lead to an overall judgment of responsibility or blame: (1) locus, the event that triggers the crisis, which can be internal or external to the actor; (2) stability, which can be unchanging or temporary; and (3) controllability, which can be within or outside the control of the actor. If the locus is external, the stability is temporary and the controllability is outside, the product-harm can be more excusable. On the contrary, if it is internal, unchanging and inside control, the affected company will be blamed seriously.

The product-harm crisis researches in perspective of attribution are mostly based on the attribution theory which was first put forward by Weiner (1985). Further researches explain attribution to product-harm crisis as people will make judgments

about the causes of events, especially unexpected events with negative outcomes (Coombs, 2004). The more consumers are engaged in attribution to an event or action, the more they will be influenced by the event or action. Many literatures demonstrate consumers' attribution is influenced by a number of factors:

First, corporate social responsibility (CSR) plays a role in consumers' product harm crisis attribution blame, over and above rational considerations (Kleina & Dawar, 2004). CSR moderates the relationship between product-harm crisis and consumers' attitude, and in turn influences the brand evaluation. In this research, consist with Weiner (1980), Kleina and Dawar (2004) use attribution model to conceptualize three causal dimensions of attribution that lead to an overall judgment of blame: (1) the stability of the behaviour, which can be unchanging or temporary; (2) the locus of the behaviour (the event that triggers the crisis), which can be internal or external to the actor; and (3) the controllability of the behaviour, which can be within or outside the control of the actor. If the locus is internal, and the behaviour is stable and controllable, observers (in our case, consumers) tend to attribute responsibility to the actor, and subsequent consumer behaviour such as blame or anger, is directed toward the actor. If on the other hand, the locus is external, and the behaviour is temporary and uncontrollable, attributions will tend to be made to external factors (Folkes, 1984). Furthermore, Kleina and Dawar (2004) has proved that (1) the crisis event will be perceived as unstable rather than stable when prior CSR is positive vs. when prior CSR is negative; (2) the locus of the crisis will be perceived as external rather than internal when prior CSR is positive vs. when prior CSR is negative; and (3) the crisis event will be perceived as uncontrollable rather than controllable when prior CSR is positive vs. when prior CSR is negative. Hence, CSR will reduce consumers' blame attribution to the enterprise, facilitate the positive attribution and raise the positive brand evaluation.

Second, positive corporate reputation reduces the damage from crisis (Fombrun & van Riel, 2004). Several researches (Siomkos & Kurzbard, 1994) (Hu, Zhao, & Flynn, 2014) (Wu & Zhao, 2014) (Carvalho, Muralidharan, & Bapuji, 2014) show that the crisis effect on a well-known company with a positive image may be minimal. On the contrary, the effect can be devastating for unknown companies. Later work shows the significant relation between corporate reputation and consumers' blame attribution (Laczniak, DeCarlo, & Ramaswami, 2001): in case of positive reputation, receivers attribute the negativity of product-harm crisis to the communicator, brand evaluations increase; on the contrary, receivers attribute the negativity to the brand, brand evaluations decrease.

Third, consumer characteristic is also an important attribution factor. There are four dimensions of different cultures: (1) power distance, (2) individualism versus collectivism, (3) masculinity versus femininity and (4) uncertainty avoidance (Hofstede G. , 1980) (Hofstede, Vermunt, & Noorderhaven, Wired International Teams: Experiments in Strategic Decision-making by Multi-cultural Virtual Teams, 1997). Blame attribution researches have been done in all latter three dimensions.

Firstly, researches on individualism versus collectivism indicate that people in individualistic societies are more willing to attribute the negativity of product-harm crisis to companies; however, when people in collective societies will attribute blame to external factors (Laufer & Coombs, 2006). Secondly, when it comes to the ambiguous product-harm crisis, the female consumers feel that they are more personally vulnerable, so women attribute blame to the companies more than men (Laufer & Gillespie, 2004). Thirdly, according to Laufer et al. (2006), uncertainty avoidance refers to the extent to which the members of a culture feel threatened by uncertain or unknown situations. Based on observation on the reaction of various countries to the Coca-Cola product harm crisis in Belgium (children became ill after drinking the product), the result proves that compared with countries of low uncertainty avoidance (Denmark, Norway and Sweden), people in countries of high uncertainty avoidance (Belgium, France and Spain) react more strongly to product-harm crisis and more likely to attribute the blame to companies (Taylor, 2000).

To sum up, when a product-harm crisis occurs, CSR, corporate reputation and consumer characteristics will influence the blame attribution, which will in turn influence consumer forgiveness. To tackle out the crisis, the approaches of blame attribution should be taken into account to design strategies based on these three factors. In addition to attribution, the other widely accepted perspective is brand equity, which will be reviewed in the next chapter.

2.1.3 Brand equity perspective

Brand equity refers to the differential contribution of the brand name on the value of the branded product (Dawar & Pillutla, 2000). It is an intangible, invaluable, yet fragile asset built up by consumers' belief and knowledge of the brand. Once product-harm crisis happens, firms response to the crisis is a key factor of consumers' belief; meanwhile, consumers' belief is a key factor of brand equity (Aaker, 1991). Hence, there are many product-harm crisis researches focus on the brand equity perspective.

Some researches indicate that brand equity will weaken the impact of product-harm crisis (Ahluwalia, Burnkrant, & Unnava, 2000). It could be accepted as an accidental event if the company has high brand equity and the probability of occurring again is low. Furthermore, brand commitment is an important dimension of brand equity. A crisis will have a significant negative impact on the brand with lower commitment. Yet as for the brand with high commitment, consumers will first question the reliability of the news; the negative effect of information is not significant. In other words, brand equity plays a role of buffer when a company is in product-harm crisis.

On the contrary, some scholars hold the viewpoint that higher brand equity may aggravate the product-harm crisis (Rhee & Haunschild, 2006). In this case, most of

the researches agree that consumer expectation plays a moderating role in the relation between brand equity and the impact of product-harm crisis. The higher brand equity a company has, the more disappointed on the brand will consumers perceive because the company does not live up with the high expectation and implicit promise. Accordingly, the perceived brand equity will reduce more significantly.

From the above, the brand equity does play an important role in product-harm crisis. Either weaken or aggravate the impact of product-harm crisis depends on the different specific situations. If consumers still hold high brand commitment, the brand equity will play as a role of buffer; if not, consumers will feel more disappointed and the crisis will be aggravated.

In addition to these two perspectives, there are also some researches on how to manage the product-harm crisis. The next chapter will review the managing approaches.

2.2 How to manage product-harm crisis

Since the product-harm crisis will cause both tangible and intangible loss, companies and even external organizations will take actions to manage crisis. Researches measure how effective the strategy is with the increase (or maybe drop) of consumer trust, purchase intention, attitude and belief (Xie & Peng, 2009) (Vassilikopoulou A. , Lepetsos, Siomkos, & Chatzipanagiotou, 2009) (Korkofingas & Ang, 2010) (Roehm & Tybout, When Will a Brand Scandal Spill Over, and How Should Competitors Respond?, 2006).

There are four main merits of successful responses (Chen, 2011): (1) strengthening the relationship between the customers and the enterprise; (2) eliminating the negative impacts; (3) maintaining or enhancing the purchase intention; and (4) reducing customer churn. On the contrary, inappropriate managing methods are more likely to damage the company than the crisis itself. Accordingly, to take appropriate actions is the essential of managing product-harm crisis. Existing researches use consumer trust (Xie & Peng, 2009) (Korkofingas & Ang, 2010), purchase intention (Vassilikopoulou A. , Lepetsos, Siomkos, & Chatzipanagiotou, 2009) (Wang, Jing, & Tu, 2012) and attitude (Roehm & Tybout, When Will a Brand Scandal Spill Over, and How Should Competitors Respond?, 2006) (Wang, Jing, & Tu, 2012) (Chen, 2011) as dependent variables to measure strategy effectiveness. In Xie and Peng's (2009) study, consumer trust is split into two dimensions: trust-belief and trust intention. Three items reflect trust-belief: I trust this company; dependable; and reliable. Another three items reflect trust-intention: repeat purchase; recommendation; and new product trial. In Korkofingas and Ang's (2010) research, the evaluation of trust and reliability are also used as measurement, and the trust on quality is added. Many researches use consumer attitude (unsafe – safe, bad – good,

unlikeable – likeable, and unattractive – attractive) and purchase intention (won’t buy – will buy, and won’t eat – will eat) as measurements.

To sum up, all these items can be concluded into two dimensions: consumer attitude (including trust, dependability, reliability, safety, goodness, likability, and attractiveness) and purchase intention (won’t buy – will buy and won’t eat – will eat). The present research will also focus on these measurements to examine if the hypotheses will be supported or not. The measurements will be further explained in chapter 3.

Western researches, represented by Siomkos and Kurzbard (1994) define four managing strategies for an affected company to deal with its product-harm crisis: denial, involuntary recall, voluntary recall and super-effort.

In Siomkos and Kurzbard’s (1994) research, denial refers to that a company simply denies any responsibility for a defective product that it markets. Involuntary recall is the strategy that an affected company recalls the product only after an agency orders such action. Voluntary recall occurs if the company chooses to recall the defective product prior to governmental intervention. Alternatively, a company may respond by demonstrating concern with consumer welfare by being socially responsible and by being honest in its communications related to the crisis (“super-effort”). Which one is the most appropriate depends on the following three cues: prior reputation, gender of consumer and uncertainty avoidance (Laufer & Coombs, 2006). The relationship between cues for predicting attributions of blame to the company and corporate responses will be shown in Table 1.

Table 1: Cues for predicting attributions of blame to the company (and appropriate corporate responses) for ambiguous product harm crises

	Attributions of blame to the company	
	Super effort strategy	Voluntary recall
Prior reputation	Unknown/ weak or negative	Well known/ strong and positive
Gender of consumers	Predominately female	Predominately male
Uncertainty avoidance	High	Low

Source: Laufer & Coombs (2006) How should a company respond to a product harm crisis? The role of corporate reputation and consumer-based cues

Vassilikpopulou et al.’s (2009) study classify product-harm crisis by extents of high, medium and low, and takes CSR, external effects and time into account. They argue that the managing emphasis should be placed differently in each degree of crisis: Table 2 (1= most important; 4= least important). For the high-extent crisis, the emphasis should be response (including denial, forced recall, voluntary recall and super effort) and time; for the medium-extent crisis, only organisational response is

found to be the most significant factor; for the low-extent crisis, CSR and external effects are found to be the key factors for coping with it (Vassilikopoulou A. , Lepetsos, Siomkos, & Chatzipanagiotou, 2009). This study also considers the overall rank of these four factors: Table 3 (1= most important; 4= least important).

Table 2: Rank of important factors for different crisis extents

	Extent of crisis		
	High	Medium	Low
CSR	3	3	1
Organizational response	2	1	4
External effects	4	4	2
Time	1	2	3

Source: Based on the results of Vassilikopoulou, Lepetsos, Siomkos, & Chatzipanagiotou(2009), The importance of factors influencing product-harm crisis management across different crisis extent levels: A conjoint analysis

Table 3: Rank of important factors for overall crisis extent

Factor	Relative importance	Overall rank
CSR	16%	3
Organizational response	41%	1
External effects	14%	4
Time	29%	2

Source: Based on the results of Vassilikopoulou, Lepetsos, Siomkos, & Chatzipanagiotou(2009), The importance of factors influencing product-harm crisis management across different crisis extent levels: A conjoint analysis

Table 2 and table 3 show that organizational response is usually the most important factor of managing product-harm crisis. Hence, the present research will apply corporate responses as main variables.

Chinese researches, based on the study by Fang (2009), define three types of solutions as: (1) affective repair efforts: apology, remorse, compassion, (2) functional repair efforts: financial compensation, managerial steps to avoid recurrence, and (3) informational repair efforts: the communication of updated information (Xie & Peng, 2009). Xie and Peng's (2009) research build up a comprehensive model explaining the mechanism by which corporate initiatives repair or rebuild customer trust

following negative publicity. The research focuses on the roles of trustworthiness factors (competence, benevolence, and integrity) and consumer forgiveness. The results indicate that affective, functional, and informational efforts contributed to rebuilding a corporate image of trustworthiness and earning forgiveness from consumers. They also give a clear pattern of different influential factors for each aspect of trustworthiness was shown by comparing the coefficients of different trust-repair efforts on competence, integrity, and benevolence: Table 4.

Table 4: correlation coefficient between different repair efforts and factors of trustworthiness

	Integrity	Competence	Benevolence
Affective repair	0.764***		0.869***
Functional repair	-0.004 NA	0.195**	.0087 NA
Informational repair	0.198**	0.621***	

** p < 0.01, *** p < 0.001

Source: Xie and Peng (2009) How to repair customer trust after negative publicity: The roles of competence, integrity, benevolence, and forgiveness

Table 4 shows that benevolence is the most relevant factor in affective repair; competence factor works effectively in both functional and informational repair.

Similar classification from Chinese research: (1) affective repair efforts, (2) informational repair efforts, and (3) corrective repair efforts: recall, unconditionally return purchase, compensate for losses (Fang & Yang, 2009) (Qing, Hu, Feng, Zhang, & Xiang, 2013). Their research define three types of product-harm crisis according to the causes of harm: (1) law broken, (2) morality offended, and (3) emotion hurt. The result demonstrates that all the three solutions are useful in law broken product-harm crisis events, and the corrective repair effort is the most significant. Corrective and informational repair efforts both work in morality offended product-harm crisis events, yet simple affective repair cannot recover consumers' trust. Emotion hurt product-harm crisis need affective and corrective repair, and of cause affective repair effort is more significant. Meanwhile, in this comprehensive model, locus of control and brand commitment both play as moderators. All three efforts perform better in condition of high brand commitment and perceptions of consumers of the crisis as being externally caused.

Based on the above, although two different kinds of classification of corporate responses to the crisis has been defined, internal consistency and overlap between these two classifications still can be seen. Affective repair refers to apology, remorse, compassion can be seen as part of super effort strategy; informational repair, consists mainly of communication and information updating, can be also seen as part of super effort strategy; functional or corrective repair refers to recall and compensation. In addition, external effects can be seen as part of denial strategy because external organizations (e.g. government, external expert groups and NGOs)

could provide strong supporting evidences to show the affected company has no responsibility for a defective product or the defect has already been repaired. Accordingly, this present study defines four kinds corporate response to the product-harm crisis as: (1) denial (not simply deny any responsibility for a defective product that it markets, but provide strong supporting evidences for that the company is not responsible); (2) recall; (3) active compensation, and (4) super communication.

Recently, researches about product-harm crisis are not only concentrated on the affected company itself any more, but extend to the spillover effects to the competitors and even the whole industry. The next chapter will review the researches on product-harm crisis spillover effects.

2.3 Product-harm crisis spillover effects

There has been growing interest in the concept of spillover, which refers to the phenomenon in which information influences beliefs that are not directly addressed in a communication (Ahluwalia, Unnava, & Burnkra, 2001). In the product-harm context, spillover effects can be defined as the consequence the affected brand has over other brands including those outside the category (Korkofingas & Ang, 2010). The present research will apply this definition, but focus on the spillover effects on the competitors.

Currently researches on product-harm crisis spillover effects can be divided into two clusters: internal spillover from one product to another within the same brand family; and external spillover from one brand to its competitor or the whole industry. Based on the problem and research questions, this present research will focus on the external spillover effects, i.e. product-harm crisis sippllover effects to competitors.

One interesting study (Dahlen & Lange, 2006) finds that that when a product (e.g., online bank A) is in crisis, the whole category itself (i.e., banking) is also negatively affected because of associative activations in our memory. The whole category now is perceived to be more risky and less positive. This in turn has a negative spillover effect on similar brands (e.g., online bank B) because of assimilation. That is a product similar to the affected product is now perceived more negatively.

Another interesting study (Roehm & Tybout, When Will a Brand Scandal Spill Over, and How Should Competitors Respond?, 2006) also shows that product-harm crisis does spillover to the whole category and competitors and provides insight into when will it spillover. For a product-harm crisis to spillover, consumers must activate a spillover target (e.g., a category, a competitor) as scandal information is processed. Activation is especially likely to happen when the affected product is typical in the category and the affected brand is strongly linked to the competitors (e.g., their similar products, similar marketing positioning and direct competition). In addition, Roehm and Tryout's research tests when and how one of the management methods,

denial, can be beneficial. When spillover effects occur, providing a denial results in more favourable judgments than does no denial. However, the present research will focus on how to manage the negative spillover effects and based on the fundamental assumption: the product-harm crisis has already spilled over to competitors and has already resulted in negative consequences. Hence, when will the crisis spillover is not included in the scope in the present research.

Korkofingas & Ang (2010) point out that there has been surprisingly little research into product-harm spillover effects, yet product-harm spillover effects are important for all members in the whole industry. Look at the Sanlu melamine example in the introduction again; the competitors (other Chinese diary companies) involved in the negative spillover effects will also face the serious consequences of decrease in sales and widespread negative publicity, which in turn affects consumers' attitudes, beliefs and future purchases. From the above, current researches on product-harm crisis spillover effects to competitors are mostly based on the event itself. Hardly any research made clear which managing strategy is likely to be effective for the competitors involved in the negative spillover effects. Moreover, only one of managing solutions (denial) is tested. Accordingly, the knowledge gap lies in how competitors should respond to the negative spillover effects of product-harm crisis; and which solution is likely to be effective. The present research will address these questions. Some hypotheses will be proposed in the next chapter.

2.4 Hypotheses development

According to existing researches (Laufer & Coombs, 2006) (Siomkos & Kurzbard, 1994), both denial and forced compliance strategies are not particularly effective for companies affected in its own product-harm crisis as a response to a product harm crisis; therefore, in most instances, companies must choose between a voluntary recall and a super effort. However, under circumstances of product-harm crisis spillover effects, things are different. Based on Laufer & Coombs'(2006) research, firmly denial can be an appropriate strategy in condition of product-harm crisis spillover effects to competitors. Roehm and Tybout's (2006) research also supports the point of view.

In the present research, denial strategy includes publicly announcement and outside supports, e.g., Quality Certificate from quality supervise department. Denial should be used to correct a misunderstanding regarding culpability, and company management must prove that using the product causes no actual harm. And the innocent competitors involved in the spillover effects fit the situation. Take the Sanlu melamine incident as an example. If other diary companies (they are competitors to Sanlu) involved in the spillover effects recall their milk powder, the action may imply that their products are also contaminated with melamine and in turn reduce consumers' trust. Hence, both forced compliance and voluntary recall strategies will not be effective for companies involved in competitive spillover effects. On the

contrary, if the competitors firmly deny the melamine problem and provide strong evidences showing that they are innocent, it can be possible to heal consumers' trust. Hence, in present research, denial strategy is expected to be effective than no response. And the first hypothesis will be:

H1: Denial strategy is likely to be more effective for companies involved in competitive spillover effects of product-harm crisis vs. no response.

Another strategy which is expected to be effective is super communication. Laufer & Coombs (2006) define the super effort as additional concern to the public by providing compensation and increasing communication efforts beyond what is required by law. Similar with recall strategies, compensation cannot be the solution, but increasing communication can always be an effective option in any case of crisis. Accordingly, in the present research, super communication strategy includes updating information, showing the attention of consumer welfare and actively asking feedback. These methods are always believed to be key elements in consumer communication. Take the Sanlu melamine incident as an example again, when the product-harm crisis negatively spilled over, if the competitors disclose more production information (e.g., showing the public their farms and factories are clean) and actively communicate with their clients if they have any complain or questions about milk powder, it can be possible to heal consumers' trust. Accordingly, super communication is also expected to be effective in the spillover effects than doing nothing. Correspondingly, the second hypothesis will be:

H2: Super communication strategy is likely to be more effective for companies involved in competitive spillover effects of product-harm crisis vs. no response.

In addition, the present research will also test which strategy is likely to be more effective. Super communication is expected to be more effective than denial strategy because it is a two-way interaction between business and consumers. The super communication strategy will not only provide some information to consumers, but also get feedback from them. And denial strategy is only one-way information flow. Hence, the third hypothesis will be:

H3: Super communication strategy is likely to be more effective for companies involved in competitive spillover effects of product-harm crisis vs. denial strategy.

Furthermore, based on the literature, CSR and brand commitment should be taken into account. From perspective of attribution, CSR beliefs are a key element of the knowledge of the company that an individual holds and draws upon to make these kinds of judgments. Klein and Dawar (2004) argue that CSR associations are cast as a moderator of attribution. However, the moderating function is reported effective in condition of product-harm crisis. Whether it will work in circumstance of spillover

effects to competitors has not been checked. So this present research suggests that SCR will strengthen the relation between corporate response the the effectiveness of repair. Hence, hypotheses will be:

H4a: The denial strategy is likely to be more effective when the prior CSR is high vs. prior CSR is low.

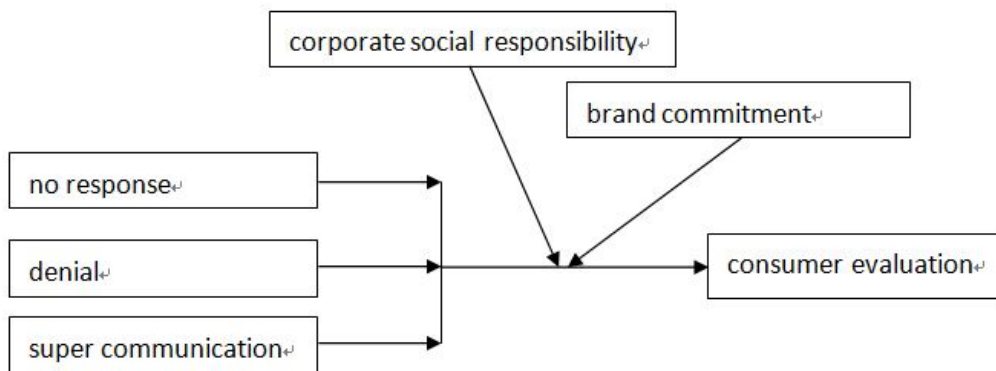
H4b: The super communication strategy is likely to be more effective when prior CSR is high vs. prior CSR is low.

From perspective of brand equity, brand commitment is an essential factor. Ahluwalia et al.(2000) argue that prior characteristics of the consumer—specifically, commitment to the target brand— moderate the processing and impact of negative publicity for the several reasons. First, commitment has been viewed as one of the two major dimensions of attitude strength (Krosnick, Boninger, Chuang, K.Berent, & Carnot, 1993) (Pomerantz, Chaiken, & Tordesillas, 1995). Second, commitment has been shown to play a critical role in determining resistance to counterattitudinal information. Specifically, the effect of several strength variables, such as prior knowledge and importance, has been shown to depend on the person’s level of commitment toward the target (Wood, Rhodes, & Biek, 1995). Third, commitment is akin to brand loyalty, a concept that has recently engendered much research in marketing (Dick & Basu, 1994) (Fournier, 1994). Commitment provides an essential basis for distinguishing between brand loyalty and other forms of repeat purchase behavior (Jacoby & Chestnut, 1978). Although brand loyalty was viewed simply as repeat buying in the past, it has become increasingly similar to the conceptualization of commitment as the field of consumer behavior has matured (Morgan & Hunt, 1994). It has been defined as an emotional or psychological attachment to a brand within a product class (Lastovicka & Gardner, 1978). Similar with the SCR, the moderator function has not been checked in circumstance of spillover effects to compatiors. Here comes to the hypotheses:

H5a: The denial strategy is likely to be more effective for consumers who are high vs. low in commitment towards the brand.

H5b: The super communication strategy is likely to be more effective for consumers who are high vs. low in commitment towards the brand.

Graph 1 shows the concept framework of present research:



Graph 1: theoretical framework

3. Research design

The present research applied a 3 (corporate responses: no response, denial or super communication) X 2 (SCR: high or low) X 2 (commitment: high or low) between subjects experiment. Accordingly, 12 versions of questionnaires reflecting 12 different situation combinations were involved. Each group included 30 participants and 360 participants in total.

A fictitious company was introduced to make sure the experiment was objective and an experiment was conducted to collect data. Respondents were first expected to read a designed journal article reflecting a negative product-harm crisis spillover effects to competitors. Then respondents filled in questionnaires under scenario of no response, denial or super communication respectively. Under each scenario, different information about CSR and brand commitment was provided respectively. The detailed experimental scenario design, the pre-test of scenario will be elaborated in this chapter.

3.1 Experimental scenario design

Present research chose Chinese dairy industry as the affected industry in product-harm spillover effects to competitors because of the following three reasons. First, milk, no matter liquid milk or milk powder, was such a popular category that most consumers were familiar with and purchase frequently. People were more willing and find easier to give evaluation on the category they were familiar with. Second, in recent decades, product-harm crisis and its negative spillover effects to competitors occurred frequently in Chinese dairy industry. It was a typical Chinese event of product-harm crisis spillover effects to competitors. Present study was expected to have its practical significance to help with solving the practical problem. Third, a lot of brands in Chinese dairy industry differ greatly in terms of CSR and BC. All these real situations provide abundant materials for a simulated experiment.

In the experiment, the product-harm crisis and its *negative spillover effects to competitors* was described as a journal article:

BEIJING ---- The whole Chinese dairy industry was now facing a downturn because of the melamine problem from only one company ---- China Daily

One year ago, the Center for Food Safety of China released the latest batch of test results of dairy products, a sample of Deer infant formula milk powder was found to contain melamine. Melamine can cause kidney stones if taken in excessive levels, and babies who were fed tainted milk powder were the most widely affected. The company's major foreign investor, New Zealand's Fonterra Group, says the Deer Group was facing mounting debts as a result of the melamine contamination crisis.

Young pwerents were now more willing to buy imported milk powder even if they have to pay the double price. A new survey has confirmed that, after the product-harm crisis from Deer Group, the whole Chinese diary entered a downturn. Cow Group was one of the

victims in this product-harm crisis spillover effects; although no evidences show products from Cow Group has any problem according to the law and safety standards. The ECO of Cow Group says their sale has dropped more 50% by now and the loss was still continuing and the whole Chinese dairy industry was now facing the challenge to heal consumers trust.

In this simulated experiment, Deer Group was the affected company of product-harm crisis and Cow Group was one of the affected companies of negative competitive spillover effects.

3.2 Experimental manipulation

Three variations of corporate responses were introduced: no response, denial and super communication. *No response* was treated as neutral condition in this experiment. Hence, no description was provided. The other two scenarios were described as journal articles.

Denial was described as (paragraph I):

Cow Group publicly announces that all their products were quality and safe through newspaper, TV advertisement and other public media. Moreover, Cow actively sends its products to the quality supervise department (an authoritative organization in China) and provides the Quality Certificate to the public. Also, Cow provides another Quality Certificate from the China Product Quality Association (CPQA, a well-recognized NGO in China) to support its denial of responsibility of melamine contamination.

And *super communication* was describes as (paragraph II):

"To cope with the negative spillover effects, Cow was now taking some innovative actions," The CEO of Cow Group introduced to the accredited journalist. First, Cow has already updated the product package, on which more information of effective constituent and how does it work will be contained, for example, DHA, the critical for the optimal development and function of the brain, eyes, and central nervous system during infancy and childhood. Moreover, some of staffs have been sent to supermarkets, so that consumers' questions can be answered and their feedbacks can be recorded immediately. Finally, the most innovative action, opening their factory freely and informing the public more knowledge about milk production, will be conducted next month. On the occasion, everyone will be welcomed to visit Cow's factory.

The information of CSR was given as journal articles as well.

The *high prior CSR* was described as (paragraph III):

Since the establishment of Cow Group, it makes every effort to build up its reputation of social responsibility. Cow keeps its farming place as environmental friendly as possible. Technical advances such as biogas systems were introduced to keep carbon footprint as small as possible. Except for their efforts into environment, animal welfare was also high in Cow's farm. Every cow has more than enough place to live; all the pasture were also

grown in natural and unpolluted condition. Moreover, Cow's social responsibility can also been seen in its benevolence: it donates more than 1.5 million euros to "5.12" earthquake stricken werea; it was one of the largest sponsors to Beijing 2008 Olympic Games.

The *low prior SCR* was describes as (paragraph IV):

Since the establishment of Cow Group, it makes every effort to meet every bottom line according to the environment law and safety standards both in their production process and outputs. Every cow has just enough places to live according to the law, but no report showed the feeds and pasture growing condition. One report showed they donated 0.5 million euros to "5.12" earthquake stricken werea. No report showed Cow makes effort to build up its reputation of social responsibility.

The information about consumers with high or low prior commitment was given by saying "*Imagine that you also know the following about Cow*".

The *high prior brand commitment* was described as (paragraph V):

Before the Deer's melamine incident, you liked the milk products very much and it was always your first choice when you were purchasing. You were willing to recommend Cow to your family and friends. When Cow released new products, you were also willing to try it the first time.

The *low prior brand commitment* was escribed as (paragraph VI):

For you, Before the Deer's melamine incident, Cow was just one of the normal brands among all the dairy brands. Nothing was special about the long-term relationship between you and Cow. You have already tried Cow's products, but you never paid more attention to its new products. When you were asked about the recommendation by your friends, Cow would never be your first one you come up with.

3.3 Pre-test of experimental scenario

3.3.1 Method of pre-test

In order to test the validity of experimental scenario, a pre-test was conducted. 21 Chinese students in Wageningen University (WUR) were chosen randomly. The 21 students ($M_{age} = 23.29$; $SD_{age} = 2.12$) read the all kinds of scenarios descriptions about product-harm crisis spillover to competitors, different company responses, SCR and brand commitment in one questionnaire. After each description, there were one or two questions to check their perception. All the perception was measured by 1-7 Likert Scaling (1= not at all; 7= strongly agree). In addition to the questions, demography information (gender and age) were collected.

The pre-test questionnaire start with definitions of all the concepts and a sentence saying "*Please read the following text from a journal article*". The layout of questionnaire implies that scenarios and paragraph I, II, III and IV were all journal articles. Then the scenario (paragraph I) was given. After reading the scenarios, participants answered

the first question “To what degree do you think that Cow was a victim of product-harm crisis spillover effects” (scenario).

To test the descriptions of denial and super communication strategy were perceived different from each other, both two questions about denial “To what degree do you think that Cow applies a denial strategy” (A) and super communication “To what degree do you think that Cow applies a super communication strategy” (B) were asked under each strategy description. After each paragraph III and IV, no matter high or low CSR the paragraph was expected to describe, respondents were expected to answer the same question “To what degree do you think that Cow has a high CSR”.(CSR)

For the last two paragraphs, “Imagine that you also know the following about Cow”. Then similar with the check for CSR, the same question “To what degree do you think that Cow has a high brand commitment” (BC) was given under each paragraph V and VI.

Meanwhile, the 21 respondents were all asked to read both English and Chinese version descriptions to make sure the Chinese translation give the same information with English version. The questions for checking degree of perception were given in English.

3.3.2 Results of pre-test

Product-harm crisis and its negative spillover effects to competitors. A one sample T-test was conducted to check if the mean perception of scenario was significantly higher than 4 (4 was the median of 1-7 Likert Scaling). The dependent variable was participants’ perception scaling of scenario. The result showed the scaling was significantly higher than 4 ($M_{\text{scenario}} = 5,38$; $SD_{\text{scenario}} = 1.32$; $t(20) = 4.79$; $p < .001$; Test Value = 4); i.e., scenario was significantly perceived as a product-harm crisis and its negative spillover effects to competitors.

Denial strategy. To check descriptions of denial and super communication strategy were perceived significantly different from each other, a paired samples T-test was conducted. One variable was the data from question A under denial description; the other variable was the data from question B under denial description. The results showed that scaling of question A was significantly higher than B ($M_{\text{denialA}} = 6.33$; $SD_{\text{denialA}} = .79$; $M_{\text{denialB}} = 2.86$; $SD_{\text{denialB}} = 1.65$; $M_{\text{denialA} - \text{denialB}} = 3.48$; $SD_{\text{denialA} - \text{denialB}} = 2.14$; $t(20) = 7.458$; $p < .001$); i.e., the description of denial strategy was perceived more like denial strategy than super communication.

Super communication strategy. Similar check with denial strategy, another paired samples T-test showed it was significant that scaling of question B was significantly higher than A ($M_{\text{superA}} = 2.48$; $SD_{\text{superA}} = 1.72$; $M_{\text{superB}} = 6.29$; $SD_{\text{superB}} = 1.23$; $M_{\text{superA} - \text{superB}} = -3.81$; $SD_{\text{superA} - \text{superB}} = 2.42$; $t(20) = -7.21$; $p < .001$); i.e., the description of super communication strategy was perceived more like super communication strategy than denial.

High and low SCR. To check the perceived CSR of paragraph III was higher than CSR of paragraph IV. Data of CSR question under paragraph III and IV were set as two variables in paired samples T-test. The result showed the perceived SCR of paragraph III (highCSR) was significantly higher than paragraph IV (lowCSR) ($M_{\text{highCSR}} = 6.00$; $SD_{\text{highCSR}} = 1.00$; $M_{\text{lowCSR}} = 2.71$; $SD_{\text{lowCSR}} = 1.15$; $M_{\text{highCSR} - \text{lowCSR}} = 3.29$; $SD_{\text{highCSR} - \text{lowCSR}} = 1.68$; $t(20) = 8.975$; $p < .001$).

High and low BC. Similar with the T-test on SCR, then the result of paired samples T-test (one variable was data from question under paragraph V; the other variable was data from question under paragraph VI) showed it was significant that the perceived BC of paragraph V (highBC) was higher than paragraph VI (lowBC) ($M_{\text{highBC}} = 6.00$; $SD_{\text{highBC}} = .95$; $M_{\text{lowBC}} = 2.14$; $SD_{\text{lowBC}} = 1.06$; $M_{\text{highBC} - \text{lowBC}} = 3.86$; $SD_{\text{highBC} - \text{lowBC}} = 1.88$; $t(20) = 9.410$; $p < .001$).

Accordingly, all the result of pre-test showed the validity of each description. The detailed questionnaire will be showed in Annex A.

3.4 Main experiment

3.4.1 Method

It was a 3 (corporate responses: no response, denial or super communication) X 2 (SCR: high or low) X 2 (commitment: high or low) between subjects experiment. Hence, 12 versions questionnaires reflected 12 different situations were applied. Each situation had 30 respondents and totally 360 ($M_{\text{age}} = 34.05$; $SD_{\text{age}} = 10.549$; $M_{\text{gender}} = 1.59$; 1= male, 2 = female; $SD_{\text{gender}} = .492$) were involved in this experiment. All the respondents were Chinese. Data was collected in China both on the street and online. In the questionnaire, information about scenario, strategy and CSR were provided like a journal article. Respondents were asked to read one certain situation (the situation was chosen randomly) and then answer the same questions about consumer attitudes, beliefs, buying intention and recommendation: *“What do you think of Cow? Below we have enlisted a number of statements. Please indicate for every statement to what degree it fits with your opinion of Cow. The answers range from 1 (not at all) to 7 (very strongly).”* The 13 items are displayed in Table 5. Similar with the perception check in the pre-test, consumer information was measured by 1-7 Likert Scaling (1= not at all; 7= strongly agree). In addition to the questions, demography information (gender and age) were collected. The detailed questionnaire will be showed in Annex B.

Data collection was conducted in China. I went on the streets and chose respondents randomly. Every respondent chose one of 12 versions questionnaires randomly and filled in the question form on paper. It was not an interview data collection, but if the respondents had any question about the questionnaire, I answered them at once. Because of the data collection time limitation, data were also collected online. Questionnaires were created on <http://www.sojump.com/> which is a professional

research website in China. Then I forwarded the links randomly to these website participants to collect data. I checked whether the different data collection approaches influenced the consumer evaluation. Results showed that the dependent variables were not significantly different between online data and street data ($t_1 = -.436$; $p = .663$; $t_2 = .670$; $p = .503$).

After the data collection, *factor analyses* and *reliability analyses* were conducted. Based on the question content and initial eigenvalues of factor analyses, 13 items were divided into two groups (Eigenvalue₁ = 74.40% of variance; Eigenvalue₂ = 9.66% of variance). The factor loadings of every item on the two factors are displayed in Table 5. The first group includes the first six items which reflects consumer's attitude on Cow. The second group consists of the later seven items which stands for consumer's purchase intention. The reliability statistics show a great reliability of the data for both two groups ($\alpha_{\text{attitude}} = .964$; $\alpha_{\text{intention}} = .961$). Hence, hypothesis check was conducted on both two dependent variables. Variable attitude was the mean of first six items and variable intention was the mean of later seven items.

Table 5: Factor Matrix^a

	Factor	
	1	2
a) I trust Cow Group.	,827	-,388
b) Products from Cow were dependable.	,849	-,410
c) Cow was reliable.	,869	-,387
d) Products from Cow were safe.	,871	-,328
e) Products from Cow were good.	,880	-,158
f) I like this brand.	,870	-,023
g) Products from Cow were attractive.	,871	,064
h) I intend to buy Cow's products in the future.	,892	,191
i) I will buy Cow's products in the future.	,862	,193
j) I will give my children products from Cow to eat.	,856	,301
k) I will recommend Cow's products to my friends.	,801	,301
l) If Cow releases new products in the future, I intend to buy.	,840	,324
m) If Cow releases new products in the future, I will buy them.	,810	,353

Extraction Method: Principal Axis Factoring.

a. 2 factors extracted. 4 iterations required.

3.4.2 Results

3.4.2.1 Attitude

To check which independent variables significantly influence the attitude, a three-way anova test was conducted. The attitude means and standard deviations for each situation are displayed in Table 6. The result showed that independent variables strategy ($F_{(2, 348)} = 15.48$; $p = .001$), SCR ($F_{(1, 348)} = 52.39$; $p < .001$) and BC ($F_{(1, 348)} = 75.62$; $p < .001$) have significant influences on dependent variable attitude

respectively. In addition, the interaction between SCR and BC was significant ($F_{(1, 348)} = 20.07$; $p = .003$). However, interactions between strategy and CSR ($F_{(2, 348)} = 5.66$; $p = .076$); strategy and BC ($F_{(2, 348)} = .15$; $p = .862$); or; strategy, CSR and BC ($F_{(2, 348)} = 1.01$; $p = .631$) were not significantly shown.¹

Table 6: Attitude Manipulation Check Means (and Standard Deviations)

STRATEGY	high CSR		low CSR	
	BC		BC	
	high	low	high	low
no response	4.98 (1.48)	4.57 (1.38)	5.26 (1.59)	3.67 (1.78)
denial	5.25 (1.16)	4.56 (1.60)	4.71 (1.30)	3.50 (1.56)
super communication	4.66 (1.55)	4.42 (1.36)	4.04 (1.65)	2.68 (1.18)

Note. Attitude scores could range from 1 (not at all) to 7 (very strongly).

CSR. Since there were only two situations in CSR, the three-way anova also showed the direction of how high or low CSR influence consumer attitude. $M_{\text{high CSR}} = 4.74$; $SD_{\text{high CSR}} = 1.44$; $M_{\text{low CSR}} = 3.98$; $SD_{\text{low CSR}} = 1.72$; $F_{(1, 348)} = 23.97$; $p < .001$. Hence, consumer attitude was significantly higher when CSR was higher than when CSR was low.

BC. Similar with SCR, the result for BC showed that consumer attitude was significantly higher when BC was high than when BC was low ($M_{\text{high BC}} = 4.82$; $SD_{\text{high BC}} = 1.51$; $M_{\text{low BC}} = 3.90$; $SD_{\text{low BC}} = 1.62$; $F_{(1, 348)} = 34.59$; $p < .001$).

To check the direction of influences between the rest independent variables and attitude, independent samples tests were conducted on different situations respectively. Here were the results:

H1, H2 and H3: To test for hypotheses for strategies, T-tests were conducted. The result of independent samples test (independent variable = strategy; dependent variable = attitude) showed that consumer attitude was not significantly different between no responses and denial strategy ($M_{\text{no response}} = 4.62$; $SD_{\text{no response}} = 1.66$; $M_{\text{denial}} = 4.51$; $SD_{\text{denial}} = 1.54$; $t(238) = 0.57$; $p = .573$). However, consumer attitudes were significantly different between no response and super communication strategy ($M_{\text{no response}} = 4.62$; $SD_{\text{no response}} = 1.66$; $M_{\text{super communication}} = 3.95$; $SD_{\text{super communication}} = 1.62$; $t(238) = 3.17$; $p = .002$). Moreover, the difference between denial strategy and super communication was also significant ($M_{\text{denial}} = 4.51$; $SD_{\text{no response}} = 1.66$; $M_{\text{super communication}} = 3.95$; $SD_{\text{super communication}} = 1.62$; $t(238) = 2.72$; $p = .007$). Hence, the conclusion was that consumer attitude was higher when Cow takes no actions or applies denial strategy than it applies super communication strategy. But which was better between no responses and denial was not significantly show.

1 Hereinafter: Present research applies $\alpha = .05$ as the critical value.

To test the hypothesis H4a, H4b, H5a and H5b, contrast analyses were conducted. In the contrast analyses, attitude was the dependent variable. All the 3 X 2 X 2 situations were the independent variable, but they got different weights of 1, 0 and -1.

H4a. To test whether high or low CSR plays a better role in denial strategy, situations with denial*highCSR weighted 1; denial*lowCSR weighted -1; the rest weighted 0. The result showed consumer attitude was significantly higher in denial strategy when CSR was high than when CSR was low ($M_{\text{denial*highCSR}} = 4.91$; $SD_{\text{denial*highCSR}} = 1.38$; $M_{\text{denial*lowCSR}} = 4.11$; $SD_{\text{denial*lowCSR}} = 1.43$; $t(348) = 2.964$; $p = .003$). Hence, the results supported H4a that denial strategy was significantly more effective when the CSR was high than when CSR was low in terms of consumer attitude.

H4b. Similar, to test whether high or low CSR plays a better role in super communication strategy, in the contrast analysis, situations with super*highCSR weighted 1; super*lowCSR weighted -1; the rest weighted 0. The result showed consumer attitude was significantly higher in super communication strategy when CSR was high than when CSR was low ($M_{\text{super*highCSR}} = 4.54$; $SD_{\text{super*highCSR}} = 1.46$; $M_{\text{super*lowCSR}} = 3.36$; $SD_{\text{super*lowCSR}} = 1.42$; $t(348) = 4.363$; $p < .001$). Accordingly, H4b was supported that super communication strategy was significantly more effective when the CSR was high than when CSR was low in terms of consumer attitude.

H5a. To test whether high or low BC has a better influence on consumer attitude in denial strategy, in the contrast analysis, situations with denial*highBC weighted 1; denial*lowBC weighted -1; the rest weighted 0. The result showed consumer attitude was significantly higher in denial strategy when BC was high than when BC was low ($M_{\text{denial*highBC}} = 4.98$; $SD_{\text{denial*highBC}} = 1.23$; $M_{\text{denial*lowBC}} = 4.03$; $SD_{\text{denial*lowBC}} = 1.58$; $t(348) = 3.519$; $p < .001$). Hence, H5a was supported that denial strategy was significantly more effective when the BC was high than when BC was low in terms of consumer attitude.

H5b. Similar, to test whether high or low BC has a better influence on consumer attitude in super communication strategy, in the contrast analysis, situations with super*highBC weighted 1; super*lowBC weighted -1; the rest weighted 0. The result showed consumer attitude was significantly higher in super communication strategy when BC was high than when BC was low ($M_{\text{super*highBC}} = 4.35$; $SD_{\text{super*highBC}} = 1.60$; $M_{\text{super*lowBC}} = 3.55$; $SD_{\text{super*lowBC}} = 1.27$; $t(348) = 2.964$; $p = .003$). Accordingly, H5b was supported that super communication strategy was significantly more effective when the BC was high than when BC was low in terms of consumer attitude.

Interaction between CSR and BC. To check the interactions between SCR and BC, four situations were built: highC*highB, highC*lowB, lowC*highB, lowC*lowB. The attitude means and standard deviations for each situation are displayed in Table 7. The results of paired independent samples test showed that lowC*lowB was significantly the worst situation ($M_4 < M_1$, $t(178) = 7.532$; $p_{14} < .001$; $M_4 < M_2$, $t(178) = 5.502$; $p_{24} < .001$; $M_4 < M_3$, $t(178) = 5.900$; $p_{34} < .001$). Furthermore, highC*highB

was significant better than highC*lowB ($M_2 < M_1$, $t(178) = 2.091$; $p_{12} = .038$). However, differences between highC*highB and lowC*highB ($t(178) = 1.298$; $p_{13} = .196$), or, highC*lowB and lowC*highB ($t(178) = -.682$; $p_{23} = .496$) were not significant. Hence, when CSR and BC were both low, consumer attitude will be the worst compared to any other situations; when CSR and BC were both high, it was highly probably the best combination. When it comes to the situation that SCR and BC were not in the same direction, consumer attitudes were not significantly different from each other.

Table 7: Attitude Manipulation Check Means (and Standard Deviations)

BC	CSR	
	high	low
high	4.96 (1.42) ^{a, b}	4.67 (1.59) ^b
low	4.52 (1.44) ^{a, b}	3.28 (1.57) ^b

Note. Attitude scores could range from 1 (not at all) to 7 (very strongly). Means with a different superscript differ significantly from each other within each study with all $t_s > 2.12$, all $p_s < .05$.

Interaction between strategy and CSR. To check the interactions between strategy and SCR, six situations were built: no*high; no*low; denial*high; denial*low; super*high; super*low. Dependent variable was consumer attitude. The results were displayed in Table 8. The result showed that super communication*low CSR was the worst combination among these 15 situations ($M_6 < M_1$; $M_6 < M_2$; $M_6 < M_3$; $M_6 < M_4$; $M_6 < M_5$). It was significant that no response*high CSR was better than denial*low CSR ($M_4 < M_1$). The superiority between denial*high CSR and denial*low CSR was also significant ($M_4 < M_3$).

Table 8: Attitude Manipulation Check Means (and Standard Deviations)

STRATEGY	CSR	
	high	low
no response	4.78 (1.44) ^{a, c}	4.77 (1.86) ^c
denial	4.91 (1.43) ^{b, c}	4.11 (1.55) ^{a, b, c}
super communication	4.54 (1.45) ^c	3.36 (1.58) ^c

Note. Attitude scores could range from 1 (not at all) to 7 (very strongly). Means with a different superscript differ significantly from each other within each study with all $t_s > 2.12$, all $p_s < .05$.

3.4.2.2 Intention

A three-way anova showed that independent variables strategy ($F_{(2, 348)} = 11.112$; $p < .001$), SCR ($F_{(1, 348)} = 11.677$; $p = .001$) and BC ($F_{(1, 348)} = 30.182$; $p < .001$) have significant influences on dependent variable intention respectively. In addition, there was interaction between strategy and CSR ($F_{(2, 348)} = 4.321$; $p = .014$), and, SCR and BC ($F_{(1, 348)} = 12.448$; $p < .001$). Neither interactions between strategy and BC ($F_{(2, 348)} = .277$; $p = .758$) nor interaction between three variables ($F_{(2, 348)} = 1.493$; $p = .226$)

was significant. The intention means and standard deviations for each situation are displayed in Table 9.

Table 9: Intention Manipulation Check Means (and Standard Deviations)

STRATEGY	high CSR		low CSR	
	BC		BC	
	high	low	high	low
no response	4.61 (1.44)	4.07 (1.54)	5.19 (1.52)	3.68 (1.70)
denial	4.38 (1.43)	3.86 (1.76)	3.94 (1.61)	2.89 (1.43)
super communication	3.93 (1.47)	4.07 (1.34)	3.84 (1.43)	2.15 (1.11)

Note. Attitude scores could range from 1 (not at all) to 7 (very strongly).

CSR. According to the result of three-way anova, consumer intention was significantly higher when CSR was high than when CSR was low ($M_{\text{high CSR}} = 4.15$; $SD_{\text{high CSR}} = 1.51$; $M_{\text{low CSR}} = 3.62$; $SD_{\text{low CSR}} = 1.74$; $t(358) = 3.136$; $p = .002$).

BC. Similar, the result for BC showed that consumer intention was significantly higher when BC was high than when BC was low ($M_{\text{high BC}} = 4.32$; $SD_{\text{high BC}} = 1.54$; $M_{\text{low BC}} = 3.45$; $SD_{\text{low BC}} = 1.64$; $t(358) = 5.155$; $p < .001$).

H1, H2 and H3. The result of independent samples test (independent variable = strategy; dependent variable = intention) showed that consumer intention was significantly different between no responses and denial strategy ($M_{\text{no response}} = 4.39$; $SD_{\text{no response}} = 1.64$; $M_{\text{denial}} = 3.77$; $SD_{\text{denial}} = 1.64$; $t(238) = 2.913$; $p = .004$). Furthermore, consumer intention was significantly different between no response and super communication strategy ($M_{\text{no response}} = 4.39$; $SD_{\text{no response}} = 1.64$; $M_{\text{super communication}} = 3.50$; $SD_{\text{super communication}} = 1.55$; $t(238) = 4.307$; $p < .001$). However, the difference between denial strategy and super communication was not significant ($M_{\text{denial}} = 3.77$; $SD_{\text{denial}} = 1.64$; $M_{\text{super communication}} = 3.50$; $SD_{\text{super communication}} = 1.55$; $t(238) = 1.314$; $p = .190$). Hence, the conclusion was that consumer intention was higher when Cow takes no actions than applies denial strategy or it applies super communication strategy. But there was no significant difference between denial and super communication.

To test the hypothesis H4a, H4b, H5a and H5b, contrast analyses were conducted. In the contrast analyses, intention was the dependent variable. All the 3 X 2 X 2 situations were the independent variable, but they got different weights of 1, 0 and -1.

H4a. To test whether high or low CSR plays a better role in denial strategy, situations with denial*highCSR weighted 1; denial*lowCSR weighted -1; the rest weighted 0. The result showed purchase intention was significantly higher in denial strategy when CSR was high than when CSR was low ($M_{\text{denial*highCSR}} = 4.12$; $SD_{\text{denial*highCSR}} = 1.60$; $M_{\text{denial*lowCSR}} = 3.42$; $SD_{\text{denial*lowCSR}} = 1.52$; $t(348) = 2.575$; $p = .010$). Hence, H4a was supported that denial strategy was significantly more effective when the CSR was high than when CSR was low in terms of purchase intention.

H4b. Similar, to test whether high or low CSR plays a better role in super communication strategy, in the contrast analysis, situations with super*highCSR weighted 1; super*lowCSR weighted -1; the rest weighted 0. The result showed purchase intention was significantly higher in super communication strategy when CSR was high than when CSR was low ($M_{\text{super*highCSR}} = 4.00$; $SD_{\text{super*highCSR}} = 1.41$; $M_{\text{super*lowCSR}} = 3.00$; $SD_{\text{low*highCSR}} = 1.27$; $t(348) = 3.684$; $p < .001$). Accordingly, H4b was supported that super communication strategy was significantly more effective when the CSR was high than when CSR was low in terms of purchase intention.

H5a. To test whether high or low BC has a better influence on purchase intention in denial strategy, in the contrast analysis, situations with denial*highBC weighted 1; denial*lowBC weighted -1; the rest weighted 0. The result showed purchase intention was significantly higher in denial strategy when BC was high than when BC was low ($M_{\text{denial*highBC}} = 4.16$; $SD_{\text{denial*highBC}} = 1.52$; $M_{\text{denial*lowBC}} = 3.38$; $SD_{\text{denial*lowBC}} = 1.59$; $t(348) = 2.872$; $p = .004$). Hence, H5a was supported that denial strategy was significantly more effective when the BC was high than when BC was low in terms of purchase intention.

H5b. Similar, to test whether high or low BC has a better influence on purchase intention in super communication strategy, in the contrast analysis, situations with super*highBC weighted 1; super*lowBC weighted -1; the rest weighted 0. The result showed purchase intention was significantly higher in super communication strategy when BC was high than when BC was low ($M_{\text{super*highBC}} = 3.89$; $SD_{\text{super*highBC}} = 1.45$; $M_{\text{super*lowBC}} = 3.11$; $SD_{\text{super*lowBC}} = 1.23$; $t(348) = 2.863$; $p = .004$). Accordingly, H5b was supported that super communication strategy was significantly more effective when the BC was high than when BC was low in terms of purchase intention.

Interaction between strategy and CSR. To check the interactions between strategy and SCR, six situations were built: no*high; no*low; denial*high; denial*low; super*high; super*low. The intention means and standard deviations for each situation are displayed in Table 10. And 15 pairs of independent samples were tested. The result showed that purchase intention was significantly lower in both situations denial*low CSR ($M_4 < M_1$; $M_4 < M_2$; $M_4 < M_3$; $M_4 < M_5$) and super communication*low CSR ($M_6 < M_1$; $M_6 < M_2$; $M_6 < M_3$; $M_6 < M_5$). However, the difference between denial*low CSR and super communication*low SCR was not significant.

Table 10: Intention Manipulation Check Means (and Standard Deviations)

STRATEGY	CSR	
	high	low
no response	4.34 (1.51) ^{a, b}	4.43 (1.78) ^{a, b}
denial	4.12 (1.61) ^{a, b}	3.42 (1.60) ^a
super communication	4.00 (1.40) ^{a, b}	2.99 (1.54) ^b

Note. Intention scores could range from 1 (not at all) to 7 (very strongly). Means with a different superscript differ significantly from each other within each study with all $t_s > 2.12$, all $p_s < .05$.

Interaction between CSR and BC. To check the interactions between SCR and BC, four situations were built: highC*highB, highC*lowB, lowC*highB and lowC*lowB. The intention means and standard deviations for each situation are displayed in Table 11. The results of paired independent samples test showed that lows*lowB was significantly the worst situation ($M_4 < M_1$, $t(178) = 6.24$; $p_{14} < .001$; $M_4 < M_2$, $t(178) = 4.73$; $p_{24} < .001$; $M_4 < M_3$, $t(178) = 5.99$; $p_{34} < .001$).

Table 11: Intention Manipulation Check Means (and Standard Deviations)

BC	CSR	
	high	low
high	4.31 (1.46) ^a	4.33 (1.63) ^a
low	4.00 (1.54) ^a	2.91 (1.55) ^a

Note. Intention scores could range from 1 (not at all) to 7 (very strongly). Means with a different superscript differ significantly from each other within each study with all $t_s > 2.12$, all $p_s < .05$.

3.4.2.3 Other results

T-tests were conducted to check if age, gender and approaches of data collection influence the evaluation. The results are displayed in Table X. Results showed that gender did not influence the dependent variables significantly ($t_{attitude} = 1.178$; $p = .239$; $t_{intention} = 1.743$; $p = .082$). In terms of approaches, results showed the dependent variables were not significantly different between online data and street data ($t_{attitude} = -.436$; $p = .663$; $t_{intention} = .670$; $p = .503$). In addition, results of regression analyses showed that age did not significantly influence attitude ($M_{attitude} = 4.36$; $SD = 1.63$; $t = 1.242$; $p = .215$); while age significantly influence intention ($M_{intention} = 3.88$; $SD = 1.65$; $t = 2.089$; $p = .037$; $B = .017$). It is significant that the elder a respondent was, the higher intention he or she evaluated.

Table 12: Attitude and Intention Manipulation Check Means (and Standard Deviations)

	gender		approach	
	male	female	online	street
attitude	4.48 (1.52)	4.27 (1.70)	4.32 (1.66)	4.39 (1.60)
intention	4.07 (1.59)	3.76 (1.68)	3.94 (1.65)	3.83 (1.64)

Note. Attitude and intention scores could range from 1 (not at all) to 7 (very strongly).

3.5 Summary of results

In conclusion, in present experiment, hypotheses have been tested and some else interesting results were found. Briefly, it boils down to the following:

In terms of consumer attitude, super communication was worse than no response or denial respectively when a company involved in a negative competitive spillover effects of product-harm crisis. However, based on the results, it does not matter

whether they apply denial strategy or take no action. When it comes to purchase intention, no response was better than denial or super communication strategy respectively. However, there was no significant difference between denial and super communication strategy.

The results for H4 show that both denial and super communication strategy were more effective when CSR was high than when CSR was low. Similar, results for H5 show that both denial and super communication strategy were more effective when BC was high than when CSR was low.

Apart from the hypotheses, there were also some interesting findings. First, no matter in any situations, consumer evaluation will be higher when CSR or BC was high than when CSR or BC was low. Second, the interaction between SCR and BC was significant. When CSR and BC were both high, consumer evaluation was the highest compared to any other situations. On the contrary, when CSR and BC were both low, consumer evaluation will be the worst no matter in terms of attitude or intention. Third, the interaction between strategy and CSR were also can be seen. Although which situation was the best was not significantly shown, it was clear that where a company with low CSR applies super communication strategy was the worst combination among 15 situations. In terms of demography information, it did not matter if a respondent was a male or female, but it is significant that the elder a respondent was, the higher intention he or she evaluated.

4. Discussion

4.1 General discussions

The study of consumer evaluation on different corporate responses, prior CSR and BC shows an underlying mechanism by which companies repairing consumers' trust after being involved in competitive spillover effects of product-harm crisis. The purpose of this study is to help the competitors involved product-harm crisis spillover gain back reputation by investigating which product-harm crisis management strategies are also effective in the competitive spillover effects. Present research contributes to fill in the gap of competitive product-harm crisis spillover effects management, especially focus on China.

Based on the existing literature, different classifications of product-harm crisis management can be boiled down to four strategies: (1) denial; (2) recall; (3) active compensation, and (4) super communication. However, not all of these four strategies are supposed to be effective. Since recall and active compensation imply a fault and in turn reduce consumers' trust, these two are not considered to be effective in present research. Accordingly, based on the literature, present research checked whether denial or super communication strategy is likely to be more effective than take no action. In addition, based on attribution perspective and brand equity perspective of product-harm theory, CSR and BC play important roles in repairing crisis. Hence, the moderating function of CSR and BC were checked. In the study, a 3 x 2 x 2 between subjects experiment was conducted and 360 respondents were involved. The results indicated that no response strategy contributes better than denial strategy and super communication strategy. Furthermore, if a company has a low CSR, super communication is the worst choice when the product-harm crisis spillover effects happen to it. In addition, CSR and BC are both crucial elements in competitive product-harm crisis spillover effects management. Strategies will be more effective when CSR and/or BC is higher. Interestingly, it is significant that the elder a respondent was, the higher intention he or she evaluated.

4.2 Implications

When a product-harm crisis spillover to the innocent competitors, how to heal the reputation is always a problem for competitors. To help solve the problem, the present research found some general implications by using the method of experimental study. It turned out that:

The results from experiment imply that SCR and BC are crucial elements in competitive product-harm crisis spillover effects management. According to existing researches (Klein and Dawar, 2004), CSR beliefs are a key element of the knowledge of the company that an individual holds and draws upon to make judgments. Moreover, Ahluwalia et al. (2000) argue that BC moderates the processing and

impact of negative publicity. Consistent with current researches, present study supports that no matter in what situations, consumer evaluation is higher when prior SCR and/or BC is high than when SCR and/or BC is low. Accordingly, managers must be aware of the importance of CSR and BC. On the one hand, present research suggests them to contribute more into public welfare and environmental protection, for example, applying environmentally friendly fuel, donating money to charity programs. On the other hand, competitors involved in product-harm crisis spillover effects are advised to pay more attention to BC, for example, deepening the connection between the products and customers, highlighting the benefit relationship between the brand and customer and long-term promotion to make consumers form a kind of consumption habits.

Apart from SCR and BC, company response is also important in product harm crisis spillover effects management. Roehm and Tryout's (2006) found that denial strategy is better than no responses. However, in Chinese context, present research suggests that no response strategy is at least no worse than denial. And in terms of certain situations, no response strategy is even better than denial significantly. Accordingly, present research suggests Chinese companies involved in competitive product-harm crisis take no action instead of applying denial or super communication strategy.

The different conclusions probably resulted by the extent of crisis (Vassilikpopulou et al., 2009). Vassilikpopulou et al. argue that organization response is the least important element in low extent of crisis, but should be the most important factor to heal consumer evaluation in medium crisis. Another reason for the opposite conclusion may be the cultural difference. Roehm and Tryout's (2006) research were done in the western society. On the contrary, present research only focus on Chinese context. It is reasonable that different cultures lead to opposite results (Gao, Knight, Zhang, & Mather, 2013) (Vaughan & You, 2006) (Lai & Zaichkowsky, 1999). Moreover, present research checked super communication strategy and the results supported that it is the worst one among these three strategies. Hence, present research suggests Chinese managers not to apply super communication strategy if their companies are involved in product-harm crisis spillover effects, especially when the company's CSR is low. Whether to apply no response or denial strategy depends on the particular circumstance.

It is significant that age influence purchase intention. The older a respondent is the higher intention he or she has. Based on this finding, present research suggests the management focus on the elderly, for example, doing some promotion catering to the elderly fancy, updating package to the elderly style.

4.3 Limitation and future research

Samples in present research are not large enough. Although present research collected information from 360 respondents, every situation has 30 samples only. Maybe some of testes can be more accurate if there are more respondents.

Present research only focus on Chinese context and comes to the conclusion of no response is the best strategy. This conclusion is different from Roehm and Tryout's (2006) research which deems that providing a denial results in more favourable judgments than does no denial. The different conclusions probably results from the cultural differences because Roehm and Tryout's conclusion was based on the investigation in western society. Some researchers compared Chinese consumers and consumers from western countries and found they may have different attitudes on the same event (Gao, Knight, Zhang, & Mather, 2013) (Vaughan & You, 2006) (Lai & Zaichkowsky, 1999). Also the Chinese policy context is different other countries (Oppen, Wong, & Ruyin, 2002). Hence, the cultural differences can be a new direction of future research.

In addition, according to existing investigation (Siomkos and Kurzbard, 1994) (Vassilikopoulou et al.'s, 2009) (Xie & Peng, 2009) (Fang, 2009), there are different classifications of product-harm crisis management. Hence, present research suggests future study get down to check if other strategies are better than no response, especially in Chinese context.

Different kinds of industries can also be taken into consider. Experiment in present research applied a food-related scenario. Whether the results are the same with other industries can be a possible direction.

4.4 Conclusion

Present research started from pervasive practical problems and aimed to solve them. Previous investigations focus on the product-harm crisis management for the affected company itself, while studies merely focus on the negative competitive spillover effects management. Present research contributes to fill in the gap by testing if strategies for the affected company are also effective for the competitors involved in the spillover effects. The literature review integrated most of the popular perspectives of product-harm crisis researches and provides a comprehensive review of framework for its spillover effects management. Specially, present research took into account CSR and BC as moderators to explore how they affect the relationship between strategies and consumer evaluation. Finally, it concludes that, in Chinese context, no response is supposed to be the best choice among these three strategies when product-harm crisis spillover effects happen to a competitor. On the contrary, super communication is the worst especially when the company does not have a relatively high CSR. What is more, CSR and BC are both crucial elements in

competitive product-harm crisis spillover effects management. Strategies will be more effective when CSR and/or BC is higher.

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Annex A: pre-test questionnaire

This is a pre-test for the validity of experimental scenario description. You are expected to read 7 paragraphs and answer questions about your perceived extent (1=not at all; 7= very strongly). Please circle the score in the form cell corresponding to your perception. The participation takes about 8 minutes. This survey is for academic purpose only, and does not involve any commercial companies.

Definition of concept in the present research:

1. Product-harm crisis spillover effects to competitors means that if a company was affected in a crisis of product quality problem, then the crisis will also negatively influence the innocent competitors and the whole industry. The consequence for the competitors could be the decrease of sales and loss of consumers trust.
 2. Denial strategy is one of possible responses made by an affected competitor to heal themselves in product-harm crisis spillover effects. It includes publicly announcement and show evidence that their products are good.
 3. Super communication strategy is another response. It includes updating information, showing the attention of consumer welfare and actively asking feedback. For example, the affected competitors show more processing details of their products, inform the public how to choose the most appropriate products, or open their factories and welcome consumers to see how they process products.
 4. Corporate social responsibility means the extent that a company cares about the society despite of its financial profits. For example if a company cares about the environment very much and invest a lot of money in it, and/or often donates money to charities, then the company has a high corporate social responsibility.
 5. Brand commitment is a feeling that you, as a consumer, are always willing to buy products from a certain brand even if when you have a lot of choices.
-

Gender: _____

Age: _____

Nationality: _____

Please read the following text from a journal article:

1. BEIJING ---- The whole Chinese dairy industry is now facing a downturn because of the melamine problem from only one company ---- China Daily

One year ago, the Center for Food Safety of China released the latest batch of test results of dairy products, a sample of Deer infant formula milk powder was found to contain melamine. Melamine can cause kidney stones if taken in excessive levels, and babies who were fed

tainted milk powder were the most widely affected. The company's major foreign investor, New Zealand's Fonterra Group, says the Deer Group was facing mounting debts as a result of the melamine contamination crisis.

Young parents are now more willing to buy imported milk powder even if they have to pay the double price. A new survey has confirmed that, after the product-harm crisis from Deer Group, the whole Chinese dairy entered a downturn. Cow Group is one of the victims in this product-harm crisis spillover effects; although no evidences show products from Cow Group has any problem according to the law and safety standards. The ECO of Cow Group says their sale has dropped more 50% by now and the loss is still continuing and the whole Chinese dairy industry is now facing the challenge to heal consumers trust.

	Not at all						Very strongly
To what degree do you think that Cow is a victim of product-harm crisis spillover effects to competitors?	1	2	3	4	5	6	7

Please read the following text:

2. Cow Group publicly announces that all their products are quality and safe through newspaper, TV advertisement and other public media. Moreover, Cow actively sends its products to the quality supervise department (an authoritative organization in China) and provides the Quality Certificate to the public. Also, Cow provides another Quality Certificate from the China Product Quality Association (CPQA, a well-recognized NGO in China) to support its denial of responsibility of melamine contamination.

	Not at all						Very strongly
To what degree do you think that Cow applies a denial strategy?	1	2	3	4	5	6	7
To what degree do you think that Cow applies a super communication strategy?	1	2	3	4	5	6	7

3. "To cope with the negative spillover effects, Cow is now taking some innovative actions," The CEO of Cow Group introduced to the accredited journalist. First, Cow has already updated the product package, on which more information of effective constituent and how does it work will be contained, for example, DHA, the critical for the optimal development and function of the brain, eyes, and central nervous system during infancy and childhood. Moreover, some of staffs have been sent to supermarkets, so that consumers' questions can be answered and their feedbacks can be recorded immediately. Finally, the most innovative action, opening their factory freely and informing the public more knowledge about milk production, will be conducted next month. On the occasion, everyone will be welcomed to visit Cow's factory.

	Not						Very
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	at all						strongly
To what degree do you think that Cow applies a denial strategy?	1	2	3	4	5	6	7
To what degree do you think that Cow applies a super communication strategy?	1	2	3	4	5	6	7

4. Since the establishment of Cow Group, it makes every effort to build up its reputation of social responsibility. Cow keeps its farming place as environmental friendly as possible. Technical advances such as biogas systems are introduced to keep carbon footprint as small as possible. Except for their efforts into environment, animal welfare is also high in Cow's farm. Every cow has more than enough place to live; all the pasture are also grown in natural and unpolluted condition. Moreover, Cow's social responsibility can also be seen in its benevolence: it donates more than 1.5 million euros to "5.12" earthquake stricken area; it was one of the largest sponsors to Beijing 2008 Olympic Games.

	Not at all						Very strongly
To what degree do you think that Cow has a high reputation of social responsibility?	1	2	3	4	5	6	7

5. Since the establishment of Cow Group, it makes every effort to meet every bottom line according to the environment law and safety standards both in their production process and outputs. Every cow has just enough places to live according to the law, but no report shows the feeds and pasture growing condition. One report shows they donated 0.5 million euros to "5.12" earthquake stricken area. No report shows Cow makes effort to build up its reputation of social responsibility.

	Not at all						Very strongly
To what degree do you think that Cow has a high reputation of social responsibility?	1	2	3	4	5	6	7

6. Before the Deer's melamine incident, you liked the milk products very much and it was always your first choice when you are purchasing. You were willing to recommend Cow to your family and friends. When Cow released new products, you were also willing to try it the first time.

	Not at all						Very strongly
To what degree do you feel like you are a consumer with high brand commitment to Cow?	1	2	3	4	5	6	7

7. For you, Before the Deer's melamine incident, Cow was just one of the normal brands among all the dairy brands. Nothing is special about the long-term relationship between you and Cow. You have already tried Cow's products, but you never paid more attention to its new products. When you were asked about the recommendation by your friends, Cow would never be your first one you come up with.

	Not at all						Very strongly
To what degree do you feel like you are a consumer with high brand commitment to Cow?	1	2	3	4	5	6	7

This is the end of the survey. Thank you for your participation!

Annex B: main test questionnaire

This investigation is part of my master thesis. You are expected to read some information and give your opinion and what you would do in the described situation. There is no right or wrong answer: we are only interested in your opinion. You may withdraw from participation at any moment during the study without consequences of any kind. The participation takes about 10 minutes. This survey is for academic purpose only, and does not involve any commercial companies.

Gender: _____

Age: _____

Nationality: _____

Please read the following text from a journal article:

BEIJING ---- The whole Chinese dairy industry is now facing a downturn because of the melamine problem from only one company ---- China Daily

One year ago, the Center for Food Safety of China released the latest batch of test results of dairy products, a sample of Deer infant formula milk powder was found to contain melamine. Melamine can cause kidney stones if taken in excessive levels, and babies who were fed tainted milk powder were the most widely affected. The company's major foreign investor, New Zealand's Fonterra Group, says the Deer Group was facing mounting debts as a result of the melamine contamination crisis.

Young parents are now more willing to buy imported milk powder even if they have to pay the double price. A new survey has confirmed that, after the product-harm crisis from Deer Group, the whole Chinese dairy entered a downturn. Cow Group is one of the victims in this product-harm crisis spillover effects; although no evidences show products from Cow Group has any problem according to the law and safety standards. The ECO of Cow Group says their sale has dropped more 50% by now and the loss is still continuing and the whole Chinese dairy industry is now facing the challenge to heal consumers trust.

Since the establishment of Cow Group, it makes every effort to build up its reputation of social responsibility. Cow keeps its farming place as environmental friendly as possible. Technical advances such as biogas systems are introduced to keep carbon footprint as small as possible. Except for their efforts into environment, animal welfare is also high in Cow's farm. Every cow has more than enough place to live; all the pasture are also grown in natural and unpolluted condition. Moreover, Cow's CSR can also been seen in its benevolence: it donates more than 1.5 million Euros to "5.12" earthquake stricken area; it was one of the largest sponsors to Beijing 2008 Olympic Games.

Imagine that you also know the following about Cow:

Before the Deer's melamine incident, you liked the milk products very much and it was always your first choice when you are purchasing. You were willing to recommend Cow to your family and friends. When Cow released new products, you were also willing to try it the first time.

What do you think of Cow? Below we have enlisted a number of statements. Please indicate for every statement to what degree it fits with your opinion of Cow. The answers range from 1 (not at all) to 7 (very strongly).

	Not at all						Very strongly
I trust Cow Group.	1	2	3	4	5	6	7
Products from Cow are dependable.	1	2	3	4	5	6	7
Cow is reliable.	1	2	3	4	5	6	7
Products from Cow are safe.	1	2	3	4	5	6	7
Products from Cow are good.	1	2	3	4	5	6	7
I like this brand.	1	2	3	4	5	6	7
Products from Cow are attractive.	1	2	3	4	5	6	7
I intend to buy Cow's products in the future.	1	2	3	4	5	6	7
I will buy Cow's products in the future.	1	2	3	4	5	6	7
I will give my children products from Cow to eat.	1	2	3	4	5	6	7
I will recommend Cow's products to my friends.	1	2	3	4	5	6	7
If Cow releases new products in the future, I intend to buy.	1	2	3	4	5	6	7
If Cow releases new products in the future, I will buy them.	1	2	3	4	5	6	7
To what degree do you think that Cow has a high reputation of social responsibility?	1	2	3	4	5	6	7
To what degree do you feel like you were a big fan of Cow?	1	2	3	4	5	6	7

This is the end of the survey. Thank you for your participation!